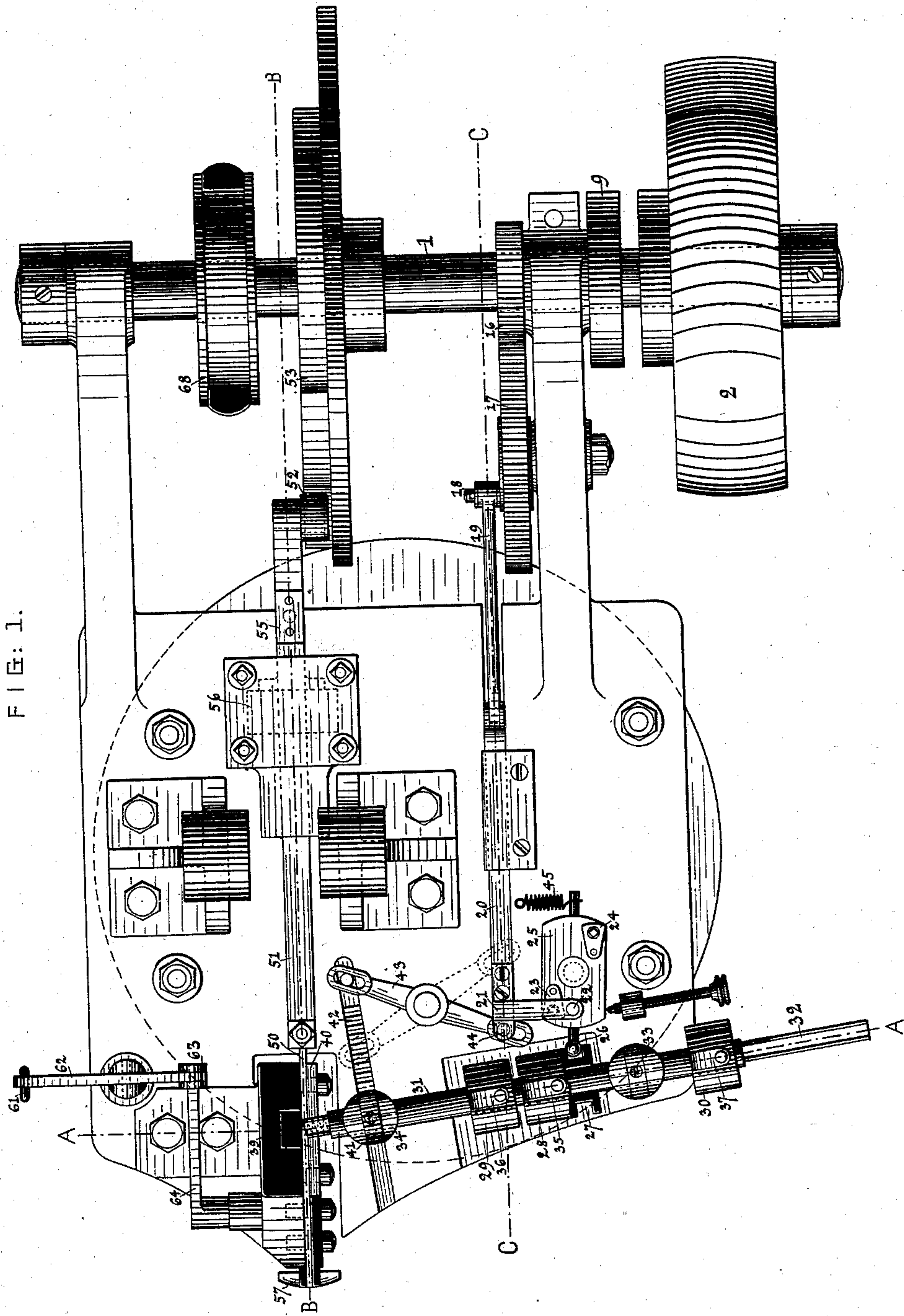


(No Model.)

