(No Model.) 2 Sheets—Sheet 1.

R. ASHE.

TACK DRIVING MECHANISM FOR LASTING BOOTS OR SHOES.

No. 341,823. Patented May 11, 1886.

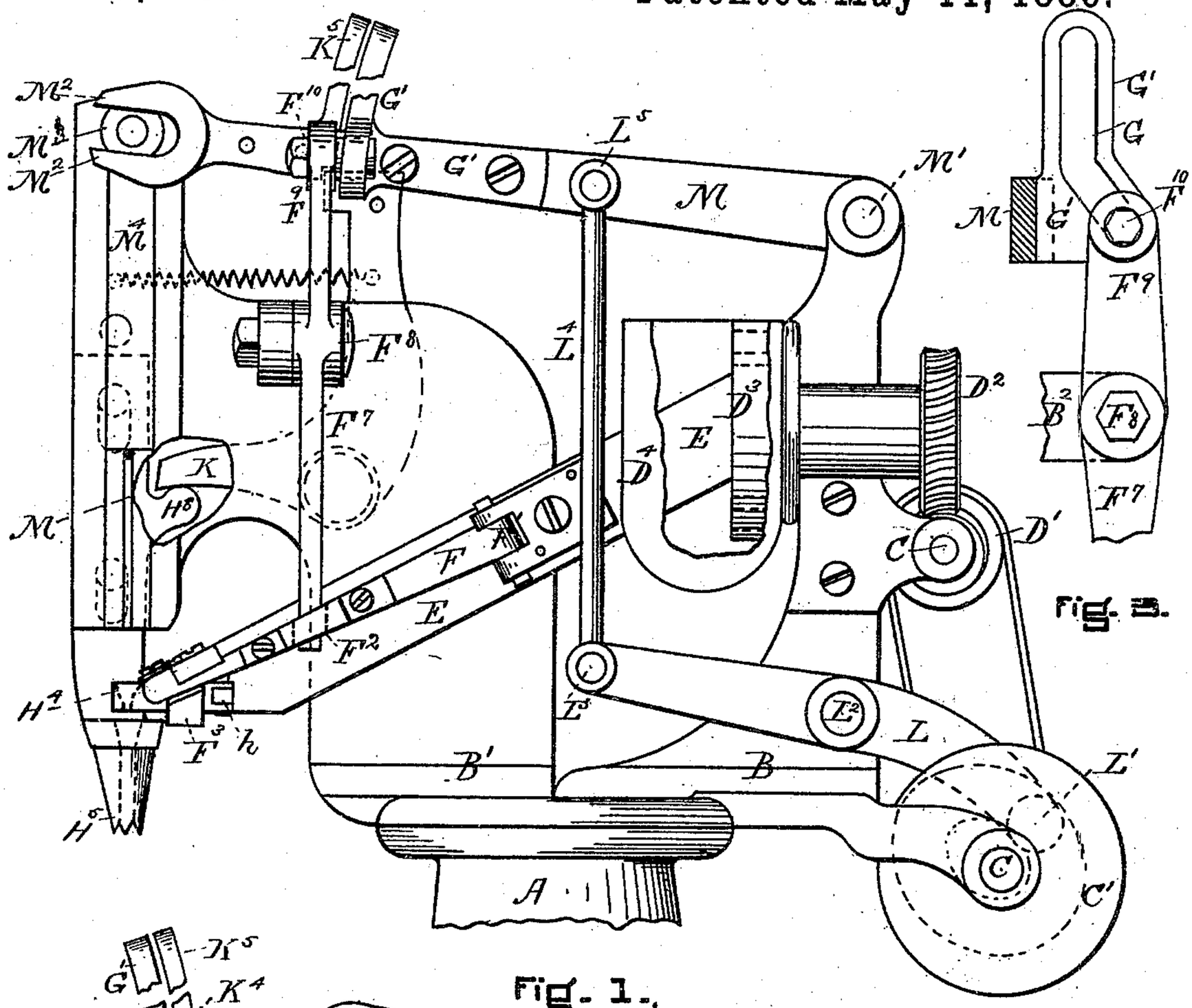

Fig. 1.

Fig. 3.

