W. Betts, 4. Sheets. Sheet. 1

Embossing Capsules.

No. 107329. Patented Sept. 13. 1870

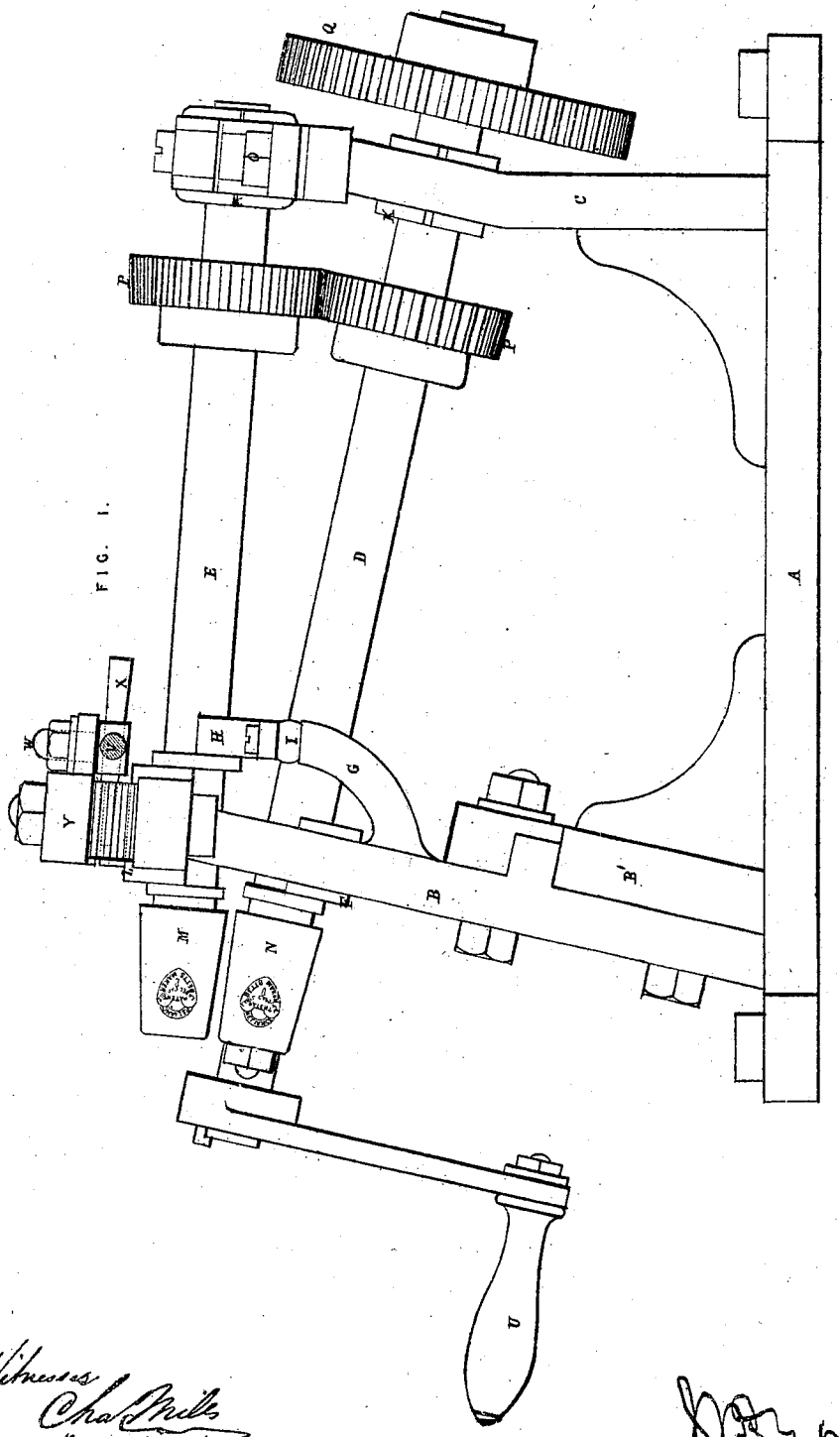


FIG. 1.

