

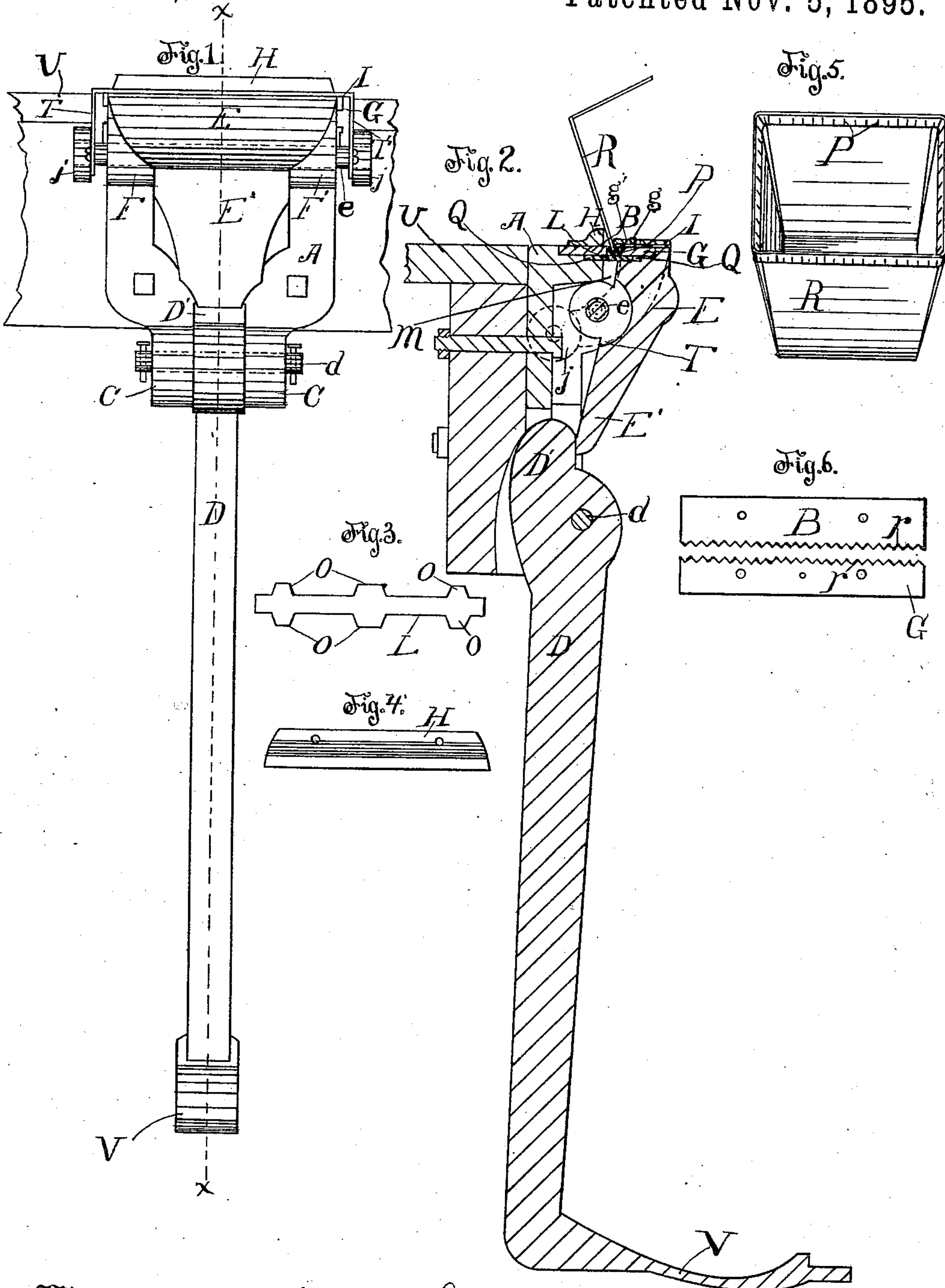
(No Model.)

2 Sheets—Sheet 1.

J. G. LETTELIER.
BOX MACHINE.

No. 549,375.

Patented Nov. 5, 1895.



Witnesses.
W. M. Lee.
Alfred D. Townsend.

