Julius Meining's

Machine for cutting Oval and Round Tin Bottoms

117095

Fig.1. PATENTED JUL 18 1871

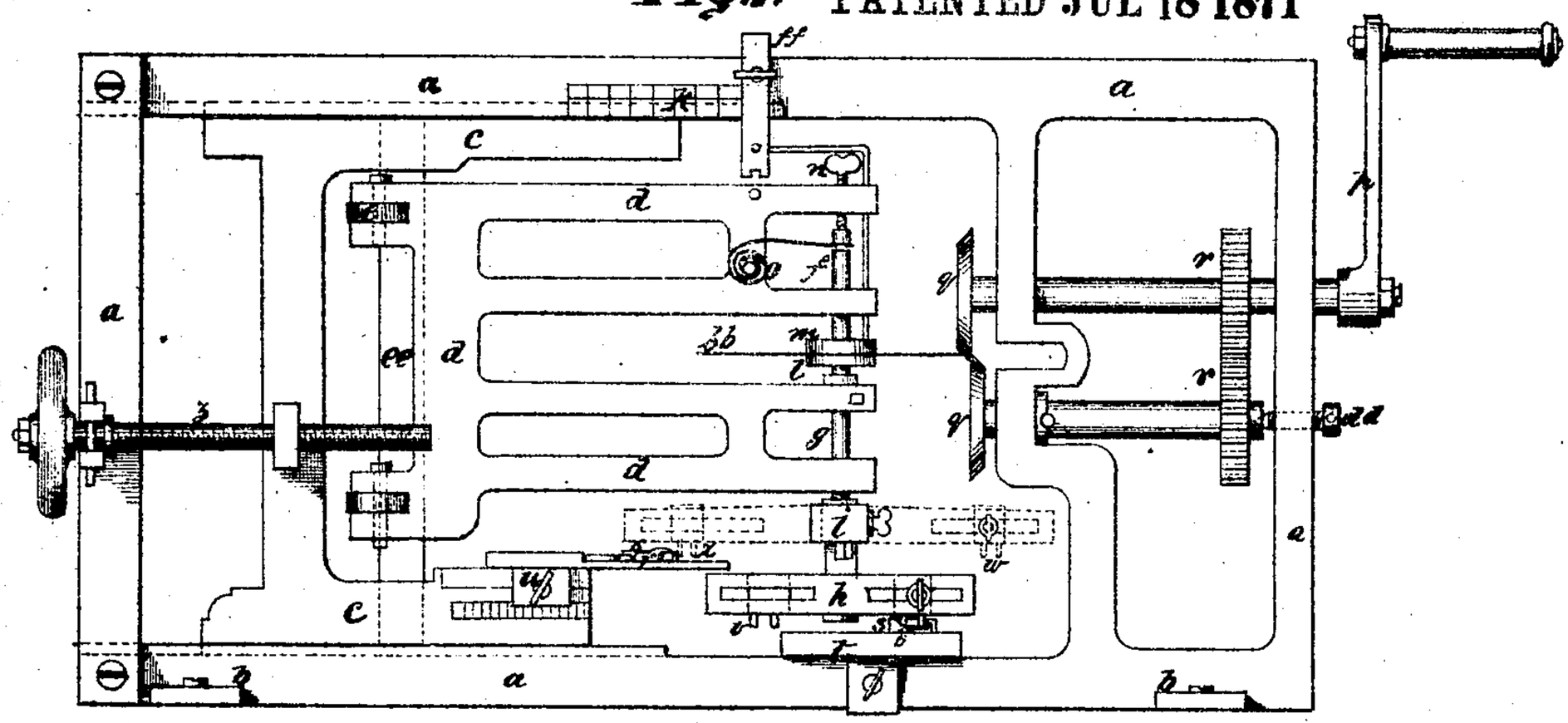


Fig.2.