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F. HURÉ.
LASTING AND TACKING MACHINE.
No. 282,524. Patented Aug. 7, 1883.



Witnesses.
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Inventor
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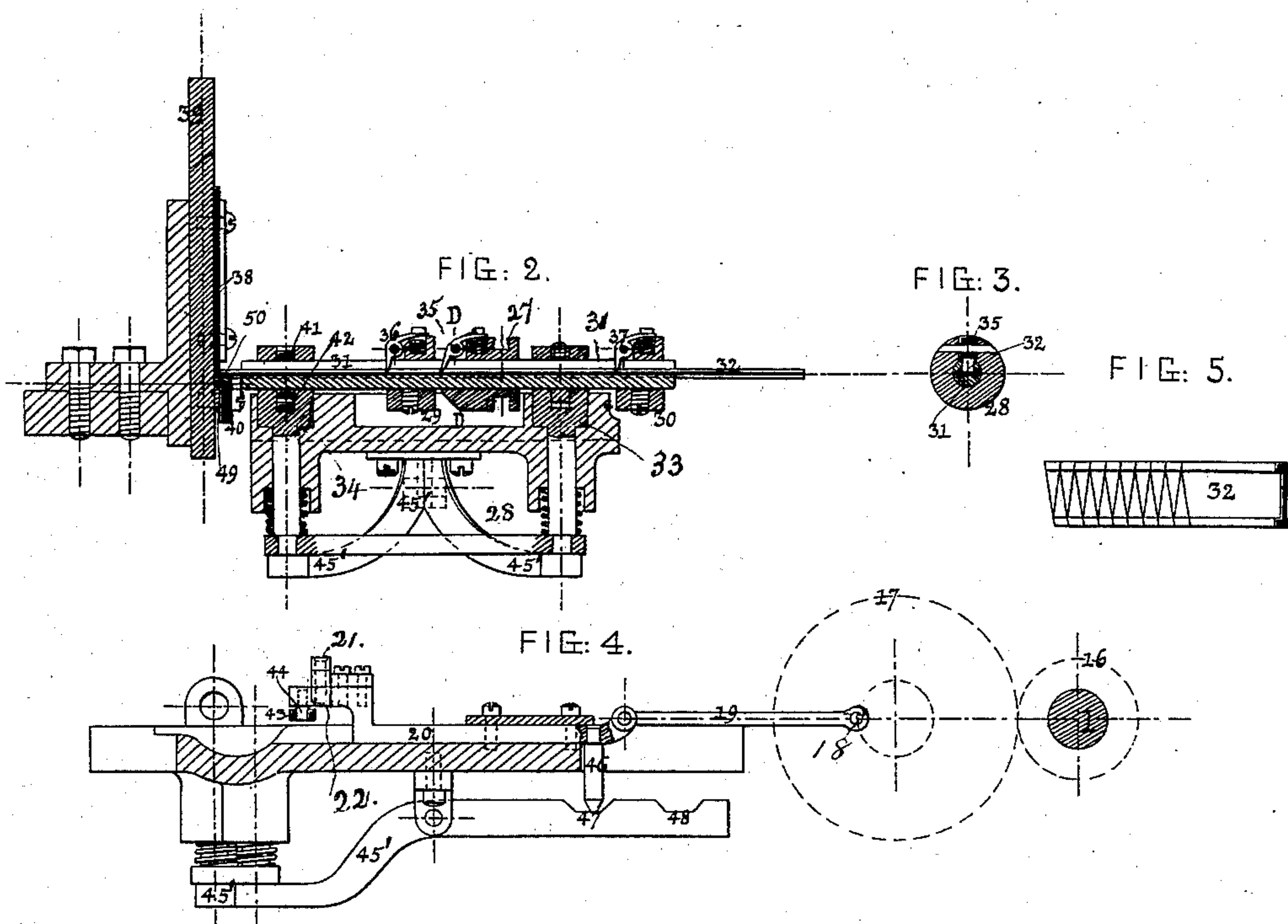
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Witnesses.

