

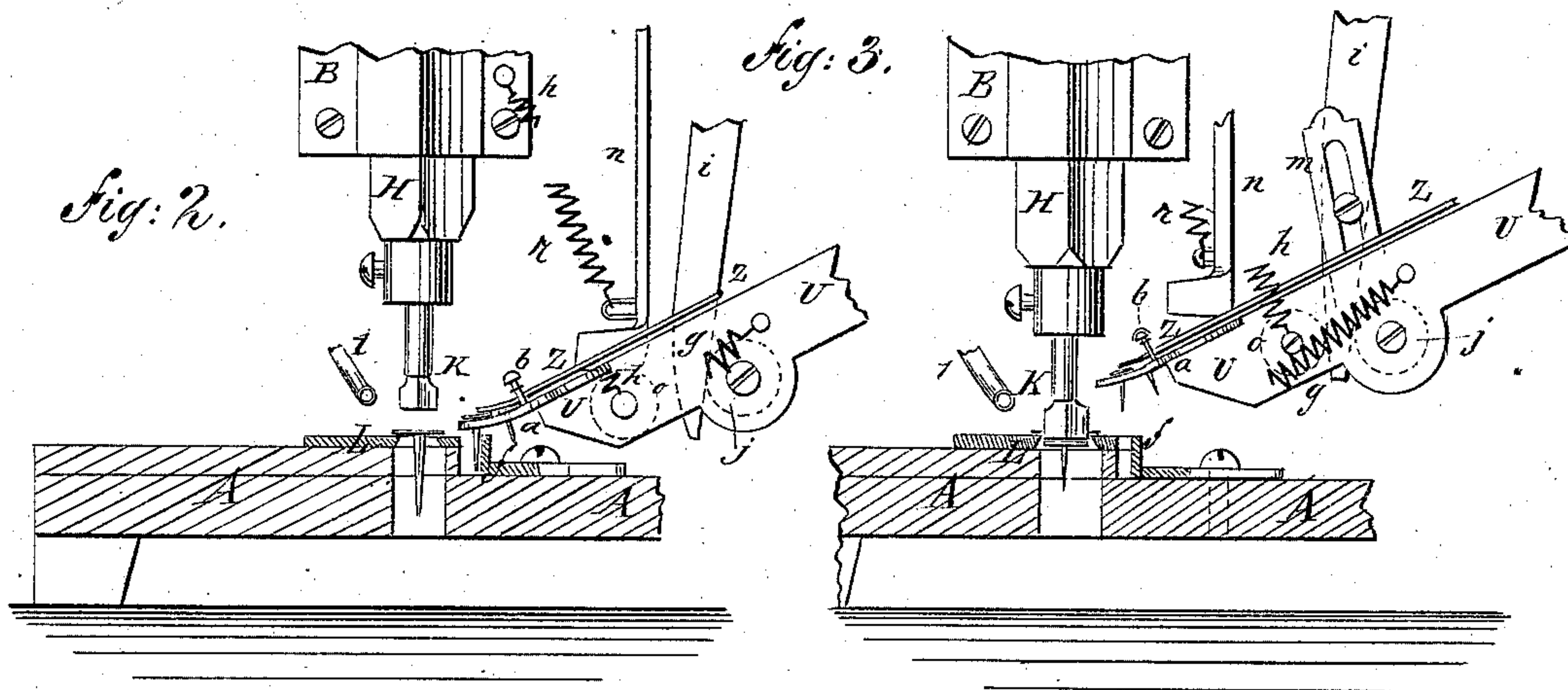
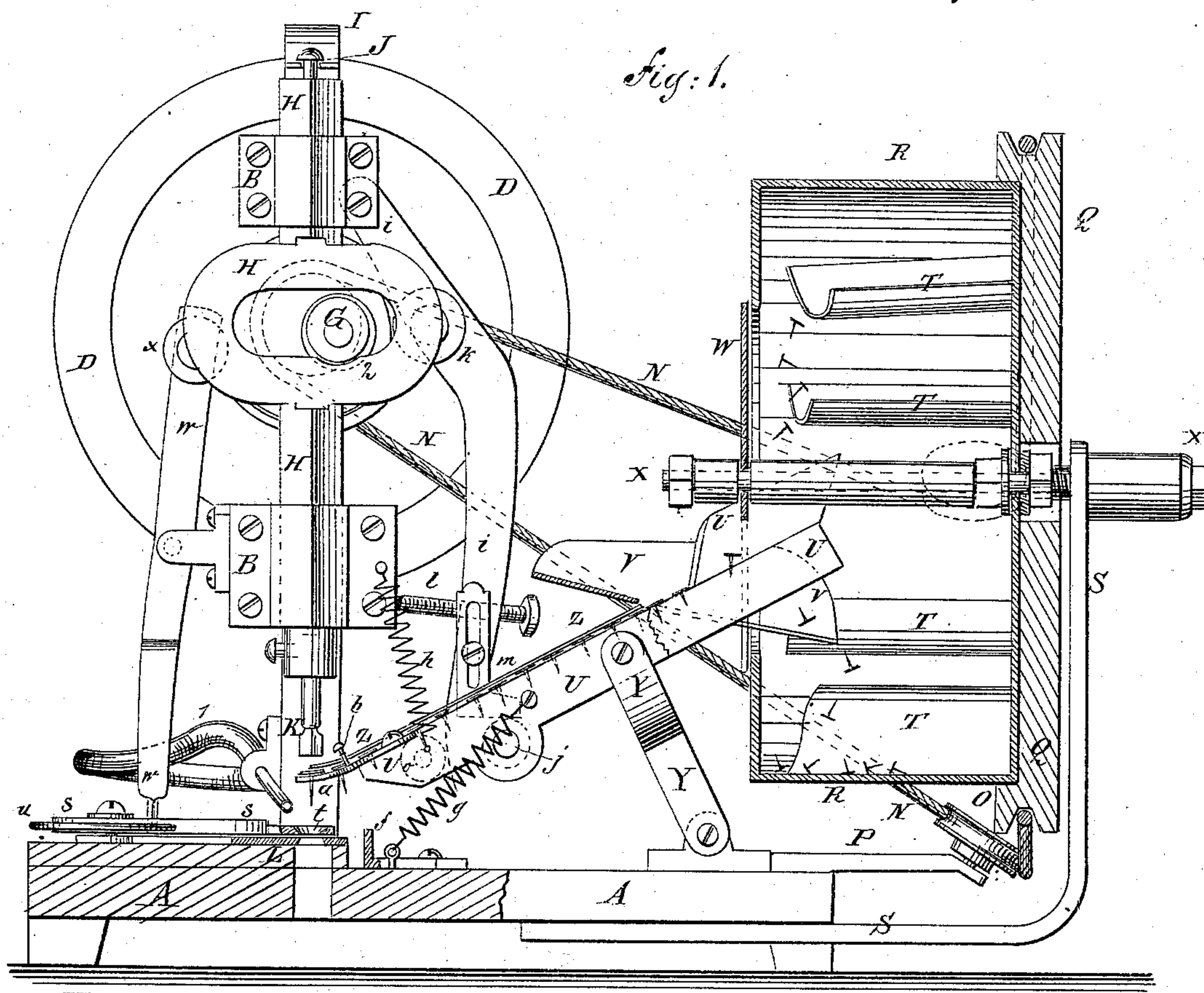
(Model.)

