(No Model.)

H. MILLER.

Machine for Seaming Cans.

No. 232,535. **Patented Sept. 21, 1880.**

Fig. 1.

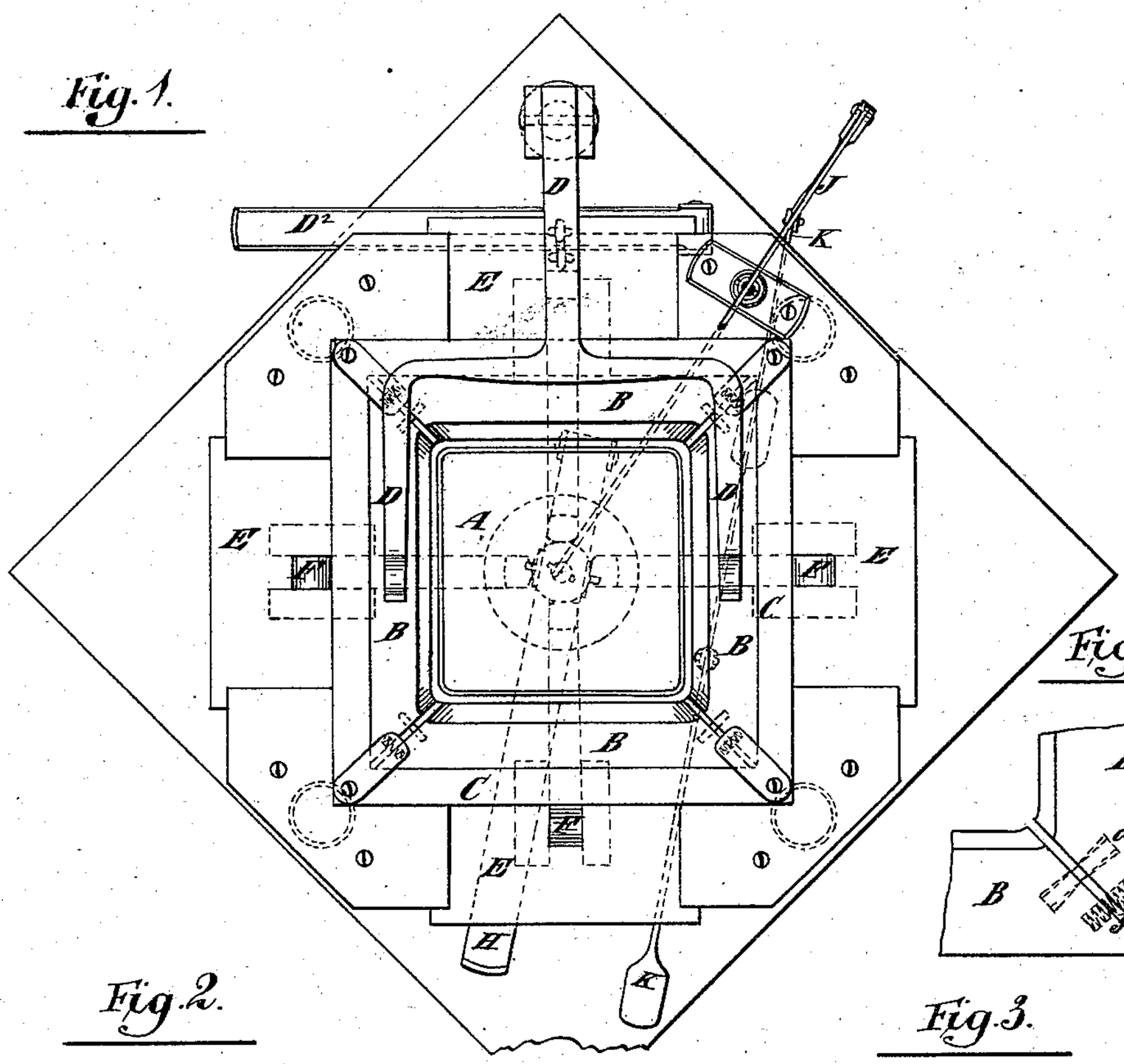
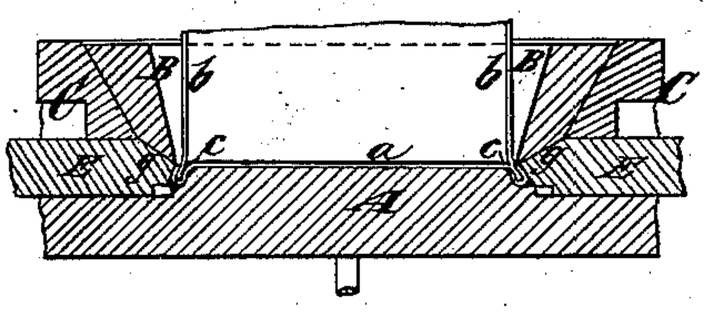


Fig. 2.

