(No Model.)

H. A. NETTLETON.

MECHANISM FOR FORMING THREADS.

No. 365,621. Patented June 28, 1887.

Fig. 1.

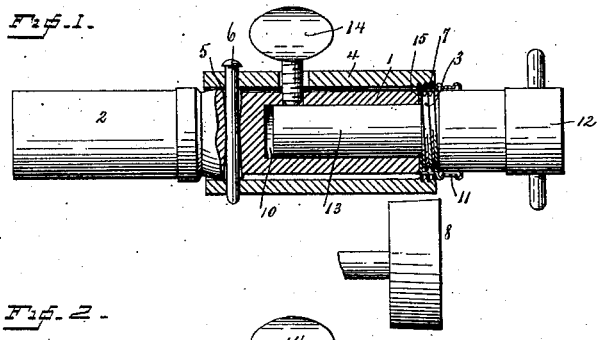


Fig. 2.

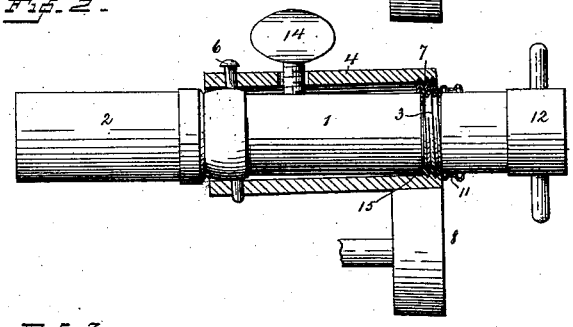


Fig. 3.

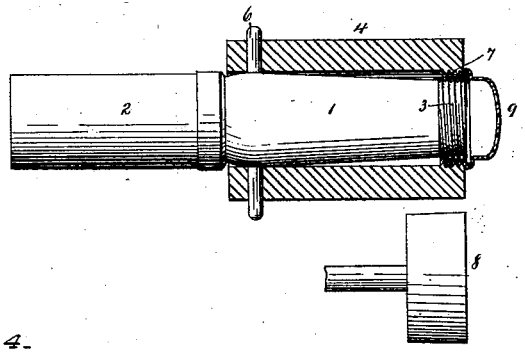


Fig. 4.

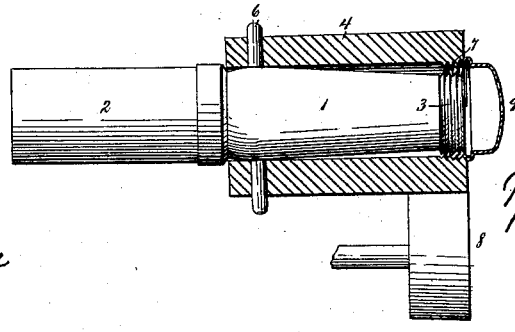


Fig. 5.

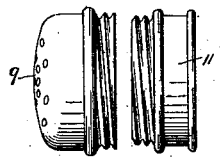


Fig. 6.

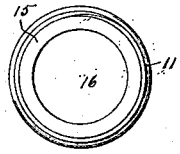
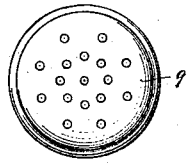


Fig. 7.



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C. E. Ruggles

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UNITED STATES PATENT OFFICE.

HORACE A. NETTLETON, OF SEYMOUR, CONNECTICUT.

MECHANISM FOR FORMING THREADS.

SPECIFICATION forming part of Letters Patent No. 365,621, dated June 28, 1887.

Application filed December 13, 1886. Serial No. 221,363. (No model.)

To all whom it may concern:

Be it known that I, HORACE A. NETTLETON, a citizen of the United States, residing at Seymour, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Mechanisms for Forming Threads; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the manufacture of pepper-boxes and salts for table use, and has for its object to produce mechanism by which I am enabled to press perfect male and female threads into the two parts of the top when made from sheet metal, and at the same time to retain a flange upon the lower part—that is, the part having the male thread—so that a neat and attractive finish is given to this part without additional operations. Heretofore it has been common to cast both parts of these tops and to cut both threads by dies. The most serious objections to this class of tops have been that the threads quickly become worn so that the tops will not stay on, and that the under part cannot be secured to the glass in such a manner as to give it a neat and finished appearance when the cover is removed. It has not been practicable heretofore to use sheet metal for this purpose on account of the difficulty in forming the threads, which is of course greater in German silver than in brass. As a matter of fact, it has been impossible to produce the threads in struck-up German silver goods at a price that enabled them to be placed upon the market. These difficulties are wholly overcome by my present invention, which enables me to press the threads with great rapidity into any class of sheet-metal goods. With these ends in view I have devised the novel mechanism, of which the following description, in connection with the accompanying drawings, is a specification, numbers being used to indicate the several parts.

