(No Model.)

E. STOCKWELL & W. H. TAYLOR.

Dials for Locks.

No. 232,086. **Patented Sept. 7, 1880.**

Fig. 1.

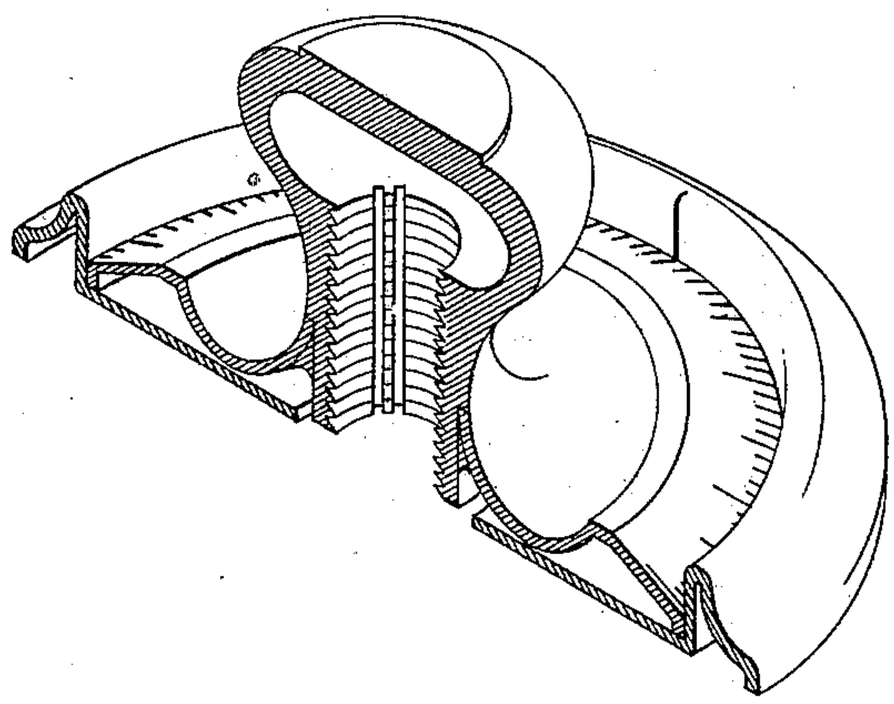


Fig. 2.

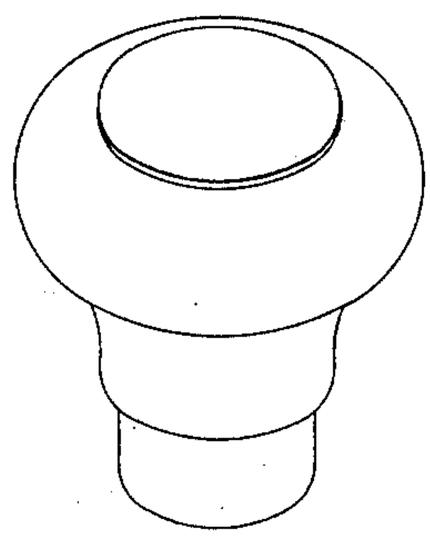


Fig. 3.

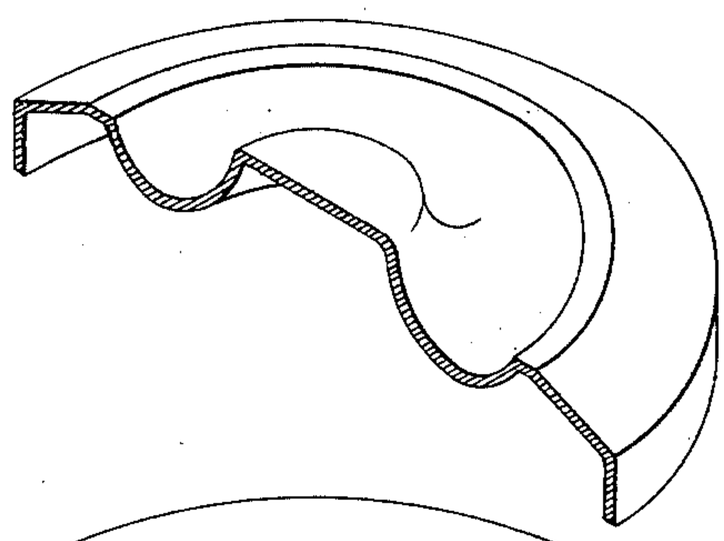
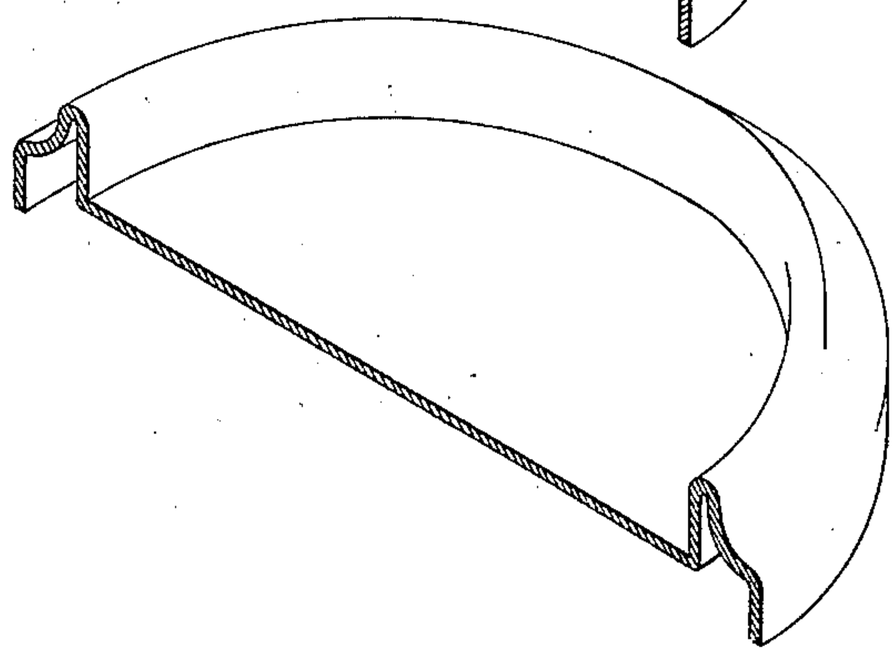


