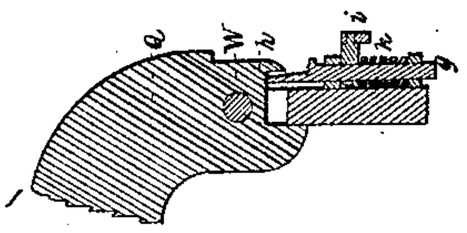
W. Lincoln,

Making Wire Dish-Covers.

No. 13,651. Patented Oct. 9, 1855.



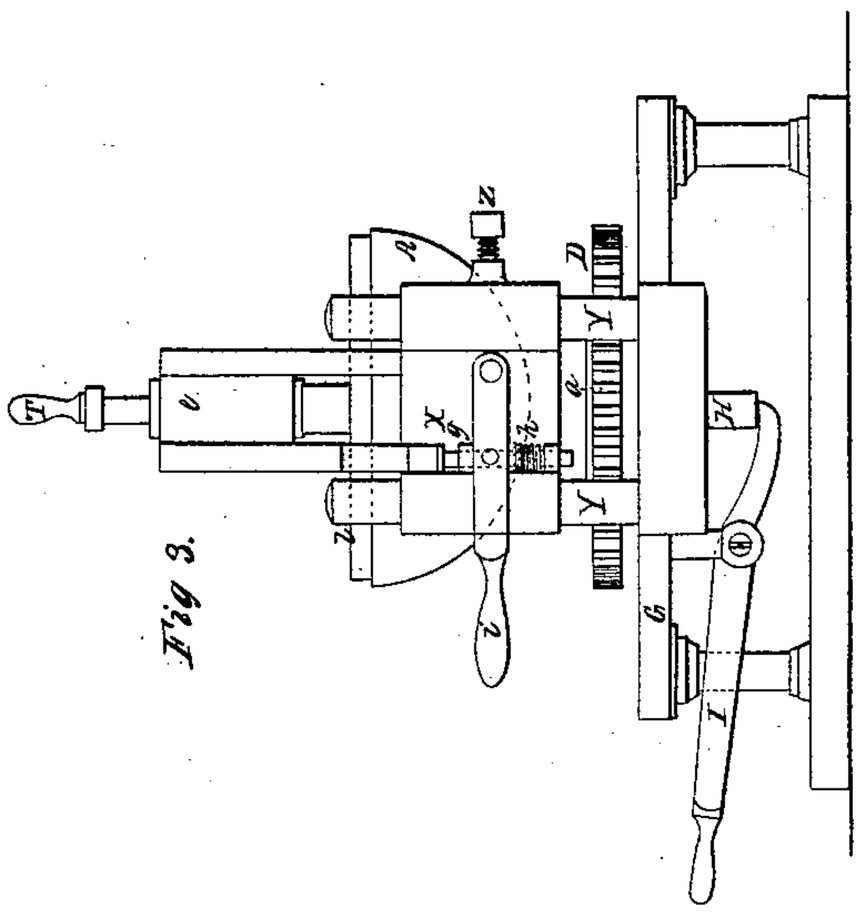


Fig 3.