Figure 1 is an elevation partly in section, illustrating my invention as applied to form the thread on the under part of a pepper-box or salt top, the parts being in operative position, but not in operation; Fig. 2, a similar view showing the parts in operation and illustrating the manner in which the thread is formed. Figs. 3 and 4 are views corresponding with Figs. 1 and 2, and showing my invention as applied to form the thread on the other part—that is, the cap or cover of the pepper-box or salt; Fig. 5, an elevation of the two parts detached, and Figs. 6 and 7 are plan views of the two parts detached.

1 is the body of the tool, and 2 the shank, which is adapted to fit into the chuck of any ordinary lathe. At the outer end of the body is a raised screw-thread, 3, which constitutes the form or die by which the thread is formed in the sheet-metal parts of the tops.

4 is a sleeve whose internal diameter is slightly greater than that of the body, and which is secured upon the body in such a manner as to have free oscillation in any direction independently of the body, but at the same time having no independent rotary movement, so that it must turn with the body.

In Fig. 1 I have shown the body as provided with an opening, 5, narrowest at the center and tapering outward in both directions, and a pin, 6, driven through the opposite sides of the sleeve and through said opening, the pin being fast in the sleeve so as to hold it securely in place in use upon the sleeve. At the outer end of the sleeve is a raised internal thread, 7, which corresponds with thread 3 upon the body and constitutes a matrix into which the sheet metal of the tops is pressed by the form or die to roll or press the threads therein.

8 is a roller journaled on a sliding carriage, and 9 denotes the cap or cover of a pepper-box or salt. In the form shown in Figs. 3 and 4 the cap is simply placed over the end of the body and is then ready to be operated upon.

Rotary movement is imparted in any suitable manner to the chuck carrying the body and sleeve, and the roller upon the sliding carriage is then pressed against the sleeve, as shown in Fig. 4. This forces the portion of the sleeve in contact with the roller against the body and forms a thread upon the cap or cover corresponding with that upon the body and sleeve—that is, the form or die and the matrix. The body of course rotates at a high

rate of speed, so that the thread is formed instantly. The rotation of the body is then stopped, the cap removed, and another one substituted in its place, these operations being continuously repeated. The operation of forming the thread upon the lower parts, 11, of the tops is precisely the same; but, as the thread is formed upon the outer end of the top instead of upon the inner end, the part has to be inserted in a different manner, in order that it may be readily removed from the form. This mode I have clearly illustrated in Figs. 1 and 2. The body is made shorter than the sleeve, and is provided with an internal opening, 10.

12 is a detachable head having a shank, 13, which slides into opening 10, and is secured there by a set-screw, 14, passing loosely through the sleeve. In this construction the thread 3 is formed upon the head instead of upon the body, as in the other construction. The part to be formed is placed over the head the shank of which passes through the opening therein. The shank is then passed into the body and secured by the set-screw. When in position to be operated upon, the flange 15 upon the part rests between the end of the head and the end of the body, all of which is clearly shown in Figs. 1 and 2. The operation of forming the thread is the same as in the other form.

Having thus described my invention, I claim—

1. The combination of a rotating body having a screw-thread at its outer end with a sleeve loosely secured to said body and rotating therewith, said sleeve having an internal screw-thread at its outer end corresponding with the thread upon the body, whereby threads may be formed on sheet-metal articles upon the former when the sleeve is pressed against it, substantially as described.

2. The combination, with a rotating body having an opening, 5, narrowest at the center and tapering in both directions, and a screw-thread at its outer end, of a sleeve provided with an internal screw-thread at its outer end lying loosely outside of said body, and secured thereto by a pin driven through the sleeve and said central opening, whereby said sleeve is caused to rotate with the body, but has oscillatory motion thereon.

3. The body having a screw-thread at its outer end, and a sleeve having a corresponding internal screw-thread secured loosely outside of said body, in combination with a movable roller adapted to bear against the sleeve, substantially as and for the purpose set forth.

4. The body having an opening, 10, and a detachable head having an external screw-thread, and a shank adapted to fit in said opening, in combination with a sleeve loosely secured to the body and provided with an internal screw-thread corresponding with the thread upon the head.

5. The body having an opening, 10, and a detachable head having an external screw-thread, and a shank adapted to fit in said opening, in combination with a sleeve loosely secured to the body and provided with an internal screw-thread corresponding with the thread upon the head, and a set-screw passing loosely through the sleeve, whereby the shank is held in the body.

In testimony whereof I affix my signature in presence of two witnesses.

HORACE A. NETTLETON.

Witnesses:

GEORGE A. STOCKING,

H. A. STOCKING.