Witnesses
Chas Mills
W. L. Wood.

Inventor

W. Betts,

4. Sheets. Sheet 2.

Embossing Capsules.

No. 107,329. Patented Sept. 13. 1870.

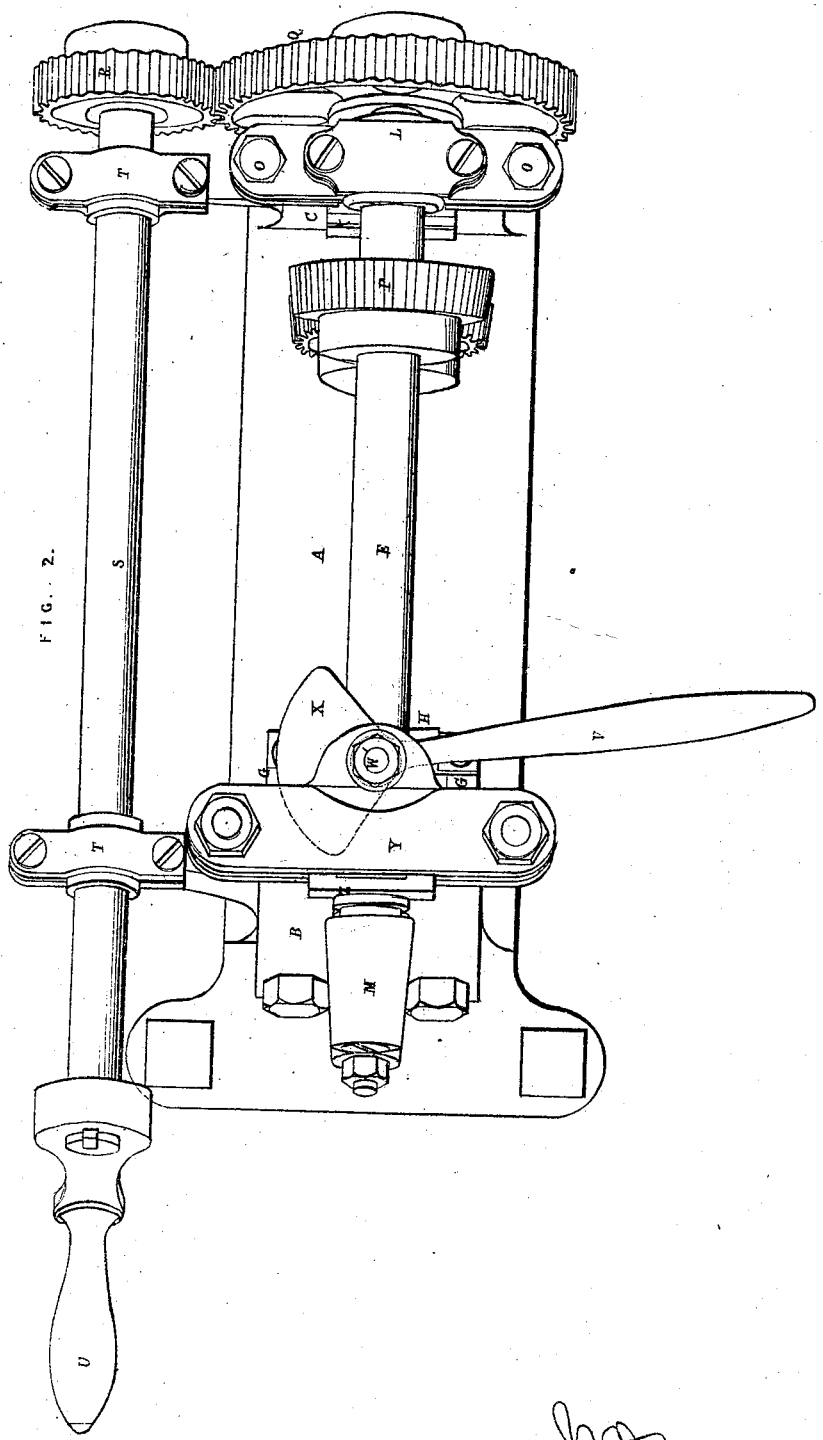


FIG. 2.