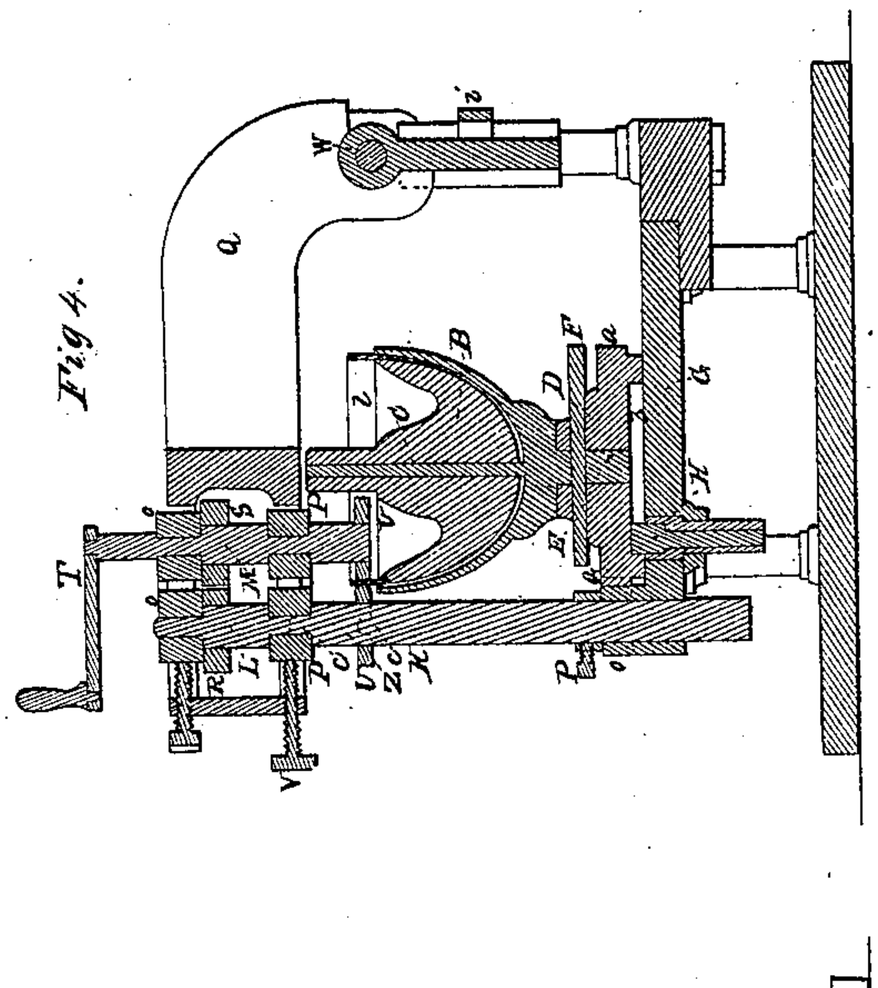


Fig 4.

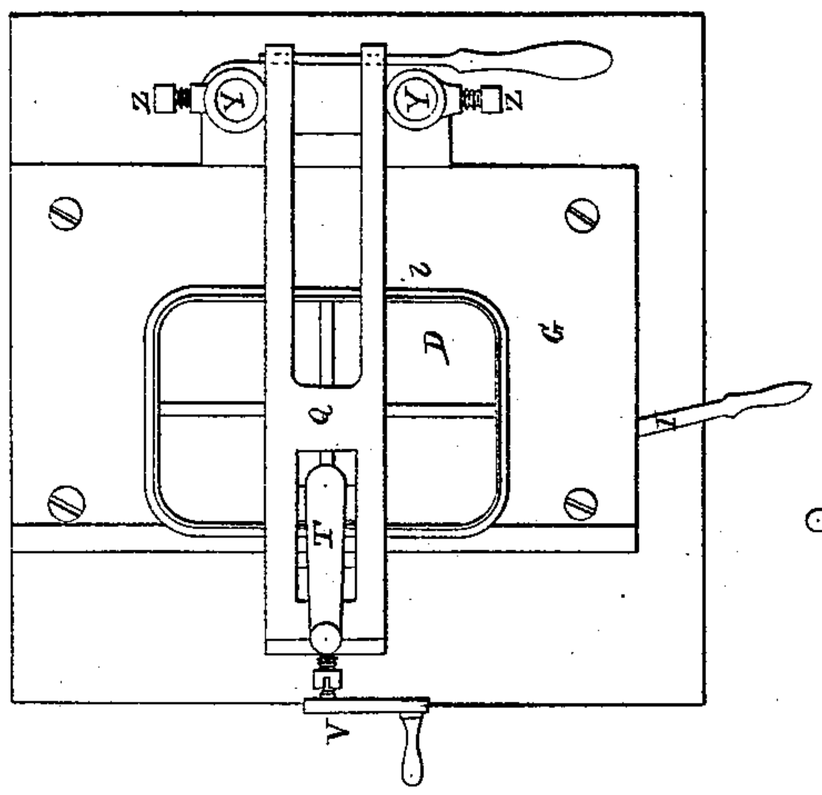


Fig 1.

