

Variations of Cast Iron Mechanical Banks

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Photo by Frank Kidd

November 11, 2005

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Part I: Review of the Literature

Part II: Proposal for Identifying Variations

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Forward and Acknowledgements

Recently a new approach was proposed for identifying variations of cast iron still banks.¹ Differences between banks that are similar but not identical are analyzed in terms of the process used to produce the banks. This allows rational judgements about whether the banks are separate types or variations of a single type.

The present pair of articles extends the proposal to cast iron mechanical banks. In Part I we review earlier literature on the subject of variations. In Part II we present the proposal, apply it to several examples, and compare our conclusions to types and variations listed in modern standard catalogs.

It is important to understand that we are not attempting to present complete lists of types and variations that would be alternatives to those already published. *Rather, we are proposing a process that allows collectors who understand how banks were made to identify types and variations, and to form their own opinions about types and variations identified by others.*

Our friend Bill Jones believes that "proposal" is a not the best word to describe our new approach because it might give the impression that we are making only a preliminary suggestion. He would prefer "findings," which would more clearly convey that we have thoughtfully considered our approach and are confident in its value.

We accept his point, but have retained "proposal" because what we have done will never be anything but a proposal unless others choose to adopt it, and also because the earlier work on cast iron still banks was named in the same way. So, we will strive to explain our approach as clearly and convincingly as we are able, and then hope that our readers see value in it.

In preparing our articles we have benefited greatly from the encouragement, suggestions, and editorial improvements offered by Bill Jones, Frank Kidd, Charlie Reynolds, Greg ("Dr. Z") Zemenick, and Steve Steckbeck. We are particularly grateful to Frank, Bill, and Tom Hagan for providing photographs and information that we have used in several of our examples. With their help it has been possible to illustrate several banks and patterns for the first time.

The authors are very interested in receiving readers' feedback. Please direct comments to Fritz Kokesh at fritz@toybanks.info and to Bill Robison at wrsbanks@alltel.net.

¹ Fritz Kokesh, "Proposal for Identifying Variations of Cast Iron Still Banks," *Penny Bank Post*, December 2003, p.18.

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Variations of Cast Iron Mechanical Banks

Part I: Review of the Literature

A. INTRODUCTION AND CONCLUSIONS

Part I is a review of earlier literature on the subject of variations of mechanical banks. It is meant to provide background for Part II in which we propose a new approach for identifying variations.

Based on this review we have reached the following conclusions:

- The term "variation" as applied to cast iron mechanical banks has never been defined, and has been used in two different senses. In one case it means simply: *two banks are different*, and in the other: *two banks are different in such a way that they should be described using a special term, namely "variation."* The words variant, variety, variance, and version have been used as synonyms for variation.
- Rather than describing a standard for variations that others can apply, earlier authors have presented lists of variations selected by themselves or others. These lists vary widely among authors, and sometimes the list from a given source changed significantly over time.
- Categorization of mechanical banks as variations has had both scholarly and economic significance. Variations have been identified to decide which mechanical banks are "collectible"—that is, belong in a complete collection—and to determine which are more valuable. (Our proposal leaves these decisions up to the individual collector and instead focuses on helping him or her understand the banks that—for whatever reasons—seem most attractive.)
- Hertz and Griffith were aware of the variability in the manufacturing process for cast iron mechanical banks and realized that it resulted in differences between banks. But they didn't systematically relate the two.
- Until Norman's and Davidson's standard catalogs, lists of variations rarely included banks that differ by color of paint or kind of finish.

B. THE LITERATURE ON VARIATIONS OF MECHANICAL BANKS

Ina Bellows

In 1940 Ina Bellows¹ published what she described as the first comprehensive list of mechanical banks. Approximately 350 cast iron banks were included, of which 23 were called "variants." She explained that *"as the word implies, (a variant is) a variation from the original bank... Sometimes a bank is known as a variant if part happens to be in two pieces instead of one. The*

Creedmoor William Tell—which substitutes a tree with a slot—instead of the boy standing in the castle door with the apple on his head, is a very definite variant."

Bellows also had opinions on what is *not* a variant. She did not believe that banks should be considered variants based on differences in finish. *"The fact that the paint is not identical with another does not constitute a variant, as oftentimes the paint on them changed a dozen times from the original colors."* Also: *"At no time is a bank considered a variant where a part is missing, if one has been substituted which is not part of such a bank."*

As for why variants are found, Bellows surmised: *"Undoubtedly some craftsmen have modeled a similar bank in which they have perfected a so-called error."* And, *"For the most part it appears that it was not always the intent of the maker to vary his model greatly from that of the original. However, a variant was not always an accident, but perhaps a whim of the maker."*

L. H. Hertz, 1947

In 1947 Louis H. Hertz published "Mechanical Toy Banks."² Although this is more a series of essays about mechanical banks than a listing of known mechanical banks, it provides important insight about the current subject. Not only does Hertz make several references to "varieties" and "variations" of particular mechanical banks, he does so in a very casual way, suggesting that this was not a controversial subject—at least not in his mind. For example, he refers to:

- "Varieties" of the Kilgore "Owl" bank.
- "Varieties" of the "Tammany" bank with different lettering on the sides of the chair, and "versions" and "varieties" that are unlettered or have the lettering "Bismark Pig" or "Tricky Pig."
- "Internal variations" of the Hubley "Trick Elephant" bank.
- "Mechanical variation" to describe a "Tammany" bank on which one foot serves as a trigger to deposit the coin.
- "Minor varieties" of the "Grenadier" bank, one with a peaked cap with an insignia on the front, and a larger cap without an insignia.
- "Plated variety" to describe the electroplated Stevens "Artillery Bank."

Our impression is that Hertz used these words to convey a general sense, not a precise meaning. Still, Hertz realized the connection between the differences that are seen and the process used to manufacture banks; he explained that the manufacture of antique mechanical banks involved "mass production," but none-the-less resulted in banks that exhibit differences.

John Meyer

When John Meyer published "A Handbook of Old Mechanical Penny Banks"³ in 1952 he downplayed variations. In the preface he wrote: *"I have not gone into details in discussing varieties, feeling that the description of one bank of a kind covers the field pretty fairly."* (He said the same in "Old Penny Banks,"⁴ which was co-authored with Freeman.) Nevertheless,

descriptions for about ten of the 230 cast iron banks listed indicate that "*varieties exist.*" He mentions, for example, varieties of the "Hold the Fort," "Pelican," and "Lion and Monkeys" banks. He even includes the "Teddy and the Bear" bank with the flat-topped hat. Meyer also used the term "type." In the description for the "Freedman" bank he said: "*Made in two types, one with four legs to the table and one without the legs.*"

F. H. Griffith

In the second edition of his booklet on "Mechanical Banks," which was published in 1966, F. H. Griffith⁵ listed 31 cast iron mechanical banks as having variations, some more than one. The number increased to 57 banks in the 1972 "illustrated edition." Only two of the variations in the latter edition are described as finish variations.

However, even in 1967 it seems that Griffith was feeling that variations were getting too much attention.* Just weeks after Mosler spoke at the 1967 MBCA Convention about "Mechanical Bank Variances," Griffith⁶ proposed a novel "Type 1" and "Type 2" nomenclature. For example, he noted that the "Bureau" bank is found in two types: "*In other words, these two banks are different enough to be classed as such, however, they are in essence the same bank and, therefore, the designation of Type 1 and Type 2 gives them individual recognition.*" This suggests that Griffith saw a connection between the classification of differences and the process for manufacturing banks.

Griffith also stated: "*Banks then which were made in two types, for example, will belong in a regular collection, listed as such, and will properly be designated as different banks. Varieties, as in the past, will remain as such, simply a variation of a certain bank, not a different addition to a collection per se.*"

E. H. Mosler, Jr. and the MBCA Reports on Variations

At the 1967 MBCA Convention Edwin Mosler presented a program on "Mechanical Bank Variances." This marked an important milestone in the study of variations because Mosler had a very large collection with multiple examples of similar banks and therefore he was able to conduct extensive and systematic comparisons.

Unfortunately, the text of Mosler's talk and his slides seem to be lost.⁷ But, in August 1968 the MBCA Education Committee published "Variations in Mechanical Banks." The Forward by E. T. Richards, Jr. notes: "*Each mechanical bank collector should be deeply indebted to Mr. Edwin H. Mosler, Jr. whose speech...spurred interest in the subject of Mechanical Bank Variations and whose vast knowledge is the basis for this report.*" Contributions by George Bauer, Leon Perelman, F. H. Griffith, Harry Ulman, and Covert Hegarty also were acknowledged.

The report was very important for educating collectors about differences that can be observed when comparing authentic specimens of particular banks. However, it says little about how those differences might have come about. Systematic analyses are proposed only for identifying differences that do *not* constitute variations. Among banks considered *not* to be variations are:

* Bill Jones suggests that Griffith's action could mean that he felt variations were getting *too little* attention.

- Those for which a difference in color has no meaning. "Hall's Excelsior" is an example where *"variations on color are not considered bank variations."* Another is a case where the overcoat paint is missing and the undercoat paint (in a different color) is all that is seen.
- Banks that are different only because of the date of manufacture. That is, the base of one specimen might have the message "Patent Applied For" while one manufactured later is identical except for the message being a patent date or patent number. The "Santa Claus" bank (N-5010 or D-428) is an example.

These exclusions have not been included in our proposal, the first because today's collectors consider finish variations to be highly collectible, and the second because we prefer to not pre-judge the significance of particular tooling variations. However, the exclusions seem to make good rules of thumb for allocating limited resources when building a collection.

Subsequently, in 1974, 1975, and 1976, the MBCA published Historian's Reports entitled: "Variations in Mechanical Banks." The 1974 Report was text only; the later two included photographs. Again Mosler was the driving force; the Forward to the 1975 Report by Helen Kasper reads: *"I wish to express my sincere gratitude to Mr. Edwin H. Mosler, Jr. for his time and patience in compiling these variations. Without his generous help and knowledge this report would not have been possible."*

Each Report is a list of banks considered to be variations. Finish variations (in the Reports called "color variations"), either paint color or paint versus plating, were not included. The 1974 MBCA Report listed about 95 variations for cast iron mechanical banks. Together, the 1975 MBCA Report (banks with names beginning A–H) and 1976 Report (I–Z) listed only 77. Just the change in total number indicates a lack of consensus about what should be considered a variation. (*C.f.* comment box below.) Careful comparisons reveal some other interesting differences between the 1974 and 1975/1976 Reports:

- The 1974 Report does not include the first four banks in the 1975 Report ("Acrobats," "American Bank (Sewing Machine)," "Artillery Bank," and "Automatic Coin Savings Bank").
- The 1975/1976 Reports do not include banks in the 1974 Report that were described as having only internal differences ("Circus Bank," "Merry Go Round," Professor Pug Frog," and "Zoo Bank").
- Banks in the 1974 Report that were made in Canada are not included in the later Reports.
- The "Trick Dog" bank with solid base is in the 1974 Report as a variation but is not in the 1976 Report.

It might not be surprising that the 1966 MBCA Price Guide does not list a single variation, or even that the 1969 guide includes only two variations of cast iron mechanical banks (the "Cat and Mouse" and "Hold the Fort" banks). At the time interest in variations was just beginning. But it is surprising that there are only two variations in the 1976 Guide (the iron and steel "Pistol" banks) since by that time the MBCA had issued two of the Reports with listings of variations. Bill Jones has suggested that this might mean that people were aware of the differences but didn't assign special value to variations.

