

J. E. WELLS.

Machines for Making Sheet-Metal Covers.

No. 156,515.

Patented Nov. 3, 1874.

Fig. 1

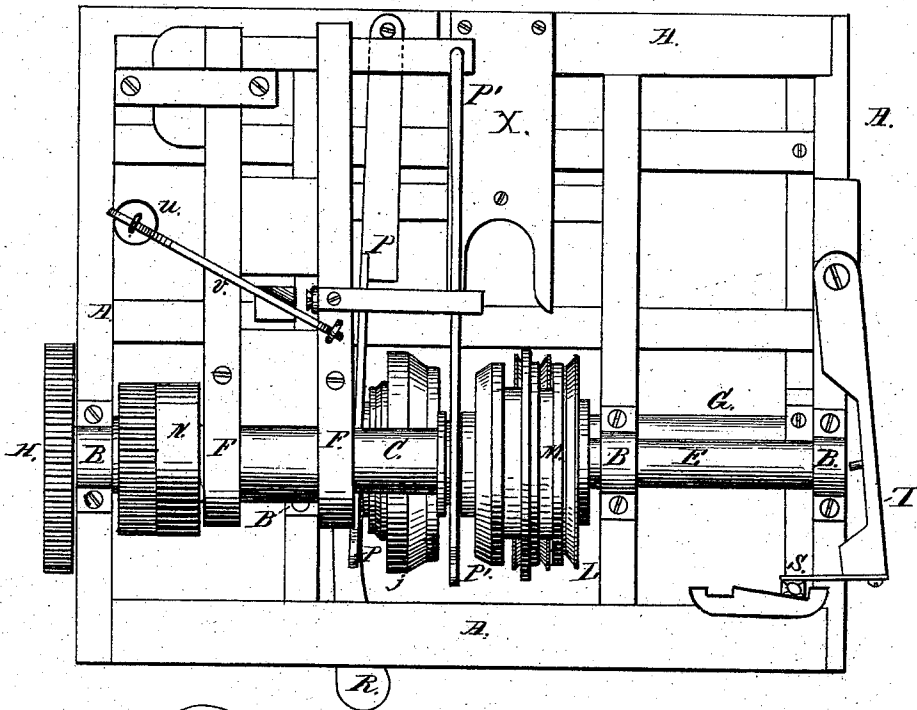
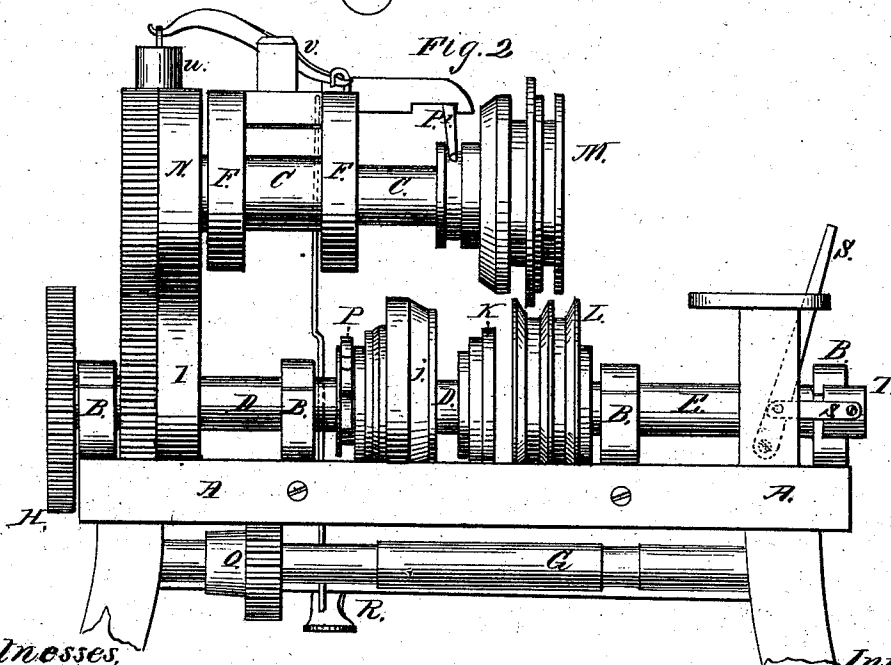