Fig. 4.

Fig. 3.



Witnesses:-

Louis M. Whitehead

Thomas E. Buck

Inventor:-

Herman Miller

by his Attorneys

Brown & Brown

UNITED STATES PATENT OFFICE.

HERMAN MILLER, OF NEW YORK, N. Y.

MACHINE FOR SEAMING CANS.

SPECIFICATION forming part of Letters Patent No. 232,535, dated September 21, 1880.

Application filed May 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, HERMAN MILLER, of the city, county, and State of New York, have invented certain new and useful Improvements in Squeezing-Machines for Closing the Seams of Cans, of which the following is a specification.

My invention relates to machines for closing the seams which join the heads to the body of a can, the body being first slightly flared outward at its edge and the head indented around its margin to form a groove for the reception of said flared edge, and then turned or closed in at the edge against the body to complete the joint. Such machines comprise a bed upon which the head is placed, and a throat projecting upward from said bed for the insertion of the body of the can.

It is very essential to the perfect closing of the seams in such a machine that the flared edge of the body should be properly placed or inserted in the indented groove in the head, and with the machines in common use very great care is required to be exercised in order to so insert it.

The object of my invention is to avoid the necessity for such extreme care in placing the bodies, and to provide for the placing of them upon the heads with greater facility, accuracy, and rapidity than is possible with the machines in common use.

To the above-mentioned end my invention consists in the combination, in such a squeezing-machine, with a bed for the head of the can, of a mouth or throat composed of or comprising adjustable sections, mechanism for moving said sections inward, so as to bring them to a position to coincide with or slightly overlap the edge of the can-head and form a guide for the accurate insertion of the body into the head, and mechanism for moving said sections outward, so as to enlarge the mouth or throat and permit the can to be conveniently removed.

The inward movement of the throat-sections may be effected in various ways. They may, for example, have inclined or tapered inner sides or faces, so as to form a funnel-shaped throat, and be fitted within a frame or ring having inclined sides, in which case the contraction of the mouth or throat may be effected by pushing the sections down, the taper of the frame or ring forcing them inward.

The movable jaws or dies by which the squeezing or closing of the seam is effected may be inclined upon their upper end surfaces, and if the lower edge of the throat-sections be correspondingly inclined the inward movement of said jaws or dies will raise the throat-sections and enlarge the mouth or throat, so as to permit the convenient withdrawal of the can.

The invention also consists in various details of construction and combination of parts, to be hereinafter explained.

In the accompanying drawings, Figure 1 represents a plan of a machine embodying my invention. Fig. 2 represents a vertical section thereof. Fig. 3 represents a section of the bed for supporting the can-head, the throat, and portions of the jaws or dies; and Fig. 4 represents a detail view, to better illustrate the construction of the throat-sections.

Similar letters of reference designate corresponding parts in all the figures.

A designates the bed of the machine, adapted to receive and support upon it the can-head *a*, indented around its margin to form a groove for the reception of the flared edge of the can-body *b*.

B designates the movable throat or mouth sections for guiding the can-body during the act of inserting its edge into the groove in the head. These sections may be constructed to form, as here represented, a rectangular throat, or they may be upon three sides only; or, indeed, two or four angular sections, adapted to fit upon the diagonally-opposite corners of a can, might be used. Four sections are here shown, each section forming one side of the throat, and united at the corners, so as to make a miter-joint with adjacent sections.

In connection with the movable throat-sections, I employ suitable mechanism for moving them inward, preparatory to inserting a can-body, until their inner faces coincide with or slightly overlap the edges of the can-head, so that in inserting the can-body in the throat it is guided directly into the groove in the head.

The movable sections are preferably tapered or inclined upon their inner faces, so as to form

a funnel-shaped throat, and are adjusted so that they do not bear hard upon the edge of the can-body until said edge passes the inner shoulder, *c*, of the can-head, and after the lower edge of said can-body leaves the throat, there being no other opening for it, it must pass directly into the groove in the head.

In connection with the movable throat-sections, I also employ mechanism for moving them outward, to increase the size of the throat when a can is to be withdrawn.