L. H. Hertz, 1969

The book "The Toy Collector" by Louis Hertz⁸ is not about mechanical banks exclusively, but is important to this subject because unlike any of the other publications in this review it discusses how to analyze differences.⁹ His "Case History" describes two Arcade cast iron trucks that are identical except for the location of the rivet head (left versus right) and the numbers stamped inside the castings.¹⁰ He considers how these differences might have come about, and the significance of each possibility. He even offers an opinion on the question of whether differences must be visible: "...many collectors retain all external variations, but regard internal variations as duplicates."¹¹

Until recently, we did not realize the relationship of Hertz's work to our own. But, as will be seen in Part II, in a qualitative sense his ideas closely parallel our proposal.

"Variations may be divided into those relating to form...and those relating to paint, finish, and decoration... Variations in form may in turn be divided into those resulting from changes in the tooling of the main portions of the toy itself, those resulting from deliberate changes in the process of assembly, and those resulting from individual or accidental circumstances during assembly. Naturally, the most important are usually those that stem from changes in the tooling, although in some case these may be purely internal and less obvious variations."

Although the words "variation" and "variety" were used more carefully than in his 1947 publication, they still were not defined.

Bill Norman

In one way Bill Norman's book¹² published in 1984 expanded the coverage of variations. Of 417 American cast iron mechanical banks listed, about 187 (nearly half!) are described as variations. And, his standard catalog was the first to include finish variations. He grouped banks by manufacturer and used an original numbering scheme in which a number was assigned to a type and a suffix letter to each variation of that type.

On the other hand, Norman included far fewer casting variations than earlier lists. He lists about 27 for U.S. cast iron mechanical banks; this is only about one-third the number in the 1975/1976 MBCA Reports. He explains: "*The mechanical bank variations included herein are subjectively classified as major... These differences are easily noticed when viewing two banks of the same basic type in their normal display mode.*"¹³ Three of the 27 were not in the 1975/1976 Reports ("Bank of Education & Economy," "Organ Grinder & Bear," and "Paddy & the Pig") and two were not included in any of the earlier lists by Bellows, Meyer, or Griffith ("Organ Grinder & Bear" and "Paddy & the Pig").

Al Davidson

We believe that Al Davidson's standard catalog¹⁴ published in 1987 provides the most complete information available on variations of cast iron mechanical banks. Like Norman, Davidson included finish variations. He also provided a complete account of casting variations, including all but one or two of those in the 1975/1976 MBCA Historian's Reports. In the Forward he indicates that he worked from Ed Mosler's notes, and it seems clear that Davidson's goal was to follow the trail that Mosler had blazed.

If there is anything to criticize about Davidson's listings it is that variations are not separately numbered. At least that was our initial reaction. However, after further consideration we can see that not only was that a nearly impossible task, it might have resulted in more smoke than light. The problem is that casting differences sometimes occur alone, but often they occur in combination. Because even two differences that are found either together or separately would represent three unique banks, numbering easily could get out of hand.

References

- ¹ Ina Hayward Bellows, "Old Mechanical Banks: A comprehensive study of the subject of mechanical banks, with illustrations," Lightner Publishing Corp., Chicago, Illinois, 1940.
- ² Louis H. Hertz, "Mechanical Toy Banks," published privately, Scarsdale, N.Y., 1947.
- ³ John D. Meyer, "A Handbook of Old Mechanical Penny Banks," Rudusill and Company, Lancaster, Pa., 1952.
- ⁴ John D. Meyer and Larry Freeman, "Old Penny Banks," Century House, Watkins Glen, N.Y., 1960.
- ⁵ F. H. Griffith, "Mechanical Banks, 2nd Edition," Pittsburgh, Pa, 1966.
- ⁶ F. H. Griffith "Bureau Bank (Serrill 'Patent applied for')," *HOBBIES Magazine*, November 1967.
- ⁷ Bill Jones, MBCA Historian, has attempted to locate these materials but thus far has not found them.
- ⁸ Louis H. Hertz, "The Toy Collector," Funk & Wagnalls, N.Y., 1969.
- ⁹ Hertz, 1969, p. 185.
- ¹⁰ Hertz, 1969, p.176.
- ¹¹ Hertz, 1969, p. 181.
- ¹² Bill Norman, "The Bank Book: The Encyclopedia of Mechanical Bank Collecting," Accent Studios, San Diego, California, 1985.
- ¹³ Norman, p. 15.
- ¹⁴ Al Davidson, "Penny Lane: A History of Antique Mechanical Toy Banks," Long's American, 1987.

Variations of Cast Iron Mechanical Banks

Part II: Proposal for Identifying Variations

A. INTRODUCTION

In Part I we reviewed the literature on variations of cast iron mechanical banks. Part II proposes a new approach to identifying types and variations in which differences between banks that are similar but not identical are analyzed in terms of the process used to produce the banks. It also gives several examples of how the approach can be applied and compares our conclusions to listings in modern standard catalogs.

B. MANUFACTURE OF CAST IRON MECHANICAL BANKS

The process for manufacturing cast iron banks is summarized in Table 1 and the Chart on p. 40. It began with design ideas and creation of master patterns, and continued with production of banks in large numbers. The production steps that followed creation of the master patterns have been grouped under the headings: Tooling, Casting, Assembly, and Finishing. (Although many of these operations involved handwork, it is incorrect to think of cast iron mechanical banks as being handmade.)

Table 1: Summary of Manufacturing Process for Cast Iron Banks.

Tooling	Casting	Assembly	Finishing
<ul style="list-style-type: none">• Casting and perfecting working patterns.• Assembly of working pattern trees.• Addition of embossed advertising messages.	<ul style="list-style-type: none">• Casting (iron, lead, brass or aluminum).• Removal of casting from the sprue, rough grinding, and tumbling.	<ul style="list-style-type: none">• Fitting twist pins and tapping for bolts.• Fitting of castings.• Addition of non-cast parts.	<ul style="list-style-type: none">• Painting or plating.• Hand decoration.• Application of labels.

Production was highly organized and involved series of repetitive operations. Nevertheless, details of production steps varied—sometimes intentionally, other times unintentionally—and differences resulted among the banks produced.

For the most part, the manufacturing process was the same as that used for cast iron still banks.¹ But there were differences at least in the preparation of master patterns and during finishing. We are certain that master patterns for cast iron still banks were first carved in wood and then cast in lead. Although we have seen only one surviving wood master pattern for a cast iron mechanical bank (see Illustration 1), we believe that the same process was used for many mechanical banks.

However, we are aware that other materials also were used to create working models. J. H. Bowen, the designer for several banks manufactured by J. & E. Stevens Co., has stated that he created his first models in wax.² And Louis Hertz, who was able to interview several individuals who were actually involved in the manufacture of cast iron mechanical, explained:³

"Considerable drawing, experimenting, and making of various pre-production models and handmade samples took place before the bank was ready for the pattern makers. These samples were made in various materials: wood, plaster, wax, or soft metal, or combinations of these materials... The patterns might have been made directly from the samples, or an original set made out of carved hard-wood. In either case, this acted as the 'master' or 'king' pattern. From this a more permanent master pattern would be cast in bronze, or sometimes in brass."



Illustration 1. Wood master pattern (less trunk) for the "Elephant Moves Trunk (large)" bank (N-2310 or D-176) by A. C. Williams. This pattern is coated with black shellac. Photo provided by Tom Hagan.

Notice that Hertz makes no mention of lead being used for master patterns of mechanical banks. No doubt, the fact that a bank was to have a mechanical action put special demands on pattern materials. Specifically, lead may be too soft to be used to form a pattern that is expected to also serve as an operating model. There also were special demands on the modeling and pattern making process because mechanical banks have more parts and smaller parts than still banks. Issues of "fit" that in a still bank might have been just a matter of aesthetics could in a mechanical bank be the difference between a bank that operated properly or not at all. So, while there are significant gaps in our knowledge about the exact steps used to produce master patterns for cast iron mechanical banks and about the materials used, there is no doubt that master patterns were created and used to perfect the design and operation of mechanical banks, and that these master patterns were used to cast the working patterns necessary for mass production of the iron banks.

Also because of the mechanical action of the banks, it seems likely that casting, assembly, and finishing were done with greater care and attention to detail. For example, banks generally wouldn't be painted by dipping (Kenton's "Mama Katzenjammer" and "Bear, Slot in Chest" banks are two well-known exceptions) because paint in the mechanism could "gum up the works" and also waste significant amounts of paint.

C. DEFINITIONS OF TYPE AND VARIATION

According to our proposal, differences between banks that are similar but not identical can be analyzed in terms of changes in production steps. Depending on what changed the banks can be classified as types or variations. This approach allows collectors who understand the production process to identify for themselves types and variations and to form their own opinions about

types and variations identified by others. (The approach also can be used with cast iron toys, etc., and easily can be extended to banks made using other organized production processes.)

"Type" and "Variation" are defined as follows:

"Type" describes all banks derived from a given master pattern.⁴ So long as the master pattern was not changed, all banks derived from it are of the same Type. When the master pattern was modified or replaced—whether in whole or in part—the banks derived from it are of a new Type.

"Variation" describes banks of the same Type that are different as a result of changes made during tooling, casting, assembly, and finishing production steps. Depending on where in the production process the change occurred that resulted in a Variation, it can be categorized as a Tooling Variation,⁵ Casting Variation, Assembly Variation, or Finishing Variation. (A Finishing Variation may also be called simply a "Finish Variation.") In particular, when the working patterns (but not the master pattern) were modified the banks produced are Variations.

In this article, when "Type" or "Variation" are capitalized they are being used as defined here.

D. EXAMPLES THAT ILLUSTRATE THE PROPOSAL

In this section we present examples that illustrate the proposal. Please understand that it is not our intent to create complete lists of known Types and Variations. Also, note that at present our proposal applies only to *authentic*,^{6,7} *old* mechanical banks. With one exception that will be explained below, we don't recommend that it be applied to banks that have been created or modified outside the factory.

Several pairs or sets of cast iron mechanical banks that are similar but not identical are listed in Table 2, which begins on p. 36.

- Column 1 is the example number.
- Column 2 describes the differences. Related differences are grouped under headings such as "Differences in Finish."
- Column 3 names cast iron mechanical banks that display such differences.
- Column 4 lists standard catalog numbers for the banks named in column 3.
- Column 5 indicates whether (according to our proposal) the named banks are Types or Variations. An asterisk ("*") follows the word "Type" or "Variation" if our conclusion differs from how the banks are described in one or both of the standard catalogs or the MBCA Historian's Reports.
- Columns 6 through 9 show the category of each Variation (*e.g.* Tooling Variation).
- Column 10 adds explanation or comments.

The examples illustrate how the proposal can be applied. Conclusions about whether particular banks are Types or Variations are compared to listings in the standard catalogs by Norman⁸ and Davidson⁹ and in the "Variations of Mechanical Banks" lists published as MBCA Historian's Reports.¹⁰ That is, we consider these sources to describe two banks as variations if Norman uses a separate suffix for a particular difference, if Davidson describes a difference in the *variations* section for a listing, or if the MBCA Historian's Reports has a listing for the particular Variations of Cast Iron Mechanical Banks

difference. We consider Norman and Davidson to describe two banks as separate types if they have completely separate listings for the two banks. Or, we use the code "NM" when a difference is not listed or *not mentioned*.

Differences in Finish

Examples 1 and 2 describe banks painted different colors or decorated in different ways. See Table 2 and Illustrations 2 and 3. These differences resulted during the finishing step of production when the paint color or instructions to the painters were changed. Therefore, according to our proposal the banks are Finish Variations (or, "Finishing Variations").



Illustration 2. Two Finish Variations of the "Hall's Excelsior" bank (N-2710 or D-228) by J. & E. Stevens Co. In the case of these specimens, notice that not only are the main paint colors different (yellow versus tan), secondary colors are combined in different ways. Photos by Frank Kidd.