M. E. Halsted

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Inventor

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his Attorneys.

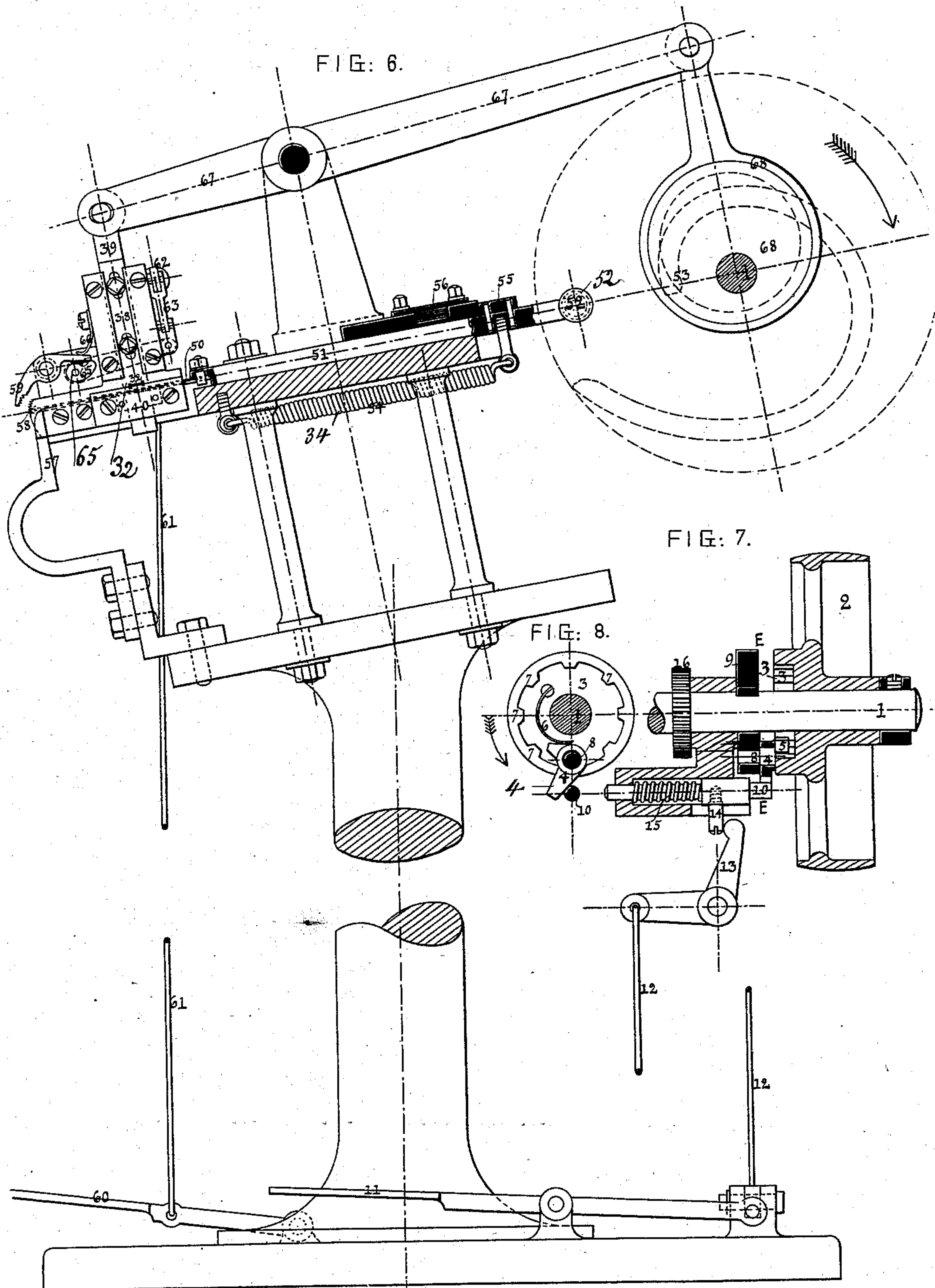
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UNITED STATES PATENT OFFICE.

