

(No Model.)

2 Sheets—Sheet 1.

G. A. MARSH.

MACHINE FOR HEADING SARDINE CANS.

No. 301,505.

Patented July 8, 1884.

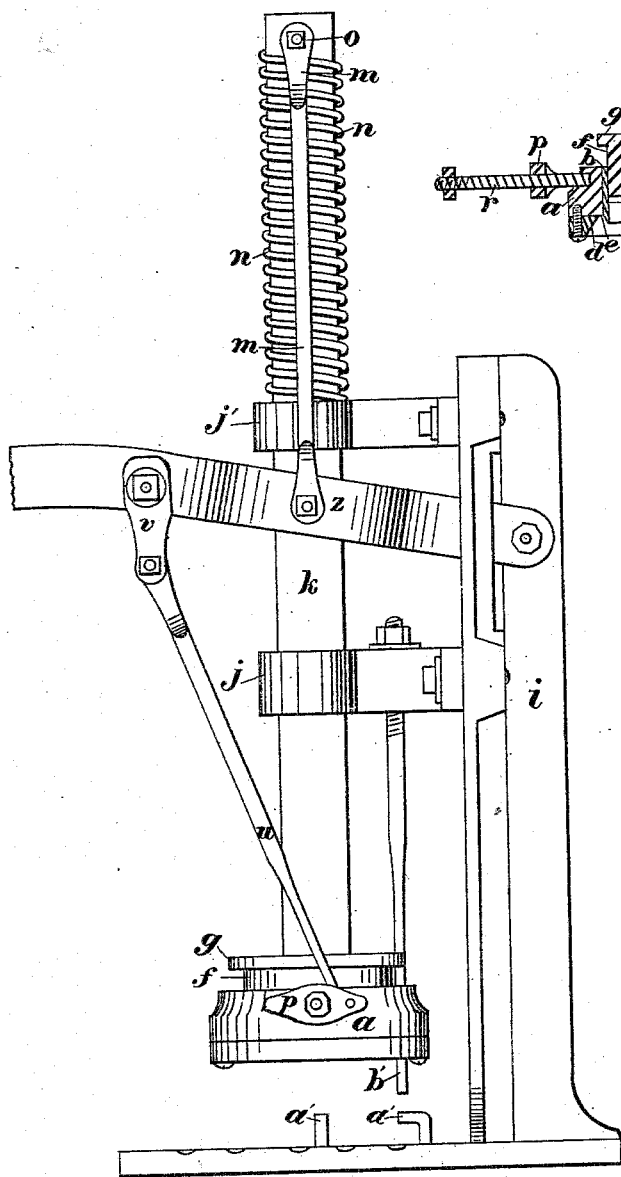


Fig. 1.

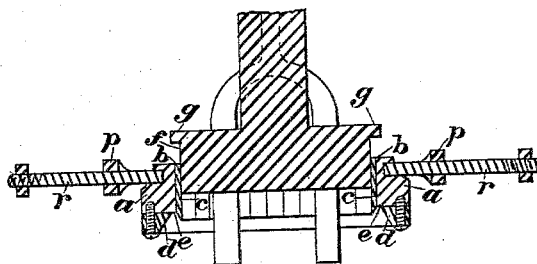


Fig. 2.

Witnesses
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by Geo. E. Bird
att'y

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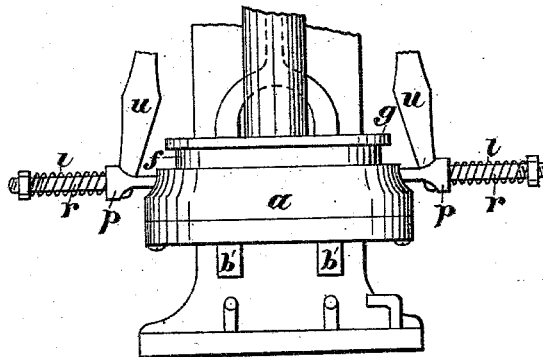


Fig. 3.