John S. Lettelier
Inventor.
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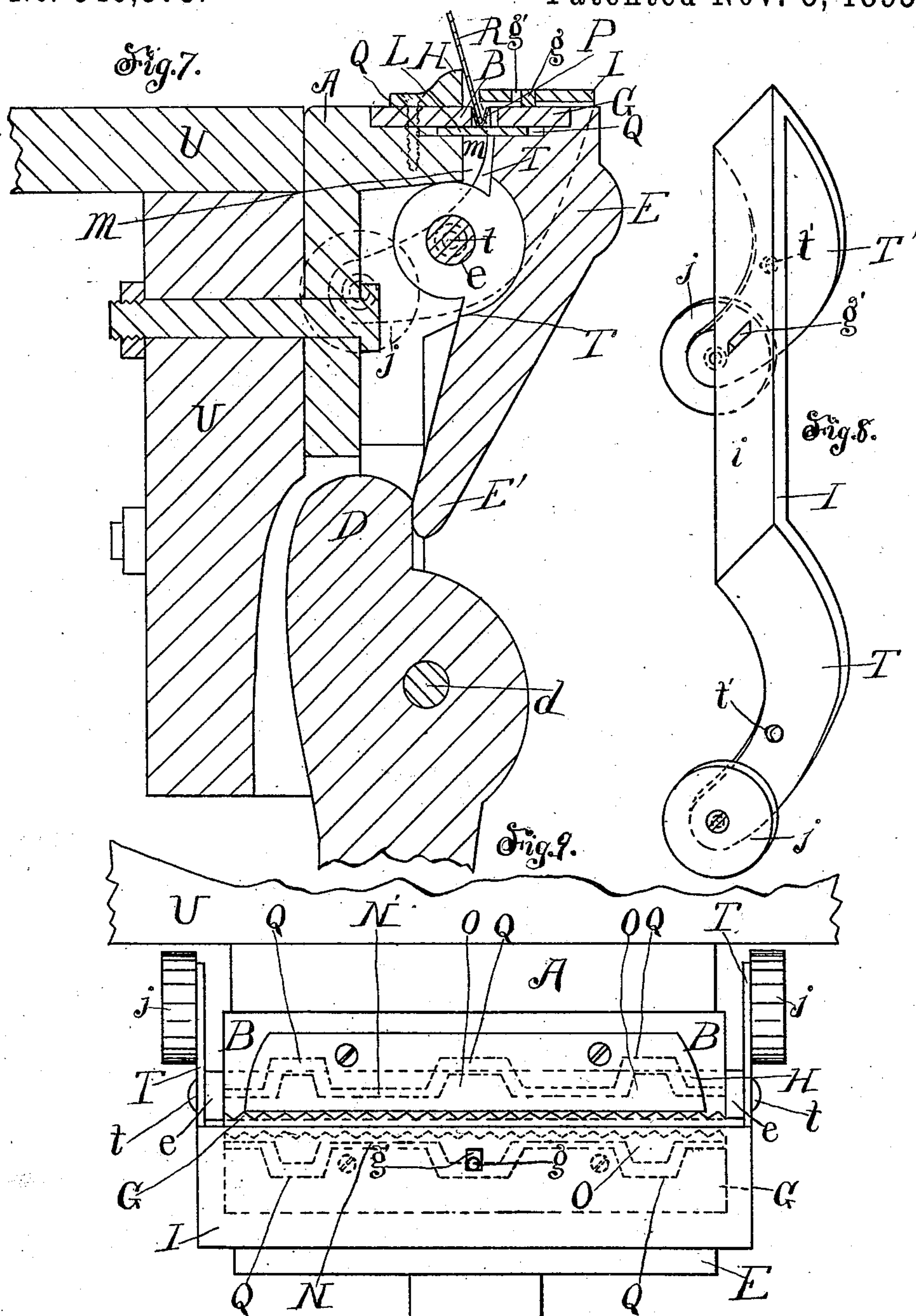
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UNITED STATES PATENT OFFICE.

JOHN G. LETTELIER, OF LOS ANGELES, CALIFORNIA.

BOX-MACHINE.

SPECIFICATION forming part of Letters Patent No. 549,375, dated November 5, 1895.

Application filed January 5, 1891. Serial No. 376,799. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. LETTELIER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Improvement in Box-Machines, of which the following is a specification.

My invention relates to that class of machines which are used to crimp a U-shaped binding-strip of tin upon the top of berry-boxes.

In making boxes of this class difficulty has been experienced in securing the pressure necessary to crimp the tin binding-strip firmly upon the wood and at the same time secure rapidity of action. Another difficulty has been that the thin materials of which such boxes are usually made is often warped and difficult to insert into the channel of the binding-strip, and much time is often consumed in properly inserting it.

