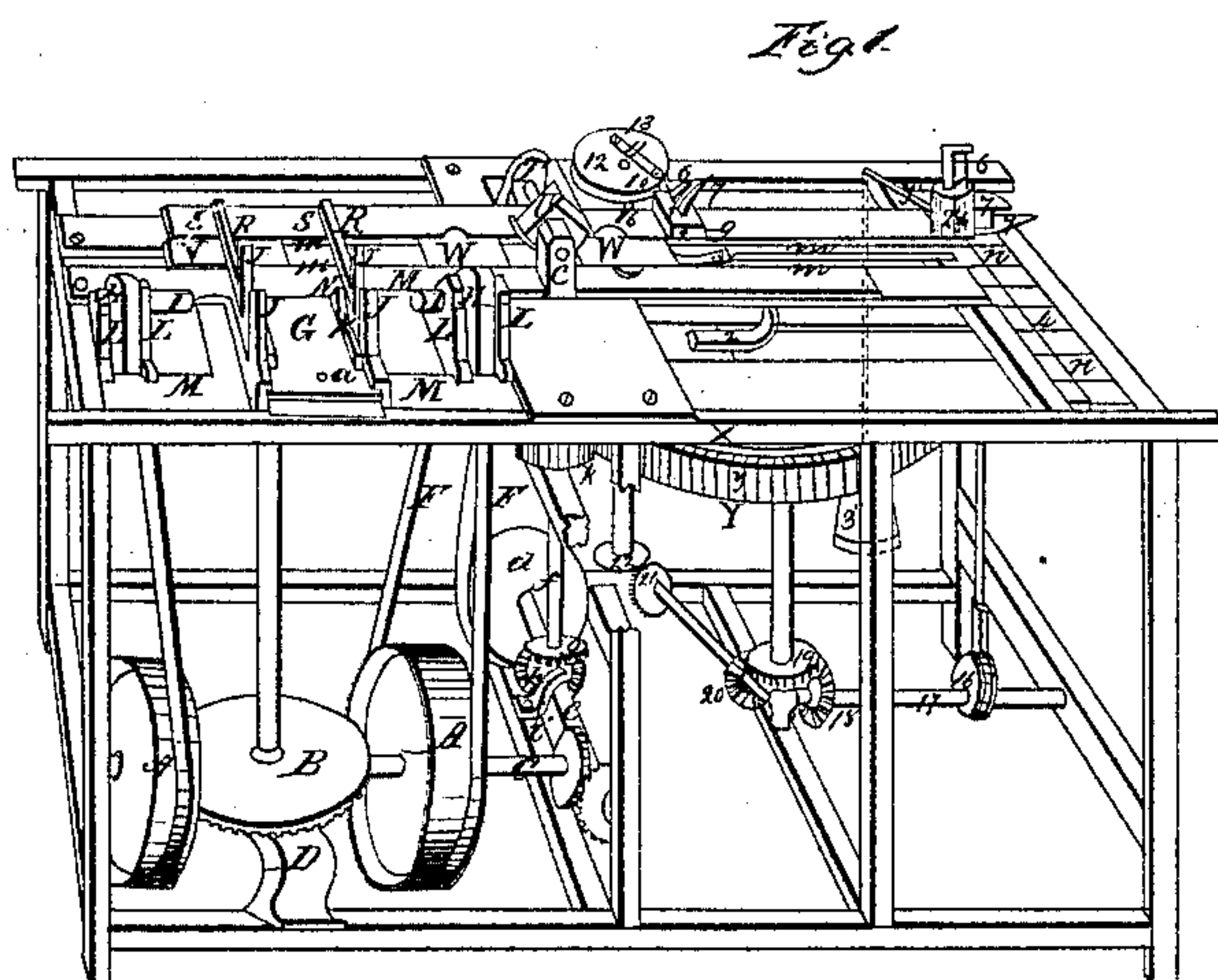