Witnesses,
Chas. Mills
W. D. Wood.

Inventor,
W. Betts

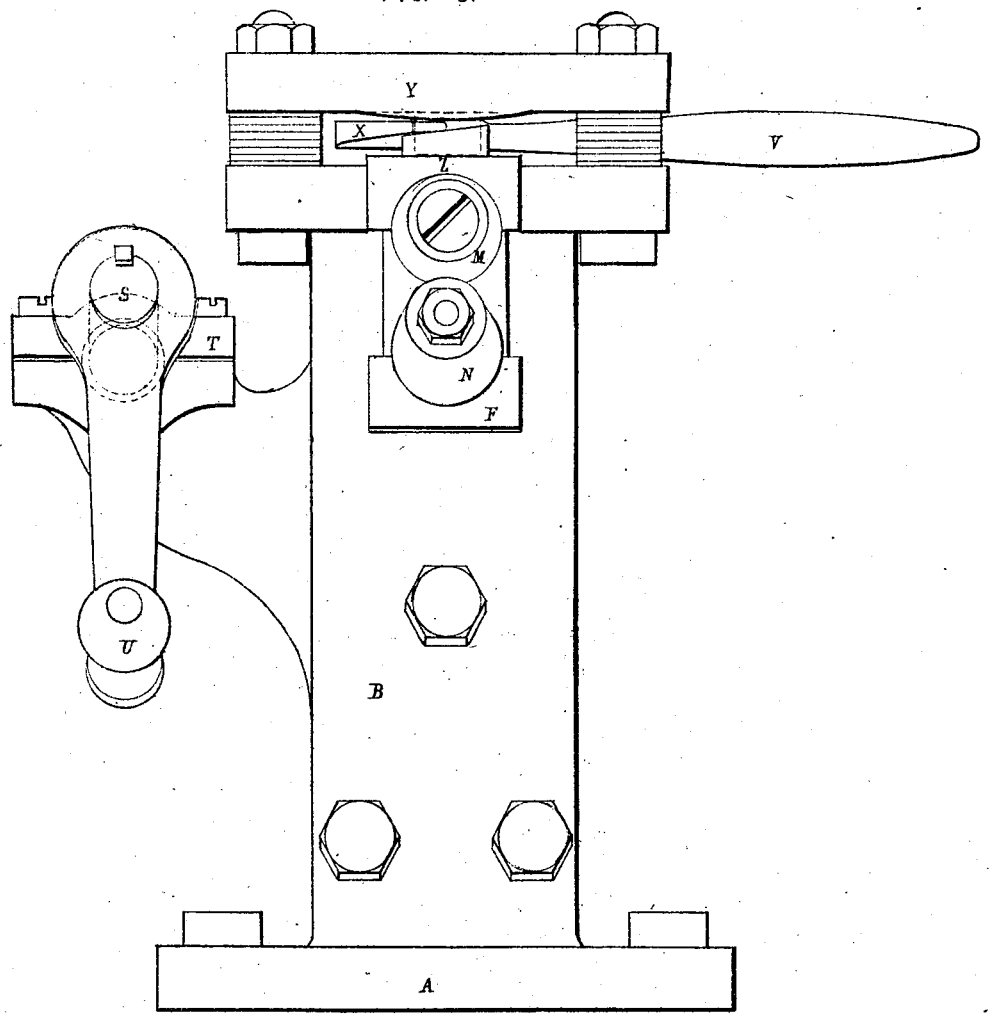
4 Sheets. Sheet. 3.