FRANÇOIS HURÉ, OF PARIS, FRANCE.

LASTING AND TACKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 282,524, dated August 7, 1883.

Application filed July 12, 1882. (No model.) Patented in France May 5, 1883, No. 148,734; in Germany May 21, 1883, No. 21,370; in England July 7, 1882, No. 3,224, and in Spain November 8, 1882, No. 2,485.

To all whom it may concern:

Be it known that I, FRANÇOIS HURÉ, mechanician, of Paris, France, have invented certain new and useful Improvements in Lasting and Tacking Machines Combined; and I hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to lasting and tacking machines; and it consists of certain improvements the objects of which are not only to hold an upper for the purpose of lasting it, but also to manufacture headed tacks from a peculiar strip of metal having a ridge on both sides of the strip, and, further, to drive such headed nails or tacks into the upper, these three operations taking place in the same machine.

In order that my invention may be clearly understood, I will now proceed to describe it conjointly with drawings hereunto annexed.

Figure 1 is a plan of the machine; Fig. 2, a front elevation of the same in section through the line A A of Fig. 1; Fig. 3, a sectional elevation through the line D D of Fig. 2; Fig. 4, a lateral elevation in section through the line C C of Fig. 1. Fig. 5 is one form of a strip of zinc from which the tacks are made, and showing the lines where they are severed from the strip by the action of the machine. This figure 5 is on a larger scale than the remainder. Fig. 6 is a longitudinal elevation, in section, through the line B B of Fig. 1, with the column supporting the machine. Fig. 7 shows the clutch in section, and Fig. 8 is a cross-section of the same through line E E of Fig. 7.

I will now proceed to describe the construction, arrangement, and operation of the machine.

1 is the driving-shaft, and 2 is the driving-pulley. In order to manufacture the tacks separately, the operator must be able to limit exactly the run of the machine. For this purpose I make use of the clutch shown in Figs. 7 and 8. In the hub of the driving-pulley 2

is a cavity, 3, Figs. 7 and 8, which resembles a gear having internal teeth. The pulley 2 causes the shaft 1 to rotate as soon as the bell-crank lever 4, Figs. 7 and 8, bears with its side lug, 5, against one of the teeth 7 by means of the spring 6. As the axis 8 of the bell-crank lever 4 is fastened upon the disk 9, fixed to the shaft 1, it follows that the shaft 1 will also rotate and that its rotation would be continuous. The rotation should, however, not be continuous, and it is prevented by the lower arm of the bell-crank lever 4, which butts against a bolt, 10. The lug 5 of the upper lever-arm is raised and is released from one of the teeth 7, and the pulley runs loose on the shaft—that is to say, the machine will not rotate; but if the machine has to work, the operator presses on the pedal 11 in order to push the spring-bolt 10 to the left by means of the rod 12, double lever 13, and stud 14. The lower lever-arm is then liberated, the spring 6 pushes the upper arm, with its lug 5, against one of the teeth 7, and the shaft 1 follows the same motion. After a complete revolution, the bolt 10 reassumes its original position by means of the spring 15, the bell-crank lever 4 butts with its lower arm against the said bolt, and the lug 5 is liberated from the tooth 7, and the machine stops. In order to cause the shaft 1 to turn more than once, the pedal 11 is depressed accordingly.