Illustration 3. An example of the "Hall's Excelsior" bank that is decorated in a more complex style* compared to the banks in Illustration 2. Differences include simulated bricks on the front of the foundation, paint squiggles down front building edges, and a roof with intricate decorations and a patent message at the rear of the roof. Photos by Frank Kidd.

* "Style" has the standard meaning: *a combination of distinctive characteristics or a perceived quality that distinguishes one object from another*. It has no special meaning to us like Type and Variation do.

Example 3 is the "Boy and Bulldog" bank painted versus Japanned.¹¹ These also are Finish Variations.

Examples 4a and 4b describe Kilgore "Owl, Slot in Book" banks that were painted versus being plated, or Shepard "Artillery Banks" that were plated with different metals. See Illustrations 4 and 5. The banks in each Illustration are different as a result of changes during the finishing process, and therefore they are Finish Variations.



Illustration 4. Two "Owl, Slot in Book" banks: painted (N-4360 or D-373) and electroplated (not mentioned by Norman or Davidson). Photos by Frank Kidd.



Illustration 5. Finish Variations of the "Artillery Bank" by the Shepard Hardware Co. (with rectangular locking trap): bronze plated (N-1060-a) and nickel plated (N-1060-b). Photos by Frank Kidd.

Example 4c. If the analyses in the earlier examples seem obvious, here is one that may be more challenging. J. & E. Stevens Co. also produced the "Artillery Bank" and offered it in both painted and plated styles. But the banks with these finishes are not simply Finish Variations because the method used to assemble the soldier also was different for the painted and plated banks. As shown in Illustration 6, the soldier is riveted together in the case of the painted bank, but is screwed together on the plated bank. (By the way, the soldier also is screwed together on the plated Shepard "Artillery Banks" described in the earlier example.)



Illustration 6. Soldiers on the painted (N-1060-d) and nickel plated (N-1060-g) "Artillery Bank" by J. & E. Stevens Co. (with round traps). The arrows point to the fasteners that holds the two parts of the soldier together.

It seems likely that the change in fastener was accomplished by modifying working patterns; it was not necessary to modify the master pattern. The differences in fastening method and finish make the painted and plated banks both Assembly Variations and Finish Variations.

Why this difference in fastening method? As mentioned in the Chart on p. 40, parts were painted *after* assembly, but plated *before* assembly. When a bank was to be painted a rivet was simple to install and the peened end could be hidden by painting. But, when a bank was to be plated the peened end of a rivet might be considered unsightly, so a screw was used instead.

By the way, whether assembly occurred before or after finishing is not significant. It is what happened during assembly and finishing that determines whether banks are Variations.

Additional Examples. Illustration 7 shows an additional example (not listed in Table 2) of the "Artillery Bank" by Shepard that is painted rather than plated. The halves of the soldier are secured with a screw, and therefore the bank is a (simple) Finish Variation of the plated banks described in Example 4b. This bank is not described by either Norman or Davidson.



Illustration 7. Additional Finish Variation of the "Artillery Bank" by the Shepard Hardware Co: painted silver & gold. Photo by Frank Kidd.

A pattern for another "Artillery Bank" is pictured in Illustration 8. It has an opening for a round trap of the kind used by J. & E. Stevens Co. Of course what makes this pattern unusual is the extension to the barrel of the mortar. When Stevens took over¹² after Shepard discontinued production of the "Artillery Bank" they might have made this to test a potential design change. (Has anyone seen a cast iron specimen of this bank?)



Illustration 8. Bronze pattern for the "Artillery Bank" with barrel extension. Photo by Frank Kidd.

Examples 5 and 6 relate to mechanical banks with advertising messages painted or pasted on. The first example is the "Speaking Dog" bank with advertising painted on. See Illustration 9. The second example is the "Pump & Bucket" bank with the advertising on a paper label that was pasted on.

If the messages were added by the bank manufacturer as part of the finishing process, such banks definitely are Finish Variations. If the messages were added by a jobber or the advertiser at or near the time of manufacture we suggest that the banks also be considered Finish Variations. (C.f. Example 26 for an advertising message cast into the bank.)



Illustration 9. The "Speaking Dog" bank with the message "Compliments of Gusky's" painted on. Unlisted by Norman or Davidson. (In foreground is a portion of the wood jig used in assembling the bank.) Photograph taken at the Kidd Toy Museum.

Pasting or painting on advertising messages is the *one exception* we mentioned earlier. We suggest that our proposal can be applied to banks that were modified outside the factory so long as this occurred near the time of manufacture. This exception is not essential to our proposal. Alternatively, the only significant differences could be those made by the bank's manufacturer.

In the first six examples the differences described resulted from changes during the finishing step and the banks in each comparison are Finish Variations. Where Norman and Davidson describe the banks in a given example they list them as variations.

Altered Assembly

Example 7. The "Organ Bank, Girl & Boy" that has cut-outs for the crank rod in both end plates (sometimes called the bank with "light crankshaft") is known with the crank handle either to the left or right (as viewed from the front of the bank). The crank is attached to a shaft that when rotated rings the bells, causes the figures of the girl and boy to rotate, and causes the monkey to raise and lower his hat and coin tray. See Illustrations 10 and 11.

As can be demonstrated by disassembling and reassembling a bank, the rod can be installed with the crank handle at either end of the bank. Proper action does not depend on the handle being at a particular end (although for a right-handed person it seems more convenient at the right end).

So, even if it was intended that the crank would always be to the left as depicted in the patent (see Illustration 11) for the similar bank with dog and cat, no damage was done if the rod was reversed during assembly. Therefore, the banks in this example are Assembly Variations. They are listed as variations in Davidson and the 1976 MBCA Historian's Report, but this difference is not mentioned by Norman (as either a variation or type).

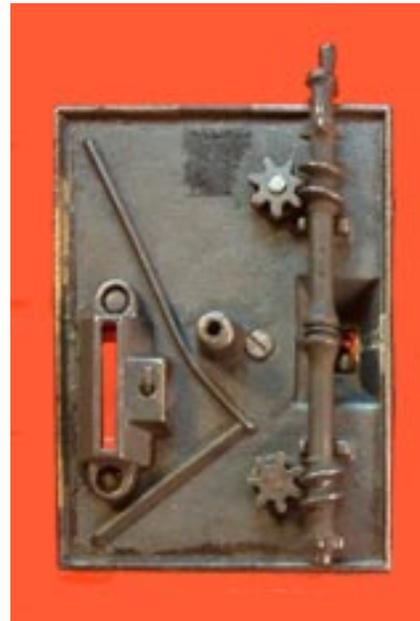


Illustration 10. "Organ Bank, Boy & Girl" by Kyser & Rex Co. (N-4310 or D-368) with light crankshaft. The crank is at the right in the bank pictured. The inset to the photo at left shows how the end plate of bank opposite the crank has a slot that the shaft rides in. The photo at right shows the underside of the top of the bank. Notice that the end of the shaft opposite the crank projects beyond the groove for the side of the bank.

So, how does one tell whether a particular "Organ Bank, Girl & Boy" is an Assembly Variation or was created after manufacture (and therefore falls outside the scope of our proposal) by someone who disassembled and reassembled the bank? The reality is that in the case of the left and right placement of the crank you probably can't tell. And, there are other cases like this. One is presented in Example 26.

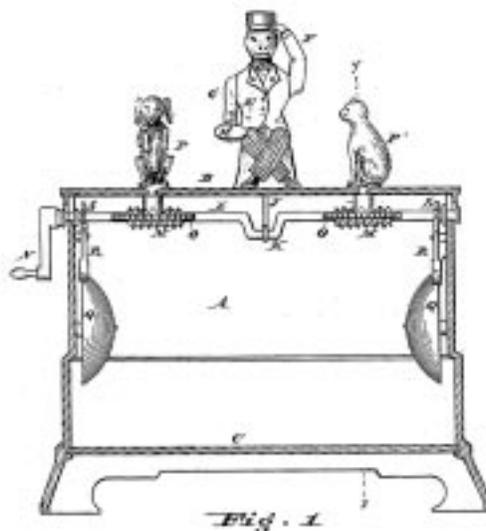


Illustration 11. Figure 1 from U.S. Patent 259,403. Notice that crank is shown at the left.

Example 8. So-called "collection boxes" or "alms boxes" are known in which a mechanical bank has been mounted atop a wooden box. See Illustration 12. These hybrids provide two important advantages: compared to a plain box the novelty of the mechanical bank action encourages donations, and compared to the bank alone the wooden box provides a larger and more secure reservoir for coins.



Illustration 12. "Archie Andrews" bank (a modern mechanical bank not listed in Norman or Davidson). The bank at right has been modified for attachment to the top of a box. The cutout allows coins to fall into the box, and the two slots allow the bank to be attached to the box. Photos by Bill Jones.

In the case of the bank pictured at the right in Illustration 12 (which we realize is neither iron nor "old") it seems likely that the opening in the bank was cut at or near the time the bank was manufactured. Bill Jones describes the edges of the opening as *"not precisely cut, but cut carefully enough to have been done in the factory given their purpose."* And, the edges of the opening have the same aged look and texture as the rest of the bank. Based on this information we believe that the two banks pictured in Illustration 12 are Assembly Variations. Of course, in the absence of documentation such as a listing for the modified bank in the manufacturer's catalog or the recollections of the person(s) who performed the modifications it is impossible to know for certain that the modifications were done at the factory.

The very rare "Viennese Soldier" bank usually is seen mounted on a wood box. Steve Steckbeck¹³ has concluded that the iron bank alone has no provision for a coin trap, and that in this case the bank as manufactured always included the box. That means the bank without the box is not a Variation; it is a post-production artifact.



Illustration 13. "Viennese Soldier" bank (N-5830 or D-555). This specimen of the bank has both a key lock and a hasp that covers the keyhole. Photo by Frank Kidd.

Changes in Non-Cast Components

Example 9. The "Panorama" bank is known with different sets of pictures on the wheel or drum. This difference would have involved substituting the picture wheels when the banks were assembled. (The wheels differ only by the pictures on the paper strip glued onto the wooden drum.) Therefore, the banks are Assembly Variations. Davidson lists the banks as variations, but Norman does not mention there being more than one set of pictures. Banks with different sets of pictures are listed as variations in the 1974 MBCA Historian's Report, but do not appear in the 1976 report.

The conclusion reached in the last example might seem somewhat arbitrary. Its basis is that substitution of a non-cast component does not require a change in the bank's master pattern, and therefore the banks cannot be different Types. No doubt, the subject of part substitution can benefit from further consideration.

Example 10. According to Norman and Davidson the "Mikado" bank is known with or without an internal bell. Norman describes the bell as sometimes having been "omitted." If the change was this simple, the banks are Assembly Variations. However, we are not certain of this conclusion, and in Table 2 have included a question mark for this example. Davidson describes the banks as variations; Norman mentions the banks with and without bell as a "known difference" but not as variations.

We are not certain about our conclusions because we do not know whether the internal mechanism is the same in the banks with and without the bell. (These are scarce banks and we have not had the opportunity to disassemble any.) If it is the same, then the banks definitely are Assembly Variations. But, if other changes were made, then depending on what was changed and how it was changed the "Mikado" banks with and without the bell could be Tooling Variations or separate Types.

Cast in Different Metals

Example 11a describes "Boy & Bulldog" banks that differ because one is iron and the other brass. They also differ in finish. These would have been produced by changing the molten metal poured into the molds; little else would need to change. Therefore, we believe they are Casting Variations as well as Finish Variations.