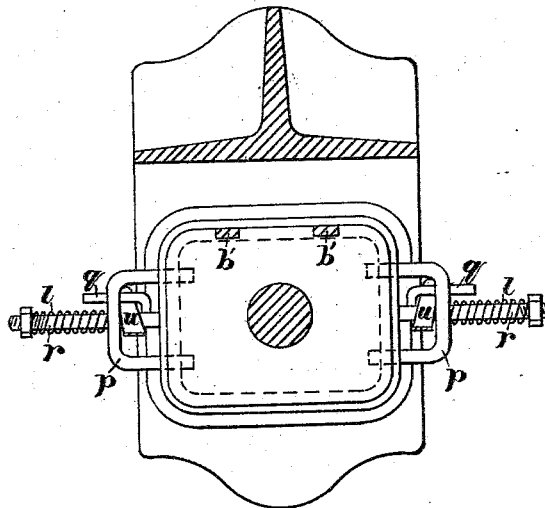


Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE A. MARSH, OF BRUNSWICK, MAINE, ASSIGNOR OF ONE-HALF TO
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MACHINE FOR HEADING SARDINE-CANS.

SPECIFICATION forming part of Letters Patent No. 301,505, dated July 8, 1884.

Application filed June 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. MARSH, of Brunswick, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Machines for Heading Sardine-Cans; and I do hereby declare that the following is a full, clear, and exact description of the invention, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of the machine. Fig. 2 is a transverse section of the lower part of the machine through the line *x y*. (See Fig. 4.) Fig. 3 is a front elevation of the lower part of the machine; Fig. 4, a top plan of the same.

The subject of my invention is a machine for heading cans, the covers of which are placed within the walls of the can and not outside them, as is the case in the ordinary round can used for packing purposes. The machine illustrated in the drawings is adapted for the heading of sardine-cans. The mechanism by which the heading of such cans is accomplished consists of a device for guiding the cover between the walls of the can and a device for forcing the cover between the walls. The guiding device as I have embodied it in this machine consists of a frame, *a*, of metal, having an opening within guides or fingers *c c*, which are attached, as described below, to a frame of metal, *a*, having an opening within of the same shape as the can to be headed. This opening in the frame should have perpendicular walls *b b*, and should be just sufficiently large to admit the cover of the can. Somewhat above the lower ends of the guides *c c* the walls of the frame cease to be perpendicular and become horizontal, forming a slight shoulder. Below the shoulder they may be beveled outward and downward until they are considerably larger than the walls of the can. The office of the beveled portion of the walls is to act in directing the guides or fingers within the walls of the can. Guides are preferably made of steel and attached to the walls at their upper ends. The walls *b b* should be grooved or slotted to receive them, and they should be attached to the walls by rivets or

bolts, but in such a manner that neither the guides nor the rivets or other means used to attach them shall project outside the surface of the wall, but be upon the same line with the surface thereof. The guides should project a slight distance below the shoulder *e*, and should at the ends be no thicker than is necessary to give them the required strength. In Fig. 2, *d* is the beveled portion, and *e* the shoulder. Within the walls *b b* is the device for forcing the cover between the walls, consisting of the plunger *f*, (having the shoulder *g*.)

For the purpose of operating the device the mechanism next described may be used. Upon a broad flat base is fixed the standard *i*, having the horizontal arms *j j'*, through circular openings in which is inserted the rod *k*, the lower end of which is rigidly attached to the plunger *f*.

Pivoted to the standard *i* is the lever *l*, which is bifurcated to surround the rod *k*. The coil-spring *n* surrounds the rod *k* between the arms *j'* and the bolt *o*, by which the rods *m m* are fastened to either side of the rod *k*. (See Fig. 1.) The lower ends of these rods *m m* are connected to the lever *l* on either side of the bifurcation.