4 Sheets—Sheet 1.

J. HYSLOP, Jr.

Machine for Shaping the Heads of Tacks, &c.
No. 241,368. Patented May 10, 1881.

Patented May 10, 1881.



WITNESSES:

WITNESSES:
Chas. Viola
C. Sedgwick

INVENTOR:

INVENTOR:
J. Hyslop Jr.
BY *Alvin Ho*
ATTORNEYS.

ATTORNEYS.

(Model.)

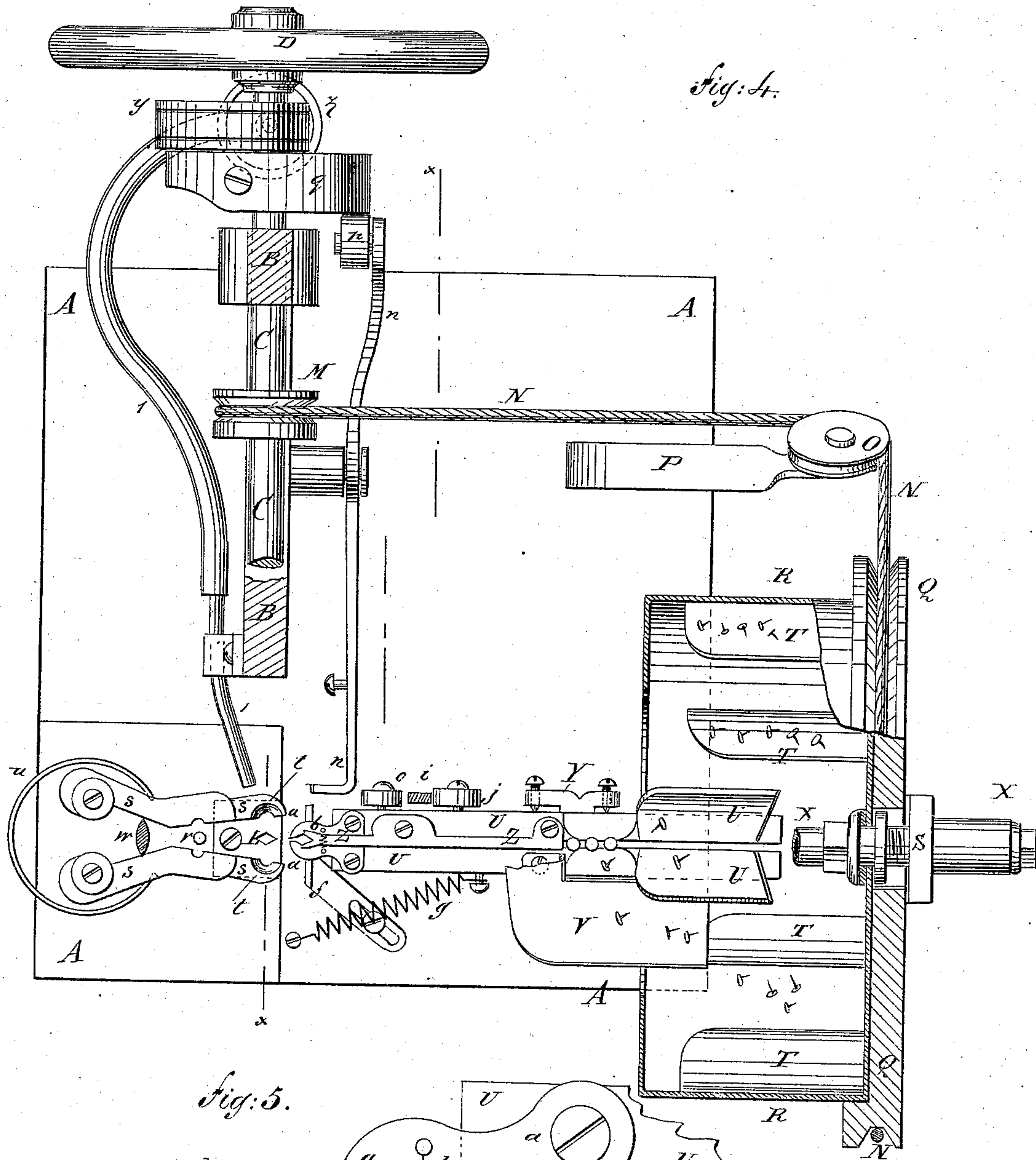
4 Sheets—Sheet 2.

J. HYSLOP, Jr.

Machine for Shaping the Heads of Tacks, &c.

No. 241,368.

Patented May 10, 1881.



WITNESSES:

Chas. Nida
C. Bugnick

INVENTOR:

J. Hyslop Jr.
BY
ATTORNEYS.

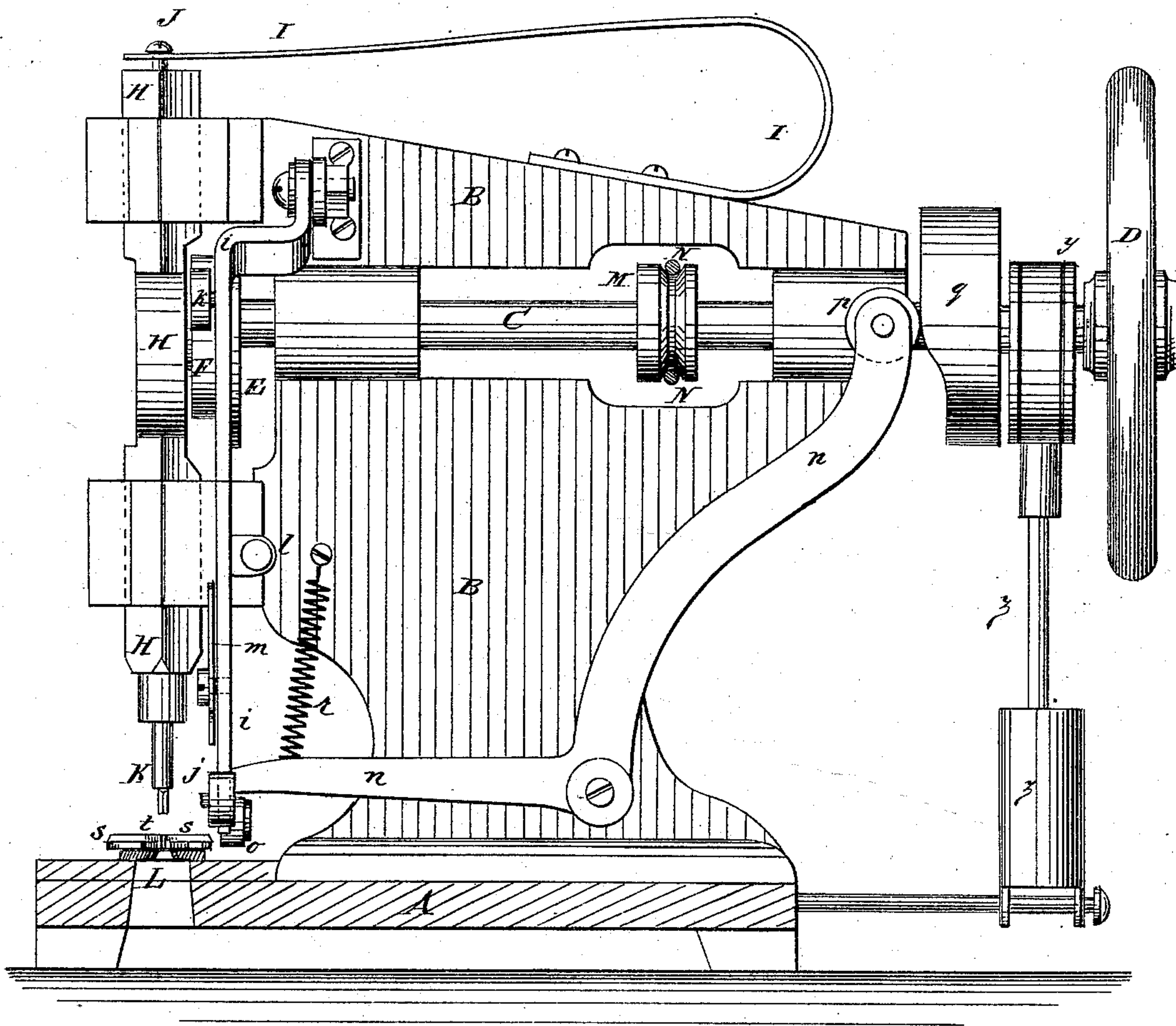
(Model.)