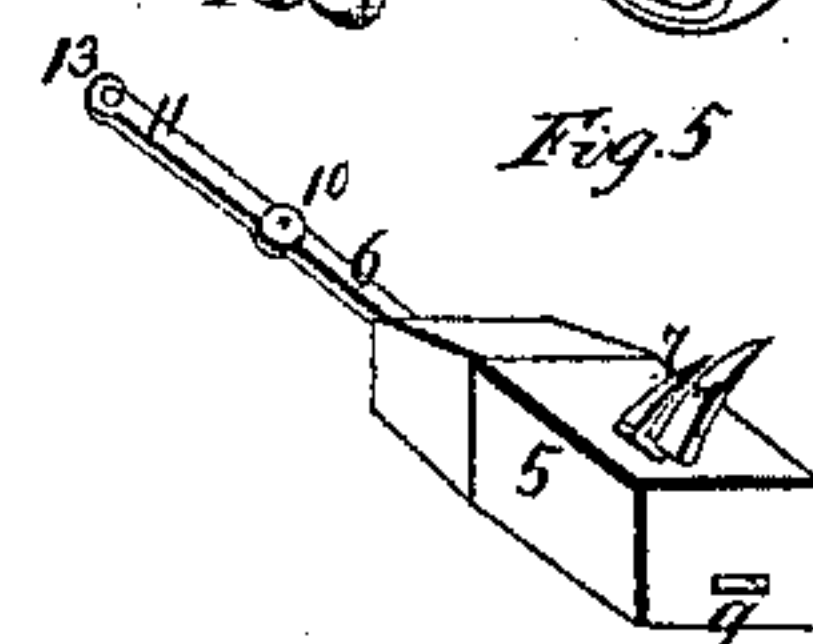
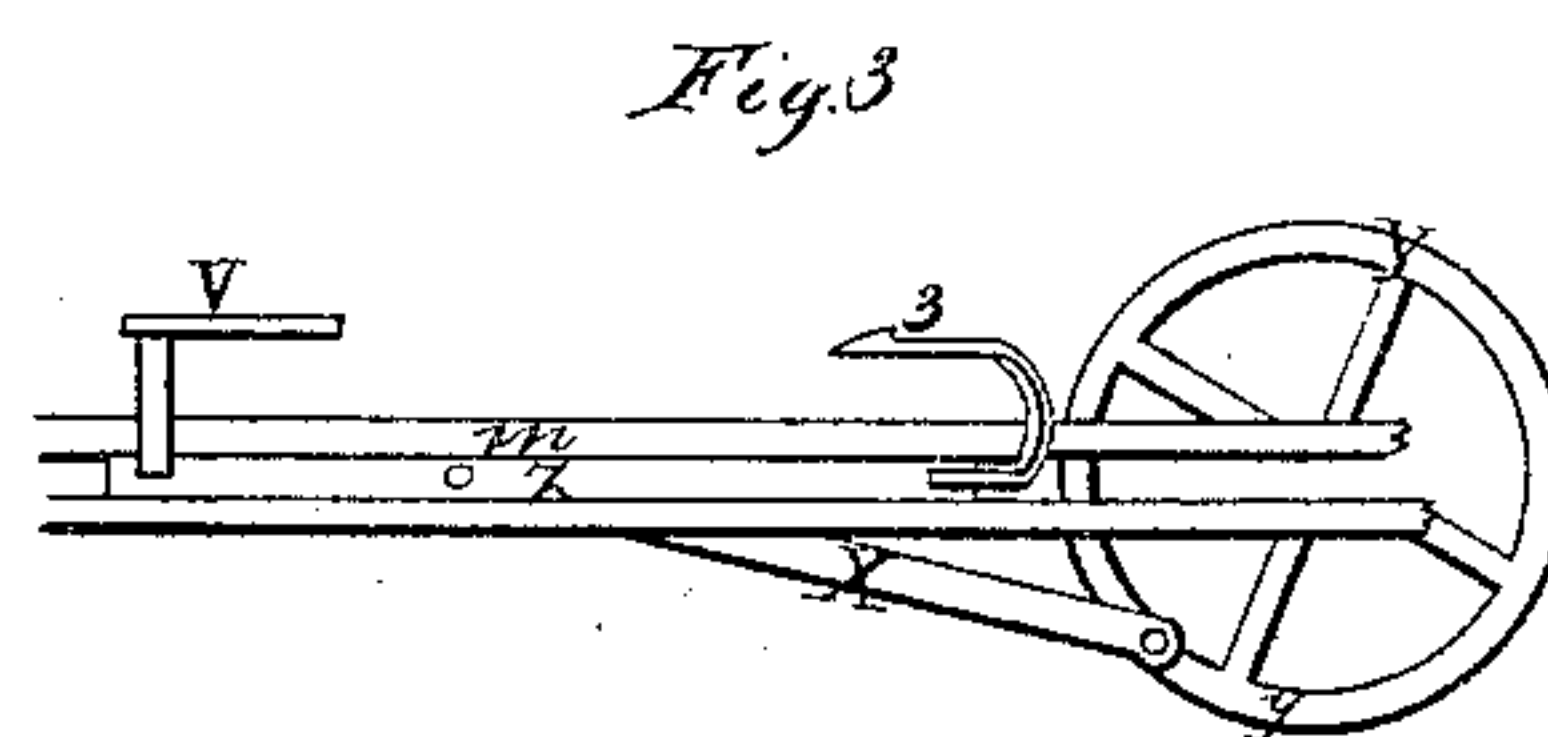