The object of my invention is to overcome these difficulties; also, to afford ease and comfort to the operator and enable him to perform more work in less time and to work longer with less weariness than was heretofore possible with box-machines run by manpower. I accomplish this by means of the device described herein, and illustrated in the accompanying drawings, in which—

Figure 1 is a front view of my improved machine ready for use. Fig. 2 is a cross-section of the machine. Fig. 3 is a plan view of my improved loose binding-strip-supporting base-plate. Fig. 4 is a plan view of my improved fixed guide. Fig. 5 is a perspective view of the completed product of my machine. Fig. 6 is a plan view of the serrated jaws. Fig. 7 is an enlarged view of the upper part of the machine attached to its table or support U. Fig. 8 is a perspective view of my improved gravity-guide. Fig. 9 is a plan view of the machine attached to a fragment of its table or support, the foot-piece of the pendent momentum-lever D being broken away to contract the view.

My invention consists of the combination of the fixed jaw, the movable jaw-lever pivoted near its upper end, so that the line of its center of gravity falls outside of its pivot and provided with the jaw upon its upper inner face, the pendulum foot-lever pivoted

near its upper end and having its shorter arm arranged to engage the lower arm of the jaw-lever to operate the jaw-lever to force the movable jaw toward the fixed jaw and having its longer arm provided at its lower end with a foot-piece V, the whole being constructed and arranged substantially as shown in Fig. 2, whereby the force of gravity of the parts will operate to cause the movable jaw to be retracted from the fixed jaw, and the foot-lever is adapted to swing as a pendulum while operating the jaw.

My invention also comprises a loose binding-strip-supporting base-plate arranged underneath the operative faces of the jaws, a fixed guide, and a movable guide arranged to guide the box material into the slot of the binding-tin.

It also comprises a loose base-plate L, arranged to support the binding-tin, and two guides H and I, arranged to guide the box material into the slot of the binding-tin.

My machine is formed of a base or body piece A cast in one piece, the upper front side of which is formed to receive the jaw B, which is secured thereto by means of screws or other suitable means. The base-plate A is provided at its lower end with two outwardly-projecting arms C C, and between these two arms is pivoted the heavy pendent momentum foot-lever D by pivot *d*. Between the jaw B and the pivot *d* is pivoted the movable jaw-lever E by pivot *e* between arms F F', projecting from the base-plate A. This movable jaw-lever is pivoted in such a manner that the line of its center of gravity falls outside of the pivot *e*, thus causing the jaw to open from its own weight, until the lower and longer end of such jaw-lever rests against the short arm of the foot-lever D. The jaw-lever E is also adapted to receive the removable jaw G, which is secured thereto in the same manner as the jaw B is secured to plate A. The jaws B and G are correspondingly serrated. Just back of the serrated edge of the jaw B, I attach a fixed guide H by means of screws screwed through the guide into jaw B, and which guide extends upward about five-eighths of an inch above the serrated edge of the jaw B.

The automatic gravity-guide I is composed of the guide-plate *i*, the inner lateral edge of

which projects beyond the serrated edge of the jaw G when said jaw is open, and the said guide is pivoted to the ends of the pivot *e* by means of pivots *t t*, passing through pivot-holes *t' t'* in the curved arms T T' and into the ends of the pivot *e*, and the lower ends of such arms are provided with weights *j j*, which throw the guide into position automatically. Springs may be used to throw the guide-plate into position; but I prefer to use the force of gravity. This guide-plate is prevented from projecting too far over the edge of the jaw G by means of a pin *g*, attached to the said jaw, and which pin projects upward through a slot *g'*, cut in the guide-plate *i*.

The fixed guide H is secured to the jaw B by screws or other suitable means, so that the outer edge of the guide is coincident with the base of the serrations in said jaw.

To sustain the tin binding-strip P in such a position that the jaws E and G will clasp it in the manner desired, I provide a loose binding-strip-supporting plate L, which extends laterally across the longitudinal open space *m* beneath the jaws B and G and plays loosely in slots N N', which extend partially under the jaws B and G, and are held from displacement by means of the lugs O, which extend outwardly into recesses Q in the base-plate A and jaw-lever E. This holds the tin binding-strip at the proper height and does not bind the movable jaw-lever when forced toward the base-plate.