Actually, changing the metal was not quite as simple as making a mold and then deciding which metal to pour. The decision about the metal would affect which sands and facings were used, and therefore would be made before the mold was made.

The banks in this example are described in Norman as separate types, and are listed individually in the 1991 MBCA Check List.¹⁴ The brass bank is not described in Davidson or the 1975 MBCA Historian's Report. This is the first example where we disagree with a standard catalog, and in Table 2 have included an asterisk in the "Type or Variation" column.

In this case we think it unlikely that all specimens of the brass bank could have been assembled from patterns because Norman assigns the "Boy & Bulldog" bank a relative rarity of "3", the same rarity rating given the iron bank.

However, when we see a bank made of brass or bronze we always consider whether it was assembled from patterns. It is worth recalling that the difference between a bank assembled from patterns and one molded in brass from the same patterns can be detected by size measurements. The parts in the molded bank will have experienced an additional shrink, and will be about 1.5% smaller than the working patterns. Put another way, a bank assembled from working patterns will be about 1.0% *larger* than an iron bank made from those patterns, while a bank cast in brass will be about 0.5% *smaller* than the iron bank.

Part (b) of this example concerns "The Robot" bank in iron and aluminum. Again, about all that had to be changed was the molten metal that was poured into the molds. So, these banks also are Casting Variations. Both Norman and Davidson list the banks as separate types.

As it cools and solidifies, molten aluminum shrinks more than iron but not quite as much as brass. If the same patterns were used to mold both banks the aluminum parts would be expected to be about 0.3 % smaller than those in iron.

Example 12 is a case where two banks have only one part cast in different metals: the rope of the "Girl Skipping Rope" bank is cast either in iron or brass. So long as the difference in shrinkage is not material, according to our proposal the same change in production process that explains banks in different metals also explains one part being in a different metal. So, we consider these banks to be Casting Variations.

The two "Girl Skipping Rope" banks are listed as variations in Davidson and the 1975 MCBA Historian's Report; Norman does not describe the bank with brass rope.

Design Refinements–Addition of Stop

The next group of examples is about *design refinements*, transitional design changes made to improve the attractiveness and operation, or ease of manufacture and profitability, of a given model of bank. Later, beginning with Example 26, we will present a second group of differences consisting of *design options* meant to result in completely new banks that could be manufactured and marketed along side the original models.

Example 13. The two "Acrobat" banks in this example differ only by addition of a stop behind the clown's left heel. It seems that the intent would have been to add the stop to all of the banks produced subsequent to the change. Normally this would have been accomplished by modifying the master pattern and casting replacement working patterns. That would make the two banks separate Types. However, the addition of the stop is a small change, and it might have been feasible to save time and effort by adding the stop to each of the existing working patterns. That would make the two banks Tooling Variations. Our feeling is that the latter is the more likely explanation, but we look forward to the opportunity to compare several specimens of the bank with stop to look for differences that would result if working patterns were modified. These banks are described as variations in Davidson and the 1975 MBCA Historian's Report. The difference is not mentioned in Norman.

Design Refinements–Addition of Bank Name

Example 14 describes the "Billy Goat" bank without and with the bank name inscribed (incuse) on one side of the base. Presumably, the bank first was made without the name, and the intent was to add it to all of the banks produced subsequently. We expect, therefore, that the master pattern was modified and new working patterns were cast at least for the side on which the name was added.

This view is substantiated by the examination of two working patterns for the bank with name. One of them is pictured in Illustration 14 and a close-up of the lettering is shown in Illustration 15. Frank Kidd¹⁵ reports that the names appear to be identical on the two patterns and they appear to have been cast into the patterns, not inscribed. Therefore the banks without and with name are separate Types. This conclusion differs from listings in standard catalogs; the banks are listed as variations in Norman, Davidson, and the 1975 MBCA Historian's Report.

If, as we have supposed, the master pattern was modified, then every bank with the name will have all of the letters of the name positioned identically. Also, the reversal of the "N" that occurred when "Bill Goat Bank" was inscribed¹⁶ should be found on every bank with the name.



Illustration 14. Bronze working pattern for the "Billy Goat Bank" with name (N-1240-a) Photo by Frank Kidd.



Illustration 15. Close-up of the lettering on the "Billy Goat Bank" with name.

Design Refinements–Addition of Detail

Example 15. The "Fortune Teller Savings Bank" is known with either plain or ribbed edges. It seems likely that the edge decoration was added in order to enhance the bank's appearance. If the intent was to add the ribbing to all future production, then almost certainly the master pattern would have been changed and new working patterns made. Therefore, we believe that the banks in this example are separate Types. They are described as variations in Norman, Davidson, and the 1975 MBCA Historian's Report.

Griffith expressed the opinion: *"The Fortune Teller Savings Bank' is one of the less attractive mechanicals since it is a rather plain nickel plated safe type bank. This opinion seems to be pretty general among most collectors of mechanical banks."*¹⁷ Perhaps the manufacturers shared this concern and were determined to improve the bank. That may be the reason the bank is known in so many different styles. Differences in addition to the edge decoration are shown in Illustrations 16 and 17 (and still more differences have been seen). Each of the three banks pictured is a unique Type.



Illustration 16. The "Fortune Teller Savings Bank" by Baumgarten & Co. with plain background on door (left) and with pebbled background (right). Each bank also has different designs on the side panels, and different style combination dials and locking mechanisms. (The coin slot insert is missing from the bank at left.)



Illustration 17. Another "Fortune Teller Savings Bank" that is painted gold and has an opening in the door through which fortunes are displayed. On top is the embossed message: "DROP A NICKEL IN THE SLOT. PUSH LEVER & HAVE YOUR FORTUNE TOLD." Photo by Frank Kidd.

Design Refinements—Addition of Coin Trap

Example 16. The "Clown on Globe" bank is found with either a plain base or a base with a round coin trap. See Illustration 18. To empty coins from the bank with the plain base, the base must be removed. We believe that the bank originally was produced with the plain base, and the addition of the trap was to affect all of the banks produced subsequently. In that case the master pattern would have been modified to add the circular trap. Consistent with this explanation, the bank with trap shows other differences, namely it has longer reinforcing ridges in the feet.

Therefore, we conclude that the two banks are separate Types. Davidson lists them as variations, as does the 1975 MBCA Historian's Report. Norman does not mention this difference.

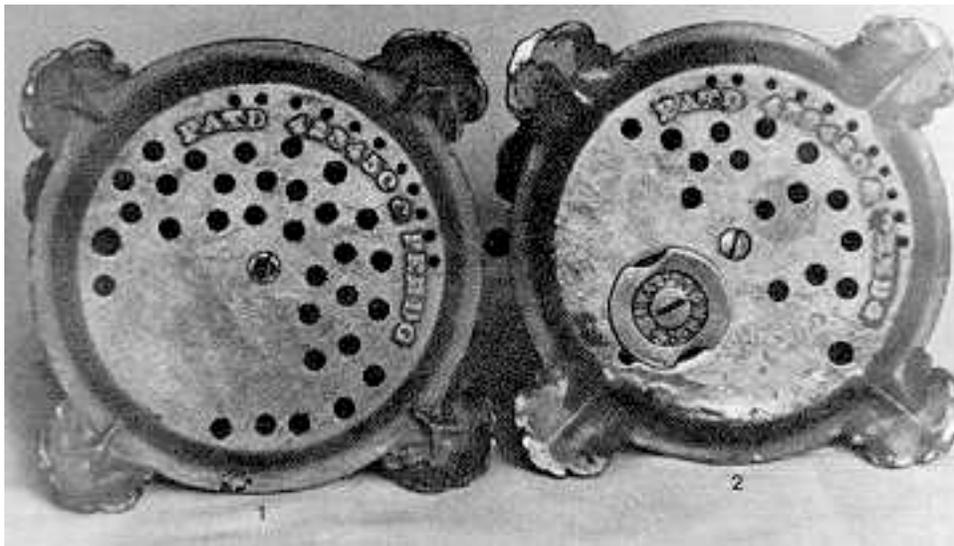


Illustration 18. Bases of the "Clown on Globe" banks by J. & E. Stevens Co. with plain base and with round trap. Photo from the MBCA 1975 Historian's Report.

It is difficult to understand the differences between these two bases. As can be seen in Illustration 18, the plain base has more holes than the base with the trap. It appears that the plain base has all of the holes found on the base with trap, plus several more. Initial attempts to analyze the differences seemed to lead to a dilemma:

- If we assumed that the master pattern for the base of the "Clown on Globe" bank resembled the plain base, then to modify the pattern to cast the second style of base a hole would have to be cut for the trap (no problem) *and several of the smaller holes in the base would be filled*. The latter would seem to be a gigantic waste of time.
- The second possibility was that the master pattern resembled the base with trap. To modify the pattern to cast the second style of base several smaller holes would have had to be drilled (no problem) *and the hole for the trap would have to be filled*. Doing all this work in order to produce a bank that is less convenient to empty again didn't make sense.

In fact, it appears that some of the holes were filled. Bill Jones pointed out that at about 9 o'clock on the bank with trap there is a dimple that corresponds to the hole in the base of the bank without trap. Another can be seen just below the "P" of "PAT'D". It therefore seems reasonable to believe other "missing" holes also were filled. The question then became 'why'? We can imagine two likely reasons: to improve the flow of iron during molding of the base, and to improve the strength of the base given the strain created by the center attachment bolt.

Design Refinements—Change in Base Thickness

Example 17. The "Milking Cow" bank is known with different base thicknesses. Norman lists three, while Davidson and the 1976 MBCA Historian's Report list two, and say that the thinner base has an ornate design on the underside, whereas the thicker base has none. Griffith¹⁸

believed that the thicker base replaced the thinner one. He surmised that the legs on the thinner casting were easily broken and the base itself was prone to cracking.

Given that the ornate design is found on the underside of the thinner base, but not on the thicker base, it is likely that the two bases were derived from different master patterns (not just a modified master pattern). Therefore, the banks are separate Types. In Davidson and the 1976 MBCA Historian's Report the two banks are described as variations. Norman also describes the banks with three thicknesses as variations.

Design Refinements–Reduced Number of Parts

Example 18. Hubley produced the "Trick Dog" bank with the base either in six parts or in a single part. Clearly, the switch to a one-part base simplified molding and assembly. Also quite clearly, a new master pattern would be required for the one-part base. Therefore, the banks with six-part and one-part bases are separate Types. Both Norman and Davidson list them as separate types. ("Trick Dog" banks also are discussed in Examples 21a and 24.)

Design Refinements–Relocated Coin Slot

Example 19 The "Owl, Slot in Book" and "Owl, Slot in Head" banks appear identical except for the location of the coin slot. See Illustration 19. Naturally, the internal mechanism that causes the eyes to move when a coin is deposited is expected to be very different in the two banks.



Illustration 19. The "Owl, Slot in Book" (N-4360 or D-373) and "Owl, Slot in Head" (N-4370 or D-374) banks by Kilgore Manufacturing Co. Photos by Frank Kidd.

One possibility is that each existing working pattern was modified, in which case the banks are Tooling Variations. It would be easy enough to fill the original coin slots and cut new ones. But it might be difficult to relocate attachment points for the internal mechanism. It seems more

likely, therefore, that these changes would have been made to the master pattern. In this case the two banks are separate Types. Norman and Davidson list the banks as types.

Which bank was produced first? Griffith¹⁹ believes it was the "Owl, Slot in Head." His reasons include the relative scarcity of this bank and the advantages he saw to the slot in book: ease of manufacture, durability of the mechanism, and ease of inserting a coin.