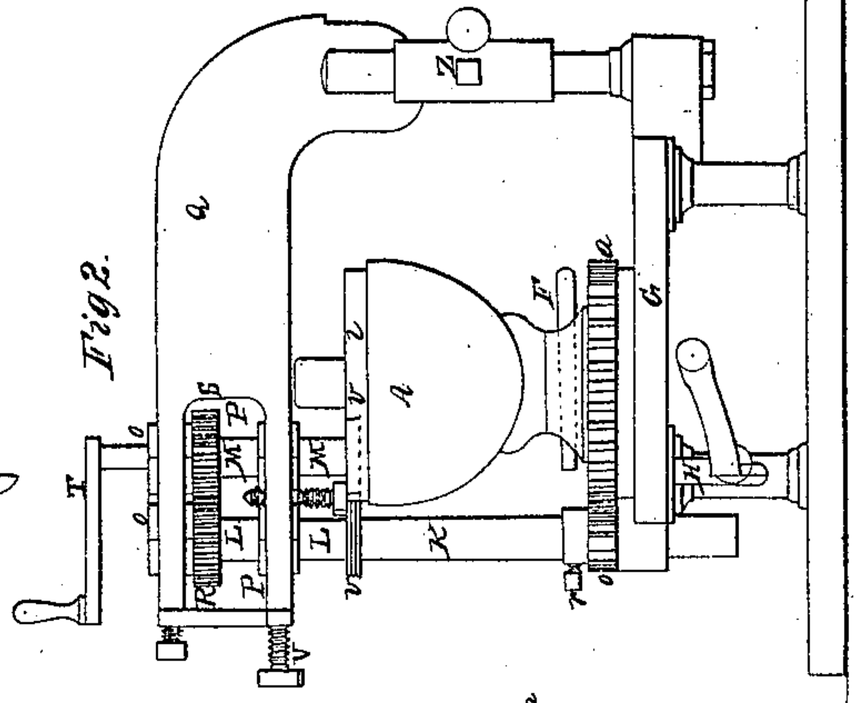


Fig 2.

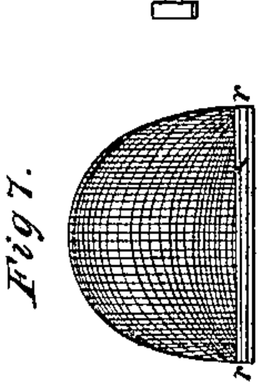


Fig 7.

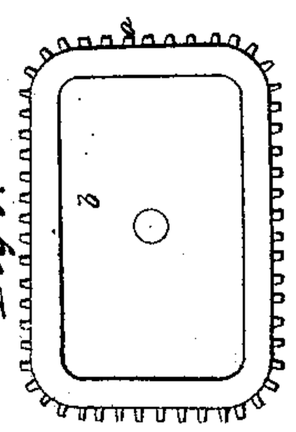


Fig 5.

UNITED STATES PATENT OFFICE.

WILLIAM LINCOLN, OF OAKHAM, MASSACHUSETTS.

MACHINE FOR MAKING WIRE DISH-COVERS.

Specification forming part of Letters Patent No. **13,651**, dated October 9, 1855.

To all whom it may concern:

Be it known that I, WILLIAM LINCOLN, of Oakham, in the county of Worcester and State of Massachusetts, have invented a new and useful Machine for Making Dish-Covers from Sheets of Woven Wire; and I do hereby declare that the same is fully described and represented in the following specification and in the accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 denotes a top view of the said machine; Fig. 2, an end elevation of it; Fig. 3, a rear elevation of it; Fig. 4, a vertical central and transverse section of it; Fig. 5, an under side view of its carriage or bed; Fig. 6, a section through the rear end of the turning-arm of the machine, and also through the bolt for locking said arm in a horizontal position. Fig. 7 denotes an end view of a wire dish-cover made by the said machine.

In carrying out my invention I employ a concave or cup die, A, and a convex die or follower, B, the latter being made so as to enter the former, as seen in Fig. 4.

From the central part of the bottom of the die A there is extended upward and through the follower B a spindle, C, which serves to guide the follower and centralize it and the sheet of wire-cloth during their passage into the cup-die A. The said die A is supported by a carriage, D. For convenience of operating with it the follower A is applied to the carriage B by means of a round tenon or spindle, E, arranged and made to enter the carriage, and it is prevented from turning around thereon by means of a pin, F, the whole being arranged as seen in Figs. 2 and 4. The carriage D is supported upon a flat bed or table, G, (see Figs. 1, 2, 3, and 4,) and has teeth or cogs formed around its perimeter, as seen at *a*. The lower part of the carriage is made with a recess, *b*, whose vertical boundary is concentric with the perimeter of the carriage, a guide-pin, H, being made to extend through the table G and into the recess *b*, as seen in Fig. 4. The said guide-pin rests upon or is jointed to a lever, I, by which it may be worked up and down, or, in other words, have its upper end depressed to or below the top surface of the table G.