4 Sheets—Sheet 3.

J. HYSLOP, Jr.

Machine for Shaping the Heads of Tacks, &c.
No. 241,368. Patented May 10, 1881.

Fig: 8.



WITNESSES:

Chas. Nida
C. DeGurich

INVENTOR:

J. Hyslop Jr.
BY *Amos H.*
ATTORNEYS.

(Model.)

4 Sheets—Sheet 4.

J. HYSLOP, Jr.

Machine for Shaping the Heads of Tacks, &c.

No. 241,368.

Patented May 10, 1881.

Fig. 6.

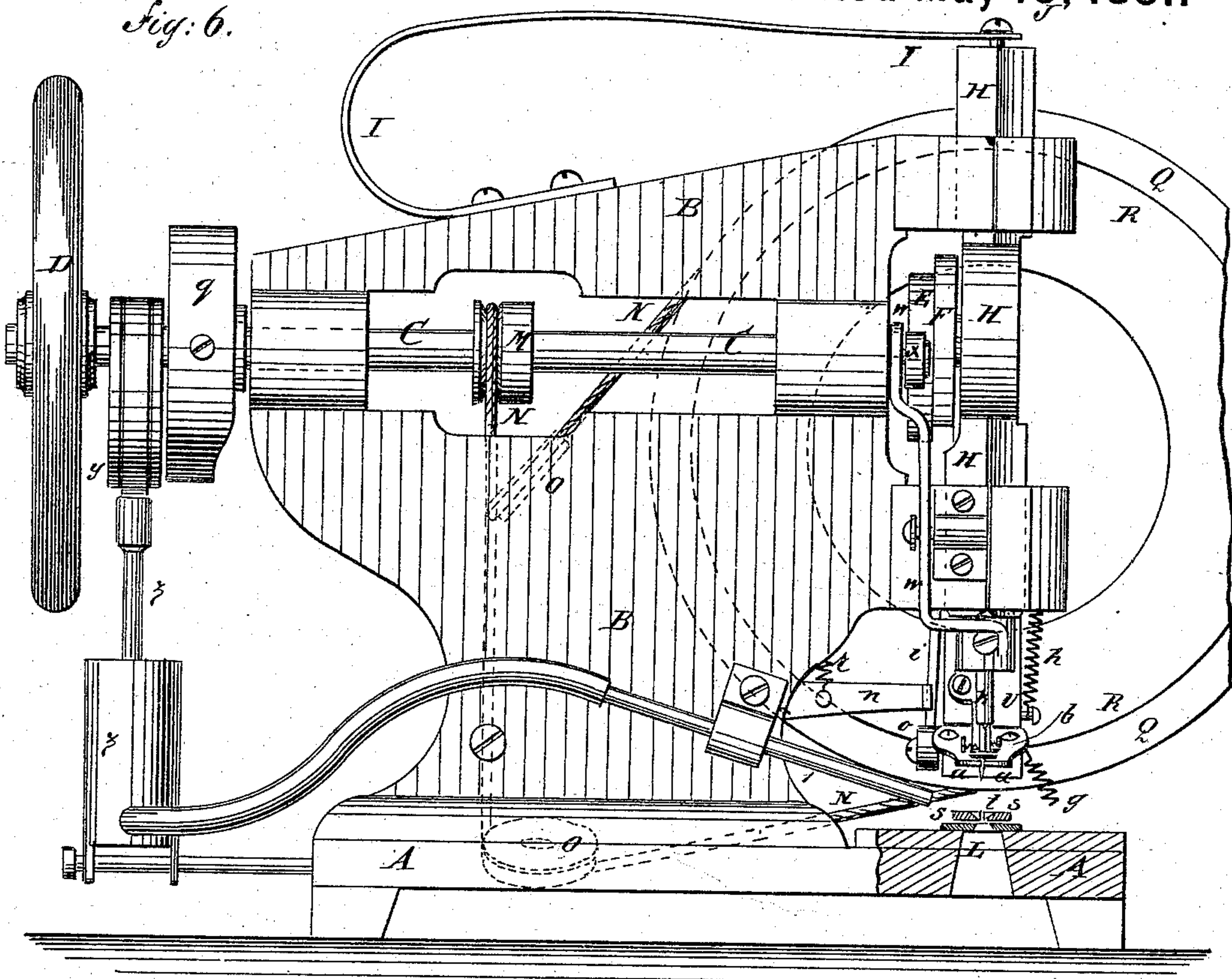
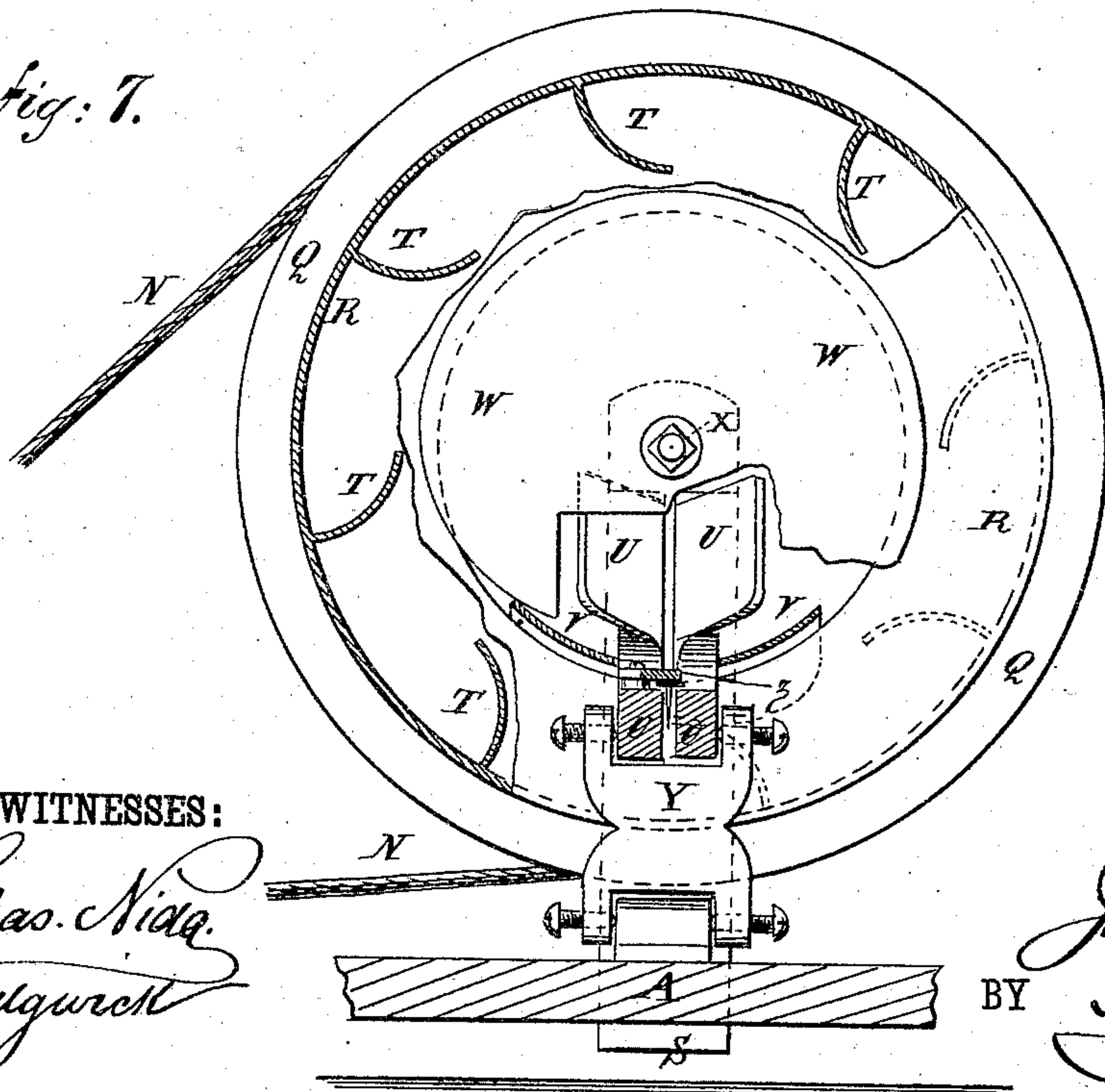


Fig. 7.