Rigidly fixed to the frame *a* are the rods *r r*, one on either end. (See Figs. 3 and 4.) Upon these rods play the yokes *p p*, the rod passing through an opening in the yoke. (See Fig. 4.) The ends of the yokes pass through holes in the frame *a* into similar holes in the plunger *f*. When the yoke is in this position, (see Fig. 3,) the lower edge of the plunger should be but a short distance within the perpendicular walls *b b*. (See Figs. 2 and 3.) A coil-spring, *t*, surrounding the rod, presses the yoke inward. The office of the bent rod *q*, which is attached to the rod *r*, and passes through the yoke *p*, is to keep the yoke from turning on the rod *r*, and furnish a point of resistance for the wedges *u u*, which depend from the lever *l*. They are connected to the lever *l* by the arm *v*, which is pivoted thereto, and may be fixed at any desired angle by the set-screw. The lower ends of the wedges *u* pass between the yoke and the rod *q*.

Secured to the arm *j'*, behind the shaft or rod *k*, is the rod *b'*, which a short distance be-

low the arm j' is bifurcated. The bifurcations pass downward between the plunger f and the frame a , through slots in the wall b at the back of the frame a . The depth of these slots and the position of the bifurcations of the rod b' in them should be such that their front surface will be in the same line with the wall b , in which are the slots. At the points where the slots are made the guides $c c$ will, of necessity, be omitted.

The operation of the machine is as follows: The cover is placed within the frame a and forced upward between the guides $c c$ until the top rests against the plunger f . The can after being filled is placed upon the base h of the machine, directly beneath the beveled opening of the frame a . This position may be readily determined in practice by means of guides $a' a'$, fixed to the base at proper points. When thus placed, the inner wall of the can will be directly beneath the ends of the bifurcated rod $b' b'$, the purpose of which is to prevent the can from tipping during the operation of heading, and also to free the can from the guides when headed. The lever l is then depressed, the beveled portion of the frame passing downward around the can until the edge of the can meets the shoulder e , when the lower ends of the guides $c c$ will project somewhat below and within the edge of the walls of the can, thus insuring the passage of the cover within the walls, as without the guides any irregularity in or springing of the walls of the can would either prevent the passage of the cover or cause a breaking down of the walls. At this stage of the operation the wedges $u u$ have thrown the yoke p from the plunger f , which, being thus released, forces the cover within the guides between the walls of the can. As the lever rises upon being released, the rod b' prevents the box from following, and it is removed from the base to be succeeded by another. The surface of the base may be provided on either side with grooves (see Fig. 1) gradually increasing in depth as they approach the sides, to allow the oil which may be forced from the can to run into a pan or other receptacle which may be placed beneath the base. Greater or less throw may be given to the wedge-shaped rods u by altering the position of the arm v .

What I claim as my invention is—

1. In a machine for heading cans, (in which the cover is placed within the walls,) the combination of the guides or fingers for directing the cover, a device for directing the guides within the walls of the can, and a device for forcing the cover into the can.

2. In a machine for heading cans, the frame a , similar in shape to the can to be headed, and having the beveled portion d , shoulder e , perpendicular walls b , and guides $c c$, substantially as described.

3. In a machine for heading cans, the frame a , similar in shape to the can to be headed, and having the beveled portion d , perpendicular walls b , and guides $c c$, secured thereto, substantially as described.

4. In combination with the frame a , having the beveled portion d , the shoulder e , perpendicular walls b , and guides $c c$, the plunger f , substantially as described.

5. In a machine for heading cans which receive the cover within the walls, a device for guiding the cover, a device connected with the cover-guiding device for forcing the cover between the guides and into the can, and means for operating the several elements, whereby the forcing device is disconnected from the guiding device at the moment when the guides have entered the walls of the can.

6. In combination with the frame a and the plunger f , the rod r , spring t , arm g , yoke p , and wedge-shaped rods u , substantially as described, for the purpose set forth.

7. In combination with the plunger f , frame a , rod r , yoke p , spring t , and arm g , the rod k , with lever l , and wedge-shaped rods u , connected with the lever, substantially as described, for the purposes set forth.

8. In combination with the plunger f and frame a , the rod b' , substantially as described.

9. The combination of the guides $c c$, attached, as described, to the inner perpendicular walls of a frame, having the shoulder e , and the plunger f within the frame, for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of June, 1883.

GEORGE A. MARSH.

Witnesses:

J. E. BURNHAM,
GEO. E. BIRD.