W. Bells',

Embossing Capsules.

No. 107,329. Patented Sep. 13. 1870.

FIG. 3.



Witnesses
Chas Mills
W. D. Wood.

Inventor

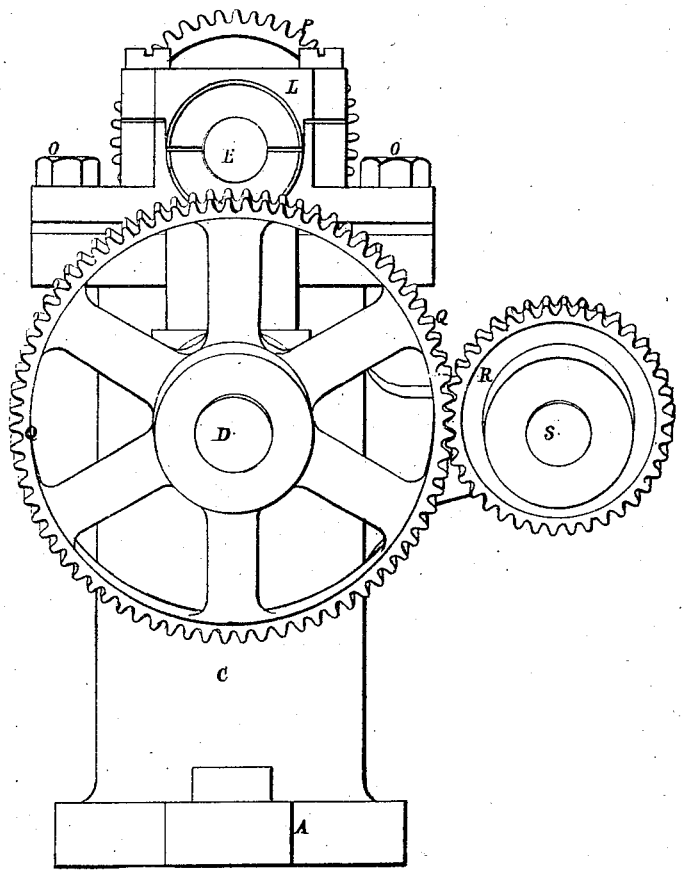
4 Sheets, Sheet. 4

W. Betts,

Embossing Capsules.

No. 107,329. Patented Sept. 13. 1870.

FIG. 4.



Witnesses:
Chas. Mills
W. D. Wood.

Inventor:

United States Patent Office.

WILLIAM BETTS, OF NO. 1 WHARF ROAD, CITY ROAD, ENGLAND.

Letters Patent No. 107,329, *dated September* 13, 1870.

IMPROVEMENT IN MACHINES FOR EMBOSSING CAPSULES.

The Schedule referred to in these Letters Patent and making part of the same

I, WILLIAM BETTS, of No. 1 Wharf Road, City Road, London, in the county of Middlesex, England, capsule manufacturer, have invented Improvement in Machines for Embossing Capsules, of which the following is a specification.

My invention relates to machines for embossing, in intaglio or relief, soft-metal capsules, such as are generally used for covering the tops of bottles; and

My invention consists of two inclined shafts, carrying conical dies at the outer ends, and geared together and arranged, as fully described hereafter, so that the blank capsules can be readily adjusted on the die, quickly embossed, and easily detached; and, in order that my said invention may be fully understood, I shall now proceed more particularly to describe the same, and, for that purpose, shall refer to the several figures on the annexed sheets of drawing, the same letters of reference indicating corresponding parts in all the figures.

Figure 1 (sheet 1) of the drawing represents a side elevation of my machine, which I have found to answer well, in practice, for embossing the sides of metal capsules by means of a rotatory die;

Figure 2 (sheet No. 2) is a corresponding plan of the same;

Figure 3 (sheet No. 3) is an elevation of the front or driving-end of the machine, showing the capsule-mandrel and rotatory die; and

Figure 4 (sheet No. 4) is a similar view of the opposite end of the machine.