WITNESSES:

Chas. Nida.
C. Senguer

INVENTOR:

J. Hyslop Jr.
Attorneys.

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN HYSLOP, JR., OF ABINGTON, MASSACHUSETTS, ASSIGNOR TO THE
ABINGTON TACK AND MACHINE ASSOCIATION, OF SAME PLACE.

MACHINE FOR SHAPING THE HEADS OF TACKS, &c.

SPECIFICATION forming part of Letters Patent No. 241,368, dated May 10, 1881.

Application filed November 5, 1880. (Model.)

To all whom it may concern:

Be it known that I, JOHN HYSLOP, Jr., of Abington, in the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Machines for Shaping the Heads of Tacks, Nails, and Rivets, of which the following is a specification.

Figure 1, Sheet 1, is a sectional front elevation of the improvement, showing a tack just brought beneath the upper die. Fig. 2, Sheet 1, is a view, showing the track withdrawn, leaving the tack beneath the dies. Fig. 3, Sheet 1, is a view, showing a tack being operated upon by the dies and another tack ready to be introduced. Fig. 4, Sheet 2, is a sectional plan view. Fig. 5, Sheet 2, is a plan view of the clamps attached to the track. Fig. 6, Sheet 3, is a side elevation, partly in section. Fig. 7, Sheet 3, is a front elevation of the drum, partly in section, and showing the track in cross-section. Fig. 8, Sheet 4, is a sectional side elevation, taken through the line *x x*, Fig. 4.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish machines for cutting, shaping, or finishing the heads of tacks, nails, and rivets, which shall be so constructed as to make all the heads uniform in shape and size, and which will allow any desired form to be given to the heads.

The invention consists in constructing a machine for shaping the heads of tacks, nails, and rivets; of a mechanism for delivering the tacks automatically to the feed-track; of a mechanism for keeping them in place while passing along the feed-track, and delivering them, one at a time, to the dies; a mechanism for centering them in the dies; and a mechanism for giving a longitudinal and an up-and-down movement to the forward end of the feed-track, all constructed and arranged as will be hereinafter fully described, whereby the heads of the tacks will be brought to a uniform shape and size.

In the accompanying drawings, A represents the bed-plate or table of the machine, to which is securely attached, or upon which is formed, a standard or upright frame, B.

In bearings in the upper part of the upright frame B revolves a horizontal shaft, C, to which motion can be given from any convenient power, and which is provided with a fly-

wheel, D, to give steadiness of motion and momentum to the operating parts of the machine.

To the forward end of the shaft C are attached, or upon it are formed, two cam-wheels, E F, and upon the forward end of said shaft is also attached a crank-pin, G. The crank-pin G passes through a horizontal slot in the plunger H, which works in bearings attached to the forward end of the frame B, so that the said plunger will be raised and lowered by the revolution of the shaft C. In the plunger H, at the bottom of its slot, is formed a recess, 2, to cause the plunger to pause an instant in its descent for the purpose hereinafter set forth.

To the top of the upright frame B is attached the short arm of a bent or U-shaped spring, I, the long arm of which extends forward and is slotted to receive the headed pin, screw, or other catch, J, attached to the upper end of the plunger H, to raise the said plunger promptly when the crank-pin G begins to rise, and to hold the plunger always pressed up against the crank-pin, so that the plunger will only move downward under a positive pressure.

To the lower end of the plunger H is attached a die, K, of the exact shape and size required to be given to the tack-head, and which fits into a correspondingly-shaped die, L, attached to the bed-plate A.

To the middle part of the shaft C is attached a pulley, M, around which passes a band, N. The band N passes around two guide-pulleys, O, pivoted to supports P, attached to the bed-plate A or the frame of the machine. The band N also passes around a large pulley, Q, formed upon or attached to the outer end of the drum or hollow cylinder, R, which is pivoted at the center of its outer end to a bracket, S, attached to the bed-plate A or to the frame of the machine.

