

A Dating Key For Post-Eighteenth Century Bottles

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The Theory

Bottles produced in the United States after the eighteenth century may be rather precisely dated on the basis of recorded changes in bottle manufacture techniques. The bottle manufacture process was constantly improved throughout this period and the dates at which many of the new techniques appeared seem well established. Obviously, by knowing the invention dates of the various techniques used to produce any one bottle, it is possible to know that the bottle could not have been made prior to the latest dated technique used in its manufacture. This provides a "no earlier than" type of absolute date for the bottle, and for any coterminous archaeological level in which it is found.

The rapid improvement of bottle manufacture techniques resulted in the replacement of earlier, less efficient techniques, especially during the last half of the nineteenth century. Replacement techniques often came in at known dates and these also provide "no earlier than" dates for bottles manufactured by the new process. The date the improved technique was developed does not, unfortunately, provide a terminal "no later than" date for the earlier technique. One cannot simply use the date a replacement technique was developed as a terminal date for an archaeological level containing a bottle made with the replaced technique because of:

1. delays in particular bottle manufacturers changing over to the new technique.
2. the use of existing stocks of bottles made by an earlier technique after a new technique was developed;

3. storage time at the manufacturer's factory prior to shipment to the bottler;

4. delays in filling the bottles with the contents to be retailed;

5. transportation time to the site; and

6. the possibility of re-use of the bottle prior to final discard.

It is unlikely that the terminal date for the production of an older technique was substantially later than the date when the new manufacturing process was developed to replace it. The bottle manufacturing industry during the nineteenth century was highly competitive and new improvements were speedily adopted. The increasing demand for bottled products would quite likely have meant a fast turnover of bottle stocks, while the transportation system in the United States was able to distribute the bottles to the users without undue delay.

If the date of a replacement technique were increased by about ten years, a terminal date would be generated for archaeological levels containing bottles made with the replaced technique. Ten years seems adequate to allow for the time delays in American bottles reaching most archaeological sites in the United States.

Thus, two bracket dates are generated each time a manufacturing process is changed:

1. the introduction date of the first technique, and

2. its termination date based on adding ten years to the date of a replacement technique.

The first date acts as the lower date before which the bottle is unlikely to have been made, while the second date is the general termination date for bottles having been made by the technique. For example, a bottle blown in a two-piece mold would not be expected to date before 1845. Since the two-piece mold was replaced by the automatic bottle making machine beginning in 1903, the bottle would have been unlikely to have been deposited in a site later than about 1913 (1903 + 10 years). Thus, the bottle was most likely deposited in a site between 1845 and 1913.

By using multiple manufacture traits it is possible to considerably refine this time span. For example, if the bottle described above were made with a snap case holding device, the dates would be 1855 to 1913, a ten year decrease in time span. If the bottle also had a crown cap, the dates would be from 1895 to the present. By using these dates in combination one can be reasonably sure that the bottle was deposited in a site between 1895 and 1913; hence, the level coterminous with the bottle most likely also dates from this time.

Use of the Bottle Dating Key

The bottle dating key presented here is based on a synthesis of data on bottle manufacture techniques given in the bibliography entries; however, sources are not shown on the key to preserve clarity. Some familiarity with bottles and the manufacture techniques is necessary and this background may be obtained from sources in the bibliography.

The key poses questions about each bottle part that are to be answered by "yes" or "no". If an answer is "maybe" or "uncertain", then the "no" answer is to be used. "Yes" answers will route the reader to a date and then on to the next appropriate question. A "no" answer merely routes the reader to the next question. Directional arrows are provided to indicate the route where there might be confusion. Each major bottle part is dated separately; therefore fragments can be dated if they exhibit any of the traits covered by the key. By keeping track of the various dates produced, it is often possible to considerably refine the date for the whole bottle. Where two dates are given on the key, the first date is of the "no earlier than" type while the second is the date of a replacement technique increased by a factor of ten years to give a general termination date for the older technique.