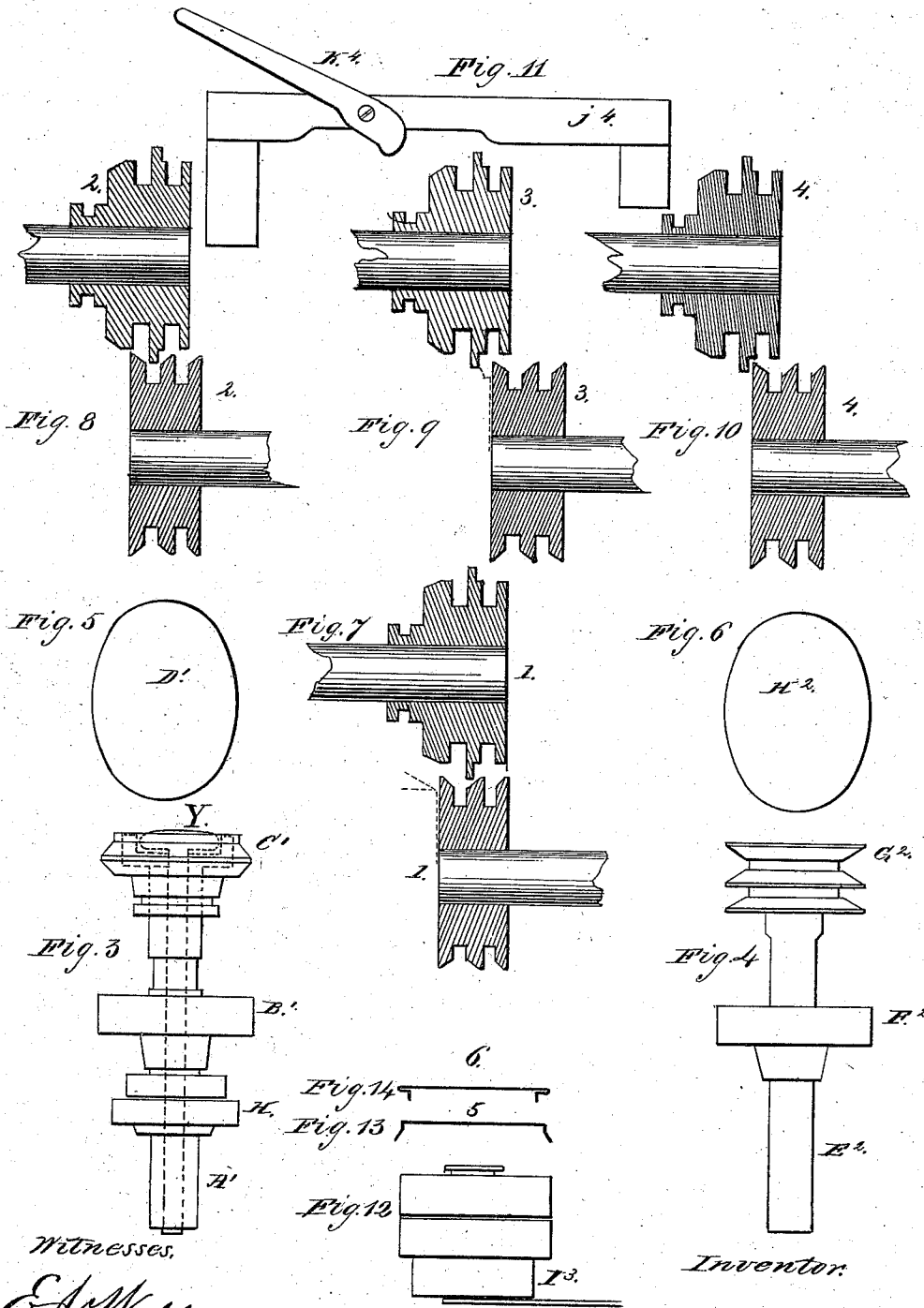
Fig. 2



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# UNITED STATES PATENT OFFICE.

JAMES E. WELLS, OF NEW MILFORD, CONNECTICUT.

## IMPROVEMENT IN MACHINES FOR MAKING SHEET-METAL COVERS.

Specification forming part of Letters Patent No. **156,515**, dated November 3, 1874; application filed July 7, 1873.

*To all whom it may concern:*

Be it known that I, JAMES E. WELLS, of the town of New Milford, in the county of Litchfield and State of Connecticut, have invented a new and useful Machine for Making Metal Lids or Covers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification—

Figure 1 being a top view of the machine; Fig. 2, a front view of the same; Figs. 3 to 14 being a view of machinery, and parts to be attached to said machine, for forming oblong articles, and for other purposes, hereinafter specified.

The nature of my invention consists in the construction, as more fully hereinafter set forth, of an improved machine for forming lids of any shape or size from a single plate of metal.