To the inner surface of the side wall of the drum R are attached buckets T, which are made a little shorter than the said drum R, and have their inner ends open, as shown in Figs. 1 and 4. The middle part of the inner end of the drum R is cut away to receive the upper end of the track or slide U, which is formed of two parallel bars placed at such a distance apart as to receive between them the body of the tack, nail, or rivet to be operated upon, but not the head. The upper part of

the track U, that enters the drum R, is made wide, and its upper surface inclines toward the slot or opening of the said track, so as to receive the tacks as they fall from the buckets

5 T. As the tacks slide down the upper part of the track U their points work into the slot of the said track, so that their heads will rest upon the upper surface of the said track. At the lower end of the widened upper part of the

10 track U the upper surface of the said track is beveled, so that the tacks whose points have not entered the slot of the said track may slide off to the apron V, and slide down the said apron into the drum R, to be again raised by

15 the buckets T and again deposited upon the widened upper end of the track U. The opening in the inner end of the drum R is closed by a plate, W, attached to the spindle X, upon which the said drum R revolves. The lower

20 part of the plate W is cut away to allow the slide or track U and the apron V to enter the said drum and for the tacks to slide past it upon the said track and apron. The track U is hinged at its middle part to the upper end

25 of a bar, Y, the lower end of which is hinged to the bed-plate A, so that the forward end of the said track can have a longitudinal and an up-and-down movement.

To the upper side of the track U is attached

30 a guard-plate, Z, extending downward from the apron V, and which is raised far enough above the track U to allow the heads of the tacks to pass between it and the said tracks when the bodies of the said tacks are in the

35 slot of the track, and to prevent the tacks from passing down when their bodies are not in the said slot.

To the lower ends of the bars of the track U are attached the parts of a clamp, *a*, which parts

40 are held together by a spring, *b*, attached to them. The clamps *a* are made with two pairs of jaws, *c* *d*, and with an opening, *e*, between them of sufficient size to receive the bodies of the tacks, but not large enough to allow the

45 tack-heads to pass through. The lower end of the guard-plate Z extends down to the opening *e* of the clamps *a*, and is recessed or notched directly above the said opening, to allow the

50 die K to pass the plate Z and come in contact with the head of the tack suspended in the said opening *e*. The tacks are drawn from the space above the jaws *c*, through the said jaws *c*, to the openings *e* by the upwardly-projecting edge

55 of a plate, *f*, attached to the bed-plate A at a little distance from the die L, and called by me the "picker." The track U is drawn forward by a spring, *g*, attached to it and to the bed-

60 plate A, and its forward end is drawn upward by a spring, *h*, attached to it and to the upright frame B. The track U is pushed back by a lever, *i*, the lower end of which rests against a

65 small roller, *j*, pivoted to the side of the said track U. The upper end of the lever *i* is pivoted to the upper part of the upright frame B. To the side of the upper part of the lever *i* is pivoted a small roller, *k*, the face of which rests against the face of the cam-wheel F of the

shaft C, so that the track U will be pushed back at the proper time by the revolution of the said shaft C. The forward movement of the track

70 U is regulated and limited by a set-screw, *l*, inserted in a screw-hole in the lever *i* or in a lug formed upon the said lever. The forward end of the set-screw *l* strikes against the side of the

75 upright frame B. The upward movement of the forward end of the track U is limited by a stop-plate, *m*, which is secured to the lever *i* by a set-screw, and the lower end of which or a

80 projecting arm formed upon the said lower end strikes against the upper side of the roller *j*. The stop-plate *m* is slotted to receive the clamping-screw, so that it can be adjusted higher or

85 lower, as required. The forward end of the track U is pushed down at the proper time by a bent lever, *n*, the forward end of which or a laterally-projecting arm formed upon the said

90 forward end rests upon a small roller, *o*, pivoted to the side of the said track U. The lever *n* is pivoted to the side of the lower part of the upright frame B. The rear part of the bent

95 lever *n* inclines upward, and to the side of its upper end is pivoted a small roller, *p*, the face of which rolls along the face of a cam, *q*, attached to the rear part of the shaft C, so that

100 the forward end of the track U will be pushed down at the proper time by the revolution of the shaft C. The forward end of the bent lever *n* is held up, except when forced down by the

105 cam *q*, by a spring, *r*, attached to the said lever and to the upright frame B.

To the bed-plate A, at a little distance from the die L, are pivoted the outer ends of the parts

110 of the clamp *s*, the inner ends of which meet directly over the die L, and have a hole, *t*, formed through them to allow the point of the tack to enter the cavity of the said die L. The hole

115 through the jaws of the clamp *s* is counter-sunk to adapt it to serve as a guide to direct the points of the tack into the cavity of the die L. The forward ends or jaws of the clamp

120 *s* are forced together by a spring, *u*, and are stopped in the right position by a pin, *v*, attached to the bed-plate A, and against which the said jaws strike. The clamp *s* is opened

125 by the lower end of the lever *w*, which is forced in between the inclined inner edges of the parts of the said clamp *s*. The lever *w* is pivoted at its middle part to the upright frame B or to a lug or arm formed upon or attached to the

130 said frame.