Extending vertically above the table and revolving freely therein is a shaft, K, whose upper end is provided with a square tenon, *c*, which enters a corresponding socket, *d*, formed in the lower end of another vertical shaft, L, which, together with a similar shaft, M, is arranged and supported in two sets of sliding boxes, O O and P P, carried by an arm or goose-neck, Q, arranged as seen in the drawings. The said two shafts L and M are connected by gears R and S, and the latter shaft is provided with a crank, T, for the purpose of enabling it to be rotated. Each of the shafts L M carries a beading-roller, U, arranged as seen in Figs. 2 and 4, one of these rollers being moved either toward or away from the other by means of a screw, V, applied to the goose-neck Q and to the box P of the shaft L of the said roller. The arm or goose-neck Q turns on a horizontal fulcrum or pin, W, supported by a cross-bar, X, which is so applied to two vertical posts, Y Y, erected on the table G, as to be capable of being raised and lowered thereon and fixed in position by set-screws Z Z, arranged as seen in the drawings, the arm being made to turn from a horizontal into a vertical position, as the case may require. When in the former, it is held therein by a locking-bolt, *g*, which is applied to the bar X, as seen in Figs. 3 and 6, the bolt being made to enter a recess, *h*, formed in the arm, as shown in said figure. A lever, *i*, serves to depress the bolt, while a spring, *k*, is applied to said bolt for the purpose of elevating it.

In connection with the follower B, I employ in the process of making a dish-cover what may be termed a movable "rim" or "top," *l*. (See Figs. 1, 2, 3, and 4.)

The shaft K, hereinbefore mentioned, is adapted to the table G in such manner as to enable it to be raised in its bearing *n*, or lowered therein, as occasion may require, it being sustained in any position by means of a pinion-gear, *o*, fastened to it by means of a set-screw, *p*, (see Figs. 2 and 4,) the pinion being made to enter and work in the row of teeth *a a*, formed upon the perimeter of the carriage D.

Having thus described my machine, I will now proceed to explain the manner or process of making a dish-cover by means of it. The carriage D, with the dies A B, being removed from the table G, and the gage *l*, as well as the follower B, being withdrawn from the cup-die A, a sheet of woven wire perforated through

its center or middle part is laid upon the top of the die A, and with the spindle C extending through its perforation, the sheet being somewhat larger in size than necessary for the formation of the cover. This having been accomplished, the follower B is placed on the spindle C and forced down thereon, so as to press the sheet of woven wire downward and between the follower and the internal surface of the cup-die and impart to said sheet the form required. This done, the gage-hoop *l* is inserted in the upper part of the die A, as seen in the drawings; or it may have been placed there previous to compression of a sheet of woven wire, in which case the said sheet previous to its compression would rest on the top of the gage *l*. Next, with a pair of scissors or shears all that part of the wire sheet projecting above the gage *l* should be removed from the rest of the sheet, the gage serving as a guide for so trimming the woven wire. Next, the gage is to be removed, and what is termed the "running" or metallic rim fitted upon that part of the cover or woven-wire sheet which extends above the die A. In this condition of things the carriage D is brought up into gear with the pinion *o*, and so as to introduce the running or rim *r* (see Fig. 7) between the leading-roller *u u*. Next, the screw V is to be turned so as to compress the rim between the beading-rollers. This done, the crank T is to be revolved, such causing the carriage D to turn about and to carry the whole of the rim around between the beading-rollers, and bead or crease it so as to fasten it firmly to the woven wire extending into it, it being understood that the said rim overlaps the wire both internally and externally, or, in other words, is bent downward, so as to receive the sheet of wire into it in the usual way.

I would remark that the spindle C is a very important portion of my invention, for although a cover may be formed between the dies without the spindle being applied to them, it cannot be so well made, and is liable to be twisted more or less out of shape. With the spindle so used it can be very evenly and correctly made. The guide H, entering the space *b* and resting against the side of it, serves to maintain the carriage D in gear with the pinion *o*.

From the above description of the machine and its representation by the drawings it will readily be seen how all that part of it except the carriage D, and the dies A and B, and the gage *l* can be applied to another set of dies and carriage of similar form, but different in size.

In the above-described machine I claim—

1. The combination of rotary forming and holding dies A and B with beading mechanism applied to operate therewith, substantially as described.

2. The guide-spindle C, in combination with the cup-die A and follower B, substantially as described.

3. The carriage D, the guide H, the gearing *a o*, and shaft K, as combined with the dies and the beading mechanism.

4. Combining with the cup-die A the movable gage-top *l*, the same being in the manner and for the purpose as hereinbefore specified.

In testimony whereof I have hereunto set my signature this 7th day of September, A. D. 1855.

WILLIAM LINCOLN.

Witnesses:

JAMES ALLEN,

HANNAH P. ALLEN.