The user is cautioned that this key is based upon generalizations and exceptions do exist. There are many variables affecting the termination date and this date must not be thought of as being infallible. An old saying may be appropriately revised as follows:

This bottle dating key is for the guidance of the wise and the obedience of fools.

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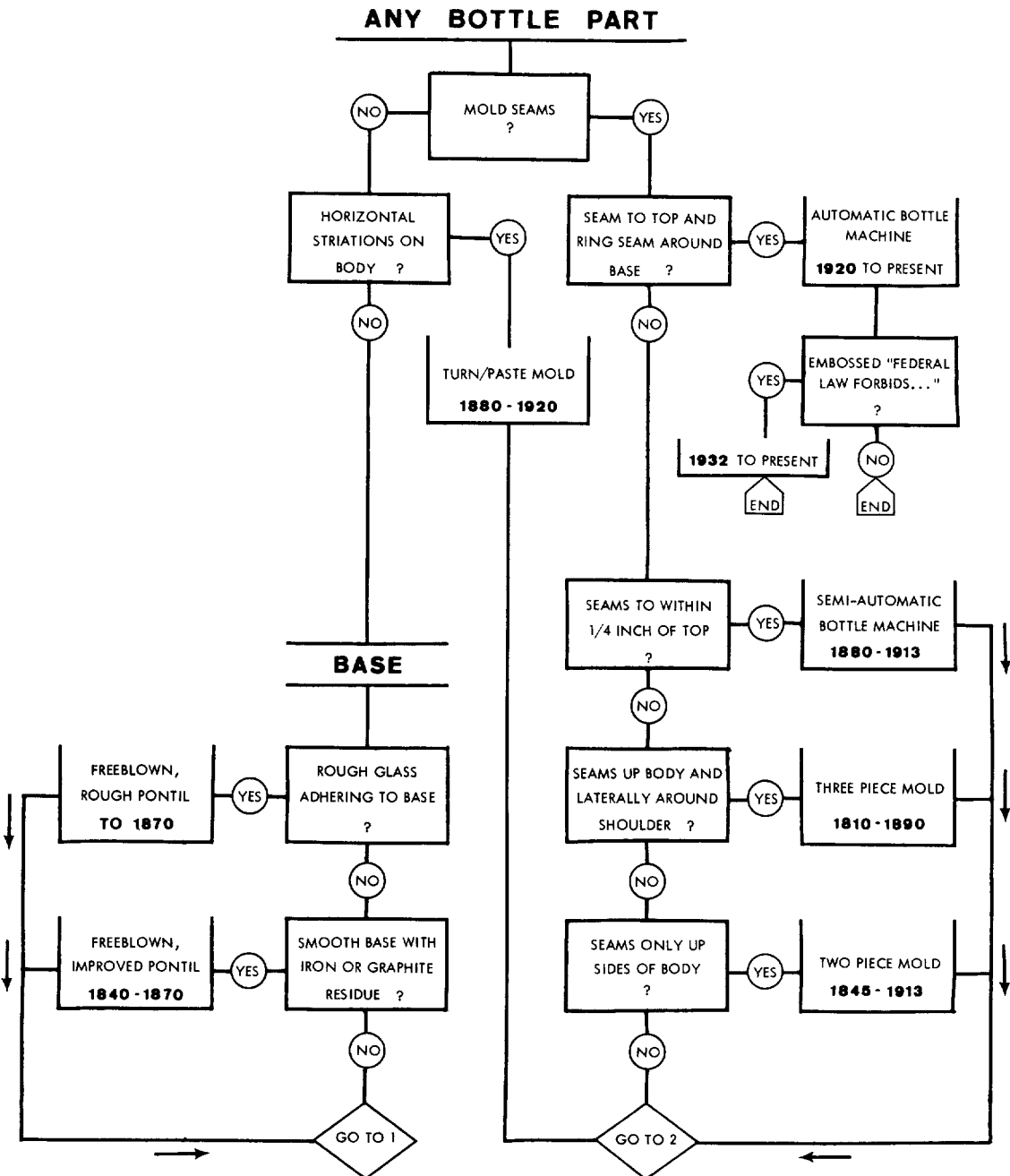


FIGURE 1.