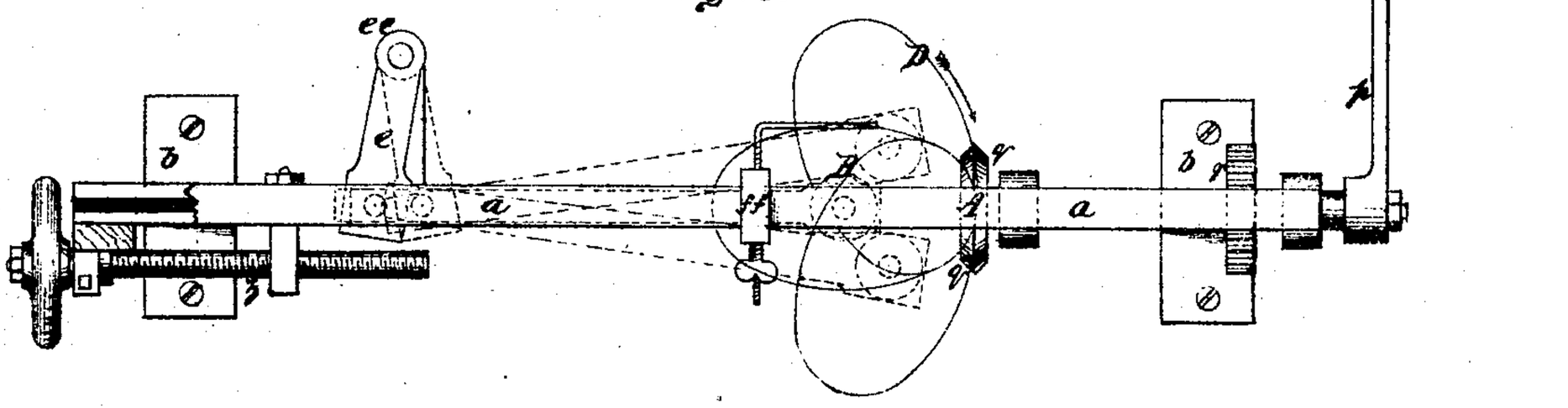


Fig.4.

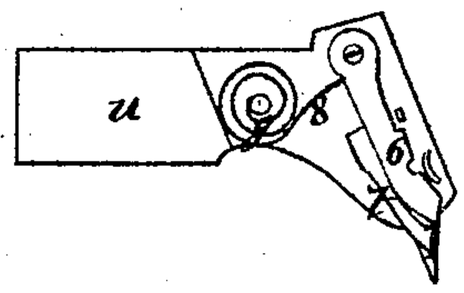
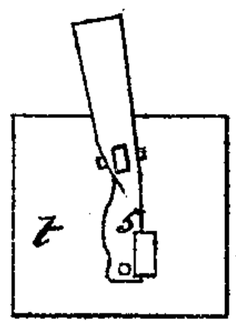


Fig.3.



Witnesses.

Robert Seeger.
Adolph Geldreich.

Inventor.

Julius Meinig.

117,095

UNITED STATES PATENT OFFICE.

JULIUS MEINIG, OF CINCINNATI, OHIO.

IMPROVEMENT IN MACHINES FOR CUTTING OVAL TIN BOTTOMS.

Specification forming part of Letters Patent No. 117,095, dated July 18, 1871.

To all whom it may concern:

Be it known that I, JULIUS MEINIG, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a machine for cutting oval and round tin bottoms for the use of tin-ware manufacturers, of which the following is a specification:

The object of this machine is: 1st, that it may be used for cutting both oval and round bottoms. 2d, that the work is done with greater speed and accuracy than if done by hand. 3d, that it dispenses with the arduous labor occasioned by the use of hand-shears and the inconvenience of marking after a pattern.

Figure I is a profile of the machine. Fig. II is a view of the machine as seen from the top. Fig. III is a plate with an oscillating lever attached and fastened to the bottom of the machine. Fig. IV is also a plate, having a spring-latch and small lever attached, and is fastened to the machine in a like manner as Fig. III.

a in Fig. I is a frame securely fastened by bolts passing through the feet *b* to a wooden stand or bench. In the upper and lower parts of the frame *a* are the grooves *a a*, Fig. II, in which the frame *c* is moved backward and forward by the screw *z*. *e e* is a shaft having the arms *e* attached and resting between projections from the top and bottom of the frame *c*. The frame *d* is connected by the arms *e* to the shaft *e e*. *f* and *g* are shafts running vertically through the frame *d*, and having the flanges *l* and *m* attached to their upper and lower ends. *n* is a set-screw for raising and lowering the shaft *f*. *o* is a spiral spring, which assists in raising the shaft *f*. *i* and *h* are beams attached to the lower end of the shaft *g*, crossing each other at right angles, one above the other, and are provided with slots for the reception of the pins *s v* and *w x*. *u* and *t* are plates, adjusted to the frames *a* and *c* by means of a screw. The plate *t*, Fig. III, has the oscillating lever 5 adjusted to its upper surface, having a hole in it for the alternate admission of the pins *s* and *v* on the beam *h*. The plate *u*, Fig. IV, shows the latch 6, the small lever 7, and the spring 8, which operate in the same manner, in alternately admitting the pins *w* and *x* on the beam *i*, as the lever 5 in admitting the pins *s* and *v* on the beam *h*. The additional pins on each of the beams are for the purpose of assisting the pins before described, and their action will be shown in describing the operation of the machine. *q q* are the shears, connected by the cog-wheels *r r* and set in motion by the crank *p*. *d d* is a screw for setting the shears.