Upon the shaft 1 is keyed a gear, 16, which meshes into the teeth of a gear, 17, the diameter of which is twice that of the gear 16. Upon the gear 17 is a crank, 18, which acts upon a slide, 20, by means of a rod, 19. The arm 21 of this slide butts with its small roller 22 first against the stop 23 and then against the stop 24 of the part 25, Fig. 1, and causes the latter to oscillate. Together with the part 25 also oscillates the projection 26, Fig. 1, which engages in the groove 27 of a sleeve, 28, thus imparting a to-and-fro motion to the said sleeve. The sleeve 28 is loose on the hollow cylinder 31, Figs. 1 and 2, whereas the collars 29 and 30 are keyed on the said cylinder or tube. The cylinder may turn in bearings 33, 34, which are capable of being raised and lowered, and it contains the zinc strip 32, from

which the tacks are cut off, and the cross-section of which corresponds to an **I** or **L**, and the tacks cut from the strip having always a head at one end, while being headless and comparatively sharp at the other end, as will be readily understood by reference to Fig. 5.

Upon the said strip bear the sharp edges of the clicks 35 36, Figs. 1 and 2, which allow the strip 32 to move forward toward the left, Fig. 2, but prevent it from retrograding. Upon the motion of the sleeve 28 toward the right, Fig. 2, by means of the projection 26, the strip will not follow this motion, because it is held by the click 36 of the collar 29; but when the sleeve 28 moves from right to left, the click 36 pushes the strip 32 forward, and in this manner the said strip advances successively to the extent of the breadth of one tack toward the shears 39 and knife 38 in consequence of the to-and-fro motion of the sleeve 28 by the oscillations of the part 25. When the strip 32 has been advanced so far that its right end lies in between the clicks 35 and 36 of the collars 29 and 30, it is no longer seized by the click 35 and fed forward in the machine. To remedy this I have adapted an extra click, 37, upon the collar 30, which acts to replace the click 36 when a fresh strip, 32, is introduced into the hollow cylinder 31. The said click 37 now acts in place of the click 36, and while the fresh strip is brought forward by the click, it pushes or drives the remainder of the former strip toward the shears until the said remainder is used entirely. By this arrangement there is no waste of the material forming the tacks.

In order to sever the tacks from the strip 32 through the lines shown at Fig. 5, it is necessary that the longitudinal axis of the strip be oblique to that of the shears, (see Fig. 1,) and that the strip lie or rest upon the bearing 40, Figs. 1 and 2, once on one side and once on the other side—that is to say, the strip must be turned over to an angle of one hundred and eighty degrees. This motion is effected by the pinion 41, Figs. 1 and 2, driven by the rack 42, which receives its motion from the lever 43, fastened to a stud, 44, of the slide 20; but as at each revolution of the gear 16 the gear 17 only makes half a revolution, and as the slide 20 thereby executes either a backward or a forward motion, the change of position of the lever 43 will correspond to that shown in full lines and in dotted lines, Fig. 1, at every complete revolution of the gear 16. At the same time the pivoting-piece 25 is caused to oscillate, its roller 22 coming in contact with the stops 23 and 24 at each forward and each backward motion under the action of a small spring, 45, Fig. 1. To the sleeve 28 is thus imparted a to-and-fro motion, and the strip 32 is moved forward to the extent of the width of one tack. Therefore it will be seen that one tack is made at each revolution of the shaft 1. While the tack is being severed, the strip 32 lies or rests upon the bearing 40, Fig. 2; but before it is turned over it must be slightly raised. The