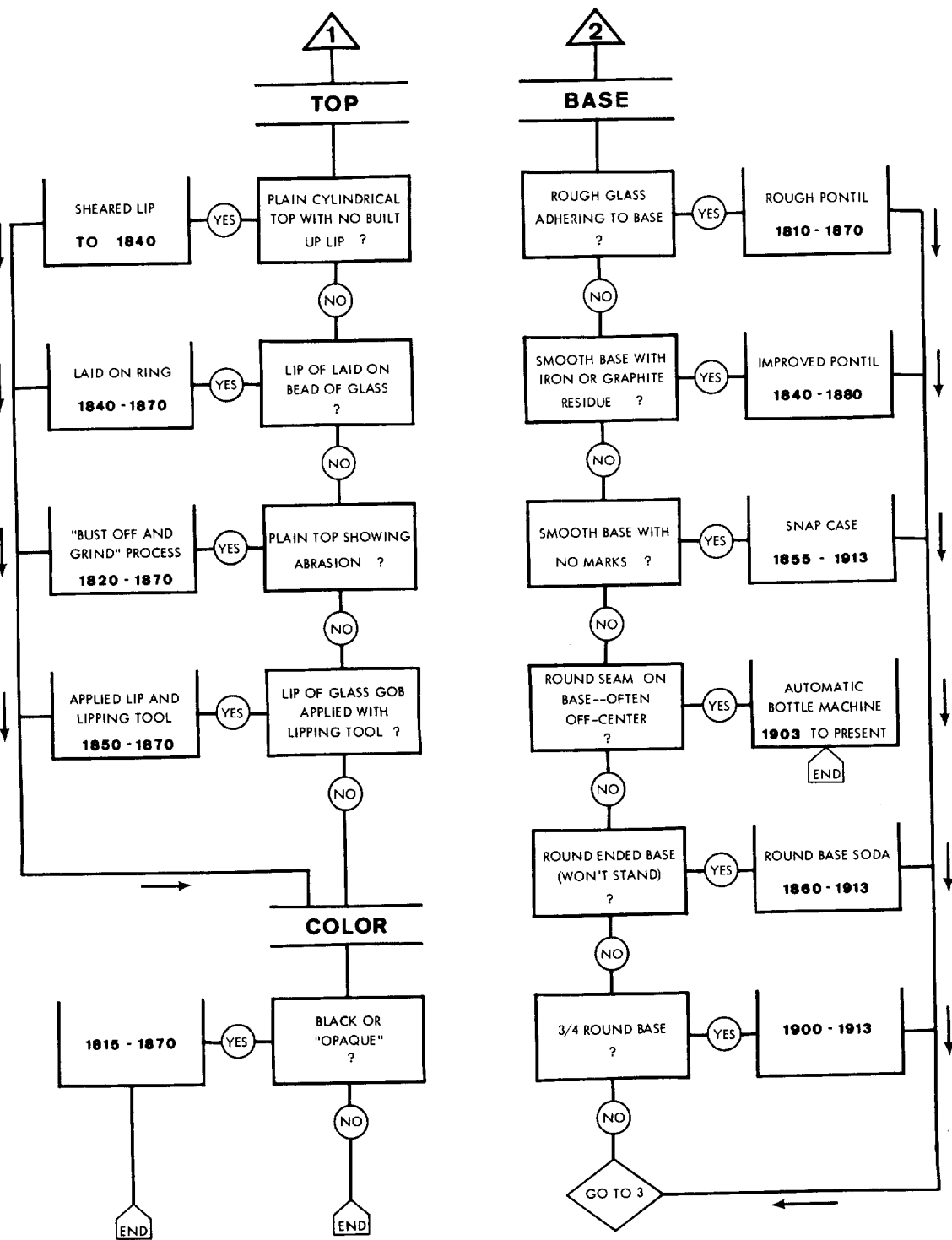


FIGURE 2