In construction it consists of the frame A, as shown in drawing, Fig. 1, on which are set in line two shafts, D and E, Fig. 2. On the outside end of shaft D is attached the driving-gear H, and on the opposite end the head K and shell J, which is set on a feather-key, and arranged to slide on or off the head K. To the end of the shaft E is secured the head L, the shaft E being arranged to slide in its boxes B. To the shaft C, hung in the movable frame F, is attached on one end the adjustable roll M, set on a feather-key, and arranged to move to its proper working position, and on the opposite end the cog-gear and roll N, arranged to connect, when brought down, with the gear and roll I on shaft D; which being of the shape and size of the lid to be made, and the gear N corresponding in size to the roll M, a perfect relative motion is secured.

It has not been deemed essential to minutely describe all the minor parts and operations, a simple explanation, with references, being given.

The shaft G, Fig. 2, is arranged for attaching cog-gear, connecting with gear on the shafts D and E, or other shafts in their place, to keep irregular-shaped heads in their proper position. The lever *v*, Fig. 1, with *u*, the weight, is to raise the frame F, and the treadle

R to press it down. The levers T and S are for pressing up and holding the shaft E and head L against the shaft D and head K and shell J. The lever P is to adjust the shell J. The lever P' is to regulate the adjustable roll M. The frame X is for attaching a circular cutter for bringing the metal to its proper size when square sheets are used. D', Fig. 5, shows the shape of the shell and head C', Fig. 3, and H<sup>2</sup> the shape of the head G<sup>2</sup>, Fig. 4. 1 1, Fig. 7, represent the roll M ready to be brought into position onto the heads K and L and shell J, (their general positions being more clearly shown in Fig. 2,) designed to strike the metal at an angle, bending it in the proper direction while adjusting itself. 2 2, Fig. 8, show them nearly in their working position in the first operation. 3 3, Fig. 9, show them ready for the second operation, designed to strike the metal at an angle to bend it down and back while adjusting itself. 4 4, Fig. 10, represent them nearly in their working position for the last operation. K<sup>4</sup> and j<sup>4</sup>, Fig. 11, are a frame and lever, attachable to the frame A, Fig. 1, for pressing up the die and plunger Y, Fig. 3, in the hollow shaft A' and head C', Fig. 3. 1<sup>3</sup>, Fig. 12, shows driving-gear and pulleys. 5, Fig. 13, represents the metal bent at the outside edge of the flange, and creased at the point designed for the angle to form the rim. 6, Fig. 14, represents a sectional view of a lid when finished.

To operate the machine a piece of metal of the proper size is placed against the head and shell K and j, Fig. 2, and the head L brought and secured firmly against it, the metal extending out from the shell sufficient to form the under edge of the flange and the rim of the lid. The movable frame F is brought down with the roll M, and the metal rolled down in the proper shape onto the shell j, when the frame F is raised up. The shell j is moved off of the head K, and the roll M, being adjusted, is brought down again, pressing the metal against the head L, forming the flange, and rolling it down onto the head K, forming the rim.

For oblong or irregular-shaped lids the heads, shell, and gear are constructed of the shape of the article to be formed, as shown in Figs. 3 and 4, and the shafts designed to work

in place of shafts D and E are connected by cog-gear with the shaft G, Fig. 2.

For stamped lids the shaft A', Fig. 3, constructed so as to fit in place of the shaft D, Fig. 2, is made hollow, with a depression in the head C' sufficient to receive a die connecting with a plunger running through the hollow shaft A', to which the lever K<sup>4</sup>, Fig. 11, may be applied, when desired. The shaft E<sup>2</sup>, Fig. 4, is also made to fit in place of the shaft E, and a depression is made in the head G<sup>2</sup> to correspond with the head C', Fig. 3.

It is evident that by this arrangement the metal for a lid of any shape or size may be turned at an angle more or less sharp, as may be desirable, forming the top and outside edge of the flange of the lid, and bending or creasing the metal at the point designed for the angle to form the rim by the proper application of rolls in the first operation, whereby the desired shape may be secured at the second and finishing operation.

It will also be seen that the particular shape of the top of the shell does not affect the result, except at the edge, making the size of the flange, the design of the shell being to hold the metal the full size of the flange for the application of rolls, which shall secure a perfect flange and rim in the subsequent operation, after the shell is removed.

I claim as my invention—

1. The shell J, in combination with the heads K and L, and the adjustable roll M and shafts D and E, substantially as described.

2. The combination of the hollow shaft A', Fig. 3, with the die and plunger Y and depressed heads C' and G<sup>2</sup>, Figs. 3 and 4, as shown and described, and for the purposes set forth.

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