A is a base-plate, intended to be screwed or otherwise secured to a table or other convenient support.

B C are two brackets, which carry the bearings for the reception of the spindles D and E.

The bracket B, which contains the front bearing F of the spindle D, is, by preference, for the convenience of construction, bolted, as shown in fig. 1, to a smaller inclined bracket, B', cast, like the bracket C, on the base A.

The front bearing of the upper spindle is upon a stirrup, which is supported by springs, resting in turn upon brackets, secured to any stationary part of the machine, so that the bearing may yield, when subjected to downward pressure, for the purpose hereinafter described, the front end of the upper spindle working in a vertical slot on the top of the bracket B, to allow of such movement of the bearing H.

The two bearings, K and L, for the rear ends of the spindles D and E respectively, are both carried in the upright bracket C.

To the front end of the spindle E is fitted a conical rotatory metal mandrel, M, of the same taper as the capsule to be embossed, and composed of a metal sufficiently soft, say tin, to receive the impression from the engraved surface of the rotatory die N, having the design engraved thereon in relief.

This rotatory die N is to be of the same taper as the mandrel, and is secured onto the front end of the spindle D, which is more or less inclined, in order to insure a perfect contact or parallelism throughout the entire length of the two contiguous surfaces of the die and mandrel respectively, as will be clearly understood on referring to fig. 1 of my drawing.

In order to vary the angle of the axis of the die and mandrel to suit capsules of different taper, which variation is very slight, I raise or lower the rear bearing L of the capsule-spindle E, by means of the adjusting-screws O, and move the two spur-wheels P P, which gear the two spindles together along their respective spindles, in order to insure their continuing to gear together.

When it is desired to employ dies and mandrels of larger or smaller diameter, then both the front and rear bearings of the spindle E are to be raised or lowered together accordingly by adjusting-screws for the purpose, the wheels P P being shifted along their respective spindles, to insure their proper gearing together.

Both the mandrel M and rotatory or rolling die N are removable, in order to admit of different sizes and shapes of mandrels and dies being employed on the same machine.

The capsule to be operated upon may be placed either upon the mandrel or upon the die, the design being engraved accordingly.

On the lower end of the inclined spindle D there is keyed the spur-wheel Q, into which gears a spur-wheel, R, fast on the driving-spindle S, which works in the bearings T T, and is provided with a winch-handle, U.

V is a horizontal-lever handle, working on a fixed center, W, and having a curvilinear incline, X, formed upon its shorter end, which incline works between the fixed cross-piece, Y, screwed to the top of the bracket B, and the top of a sliding brass, Z, resting upon the upper spindle near its front end.

By moving the handle V more or less, it is obvious that the capsule which is to be operated upon may be subjected to any required degree of pressure between the surface of the rotatory die N and mandrel M, when, by turning the winch-handle U, the die and mandrel will be caused to revolve, and to produce a sharp embossing on the side of the capsule. As the metal of the capsule thus undergoes a slight extension between the mandrel and die, the capsule is slightly enlarged thereby, and may be removed from off the mandrel or die with ease after it has been embossed, even in cases where it fitted tightly in the first instance.

By the use of this machine capsules may be em-

bossed on the side at the rate of from ten to fifteen per minute.

Having now described and particularly ascertained the nature of my said invention, and the manner in which the same is or may be used or carried into effect, I would observe, in conclusion, that

What I consider to be novel and original, and therefore claim, is—

1. The shaft D, its adjustable pinion P, and die N, in combination with the inclined shaft E, its adjustable pinion P, die M, adjustable bearing and wedge X, all constructed and operating as specified.

2. The shaft E, adjustable at both ends, in combination with the shaft D and with pinions P P, adjustable on both shafts, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

W. BETTS.

Witnesses:
CHAS. MILLS,
W. D. WOOD.