W. T. Gillinder.

Forming Threads on Sheet Metal Caps.

No 71605 Patented Dec. 3, 1867.

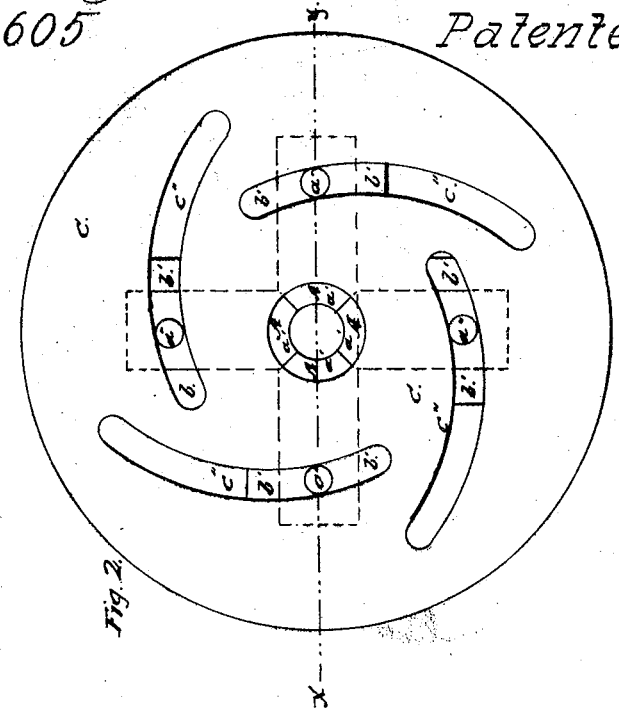

Fig. 2.

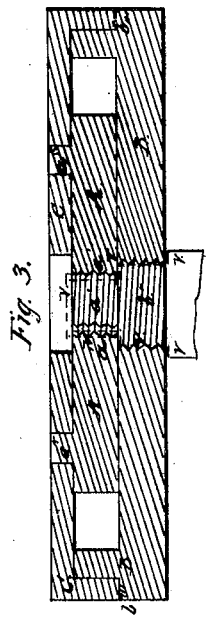

Fig. 3.

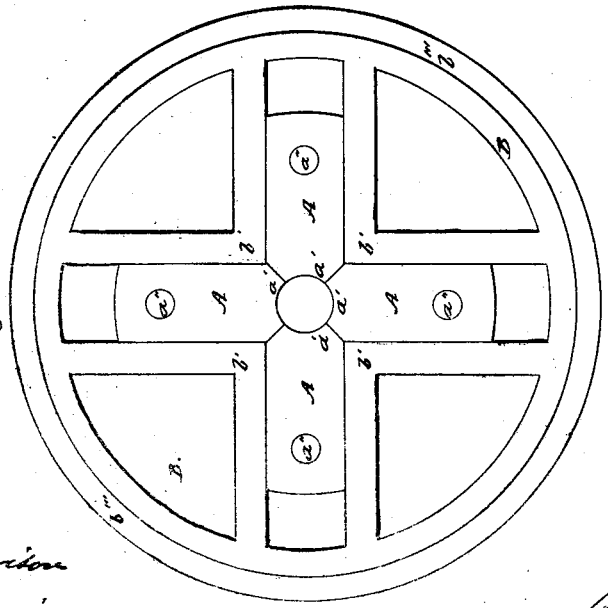

Fig 1.

Attest;

B. y. Morrison

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William T. Gillinder

UNITED STATES PATENT OFFICE.

WILLIAM T. GILLINDER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND EDWIN BENNETT, OF SAME PLACE.

IMPROVED APPARATUS FOR FORMING THREADS ON SHEET-METAL CAPS.

Specification forming part of Letters Patent No. **71,605**, dated December 3, 1867.

To all whom it may concern:

Be it known that I, WILLIAM T. GILLINDER, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in the Mode of Forming Screw-Threads in Sheet-Metal Caps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of the forming-dies in the lower part of their case, the upper part of the latter being removed for the purpose; Fig. 2, a like representation of the same having the upper part of the case applied, and Fig. 3 a vertical section cut on the dotted line *x y* of Fig. 2, like letters of reference indicating the same parts when in the different figures.

My improvement relates to the formation of the screw-threads in the sides of those sheet-metal caps which are used for closing bottles, jars, &c. Heretofore the threads have been formed by spinning on a lathe, and therefore by the expenditure of a great deal of labor and time; and the object of my invention is to reduce the labor, facilitate the operation, and therefore to reduce the cost of their production.

It consists in producing the screw-threads in a sheet-metal cap at a single stroke by the pressure of dies operating substantially as hereinafter described.

Referring to the drawings, A A A A are the dies; B B, the bottom portion of the case, and C C the upper portion of the case. The dies A are arranged in the bottom B of the case at right angles to each other, and between guides *b' b'*, so that they can be moved easily in the direction of their lengths, and thus cause their inner ends to approach toward and recede from each other, (see Fig. 1,) their inner ends, *a' a'*, being curved, and provided with screw-threads, so that when brought together a round hole will be left between the said screw ends, which will be about twice the depth of the said threads, less in its diameter than the diameter of the cap which is to be operated upon. (See Fig. 3.) The upper side of each of the die-blocks A has a projecting stud, *a''*, whereby they can be moved backward and forward by means of the upper portion, C, of the case, as will hereinafter be explained.

Through the center of the bottom B of the case there is a screw-cut hole, *b''*, which is somewhat larger in its diameter than the hole produced by the closed dies A, for the purpose of receiving and holding accurately and firmly a center plug provided with shoulders to stop it in place, and having the end which is above its upper shoulder screw-cut to correspond with the dies A. (See the faint lines *v v* in Fig. 3.)

The upper part, C, of the case has a round hole in its center, which is about twice the diameter of the hole between the closed dies A, and has also four eccentric slots, *c'' c'' c'' c''*, which respectively receive the four studs *a''* of the said dies when C is applied over B, as shown in Figs. 2 and 3, the said eccentric slots being curved, so as to cause the dies A to close and open as the said part C is rotated right and left, alternately, upon B.

The part B is intended to be firmly fixed in a strong frame and the part C applied upon it, as shown in Figs. 2 and 3, so that the latter can be rotated right and left by means of any suitable hand-lever or arm fixed thereto (not shown in the drawings) in such a manner that the dies A will be moved powerfully toward and from each other alternately.

In operating the machine to thread-screw a cap, the latter is to be placed in the hole in the center of part C of the case, and so as to fit down over or upon the screw-plug, which has previously been inserted in the central hole, *b''*, of the part B for the purpose, (see the faint lines *v v*, Fig. 3,) where it is to be held down firmly by means of any suitable vertically-moving bar or other device, (not shown,) to be attached to the frame of the machine for the purpose, when the operator causes the dies A to close suddenly and powerfully upon the cap and thus produce the screw-threads required thereon. An opposite movement given to C withdraws the dies A, and the finished cap springs open enough to allow of its being easily unscrewed by the fingers of the operator in removing, thus forming the screw-threads upon the cap by a single stroke of the dies, and removing the finished cap in the most rapid and easy manner.

The dies A and the corresponding screw-plugs are changeable for other sizes of threads, as the different-sized caps to be screwed may require.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The apparatus herein described for swaging screw-threads on sheet-metal caps, substantially as set forth.

WILLIAM T. GILLINDER.

Witnesses:
BENJ. MORISON,
WM. H. MORISON.