We believe that the "Owl, Slot in Book" was first. For one thing, if the slot in head did come first wasn't it a piece of luck that the book provided such an ideal place to relocate the slot? (That is, if the slot was not originally in the book, why did the design include the book?)

Because we had a broken example of the "Owl, Slot in Book" bank available (recall the halves of this bank are held together by a rivet so it is not easily disassembled) we could inspect the internal mechanism. See Illustration 20. It is apparent that the mechanism is very complex, and in addition it occupies a significant portion of the space within the bank. Although we have not had the opportunity to inspect the mechanism of the "Owl, Slot in Head" bank, we have no doubt that a relatively simple mechanism is possible when the coin slot is closer to the eyes. Putting the slot in the head also freed space in the body of the bank for coins, and helped keep the coins out of the way of the mechanism.



Illustration 20. The front half and the internal mechanism of an "Owl, Slot in Book" bank.

Design Refinement–Simplified Mechanism

Example 20. This example deals with differences inside the "Organ Bank, Cat and Dog," differences that in one case cannot be detected except by taking the banks apart. Inside there are either three bells or two. And, when there are two bells the bank is known either with a heavy or light crankshaft. (C.f. Example 7, which dealt with Assembly Variations of the bank with light crankshaft.)

Illustration 21 shows the undersides of the top plates of the three styles of the bank. The first photo is the bank with three bells. Probably, this was how the bank was manufactured initially. In the center photo notice that the mechanism for operating the clapper for the third bell has been eliminated; other aspects are the same. Also notice in the first two photos that the crankshafts are held by wires that project from the underside of the top plates and are bent over the shafts, and that on the end away from the crank the shaft ends short of the groove for the end plate. The third photo shows the lighter crankshaft that spans the entire width of the top plate and rides in cut-outs in each of the bank's end plates. It seems clear that the bent-over pins were eliminated to simplify the casting and assembly of the banks.



Illustration 21. Three different internal mechanisms used in the "Organ Bank, Cat and Dog" banks by Kyser & Rex Co.

Notice that on the heavy crankshafts the worm gears that turn the figures of the dog and cat have the same handedness (both spiral in a right-handed or clockwise manner). As a result, when the crank is turned the figures rotate in the same direction (either both clockwise or both counter-clockwise). However, on the light crankshaft the worm gears have opposite handedness, so the two figures rotate in opposite directions.

Given the nature of the differences, it is quite clear that the master pattern would have been modified or replaced in order to produce the bank with light crankshaft. So it is a separate Type. The three-bell and two-bell versions of the bank with heavy crankshaft may also be separate Types. However, if the three-bell bank was made first, it seems possible that working patterns could have been modified rather than replaced in order to produce the two-bell bank. In the latter case these two banks are Casting Variations. Neither Norman nor Davidson mention any of the differences described in this example.

Except for the shaft supports in the end plates, the differences described in this example will be noticeable only by disassembling the banks. Should such differences be considered significant? Given that the production process affected the outside and inside of the banks, we think the answer is "Yes."

As was noted in Part I, banks with internal differences are included in the 1974 MBCA Historian's Report and in Davidson. But they are not in the 1975 and 1976 Historian's Reports, and Norman includes only those casting variations that can be detected by examining a bank on normal display. Hertz²⁰ notes that *"Many collectors retain all external variations, but regard internal variations as duplicates."*

Design Refinement—Alternative Methods of Assembly

Example 21a. It is well known that the "Trick Dog" bank with six-part base was made by both Shepard and Hubley. (Differences between the banks from the two manufacturers will be the subject of Example 24.) However, few collectors realize that the "Trick Dog" bank made by Shepard is found in two styles (that we believe are two separate Types). See Illustration 22.



Illustration 22. Two styles of the "Trick Dog" bank with six-part base by Shepard.

The differences between the Shepard banks have to do with how the clowns and barrels are attached to the tops of the bases. On the first style bank the "tangs"* for the clown and barrel are wider and have two bolts each, while on the second style a single bolt is used. Illustration 23 shows the differences between the tangs on the barrels; similar differences are found on the tangs of the clowns. Illustration 24 shows the differences in the slots and lugs on the tops of the bases. The slot in the first style bank is 1 1/4" wide; it is only 1 1/16" wide in the second style.

* "Tangs" are projections from the bottoms of the clown and barrel that lay against corresponding "lugs" on the underside of the top of the base. Bolts that thread into the tapped holes in the tangs tighten against the lugs and thereby secure the clown and barrel to the top of the base.



Illustration 23. Barrels from the two styles of Shepard "Trick Dog". In addition to the differences described in the text, notice the more subtle simulation of stays on the barrel with two-bolt tang. (Stacks of coins were used to prop the barrels because coin deflectors project from the barrel tops.)



Illustration 24. Undersides of the tops of the bases from the two styles of Shepard "Trick Dog" bank. That at top fits clown and barrel with two-bolt tangs.

Disassembly of the base is required to see most of these differences. *However, even when the banks are displayed normally, the two styles can be distinguished by inspecting the top of the bases at the feet of the clown.* See Illustration 25. On the first style bank the slot for the tang of the clown extends about 1/8" to the left and right of the heels of the clown; the slot can be barely seen on the bank with the narrower slots and tangs.

It is quite clear that the changes to the top of the base, and probably to the clown and barrel also, required changes to or replacement of parts of the master pattern. Therefore, the two banks are separate Types. We suggest that following Griffith²¹ they be referred to as "Trick Dog" bank Shepard Type 1 and Shepard Type 2 respectively. Norman describes just one Shepard "Trick Dog," N-5620, and Davidson describes only a single "Trick Dog" bank with six-part base.



Illustration 25. Feet of the clowns on the two styles of the "Trick Dog" bank. Photos taken from behind the clowns. At left is the style that has the clown and barrel attached with two bolts.

Which style was made first, and why did Shepard change the original bank? Almost certainly the bank first produced had the clown and barrel each attached with two bolts, and the change in attachment was done to save machining and assembly time. Consider that as far as the clown and barrel are concerned the number of drilling, tapping, and assembly steps was cut in half!

As a result of these changes, there was a small reduction in the weight of the bank. The first style bank weighs 4 lbs. 4 ozs. and the second 3 lbs. 15 ozs. This savings was beneficial, but weight reduction probably wasn't the main objective in this case.

Finally, what is the relative scarcity of the Type 1 and Type 2 banks? We don't know, but we look forward to learning the results of a "census."

Example 21b. The Stevens "Creedmoor Bank" is another that fits in the category of "Alternative Methods of Assembly." Advanced collectors know that the bank is found with two sizes of round twist trap: a smaller size like that on Steven's "Hall's Lilliput Bank" and the standard size Stevens trap. The difference in size of the trap opening is apparent in the right pair of photos in Illustrations 26 and 27; it is 1" on the first style and 1 1/4" on the second. As explained below, probably the style with the smaller trap was produced first, and only for a short time.

But, why do these banks fit in the category of "Alternative Methods of Assembly"? Because when Stevens changed the size of the trap they also changed the method of attachment of the soldier to the base. The difference can be seen in the left pair of photos in Illustrations 26 and 27. Both bases have a hole in the indentation for the left foot of the soldier through which a 3/16" bolt passes up and threads into a hole in the bottom of the soldier's foot. With the second style there also is a hole in the indentation for the right foot, and a bent wire projects from the heel of the right foot of the soldier. See Illustration 28. The net result is that with the first style bank the soldier is attached to the base only by the left leg, while with the second there are two points of attachment. The addition of the supporting wire strengthened the attachment and corrected an inherent weak point in the original design.

What would have been necessary to effect these changes? The trap size and the addition of the wire could have been accomplished by modifying working patterns, and therefore according to our *original* analysis we concluded that the two styles of the "Creedmoor Bank" are Assembly Variations.



Illustration 26. Base for the first style of "Creedmoor Bank" with the smaller Lilliput size trap. The left photo is of the top of the base; the right photo is the bottom. In this style the soldier is attached to the base only by a screw into the left foot.



Illustration 27. Base for the second style of "Creedmoor Bank" with the standard size trap. The soldier is attached to the base by a screw into the left foot and a wire extending from the right foot.



Illustration 28. Feet of the soldier on the "Creedmoor Bank." Photo at left shows threaded hole under the left foot; this is present with both style banks. The bent wire fastener under the right heel of the soldier is present only with the second style.

But then we made a chance discovery. In order to assemble a bank from a base with a single point of attachment for the soldier and a soldier with a wire projecting from its right foot, we cut

off the wire. *When we then attempted to place the feet of the soldier into the indentations in the top of the base we found that the two parts would not fit.* (The indentation for the left foot seems smaller on the first style bank.) The only possible conclusion is that one or more parts of the master pattern were modified or replaced when the transition in styles occurred. *Therefore, the banks are separate Types.* Neither Norman nor Davidson describe the differences in trap size or attachment of the soldier. Nor are they described in the Historian's Reports.

A specimen of the Type 1 bank recently sold in the McCumber sale as Lot 769. According to the catalog:²² "Very rare version with Lilliput-size trap. We believe this to be the original version of the bank as the Lilliput bank was patented in 1873 and Creedmoor in 1877. There must have been difficulty in shaking the coins out of such a small trap hole."

(The 1873 patent date for the "Hall's Lilliput Bank" seems to be an error. A design patent issued in 1875, and the utility patent followed in 1877—just a few months before the utility patent for the "Creedmoor Bank." All follow the 1875 issue date for the utility patent that covers the Steven's twist out trap.)

The differences between the two Types of "Creedmoor Bank" are not visible when the banks are in normal display position (although there may be a corresponding difference in the complexity of the painting of the banks somewhat like that noted earlier for the Stevens "Hall's Excelsior" bank). However, the differences are easily seen by simply turning over the banks.

Additional Examples. Here are two additional examples of design refinements accomplished by altering bank assembly. (These are not listed in Table 2.) Both the "Elephant Swings Trunk (raised coin slot)" N-2320 or D-177 by A. C. Williams and "Elephant, Three Stars" N-2340 or D-183 can be found with two different mechanisms for pivoting the trunk. In one style there is a hole in the casting for the trunk that rides on a shaft that projects from one side of the bank. See Illustration 29. In the second style the casting of the trunk has two pin-like projections that ride in indentations inside the castings for the elephant's head.

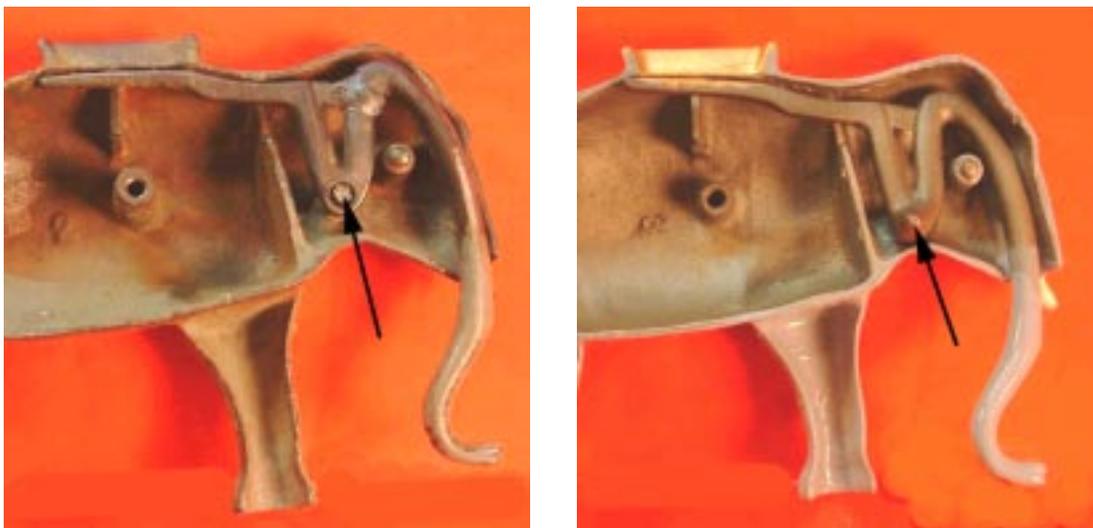


Illustration 29. Two styles of the "Elephant Swings Trunk (raised coin slot)" bank. (In the bank at left (Type 1) the trunk a repair to the moveable trunk can be seen above and slightly to the right of the shaft on which the trunk pivots.)