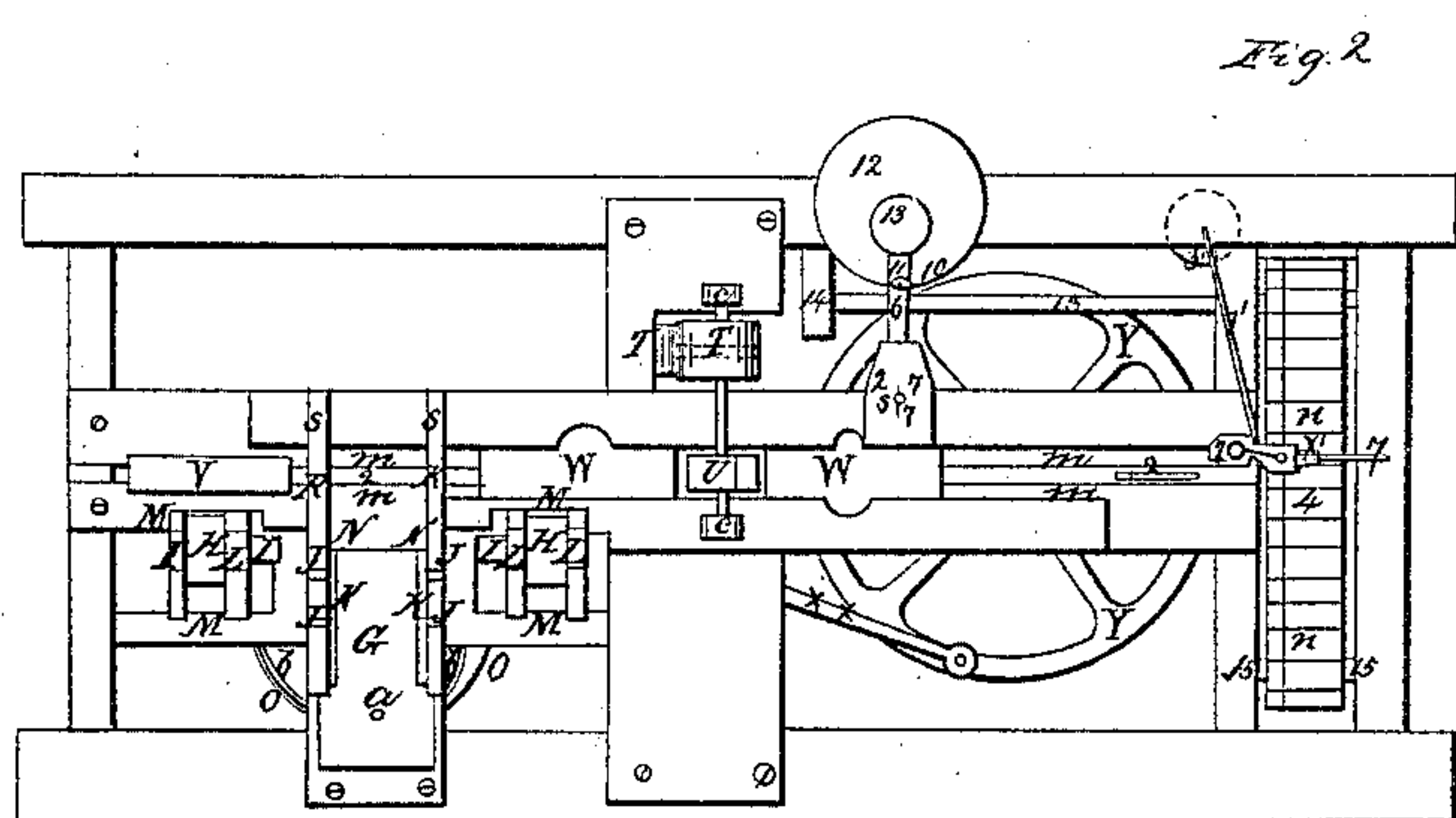