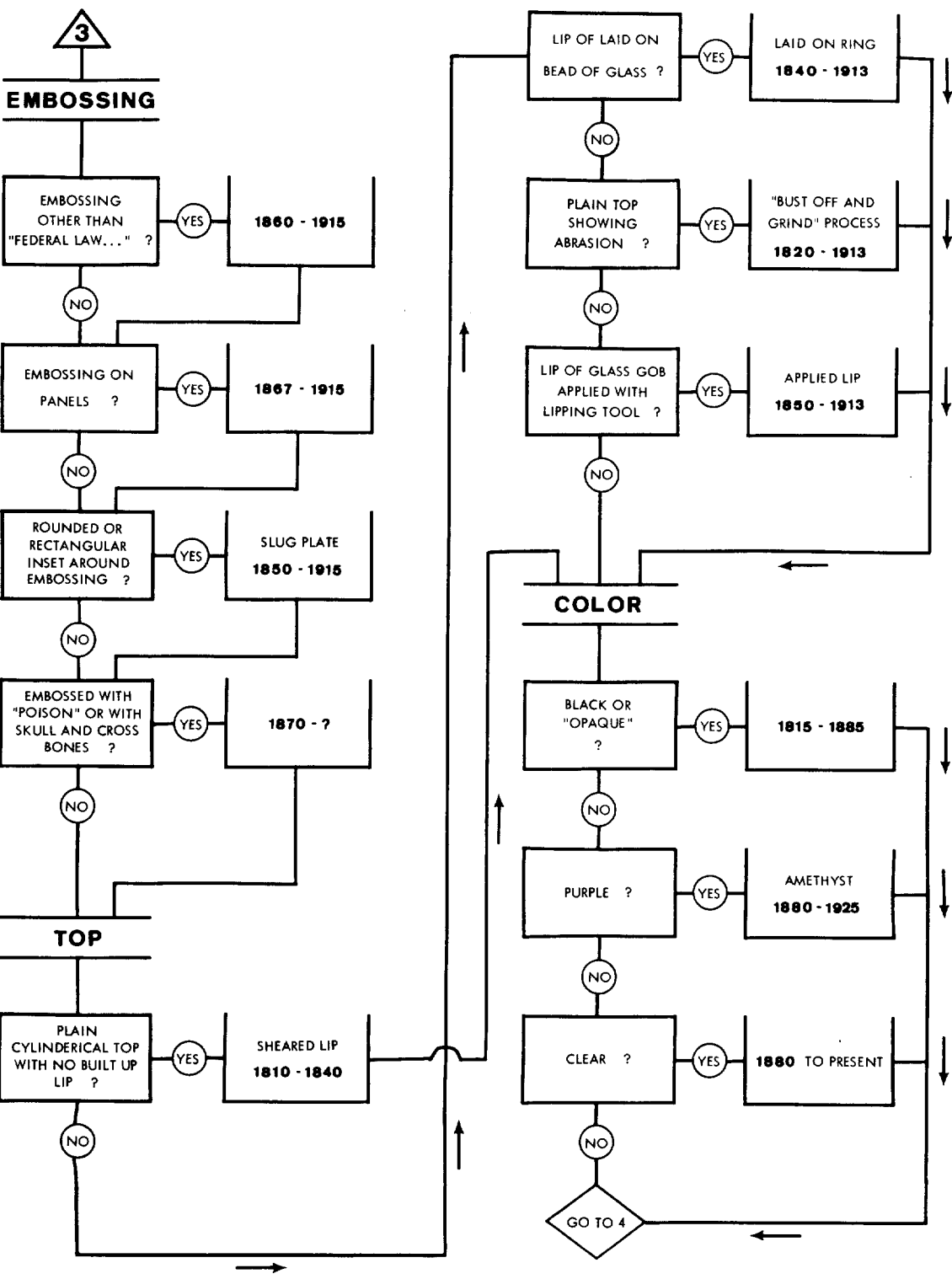


FIGURE 3