The two styles of each bank can be distinguished only when the banks are disassembled. In each case we believe that the different styles represent separate Types (and that the Griffith "Type 1" and "Type 2" nomenclature should be used to distinguish them).

Design Refinement–Details Changed

Example 22. Members of three pairs of banks in Examples 22a to 22c of Table 2 have the same design theme but show significant differences in details. The two "Lion and Monkeys" banks (see Illustration 30) have trees that are different heights and that lean at different angles. The corresponding sides and the ends of the two "Hold the Fort" (seven holes) and "Hold the Fort" (five holes) banks are completely different. And, one "Butting Buffalo" has a rock or mound of dirt in front of the tree, while the other has none. In each case, manufacture of the two members of each pair required that at least portions of the master pattern be replaced. Therefore, the banks in each pair are separate Types. The pairs of "Lion & Monkeys" and "Butting Buffalo" banks are listed as variations in Norman, Davidson, and the 1975 and 1976 MBCA Historian's Reports. Norman and Davidson describe the "Hold the Fort" banks as separate types.



Illustration 30. Two "Lion & Monkeys" banks by Kyser & Rex. The taller "double peanut" bank at left is 9 1/16" tall. The "single peanut" bank is 8 1/2" tall.

Why were these changes made? In the case of the "Lion & Monkeys" we believe the objective was to improve the certainty that coins dropped by the monkey would fall into the lion's mouth. (In the shorter style the separation between the monkey's hand and the lion's mouth was reduced by about a half-inch.) This analysis assumes that the larger so-called "double peanut" style was the first manufactured. But this seems like a safe assumption, since if the "single peanut" style had been first why would Kyser & Rex have replaced it with a bank that operated less reliably?

Illustration 31 shows two more banks that are based on the same design but differ in details. The two versions of the "Registering Dime Savings Bank" in Example 22d are identical except that one is taller because it has additional trim along the base of the clock. It is easy to imagine how a working pattern for the front of the bank could have been modified to make it either taller or shorter. However, in order to resize the cast iron box that forms the back of the bank that portion of the master pattern would have to be replaced. Therefore we believe these two banks are separate Types. Norman and Davidson picture the taller bank and don't mention the smaller size.

Both Norman and Davidson attribute the "Registering Dime Savings Bank" to Ives, Blakeslee & Williams Co., but note that the banks came with a sticker on the back that read "Munger's Automatic Registering Dime Savings Bank." The bank is based on U.S. Patent No. 423,528, which was issued to Alfred S. and Louis A. Munger and at the time of issue was *not* assigned to Ives. The illustration in that patent closely resembles the shorter bank. Therefore, this may be a case where Ives initially produced the shorter bank as depicted in the patent, but later chose to make it taller to order to be more saleable.



Illustration 31. Two separate Types of the "Registering Dime Savings Bank," which Norman indicates is by Ives, Blakeslee & Williams Co. The bank at right is N-4870 or D-413. The bank at left is not described by Norman or Davidson.

Design Refinement—Improve Bank Operation

Example 23. Coins are inserted in the "Safety Locomotive" through a slot in the roof of the cab. When the bank is full the smokestack and sand dome can be removed, exposing a slot in the boiler through which the coins can be emptied. Banks are known with three different castings for the removable parts, with related changes to the boiler. See Illustration 32. Other differences also are known (see insert).



Illustration 32. "Safety Locomotive" banks" (manufacturer unknown). The bank to the left is the original style; that to the right has the additional slot for removal of coins and the set of "wings" that fills that slot. The third style in which the wings are molded as one part with the smoke stack and sand dome is not shown.

It does not seem overly harsh to describe the initial design as a "failure." It is extremely difficult to remove the coins from the bank because the opening exposed by removal of the smokestack is at right angles to the stack of coins. The first design refinement involved adding a second slot perpendicular to the first one and a set of "wings" separate from the smokestack to fill the new slot. In the final design the smokestack and wings were made a single part. The first design refinement would have required changes to the master pattern for the wings, and the second for the combined smokestack and wings.

This is another case where the manufacturer made a large number of changes in order to improve a bank. The most well-known differences involve the lettering on the sides of the cab ("Safety" or "Pat. 87") or front of the boiler (sometimes "Pat. Nov. 15, 1887"). In addition, banks have been seen with the cow catcher attached in three different ways. We will have to compare more specimens of the "Safety Locomotive" to understand if and how differences in the smokestack castings correlate with these other differences.²³

Therefore, each of the three banks is a separate Type. Neither Norman nor Davidson describe the differences in the slot. The 1974 MBCA Historian's Report describes a variation in the casting of the "large and small smoke stacks" and the 1976 report describes two variations involving the "smoke stack attachment."

Design Refinement—Manufactured by Different Foundries

Example 24. Two styles of the "Trick Dog" bank with six-part base are well known, one made by Shepard, and the other by Hubley. The most obvious differences are that the base of one is painted red and light green and has dimensions of 8 3/4" x 2 7/8"; the other base is painted yellow and brown and measures 8 9/16" x 2 3/4". See Illustration 33.

The banks differ in many ways beside the colors and base footprint. Even though both banks have square key-lock traps, that on the first bank is slightly larger. The base of the larger bank is

held together with two bolts that enter from the bottom (and thread into tapped bosses under the top of the base), while the base of the second bank is secured with two twist pins. The clown on the first bank consists of three parts held together with a bolt, whereas on the second bank the clown has only two parts that are secured by a rivet, the head of which is at the back of the clown. On the bank with smaller base no slot can be seen in the top of the base at the heels of the clown. Finally, The bank with the smaller base weighs 3 lbs. 4 ozs.



Illustration 33. Two styles of the "Trick Dog" bank with six-part base. At left is the bank with larger base by Shepard (the bank pictured is the Shepard Type 1) and at right the bank with smaller base by Hubley (N-5610).

Disassembly of the base reveals additional differences. On the bank with smaller base the clown and barrel are attached to the top plate of the base with a single bolt each just like with the Shepard Type 2 "Trick Dog" bank. (*C.f.* Example 21a.) Also, the underside of the top on the larger base has a reinforcing strip between the two bosses, but there is none on the bank with smaller base.

There are still more differences that will not be enumerated here. In fact, there are so many differences that we are certain that no casting in the two banks was produced using the same master pattern. Therefore, the two banks are separate Types. Norman lists the two as separate types. Davidson does not mention the size difference.

Although we are confident that the two banks required completely separate master patterns, we aren't certain why Hubley found it necessary to prepare a new master pattern considering that Schreckinger²⁴ reports that after Shepard discontinued bank production its patterns and patent rights for the "Trick Dog" bank were transferred to Hubley. In that case, why didn't Hubley use those patterns for its production of the "Trick Dog" with six-part base? Even if the weight reduction of about 1 lb. per bank (compared to the Shepard bank) was the reason to replace the pattern, the fractional differences in base dimensions suggest that Hubley may not have had the Shepard patterns to use as a starting point. Bottom line: this issue deserves additional research not just for the "Trick Dog" bank but also for the Shepard-designed banks that Stevens later manufactured (the "Artillery Bank," "Speaking Dog" bank, and "J.N." bank).

Design Refinement–Manufactured by Different Processes

Example 25. The two "Pistol" banks shown in Illustration 34 are very similar but were made using totally different processes. The iron bank (N- 4500) was produced like any cast iron bank. But the steel bank (N-4600) was made by stamping and assembling sheet metal parts.



Illustration 34. The "Pistol" bank in iron (left) and steel. The two are very similar, although there are three distinct differences: the iron bank is marked "Patented" and the steel bank "PATD"; the steel bank has a front sight but the iron bank has none; and, the traps hinge in opposite directions.

Because the second manufacturing process is outside the scope of our proposal, we consider these banks to be separate Types. Norman lists them as separate types and Davidson describes them as variations. They are included in the 1974 MBCA Historian's Report (as variations), but are not in the 1976 report.

Design Options–Cast Component Substituted

The next group of examples involves differences that are believed to be *design options* meant to lead to a completely new bank that could be manufactured and marketed along side the first model.

Example 26. The "Columbian Magic Savings Bank" is found either with a simple round twist trap or with a combination trap. Separate master patterns would be required for each style of trap, so the obvious explanation is that the banks with round twist trap and combination trap are separate Types. However, this analysis probably is wrong. The problem is that there is a still version of "Columbian Magic Savings Bank" and it also is found with both styles of trap. It wouldn't make sense to say that the master patterns for the traps belong exclusively to either the mechanical or the still bank since they would have been used for both banks.

One possibility is that working patterns for the mechanical bank included either the round twist or combination trap. In that case mechanical banks with different style traps are Tooling Variations. A simpler explanation is that the traps were standard (interchangeable) parts that were molded separately from the other parts for the banks. When the banks were assembled either the round twist or combination trap was installed depending on which bank was needed to fill orders. This would make banks with the different style traps Assembly Variations. We think this is the more probable explanation.

Our analysis seems reasonable given that standard parts were used on other banks. For example, nearly all banks from J. & E. Stevens have the same round trap. And the series of wheeled still banks made by A. C. Williams Co. are found with several styles of wheels that also were used on iron toys. However, because a trap is made to be removable, it is impossible to know whether a particular style trap was put on a bank at the factory or at a later time.

Design Options—Advertising in Raised Lettering

Example 27. The banks described in this example differ by the addition of advertising messages molded into the bank. The first pair of banks again are specimens of the "Columbian Magic Savings Bank." See Illustration 35.



Illustration 35. Examples of the "Columbian Magic Savings Bank" by Introduction Co. with building detail (N-1060-b) and with advertising (N-1060-a) at the base of the dome. Photos by Frank Kidd.

A portion of the building detail has been replaced with an advertising message. The message could have been added either to the master pattern and the working patterns replaced, or it could have been applied to one or more working patterns. Since the addition of advertising messages would have affected only a portion of overall production and would have occurred for a limited period, we think it more likely that the messages would have been applied to working patterns. When production of banks with advertising was complete, the lettering could have been easily removed and the working patterns re-used to produce banks with a different message. (This system was widely used for cast iron still banks.) Therefore, we conclude that the banks are Tooling Variations. The "Columbian Magic Savings Bank" with advertising is listed as a variation in Norman, Davidson, and the 1975 MBCA Historian's Report.

Likewise, the two "Pump & Bucket" banks are Tooling Variations. In this case brass "pattern letters"²⁵ could have been easily applied and later removed from one or more working patterns for the top plate for the base. The bank with "Compliments of Gusky's" is listed as a variation in Davidson and the 1976 MBCA Historian's Report, but is not mentioned in Norman.

The conclusion that the banks are Tooling Variations would be confirmed if one or more working patterns were found with the advertising message still attached. It also would be confirmed if comparisons of several banks with a given message revealed slight differences in positions of the letters (as the result of two or more working patterns having been modified in not exactly the same way). On the other hand, if working patterns were found with the message molded in, or if the master pattern was found with the message attached, then the banks with and without the message would be separate Types.