E. R. Benson,
Making Blinds.

No 10,063.

Patented Oct. 4, 1853.



UNITED STATES PATENT OFFICE.

ELIHU R. BENSON, OF WARSAW, NEW YORK.

SLAT-MACHINE FOR WINDOW-BLINDS.

Specification of Letters Patent No. 10,063, dated October 4, 1853.

To all whom it may concern:

Be it known that I, ELIHU R. BENSON, of Warsaw, in the county of Wyoming and State of New York, have invented a new,
5 original, and useful machine, not heretofore known or used, for the milling, dressing, and wiring of the slats of window-blinds, hereinafter particularly described.

I propose to name the machine "Benson's
10 window blind machine."

The drawings referred to in this specification are to be taken as forming a part of it, and are: Figure 1, a perspective view of the machine. Fig. 2, a bird's eye view
15 of the top thereof. Fig. 3, a view of the slides in the dressing and wiring parts of the machine. Fig. 4, a view of some of the machinery operating the slide in the milling part of the machine. Fig. 5, a perspective
20 view of one of the stickers in the wiring part of the machine.

For convenience and simplicity I shall divide the machine, (in the description of it,) into three parts, viz:—the milling part,
25 the dressing part, and the wiring part. Each of these parts will be separately described.

1st. The milling part.—The office of this part is to make the tenons on the ends of the slats, and to place the slats, (after mill-
30 ing) in the dressing part of the machine. The letters A, B, C, D, E, F, in Fig. 1, indicate the gearing for operating this part of the machine—(in part) and need no description, except the drawings.

The letters G, H, I, J, K, L, M, N, R, S, in Fig. 1, denote the same parts, in Fig. 1,
35 and in Fig. 2, and in both Fig. 1, and Fig. 2 denote parts of the milling part of the machine.

In Figs. 1 and 2 J, J, J, J are 4 guides or posts, forming in all one crib in which the slats are placed, in the rough state, in a
40 pile, across the slide G, each end of the pile resting on the elevated edges of the slide G shown in the drawings. These guides or posts are far enough apart to just hold the
45 slats in a perpendicular pile.

In Figs. 1, and 2, the letter G is a slide operating back and forth by means of a
50 pin—a—which protrudes through the slide into an eccentric groove b, b, b, in the wheel O, Figs. 2 and 4. (Wheel O, is near the top of, and upon the shaft E, see Figs. 1,
55 and 4.) When the slide G is drawn out, the pile of slats drops into the notch K, which is deep enough to receive the bottom

slat in the pile. As the slide G passes back, the lower slat, resting in the notch K is thrust forward, under the springs R, R, (hereafter described) to a point directly
60 between the two hollow augers I, I, when the two augers I, I, are drawn up against the two ends of the seat and perform the tenoning, (or milling) of both ends of the
65 slat at once. While the milling is going on, the slide G is again drawn out, and the pile of slats in the crib J, J, J, J again drops into the notch K, and the augers are at the same time withdrawn from the first
70 slat, and that slat drops down over the end of the spring N, and as the slide G again moves forward the first slat, at N, and the bottom slat in the pile at K are both moved forward—the former by the springs
75 at N into the dressing part of the machine and left on the bed m, m, Figs. 1 and 2, and the latter slat is taken to a point between the two hollow augers I, I, when it is milled, as above described, and so of each
80 successive slat.

The springs at N, Figs. 1, and 2, made fast at K are pressed down by the slat, as it rests upon them, at the commencement of the
85 milling process; as soon as that process is begun, the slide G is drawn back so far as that the springs N, fly up and present a shoulder, which, as the slide G moves forward, drives the slat, just milled, into the
90 dressing part of the machine, as above stated.