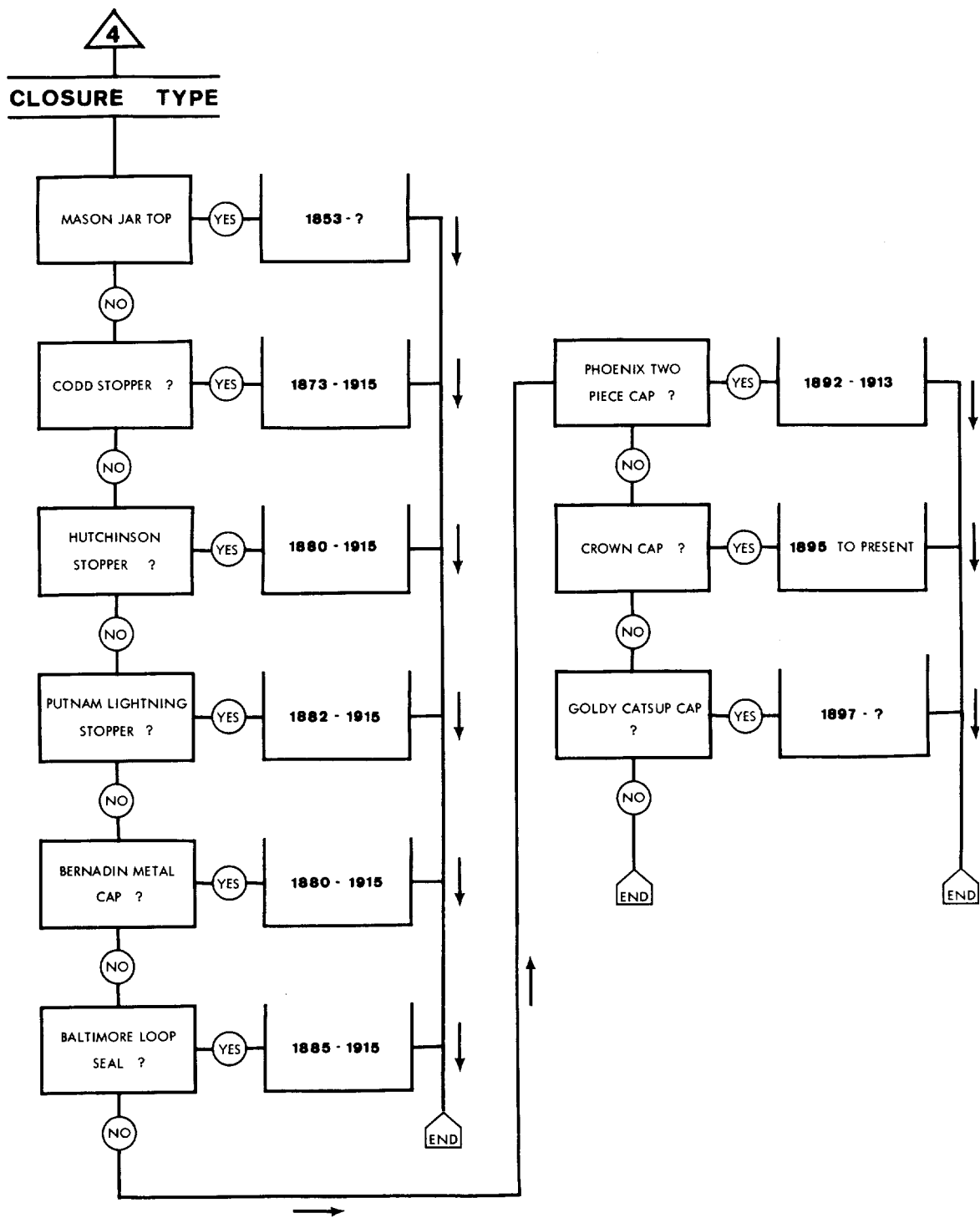


FIGURE 4