Design Options—Addition of Hanger

Example 28. It is well known that there are two styles of the "Automatic Coin Savings Bank," one meant to stand on a surface, and one with a tab that allows it to be hung on a wall. *Actually, as shown in Illustration 36, there are at least three different banks.* The first two in the Illustration are identical except for the hanger tab. They are nickel plated and the back plates have a faux key-lock trap. The third bank is electroplated and does not have the tab or the faux trap. The first two have blue cards in the front and back of the bank; the third has red cards (but these might not be original). All three banks are 6 3/8" tall (excluding the tab on the first bank) and are stamped "Pat Appl'd For."²⁶



Illustration 36. Three styles of the "Automatic Coin Savings Banks" by the Automatic Coin Savings Bank Co. Photographs taken at the Kidd Toy Museum.

Several earlier examples described changes where the intent probably was to affect all future production. Focusing for the moment on the first two banks, it would be more reasonable to expect that both styles of the bank would be produced and offered for sale. Normally in this case a second master pattern would be created. However, when only a tab must be added, it seems more likely that working patterns were modified. Therefore, we believe that the first two banks in the Illustration are Molding Variations.

Norman, Davidson, and the 1975 MBCA Historian's Report all describe the banks with and without the wall hanging tabs as variations. Both Davidson and the 1975 MBCA Historian's Report mention a difference in perforations on the backs of the two banks, so it appears that they are comparing the first and third banks in the Illustration. According to the 1975 MBCA

Historian's Report the standing bank is about 1/8" shorter than the hanging bank; that difference in height is not apparent here.

By the way, because the differences between the back plates of the first and third or the second and third styles would require changes to the master pattern, either of these pairs are separate Types.

Design Options–Different Figures

Example 29. The "Pelican" bank is known with five different characters that appear when the pelican opens its mouth. Quite clearly, separate master patterns were required for each figure, and therefore the banks are separate Types. Norman lists the five "Pelican" banks as separate types. Davidson and the 1976 MBCA Historian's Report describe them as variations. (The MBCA report includes only four figures.)

Opinions vary widely on the "Pelican" bank. Thus, the 1976 MBCA Historian's Report includes the "Pelican" banks, but the 1976 MBCA Check List has them listed as separate types. And while in his 1966 book Griffith lists four "Pelican" banks as variations, in the 1972 edition he describes them as separate types.

The "Organ Bank, Girl and Boy," and "Organ Bank, Cat and Dog" in part (b) of the Example differ by the two smaller figures atop the organ. In these cases the conclusions are quite clear: separate master patterns were required for each figure, and therefore the banks are separate Types. Norman and Davidson list them as separate types.

Design Options–Different Size

Example 30. The "Elephant Moves Trunk" bank is known in large (4 3/4" tall) and small (3 1/2") sizes. The designs of the two banks are nearly identical, although the bolts are on opposite sides. See Illustration 37. Clearly separate master patterns were required for each bank, and therefore the banks are separate Types. Both Norman and Davidson list them as separate types.



Illustration 37. Large (N-2310) and small (N-2330) sizes of the "Elephant Moves Trunk" bank by the A. C. Williams Co. Photos by Frank Kidd.

E. STRENGTHENING CONCLUSIONS

In several of the Illustrations in the previous section it was explained how additional information could strengthen or confirm conclusions about particular banks being Types or Tooling Variations. This information can come from comparing additional banks, or from examining master or working patterns (when they are available). We will not cover every possible situation, but this discussion should illustrate how information from a variety of sources can be combined in order to make a more convincing case.

Finding the patterns does not depend on finding a pattern tree; a bank assembled from patterns probably would be just as useful for strengthening conclusions.

A change made to the master pattern will be passed on to each bank produced from that pattern. This is true as long as the new working patterns made after the change to the master pattern are not themselves altered. Therefore, when it has been concluded that a difference between two banks is the result of the master pattern being changed, and that two banks are separate Types, this conclusion can be strengthened in at least three ways:

- By examining several examples of a given Type and finding that all are identical except for small differences that might be expected to occur during casting and perfection of working patterns. In particular, if lettering was added to a master pattern it should be positioned identically on every bank examined.
- If the master pattern is available, by finding signs of the modification, particularly on the metal (lead, brass or bronze) master pattern. However, if the metal master pattern does not show signs of modification consider the possibility that the wood master pattern was modified and a new metal pattern was cast.
- If brass working patterns are available, by finding that all are basically identical. (There may be minor differences due to the normal "perfection" of working patterns.) Also, any changes made to the master pattern including lettering that was added should be molded into the working patterns.

When it has been concluded that a difference between banks is the result of a change to working patterns and that two banks are Tooling Variations, this conclusion can be strengthened in the following ways:

- By examining several examples of the bank and finding that they differ in small ways consistent with the impossibility of modifying each working pattern in the very same way. In particular, if lettering was added to the working patterns it might be laid out differently on each pattern; any difference will have been replicated when banks were molded from the patterns.
- If the master pattern is available, then it should not show signs of the change. It should still appear like the pattern for the original bank (before the change).

- If a single brass working pattern is available, it should show signs of the change. If lettering was added to the working patterns then it will have been soldered on one letter at a time.
- If two or more brass working patterns are available, the same changes should have been made to each. If lettering was added to the working patterns then it may not be positioned identically on each pattern.

In many cases examination of patterns will be more informative if the chronological sequence of the banks is known (which came first, and which is a modification of the other). Such information might come from a manufacturer's catalogs or sales lists. For a very interesting example of analysis of two cast iron toy trucks see "A Case History" in Louis Hertz's "The Toy Collector."²⁷ (We only recently came across this discussion but are amazed to find how closely some of our ideas parallel Hertz's.)

F. FINAL COMMENTS

First off, we suggest that rather than focusing on whether our method results in agreement or disagreement with Norman and Davidson for specific banks, there is greater value in using our proposal to extract more from the information gathered by them and earlier writers. In particular, it is helpful to read the "variations" section of Davidson's descriptions as 'known differences between banks of the same style.' Using our approach the source of those differences can be analyzed, and judgements can be made about whether banks exhibiting particular differences represent or Types or Variations.

To recap, we have proposed differences between banks that are similar but not identical can be analyzed using the following definitions for "Type" and "Variation":

"Type" describes all banks derived from a given master pattern. As long as the master pattern was not changed, all banks derived from it are of the same Type. However, if the master pattern was modified or replaced—whether in whole or in part—the banks derived from it are of a new Type.

"Variation" describes banks of the same Type that are different as a result of changes made during tooling, casting, assembly, and finishing production steps. Depending on where in the production process the change occurred that resulted in a Variation, it can be categorized as a Tooling Variation, Casting Variation, Assembly Variation, or Finishing Variation. In particular, when the working patterns (but not the master pattern) were modified the banks produced are Variations.

And we have illustrated our proposal with several examples. In the majority of these examples where application of our proposal suggested two banks were variations, the conclusion is consistent with the descriptions in Norman and Davidson. One clear exception is in the case of banks made of different metals. But in perhaps half of the examples where we conclude that two banks are separate types, Norman and Davidson have described them as variations.

This is perhaps our most surprising result. In fact, in the case of "design refinements" effected by changing the master pattern our proposal may result in separate Types being identified too

often. In the future, perhaps a special class of Type, the "Transitional Type," could be declared in these cases. On the other hand, our proposal might provide useful insight to collectors who choose to specialize in a particular bank; the rest of us should consider adding only "Collectible Types."

Table 2: Differences Between Cast Iron Mechanical Banks That Are Similar but Not Identical									
Example No.	Difference	Example	Catalog References	Type or Variation?	Variation Classification†				Explanation
					Tooling	Casting	Assem	Finish	
Differences in Finish									
1a	Paint Colors	"Hall's Excelsior" bank five (or more) colors	N-2710-a (gray) through -e (tan); D-228 vars	Variation				X	
1b	Paint Colors	"Eagle and Eaglets" gray vs. green grass	N-2230-a (gray grass) & N-2230-b (green grass); D-165 vars	Variation				X	
1c	Paint Colors	"Elephant Moves Trunk (large)" gray vs. gold	N-2310-a (gray) & N-2310-b (gold); D-176 vars	Variation				X	
2a	Complexity of Painted Decoration	"Hall's Excelsior" bank, extent of decoration	N-2710 diff NM; D-220 diff NM	Variation				X	Early style of decoration has simulated bricks on front of foundation and paint sauiqaes down front building edges.
2b	Complexity of Painted Decoration	"Elephant, Locked Howdah" painted silver or gold vs. multi-color (polychrome)	N-2260-a (silver) or -b (gold) & N-2260-c (multi-color); D-171 vars	Variation				X	
3	Kind of Coating	"Boy & Bulldog" painted vs. Japanned	N-1340-c (painted multi-color) or -a (Japanned); D-49 vars; vars per 1975	Variation				X	
4a	Kind of Coating	"Owl, Slot in Book" painted vs. electroplated	N-4360 (painted); D-373 (painted)	Variation				X	Electroplated owl is not listed in Norman, Davidson, or the MBCA Historian's Reports.
4b	Kind of Coating	Shepard "Artillery" bank bronze vs. nickel plated	N-1060-a (bronze plated) & 1060-b (nickel plated); D-11 vars	Variation				X	
4c	Kind of Coating	Stevens "Artillery" bank painted vs. plated	N-1060-d (painted blue coat) & 1060-g (nickel plated); D-12 vars	Variation			X	X	
5	Advertising Painted On	"Speaking Dog" bank plain and with "Compliments of Gusky's" painted on back	N-5170-c (plain) & N-NM (with label); D-447 (plain) & D-NM (with label)	Variation				X	
6	Advertising on Paper Label	"Pump & Bucket" bank plain and with paper "Gusky's" label	N-4700-a (plain) & N-4700-b (with Gusky's paper label); D-401 (plain) & D-NM (with label)	Variation				X	The application of a paper label is perhaps the smallest change leading to designation of a Variation.
Altered Assembly									
7	Orientation of Component	"Organ Bank, Girl & Boy" with crank on right-hand side vs. left-hand side	D-368 vars; 1976 MBCA Hist Report vars; N-4310 (Girl & Boy). diff NM	Variation				X	
8	Component Modified After Casting	"Archie Andrews" bank with solid base and with cut-out for mounting on alms box.	Unlisted by Norman or Davidson	Variation				X	

Example No.	Difference	Example	Catalog References	Type or Variation?	Variation Classification†				Explanation
					Tooling	Casting	Assem	Finish	
Changes in Non-Cast Components									
9	Substitution of Non-Cast Component	"Panorama" bank with different pictures on wheel	D-377 vars; N-4410, diff NM	Variation			X		
10	Deletion of Non-cast Component	"Mikado" bank with and without internal bell	N-3860, diff mentioned but not listed as var; D-326 vars	Variation?			X?		Question mark signifies uncertainty in conclusion about banks being Assembly Variations.
Cast in Different Metals									
11a	Bank Cast from Different Metals	"Boy & Bulldog" iron vs. brass	N-1340 (iron) & N-1345 (brass); D-49 (iron) D-NM (brass)	Variation*		X		X	The two banks also have different finishes.
11b	Bank Cast from Different Metals	"The Robot" bank iron vs. aluminum	N-4900 (iron) & N-4890 (aluminum); D-416 (iron) & D-417 (aluminum)	Variation*		X			
12	Component Cast from Different Metals	"Girl Skipping Rope" bank with rope cast from iron vs. brass	D-217 vars; vars per 1975 MBCA Hist Report; N-2640, diff NM	Variation		X			
Design Refinements									
13	Addition of "Stop"	"Acrobat" bank without stop behind left leg and with stop	D-1 vars; vars per 1975 MBCA Hist Report; N-1010, diff NM	Variation	X				
14	Addiiton of Bank Name	"Billy Goat" bank without vs. with name	N-1240-b (without name) & N-1240-a (with name); D-34 vars; vars per 1975 MBCA Hist Report	Type*					In general, as the complexity of the lettering and intended production quantity increase so does the likelihood that the master patterns would be modified rather than several individual
15	Addition of Detail	"Fortune Teller Savings Bank" (plain edges) vs. "Fortune Teller Savings Bank" (ribbed edges)	N-2460-b (plain) & N-2640-a (ribbed); D-195 vars; vars per 1975 MBCA Hist	Type*					
16	Addition of Coin Trap	"Clown on Globe" plain base vs. trap	D-127 vars; vars per 1975 MBCA Hist Report; N-1930, diff NM	Type*					
17	Change in Base Thickness	"Milking Cow" with different base thicknesses	N-3870-a or -b (thin), N-3870-c or -d (medium), & N-3870-e or -f (thick); D-327 thin & thick vars; vars per 1976 MBCA Hist	Type*					
18	Reduced Number of Parts	Hubley "Trick Dog" (six-part base) vs. Trick Dog (solid base)	N-5610 (six-part) & N-5630 (solid); D-481 (six-part) & D-482 (solid)	Type					