By casting the base-plate A in one piece and pivoting the movable jaw-lever E and the heavy foot-lever D both to the solid base-plate A there can be no shifting of the parts under the severe strain to which machines of this class are subjected when in use.

A special improvement which I claim over all other machines of this class is the peculiar appliance shown for giving rapid and at the same time powerful movement for the crimping of the tins with a minimum of exertion on the part of the operator. This improvement comprises as its essential feature the pendent foot-lever D, arranged to swing like the pendulum of a clock and provided at its bottom with the projecting foot-piece V, fixed to its lower end and having its short arm arranged to engage with and operate the jaw-lever E. By this appliance a very slight exertion upon the part of the operator serves to produce the power for the crimping, it only being necessary to actuate the foot-lever sufficiently to keep up its pendulous motion, the momentum of the foot-piece and the lever to which it is attached, together with that of the foot of the operator, being sufficient to exert the force necessary to produce the crimping.

My invention is distinguished from all other box-machines of which I am aware in that the movement of the foot with my machine is in a horizontal arc, while with the machines heretofore in use the foot movement has been up and down. Furthermore, with my machine,

in which the foot-lever is made to swing like the pendulum of a clock, the foot-piece forms a support for the foot and leg of the operator at all parts of the stroke, both at the return stroke, the advance stroke, and also when the lever is at rest, and this adds very greatly to the comfort of the operator, so that the work can be performed with much less fatigue than would be the case if the lever were arranged to come to rest when or before it reaches the perpendicular, instead of being allowed to swing freely in each direction beyond the perpendicular.

The manner of using my invention is as follows: The lever D, being free, swings into the position shown in Fig. 2, the jaws B and G being then separated about one-quarter of an inch. The binding-strip of tin is placed between the jaws G B and rests upon the binding-strip supporting plate L with the channel upward. The operator then takes a strip of box material R and places the end thereof in the channel of the tin binding-strip P. Since the rear guide H is solidly fixed, the box material can be held at an angle thereagainst, while the front movable guide is pressed against the end of the box material just above the binding strip. Any warp or twist which may be in the box material is straightened out and the end of the strip of box material is guided into the channel of the binding-strip of tin without difficulty. The operator then swings the lever D backward, and the upper short arm D', engaging with the lower longer arm E' of the movable jaw-lever E, moves it outward, and the upper shorter arm, provided with the serrated jaw G, moves toward the serrated jaw B and presses the binding-strip and the box material firmly together. The lever is then allowed to swing into the same position as at first, and the jaw-lever E opens with its own weight and the operation is repeated in the same manner.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A box machine having the pivoted jaw lever, and having the pendent foot lever pivoted near its top and arranged to swing like the pendulum of a clock and provided at its bottom with the projecting foot piece fixed to its lower end, and having the short arm of the foot lever arranged to engage with and operate the jaw lever.

2. The combination of the base plate, provided with the jaw fastened to its upper front face, the movable jaw lever pivoted to the base plate near its upper end, so that the line of its center of gravity falls outside of its pivot, and provided with the jaw on its upper inner face; the foot lever pivoted to the base plate and having its shorter arm arranged to directly engage the longer arm of the jaw lever; the pivoted gravity guide and the fixed guide.

3. The combination of the base plate, the

fixed jaw secured thereto; the movable jaw lever provided with a jaw pivoted near its upper end to the base plate; the pendent swinging foot lever provided with the foot piece fixed thereto and pivoted near its upper end to the base plate, and having its shorter arm arranged to engage the movable jaw lever below its pivot.

4. The combination of the fixed jaw, the pivoted movable jaw, the lever pivoted near its upper end and arranged to engage the

movable jaw below its pivot, and the loose, binding strip-supporting base plate.

5. In a box machine the combination set forth of the jaws; the fixed guide; the movable guide; and the loose binding strip supporting base plate.

JOHN G. LETTELIER.

Witnesses:

M. C. GALER,

ALFRED I. TOWNSEND.

It is hereby certified that in Letters Patent No. 549,375, granted November 5, 1895, upon the application of John G. Lettelier, of Los Angeles, California, for an improvement in "Box-Machines," an error appears in the printed specification requiring correction, as follows: In line 27, page 2, the word "are" should read *is*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 26th day of November, A. D. 1895.

[SEAL.]

JNO. M. REYNOLDS,
Assistant Secretary of the Interior.

Countersigned:

JOHN S. SEYMOUR,
Commissioner of Patents.