As the slats are shoved along, as above described they pass under the two springs
95 R, R, Figs. 1, and 2. These springs are made fast at S, S, only. The other ends of the springs are turned up, at right angles and form two of the guides or posts, J, J,
above described.

The two hollow augers I, I, Figs. 1, and 2, are made to revolve by belts over the
100 pulleys H, H, Figs. 1 and 2, and they are made to press against the two ends of the slat, in the process of milling, and to withdraw themselves from the slats, when milled, as herein described, by means of
105 the two eccentrics P, P, Fig. 4, placed below the wheel O, Figs. 2 and 4 on the shaft E, Figs. 1, and 4. An eccentric strap or arm extends from one eccentric P to one of the carriages L, L, and is fastened to the
110 lower part of it. A like strap passes from the other eccentric P to the other carriage L, L, all so arranged as that the carriages

L, L, L, L, Figs. 1 and 2, in which are the pulleys H, H, and the augers I, I, are drawn toward each other, to do the milling, at once, and removed apart again, after
 5 doing the milling, at the same time, the carriages L, L, sliding on the ways M, M, Figs. 1 and 2.

Wheel O is seen in Fig. 4 on the end of shaft E. The eccentric groove *b, b, b*, in
 10 Fig. 4, and in Fig. 2, is on the upper surface of the same wheel O. The bevel wheel B, Fig. 1, resting on a step D, is moved to revolve by a bevel wheel on shaft C, not seen in the drawings. The slats, in an un-
 15 dressed state are laid into the crib J, J, &c. by hand.

2. *The dressing part.*—The dressing part of the machine is indicated by the letters T, U, V, W, X, Y, *c* and *m* in Figs. 1 and
 20 2, and letters *d, e, f, g, h, i, k* in Fig. 1. The arrangement of the gearing of this part is seen in Fig. 1.

The slat, after being milled, is left by the slide G, as above described, on the
 25 bed *m, m*, Figs. 1, and 2. The slide V then in the place of the slide V in Fig. 2, (but not in the place of the slide V Fig. 1,) takes the slat, resting on the bed *m, m*, Figs. 1, and 2, and shoves it along on the bed
 30 *m, m*, under the two springs W, W, Figs. 1 and 2, passing it between the two revolving planes—one of which marked U, is seen in Figs. 1 and 2, (the other being below, and not shown in the drawings) when it is
 35 dressed on both sides.

The planes are made in the usual manner and may be made to dress the sides of the slats, in such form as may be desired. The
 40 planes are both operated by one belt, *f*, Fig. 1, passing between the two pulleys T, T, Fig. 2 and over one of them, so as to drive the planes in opposite directions. The belt is driven by the band wheel *d* Fig. 1.

The slide V, is constructed and operated
 45 as shown by Figs. 2 and 3, the corresponding letters in each figure denoting the same parts, and the same letters, so far as seen in Fig. 1, denoting also the same parts. The spur-wheel Y, being driven by the pin-
 50 ion *k*, Fig. 1, and the arm, or pitman X, Figs. 1, 2 and 3, fastened to the slides V and 3 as shown in Fig. 3, gives the motion to slide V already described and also to slide 3, hereinafter described.

3. *The wiring part.*—This part does all the wiring—both of the slats and of the
 55 rods, and consists of two stickers, a slide, and an endless chain, and the gearing by which these are all operated. The two
 60 stickers are marked 2, 2, Figs. 1 and 2. The slide is marked 3, Figs. 1 and 2 and 3. The endless chain is marked 4 Figs. 1 and 2.