Example No.	Difference	Example	Catalog References	Type or Variation?	Variation Classification†				Explanation
					Tooling	Casting	Assem	Finish	
19	Relocated Coin Slot	"Owl, Slot in Book" and "Owl, Slot in Head"	N-4360 (slot in book) & N-4370 (slot in head); D-373 (slot in book) & D-374	Type					
20	Simplified Mechanism	"Organ Bank, Cat and Dog" with three bells or two bells, and with heavy or light crank shaft	N-4310, diff NM; D-368, diff NM	Type*					
21a	Alternative Methods of Assembly	Two styles of "Trick Dog" bank by Shepard. (Both six-part bases)	N-NM; D-NM	Type*					So far as we are aware these banks have not been described previously.
21b	Alternative Methods of Assembly	"Creedmoor Bank" with different size traps	N-NM & D-NM (Lilliput trap); N-2000 & D-137 (std Stevens trap)	Type*					
22a	Changes in Design Details	"Lion & Monkeys" bank (9 1/16" tall) vs. "Lion & Monkeys" bank (8 1/2" tall)	N-3650-a (9 1/16" tall) & N-3650-b (8 1/2" tall); D-300 vars; vars per 1976 MBCA Hist Report	Type*					
22b	Changes in Design Details	"Hold the Fort," seven holes and "Hold the Fort" five holes	N-2820 (five holes) & N-2830 (seven holes); D-240 (five holes) & D-241	Type					
22c	Changes in Design Details	"Butting Buffalo" with stump (hump) and without	N-1570-a (with hump) & N-1570-b (without hump); D-90 vars; vars per 1975	Type*					
22d	Changes in Design Details	"Registering Dime Savings Bank" tall and short	N-4870 (tall), short NM; D-413 (tall), short NM	Type*					
23	Improved Bank Operation	"Safety Locomotive" banks with three different systems for coin removal	Vars per 1976 MBCA Hist Report; N-4960, diff NM; D-422 diff NM	Type*					Difference in casting of the smokestacks is mention in the 1974 MBCA Historian's Report.
24	Manufactured by Different Foundries	"Trick Dog" bank" base length 8 3/4" vs. "Trick Dog Bank" base length 8 9/16" (Both six-part	N-5620 (Shepard) & N-5610 (Hubley); D-481 (six-part base), size diff NM	Type					
25	Manufactured by Different Processes	"Pistol" bank cast iron vs. "Pistol" bank sheet steel	N-4500 (iron) & N-4600 (steel); D-391 vars	Type*					
Design Options									
26	Cast Component Substituted	"Columbian Magic Savings Bank" with round twist vs. round combination trap	D-130 vars; vars per 1975 MBCA Hist Report; N-1960 diff NM	Variation			X		

Example No.	Difference	Example	Catalog References	Type or Variation?	Variation Classification†				Explanation
					Tooling	Casting	Assem	Finish	
27a	Advertising in Raised Letters	"Columbian Magic Savings Bank" without vs. with various advertising messages	N-1960-b (no advert) & N-1960-a (advert); D-130 vars; vars per 1975 MBCA	Variation	X				
27b	Advertising in Raised Letters	"Pump & Bucket" bank plain vs. with "Compliments of Guskv's"	N-4700-a (plain) & N-NM; D-401 vars	Variation	X				
28	Addition of Hanger	"Automatic Coin Savings Bank" free standing vs. wall hanging	N-1100-a (free standing) & N-1100-b (wall hanging); D-14 vars; vars per 1975 MBCA Hist Report	Type*					
29a	Different Figures	"Pelican" bank with various characters in pouch	N-4490 (Arab) through N-4530 (Rabbit); D-381 vars; vars per 1975 MBCA Hist	Type*					
29b	Different Figures	"Organ Bank, Girl & Boy" vs. "Organ Bank, Cat & Dog"	N-4310 (boy and girl) & N-4320 (cat and dog); D-368 (boy and girl) & D-369 (cat	Type					
30	Different Size	"Elephant Moves Trunk (large)" vs. "Elephant Moves Trunk (small)"	N-2310 (large) & N-2330 (small); D-176 (large) & D-178 (small)	Type					
†Variation Classifications									
Tooling = tooling: working pattern creation and adjustment									
Casting = casting									
Assem = assembly									
Finish = finishing									

Chart: Production Process for Cast Iron Banks²⁸

Design: The bank's creator conceived of the idea for the bank, prepared drawings, and (if the design was complex) built working models.

Master Patterns: The pattern maker first created pattern in wood or other material. If management gave its go-ahead he replicated the wood pattern in metal and perfected the metal pattern. In some cases details or lettering were added to the master pattern.

Working Patterns: In preparation for mold making at a manufacturing pace, multiple brass (or bronze) working patterns were made by replicating the lead master pattern. Any casting defects were repaired and the finish was refined on each pattern. Working patterns might be machined to provide for turn-pin or threaded fasteners or have details or lettering attached.

Working Pattern Tree: The parts of the working patterns were soldered to brass rods or bars to create working pattern trees. These facilitated handling the working patterns when making production molds.

Match Mold: Match molds complementary to each pattern tree were made of hardened sand.

Production Molds: Molders used the working pattern tree and complementary match molds to make sand molds and prepared them for casting.

Cast Metal: The cupola foreman prepared the molten cast iron and the cupola crew poured it in each mold.

Shake Out: The shake out crew opened the molds, broke the parts off the castings, and placed each kind of part into a separate barrel.

Grinding and Machining: The grinders removed remnants of gate from each cast part and removed flash as necessary. They ground a smooth finish onto parts that were going to be plated. In the machine shop parts were drilled and tapped.

Tumbling (Cleaning): Parts were tumbled with (for example) agate balls or iron stars to clean and lightly polish them in preparation for finishing.

Assembly: Banks were assembled from the cast parts and other parts such as stamped wheels. Assembly might include touching up parts and turn pins in order to achieve desired fit.

Finishing: Each bank would either be painted or plated. Painting involved dipping the bank and also might have included hand brushing to apply details like eyes and mouth. Labels or decals were added. If the bank was painted, finishing occurred last; if the bank was plated, then assembly was last.

TOOLING

CASTING

ASSEMBLY

FINISHING

References

- ¹ Fritz Kokesh, "Patterns and the Molding of Cast Iron Banks: Seminar by Bill Robison," *Penny Bank Post*, April 2004, p. 5.
- ² Ina Hayward Bellows, "Old Mechanical Banks: A comprehensive study of the subject of mechanical banks, with illustrations," Lightner Publishing Corp., Chicago, Illinois, 1940, p.26. Note that Bellows attributes this story only to "a one-time toy craftsman."
- ³ Louis H. Hertz, "Mechanical Toy Banks," published privately, Scarsdale, N.Y., 1947, p. 20.
- ⁴ This definition applies regardless how master patterns were made.
- ⁵ "Tooling Variation" is the preferred term, but in some earlier articles the term "Pattern Variation" also may have been used.
- ⁶ Griffith (Forward, 1972) proposed the following definition for "authentic mechanical bank": "A bank that has been produced commercially and sold direct, or otherwise, to stores or other outlets and in turn sold to the general public for the use of children as a toy savings device. In other words, a bank that has been legitimately manufactured with the prime purpose and end use of encouraging children to save their money therein, and the mechanical action the added incentive to cause children to do so."
- ⁷ Hertz (p. 197) has suggested that "authentic" means that the banks were made by the proper factory, not created privately even when factory-made parts were used.
- ⁸ Bill Norman, "The Bank Book: The Encyclopedia of Mechanical Bank Collecting," Accent Studios, San Diego, California, 1985.
- ⁹ Al Davidson, "Penny Lane; A History of Antique Mechanical Toy Banks," Long's American, 1987.
- ¹⁰ "Variations in Mechanical Banks," MBCA Historian's Reports, 1974, 1975 and 1976.
- ¹¹ A coating method that takes advantage of the impermeability of Japan varnishes. Applied to iron it provides a tough and durable finish that prevents corrosion.
- ¹² "The Artillery Bank," MBCA Mini-Reference Series, Volume I, 1981.
- ¹³ Stephen A. Steckbeck, "#9 – Viennese Soldier", *The Mechanical Banker*, April 1981.
- ¹⁴ "Check List of Old Mechanical Banks and Their Prices," Mechanical Bank Collectors of America, September 1991.
- ¹⁵ Frank Kidd, personal communication, February 12, 2005.
- ¹⁶ Sy Schreckinger, "The Billy Goat Bank," *Antique Toy World*, October 1983, p. 68.
- ¹⁷ F. H. Griffith, "Fortune Teller Savings Bank (Original Label)," *HOBBIES Magazine*, February 1974.
- ¹⁸ F. H. Griffith, "Milking Cow Bank," *HOBBIES Magazine*, August 1953.
- ¹⁹ F. H. Griffith, "Owl Type 1 (Slot in Head)," *HOBBIES Magazine*, August 1974.
- ²⁰ Hertz p. 181. Hertz went on to say: "*In short, they conclude that if the variation can be noted by a keen-eyed observer while the toy is on display, it is a variation—no matter how minor...; if the variation can be seen only by handling the toy and by scrutinizing areas not visible in an ordinary display position, the article should be considered a duplicate.*"
- ²¹ F. H. Griffith "Bureau Bank (Serrill 'Patent applied for')," *HOBBIES Magazine*, November 1967.
- ²² "The McCumber Collection at Auction," May 13-14, 2005, East Hartford, Conn.
- ²³ The 1976 MBCA Historian's Report describes two variations. The first has "Pat. 87" on the front and no smoke stack attachment. The second has "Safety" on the front and has the smoke stack attachment.
- ²⁴ Sy Schreckinger, "The Trick Dog Bank (Solid Base)," *Antique Toy World*, December 1992, p. 80.
- ²⁵ Fritz Kokesh, "Patterns and the Molding of Cast Iron Banks, Supplement No. 6: Pattern Lettering," privately published, 2004. Available at: www.toybanks.info .
- ²⁶ Measurements and other details provided by Frank Kidd.
- ²⁷ Louis H. Hertz, "The Toy Collector," Funk & Wagnalls, N.Y., 1969, p. 176.
- ²⁸ For more information see: Notes by Fritz Kokesh, "Patterns and the Molding of Cast Iron Banks, Seminar by Bill Robison," *Penny Bank Post*, April 2003, p.5.