The movable throat-sections B might be constructed and arranged to have a horizontal movement inward to contract or increase the size of the throat; but, as here represented, the said sections are inclined or tapered upon the outside, and are fitted into a correspondingly inclined or tapered ring or frame, C. When so constructed it is, of course, obvious that a pressure exerted upon the top of the throat-sections will cause them to move downward and inward. The mechanism to exert this pressure, as here represented, consists of a bifurcated lever, D, operated by a rod, D′, from a treadle, D^2. This lever exerts a pressure upon opposite throat-sections, and as all are connected by dowels *d* (see Fig. 4) at their mitered corners, all will be simultaneously moved inward, contracting the throat equally on all sides.

E designates movable jaws or dies, which are represented as adapted to bear upon the four sides of the can, for squeezing or closing down the rim of the head upon the outwardly-flaring edge of the body. Each of the jaws or dies is operated by means of a lever, F, pivoted at *e*, and by means of a pusher, G, operated by a treadle, H, all of said levers may be oscillated and the jaws or dies all moved inward simultaneously.

After the closing of the joint some means is necessary to enlarge the throat to permit the convenient withdrawal of the can, and in the present instance this is effected by spiral springs *f*, inserted at the mitered corners of the throat-sections, as shown in Fig. 4, and acting to force said sections apart, which force, in conjunction with the inclined back of the throat-sections, raises them and enlarges the mouth or throat.

In order to effect the positive upward movement of the throat-sections the jaws or dies are shown as inclined or tapered at *g*, and bearing upon the under edge of the throat-sections, which are correspondingly tapered, raises the throat-sections positively and permits the springs *f* to act to spread the sections B.

In the operation of my machine a boy places the head *a* on the bed A and presses down the treadle D^2, bringing the bifurcated lever D down upon the throat-sections and contracting the size of the throat. The operator then inserts the can-body *b* in the throat, and as it is automatically guided to its seat in the head, no care is necessary in its insertion; but it may be placed carelessly therein, effecting a material saving of time.

I designates a presser-plate pivoted to a lever, J, and adapted, by means of a treadle, K, acting through a rod, L, to be brought to bear upon the top of the can-body. The operator steps upon the treadle K to hold the can securely in place, and finally steps upon the treadle H, thereby operating the jaws or dies and closing the joint E. The said jaws or dies, by their inclines *g* acting upon the lower faces of the throat-sections, raise the latter, thus enlarging the throat and permitting the easy and quick removal of a can.

It will be observed that the funnel-shaped mouth or throat not only forms a guide for the insertion of a can-body, but serves to square or true up the can-bodies to correct any irregularities in the lower flared edge thereof, which is especially advantageous in large cans made of thin metal, as such cans are more liable to become injured.

Although this machine is represented as adapted for rectangular cans, machines similar in operation might be constructed for closing round cans.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a squeezing-machine for cans, the combination, with a bed for supporting the head of a can, of a mouth or throat composed of or comprising movable sections, mechanism for moving said sections inward, so as to coincide with or slightly overlap the edges of the can-head, and mechanism for moving said sections outward, so as to enlarge the mouth or throat to permit the withdrawal of the can, substantially as specified.

2. In a squeezing-machine for cans, the combination, with a bed for supporting the head of a can, of a mouth or throat composed of movable sections having inclined outer sides, a frame or ring in which said sections are fitted having its inner wall or face correspondingly inclined, mechanism for depressing said throat-sections to cause them to move inward to contract the throat, and devices for raising said sections to permit them to move outward to enlarge the throat, substantially as specified.

3. In a squeezing-machine for cans, the combination, with a bed for supporting the head of a can, of a mouth or throat composed of movable sections having inclined outer sides and inclined lower edges, a frame or ring in which said sections are fitted having its inner wall correspondingly inclined, mechanism for depressing said throat-sections to cause them to move inward to contract the throat, and movable squeezing jaws or dies having inclined upper faces, which, when said jaws or dies are moved inward, bear against the inclined lower edges of the throat-sections and raise the latter, substantially as specified.

4. The combination of the bed A, the mov-

able throat-sections B, the inclined or taper frame or ring C, and the lever D, bearing upon opposite throat-sections, substantially as specified.

5. The combination of the bed A, the throat-sections B, springs *f*, interposed between said throat-sections, the frame or ring C, mechanism for depressing the throat-sections, and the movable jaws or dies E, inclined upon their upper surfaces, and adapted to raise the throat-sections by their inward movement, substantially as specified.

HERMAN MILLER.

Witnesses:
FREDK. HAYNES,
E. P. JESSUP.