said rise of the strip 32, with its cylinder 31, and the bearings 33 and 34, Fig. 1, is effected by means of the forked lever-arm 45', Figs. 2 and 4, which is actuated by a pin, 46, fastened to the slide 20. The pin 46 depresses the lever 45', except when it assumes the extreme positions. It then engages one of the slots 47 or 48, Fig. 4, and allows the said lever 45' to rise, whereupon the bearings 33 and 34 are lowered. The strip 32 then bears upon the bearing 40, and it can then be cut by the shears. The knife 38, together with the slide 39, to which it is attached, receives a vertical to-and-fro motion by means of a lever, 67, Fig. 6, which receives a to-and-fro motion by means of an eccentric, 68. The severed tack falls upon the part 49, Fig. 2, which is between the bearing 40 and the slide 39, and thus lies in a groove or channel, from where it is driven into the upper by means of a needle, 50, fastened to a slide-bar, 51, Figs. 1, 2, and 6, immediately after it has been severed from the said strip 32. The slide-bar 51 is operated by a roller, 52, to which motion is imparted by a cam, 53, on the shaft 1, a spring, 54, acting for driving the said slide to the left. The bearing 56 for the slide-bar 51 is provided with a flexible or rubber buffer, 55, for lessening the shock of the slide-bar 51. The tack is thus driven out of the machine into the upper, which is held against the bearing 57, and seized by the pinchers 58 59. The upper jaw, 59, is liberated by means of a pedal, 60, which by means of the rod 61, Figs. 1 and 6, lever 62, and rod 63 raises the lever-arm 64, Fig. 1, whereby the cam 65, fastened at the end of the lever 64, comes under the horizontal arm of the jaw 59, and causes the latter to be brought against the stationary jaw 58, in order to hold tightly the upper. By depressing the pedal 60 the spring 66 presses upon the horizontal arm of the movable jaw 59 and causes the jaw to rise, so that the upper can then be taken out.

Instead of the zinc strip 32 assuming a longitudinal head on each edge, its edges may simply be turned over, so as to form an **L**; and I may here remark that by means of the arrangement which causes the said strip to be turned over, first on one side and then on the other, tacks may be severed therefrom without any waste whatever.

The above-described arrangement of pinchers for holding the upper, as above stated, may be applied to any machine the purpose of which is to drive nails into boots and shoes or into uppers, whether the said tacks are introduced ready-made into the said machine or severed from a specially-prepared wire or strip.

I claim as my invention—

1. In lasting and tacking machines for boots and shoes, the device for causing the strip 32 to be turned over, composed of the hollow cylinder 31, pinion 41, rack 42, lever 43, slide-bar 20, and connecting-rod 19, as shown and described.

2. In lasting and tacking machines for boots

and shoes, the device for feeding the strip 32, composed of the projection 21 on the slide-bar 20, having a roller, 22, on its under face, stops 23 24, projection 26 on the swiveling part 25, 5 and sleeve 28 on the hollow cylinder 31, having a feed-click, 35, in combination with the stationary collars 29 30, provided with clicks 36 and 37, respectively, as shown and described.

3. In lasting and tacking machines, the device for driving tacks into uppers, or boots and shoes, composed of the slide-bar 51, having the driving-needle 50, fixed at one end, and operated partly by a cam, 53, actuating a roller, 52, fixed at the other end of the said slide-bar 15 51, and partly by a spring, 54, as shown and described.

4. In lasting and tacking machines for boots and shoes, the device for slightly raising the strip 32 before it is turned over, composed of 20 the stud 46, actuated by the connecting-rod 19, forked lever 45', with grooves 47 and 48, and bearings 33 and 34, as shown and described.

5. In combination with the strip of metal having flanged edges, mechanism, substantially as described, for holding, cutting, and 25 turning over such strip.

6. The described means for holding the upper while it is being tacked to the sole, consisting of the combination, with the stationary 30 pincher-jaw 58, of the lever-jaw 59, mechanism, substantially as described, for operating the same, and the lifting-spring 66.

7. In combination with the strip 32, from which the headed tacks are cut, and with devices for cutting and turning the strip, 35 substantially as described, the rest or bearing-piece 40, upon which such strip lies while being cut, substantially as set forth.

In witness whereof I have hereunto set my 40 hand in presence of two subscribing witnesses.

FRANÇOIS HURÉ.

Witnesses:

R. H. BRANDON,
E. P. MACLEAN.