Fig. 5, is a perspective view of a sticker. The sticker which wires the slats, is placed
 65 horizontally on the machine and operated

by the wheel 12 see Figs. 1 and 2 upon the horns 7. Fig. 1, a number of staples are placed in order, in a pile, the base of the pile resting on the driver 6, in the orifice 8
 70 Fig. 5. As the driver is drawn out, by the revolution of wheel 12, Figs. 1 and 2, the lower staple in the pile drops to the bottom of the orifice 9, Fig. 5, which orifice is just as wide up and down, as the staple is thick, as it lies flat on the bottom of the orifice. 75
 The slat having passed through the planes, as described above in the dressing part of this specification, is left, by the slide V, also above described, precisely at such a point, as that the center of one edge of the
 80 slat is at the center of the orifice 9 Fig. 5, of the sticker. The driver 6 is moved by the wheel 12 Figs. 1 and 2, and thrusts the staple, lying in said orifice 9 into the edge of the said slat. The slat is held in its
 85 place, during the operation by the spring W, Figs. 1 and 2. As soon as the staple is stuck in the slat as just described, the slide 3, Figs. 1, 2, and 3, having passed to the left, under the slat, now takes it in the notch 3, 90
 Fig. 3, and shoves it along on the bed *m, m*, Figs. 1 and 2, to such a point as that the staple just stuck rests on the rod, at the place where it is sought to wire it to the rod. The other sticker, at this instant drives a
 95 staple, into the rod, astride the staple in the slat and thus finishes the wiring. The rod during this process is lying in a groove *n, n*, Figs. 1 and 2, upon the endless chain 4 and the instant one slat is wired to the rod 100
 as just described, the endless chain 4, is moved along just the distance the staples in the rod are to be placed apart, moving the rod in the groove, when another slat is wired to the rod, as above described, and so 105
 on, until the requisite number has been wired to the rod. This endless chain, of ordinary construction is moved by a pulley on the shaft 13, Fig. 2, resting in a step at 14, on which is a ratchet, or ratchet which 110
 is moved by an arm or claw which is shoved out and drawn in at regular intervals by means of an eccentric groove on the under side of the wheel 12 Figs. 1 and 2, similar to the groove on the upper surface of the 115
 wheel, O, Figs. 2 and 3, as herein above in the milling part, described. The other end of the chain passes over a pulley the shaft of which is seen at 15, 15, Fig. 2.

The sticker herein above first described— 120
 of wiring the slats, is driven by an eccentric, on the wheel 12, Figs. 1 and 2, in the usual way, and the other sticker is driven by the eccentric 16 on shaft 17 Fig. 1. The rod 6 is the driver, to this sticker. The 125
 staples to this sticker are held on the lower horn 7, Fig. 1, and are drawn into an orifice in the body of the sticker similar to 8 and 9 in Fig. 5, by means of a spring, or of a cord and weight, attached to a follower 130

or to the outer staple, so as to keep the staples pressed into the orifice. The rest of the operation is as described in the other sticker. This sticker is placed in a perpendicular position.

The slide 3, Figs. 1, 2, and 3, is operated similar to the slide V above described in the dressing part, and its construction will be seen from that description and from the drawings.

A view of the gearings as represented in Figs. 1, 2 and 3, will be sufficient to understand the manner in which this part of the machine is moved. The rod is laid into the groove *n, n*, by the hand of the tender. So also are the staples placed upon the stickers.

General matters.—The three band wheels, Fig. 1, may be of the same diameter. All the miter wheels may be of one diameter. The rest of the gearing will be varied to suit the thickness, length, and width of the slats, and may be readily arranged to any particular motive desired, in the three parts of the machine, so as to produce just the movement necessary, and at the proper time. The frame may be of metal, or wood, and the different parts may be of such materials as are most convenient or suitable.

In this machine all the parts are combined, and contained in one frame. The power may be applied to the machine by a belt over a pulley placed anywhere on the

shaft *e*, or on the shaft C, Fig. 1, as shall be found most convenient. The bevel wheel B, Fig. 1, is turned by a small bevel pinion 35 on the shaft C.

The staples are supplied to the rod sticker by means of the slide *x'* placed over the hook on which the staples are astride; which slide is attached to the cord *y'* having suspended at its extremity the weight *z'*.

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

1. The arrangement for moving the hollow augers I back and forth in performing the milling of both ends of the slats at once, combined with the slide G operated substantially in the manner and for the purposes herein specified.

2. The manner of feeding the dressing and sticking portions of the machine by means of the slide Z operated substantially as specified.

3. The method herein described of sticking the wires by means of hooks and drivers operated substantially as herein specified.

In testimony whereof, I have hereunto signed my name before two subscribing witnesses.

ELIHU R. BENSON.

Witnesses:

GEO. PATTEN,
JNO. OBER.