The operation of the machine for cutting ovals is as follows: The square sheet *b b*, Fig. I, from which the oval is to be cut, is placed between the flanges *l* and *m* and held firmly, by lowering the shaft *f* and tightening the screw *n*, and the edge of the sheet brought in contact with the shears. By turning the crank *p* the sheet is drawn into the shears in the direction of the arrow. The power exercised upon the sheet by the shears brings the whole machine into motion. When the square sheet *b b* is in a parallel position to the shears one of the pins, *s v* or *w x*, on the beams *i* and *h*, is held confined in either of the plates *u* or *t*. Upon turning the crank *p*, and thereby drawing the sheet into the shears, the shafts *f* and *g*, together with the sheet *b b* and the beams *i* and *h*, revolve. If the pin *s*, on the beam *h*, is confined in the hole of the lever 5 the half of the short arch, from A to B, Fig. II, will be described by the action of the shears upon the sheet, which moves the frame *c* backward upon its hinge at the shaft *e e*. The revolving of the shafts *f* and *g* brings the beam *i* to bear upon the small lever 7, Fig. IV, raising it sufficiently to withdraw a small pin at its lower end, thereby allowing the pin *w* on the beam *i* to push back the latch 6; when the shafts *f* and *g* have revolved sufficiently to bring the pin *w* opposite the cavity in the latch 6, the spring 8 forces the latch back, and the small lever 7 falls into its position and confines the pin *w*. At the same time that the pin *w* has been caught by the latch 6 the pin *s* on the beam *h* has been released by its neighboring pin, which has forced down the lever 5 and allowed it to escape. When the pin *w* has been caught by the latch 6 and the pin *s* released, the long arch from A to D, Fig. II, is described. When the point D has arrived at the shears the pin *v* on the beam *h* has forced down the lever 5 on the plate *t*, and on coming over the hole the lever falls down and confines the pin. The pin *w* is released at the same time the pin *v* is confined by its neighboring pin, which forces back the latch 6 slightly and thereby allows it to escape from its place in the latch. The short arch from A to B, Fig. II, is next described. Upon the point B arriving at the shears the pin

x on the beam i has been confined by the latch and the pin v released. The long arch from A to D, Fig. II, is again described, the oval being now on the opposite side of the first long arch. When the point D has again arrived at the shears the pin x has been released and the pin s again confined. The last half of the short arch from A to B, Fig. II, is now described, which completes the oval and brings the machine into the position it occupied upon the beginning of the operation. When round bottoms are to be cut the plates w and t are removed, thereby preventing the pins s and v and w and x on the beams i and h from being confined in the plates. The clamp $f\ f$ is lowered, which secures the frame d in parallel position to the shears. This completes the change, and round bottoms can be cut as easily as oval bottoms. The gauge k is for the purpose of regulating the size of the bottoms, and the gauges upon the beams are for regulating the shape of the oval. The machine will cut bottoms varying in size from four to eighteen inches. The wire hook attached to the clamp $f\ f$ is used as a gauge in placing the sheet $b\ b$ between the flanges l and m.

I claim as my invention—

1. The combination, with the cutters, of the pivoted frames $d\ e$, the former carrying a rotating clamp for the blank sheet, as and for the purposes set forth.

2. The shaft g, carrying the beams h and i, having pins $s\ v\ w\ x$, as and for the purposes set forth.

3. The adjustable plate t, carrying the perforated weighted lever 5, as and for the purposes set forth.

4. The construction and arrangement of the perforated lever 5 relatively to the pins s and v in beam h, as and for the purpose set forth.

5. The adjustable plate u, carrying the notched latch 6, its pawl 7, and spring 8, as and for the purposes set forth.

6. The combination of the double pins w and x in beam i with the latch 6, as and for the purpose set forth.

7. The arrangement of the pawl 7 relatively to the ends of the revolving beam i, as and for the purpose set forth.

8. The combination and arrangement of the beams h and i and their stops or latches 5 and 6, as and for the purpose set forth.

JULIUS MEINIG.

Witnesses;

ROBERT SEEGER,

ADOLPH GELDREICH.