To the upper end of the lever *w* is pivoted a small roller, *x*, the face of which rests against the face of the cam E, formed upon or attached to the shaft C, so that the guide-clamps *s* will be opened at the proper time by the revolution

135 of the said shaft C.

To the rear part of the shaft C is attached an eccentric, *y*, with which is connected, by a strap or other suitable means, the upper end

140 of a piston-rod of an air-pump, *z*, with the discharge-opening of which is connected a tube, 1. The tube 1 passes along the side of the frame B, and its forward end, or a nozzle attached to its forward end, is secured in such a

position as to direct the air-blast against the die L. The eccentric *y* is so arranged upon the shaft C that a blast of air will be driven across the die L when the clamps *s* are open, so as to blow off any chips or particles of metal that are cut from the tack-heads, and thus keep the said die L clear.

In using the machine the tacks to be operated upon are placed in the drum R, are transferred to the track U, and pass down the said track to the clamps *a*, in the manner hereinbefore described. As the track U is pushed back, withdrawing the clamp *a* from between the dies K L, the picker *f* catches the downwardly-projecting end of the tack next above the jaws *c*, and draws the tack through the said jaws *c* to the opening *e*, where it hangs suspended by its head. As the die K moves up out of the way the track U moves forward, bringing the suspended tack directly between the dies K L. As the die K moves downward and comes in contact with the head of the tack the lower end of the track U also moves downward, and the end of the tack is guided into the cavity of the die L, by the countersunk hole *t* in the clamp *s*. As the point of the tack enters the cavity of the lower die, L, the upper die, K, stops an instant in its descent, and at the same time the clamp *s* is opened and the track U is drawn back, withdrawing the clamp *a* from the tack and leaving the tack between the said dies K L. The die K then continues its descent and forces the tack into the die L, cutting its head into exactly the desired size and shape. As the track U moves back the picker *f* draws another tack through the jaws *c* into the opening *e*, ready to be operated upon in turn. The passage of the tack through the jaws *c* causes it to take a proper position in the opening *e*, so that all the completed tack-heads will have the same position with respect to the bodies of the tacks, and at the same time will be uniform in shape and size.

Any desired shape can be given to the tack-heads by making the dies K L of the required shape.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the cams E F, arranged on shaft C, the latter having crank-pin G, the horizontally-slotted plunger H, having recess 2, the slotted U-shaped spring I, and the headed pin J, all arranged substantially as shown and described.

2. The track U, formed of parallel bars bev-

eled on the upper surface of the lower end of the widened part, in combination with the apron V, whereby the tacks whose points fail to enter between said bars may slide off to the apron and thence to the drum, as set forth.

3. The combination, with the die K, of the recessed guide-plate Z, and the clamps *a*, having the opening *e*, as and for the purpose specified.

4. The combination, with the clamp *s*, of the spring *u*, pin *v*, and lever *w*, the latter arranged to operate as and for the purpose specified.

5. In a machine for shaping the heads of tacks, nails, and rivets, the combination, with the track U, of the hinged supporting-bar Y, substantially as herein shown and described, whereby the forward end of the track is allowed to have a longitudinal and a vertical movement, as set forth.

6. In a machine for shaping the heads of tacks, nails, and rivets, the combination, with the track U and the driving-shaft C, of the springs *g h*, the levers *i n*, and the cams F *g*, substantially as herein shown and described, whereby a longitudinal and a vertical movement is given to the track, as set forth.

7. In a machine for shaping the heads of tacks, nails, and rivets, the combination of the clamps *a*, having two pairs of jaws, *c d*, with an opening, *e*, between them, the spring *b*, and the picker-plate *f*, substantially as herein shown and described, whereby the tacks are transferred, one at a time, from the track to the dies, as set forth.

8. In a machine for shaping the heads of tacks, nails, and rivets, the combination, with the dies K L, and the clamps *a*, attached to the track U, of the clamps *s*, having countersunk hole *t* in their jaws, the spring *u*, and the stop-pin *v*, substantially as herein shown and described, whereby the points of the tacks are guided into the cavity of the lower die, as set forth.

9. In a machine for shaping the heads of tacks, nails, and rivets, the plunger H, constructed with a recess, 2, in the lower side of the slot that receives the crank-pin G, substantially as herein shown and described, whereby the plunger is made to stop for an instant in its descent to allow the tack-holding clamp to be withdrawn from between the dies, as set forth.

JOHN HYSLOP, JR.

Witnesses:

GEORGE W. HOLMES,
TIMOTHY DRAKE.