Fig 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

EMORY STOCKWELL AND WARREN H. TAYLOR, OF STAMFORD, CONNECTICUT, ASSIGNORS TO THE YALE LOCK MANUFACTURING COMPANY, OF SAME PLACE.

DIAL FOR LOCKS.

SPECIFICATION forming part of Letters Patent No. 232,086, dated September 7, 1880.

Application filed May 12, 1880. (No model.)

To all whom it may concern:

Be it known that we, EMORY STOCKWELL and WARREN H. TAYLOR, both residents of Stamford, Fairfield county, Connecticut, have invented a new and useful Improvement in Dials for Locks, of which the following is a description that will enable those skilled in the art to understand and make the same.

Our invention relates to the manufacture of graduated dials used for setting and operating what are known as "combination" or "dial" locks for safes, and similar uses, and also the rim or rings used in connection with such dials.

Heretofore it has been customary to form such dials and rings of cast metal. This has necessitated the use of metal of considerable thickness to insure sound castings and to give sufficient stiffness in turning and finishing the work. In casting the dials difficulty has been experienced in removing the metal behind the knob or head of the dial and forming what may be termed the "neck." This has been accomplished either by casting the head and neck of a uniform diameter, and subsequently cutting away the metal behind the head so as to form the neck, (which process involves much labor and some waste of metal,) or by molding the dials in what are termed "three-part flasks," whereby the diminution of diameter behind the head to form the neck is made in the mold. This process is better than the other, but involves more trouble and expense in molding.

Our invention consists in making the dials and their rings of rolled or sheet metal.

In the accompanying drawings, which illustrate our invention, Figure 1 is a sectional elevation, in perspective, of our complete dial, knob, and ring combined together as in use. Fig. 2 is a perspective view of the knob detached. Fig. 3 is a sectional elevation, in perspective, of the dial partially completed. Fig. 4 is a sectional elevation, in perspective, of the ring partially completed.

In manufacturing our invention we proceed as follows: The dial is formed from a piece of sheet metal of proper size and thickness, the first operation consisting of stamping, dropping, or spinning it into a blank or form shown by Fig. 3. The next operation is to impress on the disk thus formed the desired graduations and figures or lettering, which is done by placing the blank under a die having on its face the desired marks, and then striking the blank with this die with sufficient force to impress the marks on its surface. The next operation consists in punching or cutting the central aperture and in trimming off the surplus metal from the back, thus leaving the blank in the condition indicated by Fig. 1. The knob of the dial we prefer to form of cast metal to give the necessary solidity, particularly for the screw-thread, by means of which the dial is subsequently attached to the spindle of the lock.

Fig. 2 indicates the form of the knob or head ready for attachment to the dial or disk. These two parts, being slipped together, are then securely united by soldering or brazing or by spinning or riveting them together. The dial is now ready for its final polishing or for plating, if that is desired.

The ring or rim for inclosing the dial on the door is formed in the same manner.

Fig. 4 shows the blank as first formed by stamping or spinning from a piece of sheet metal. Fig. 1 shows the same with the central aperture punched or drilled out, the surplus metal trimmed off of the back edge, and in its final form ready for use.

An index or zero mark is impressed at one point on the face of the ring, for use in setting the dial to the desired number or position, as usual.

By reference to the foregoing and to the drawings it will be seen that we produce a dial and ring of ample strength and stiffness with a much smaller quantity of material or weight of metal than heretofore, and at a small fraction of the cost for labor of dials and rings as formerly made. The process of stamping admits of the reproduction of the desired forms with perfect accuracy and with great rapidity. The machinery necessary for the purpose is inexpensive, and the work of a kind which can be done by comparatively unskilled labor, whereas the lathe-work involved in making dials heretofore has necessitated the employment of skilled mechanics.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a lock-dial formed of sheet or wrought metal, substantially as and for the purposes described.

2. As a new article of manufacture, a rim or ring for lock-dials formed of sheet or wrought metal, substantially as and for the purposes described.

3. The combination of the knob or head, formed of cast metal, and the lock-dial, formed of sheet metal, the two being permanently united, substantially as and for the purposes described.

4. The combination of the knob or head, formed of cast metal, the lock-dial, formed of sheet metal, and the sheet-metal dial-ring, substantially as and for the purposes described.

In testimony whereof we have hereunto subscribed our names.

EMORY STOCKWELL.
WARREN H. TAYLOR.

Witnesses:
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