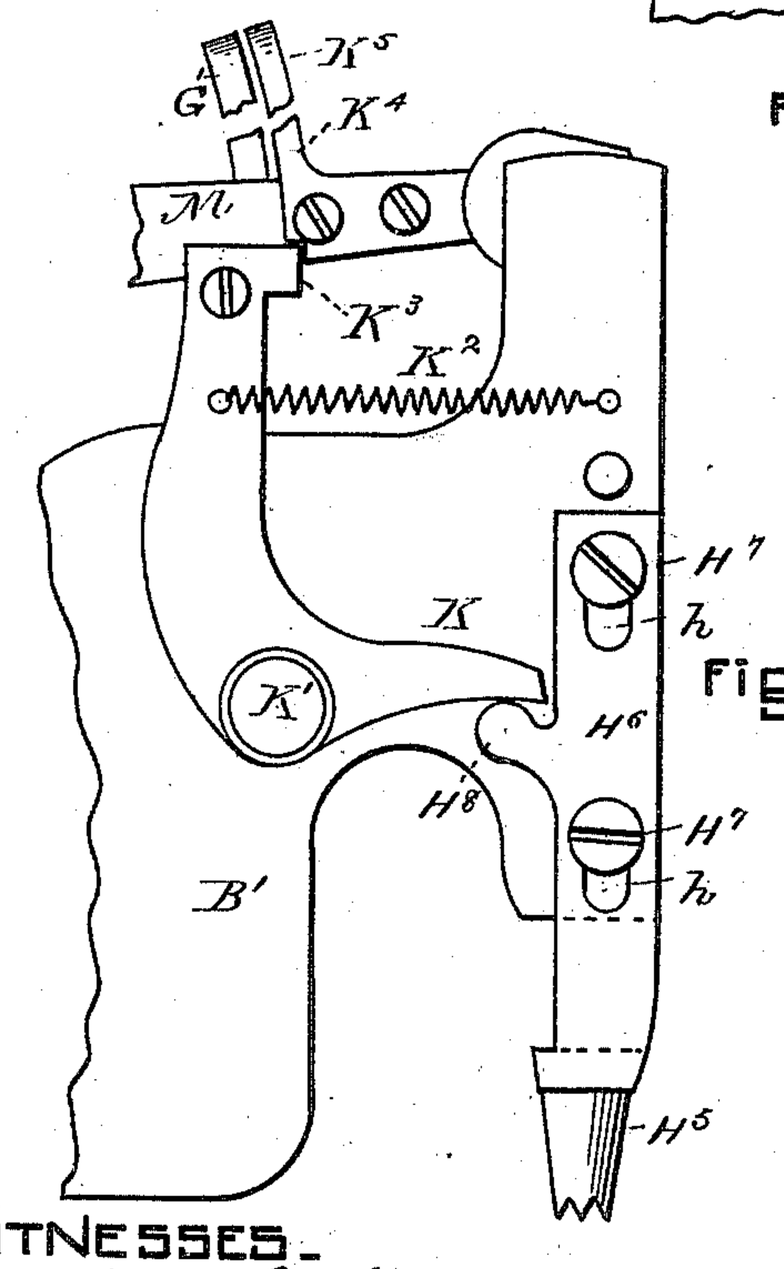

Fig. 2.

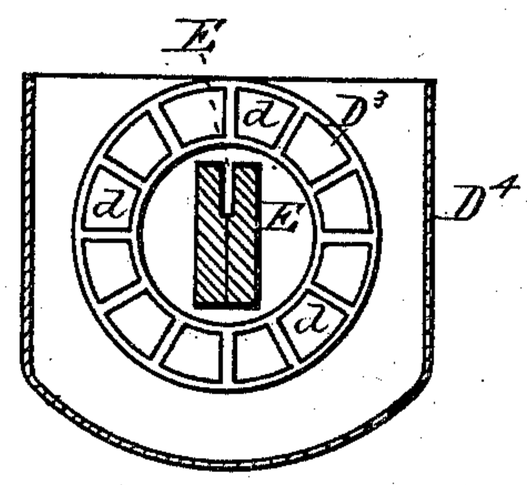

Fig. 4.

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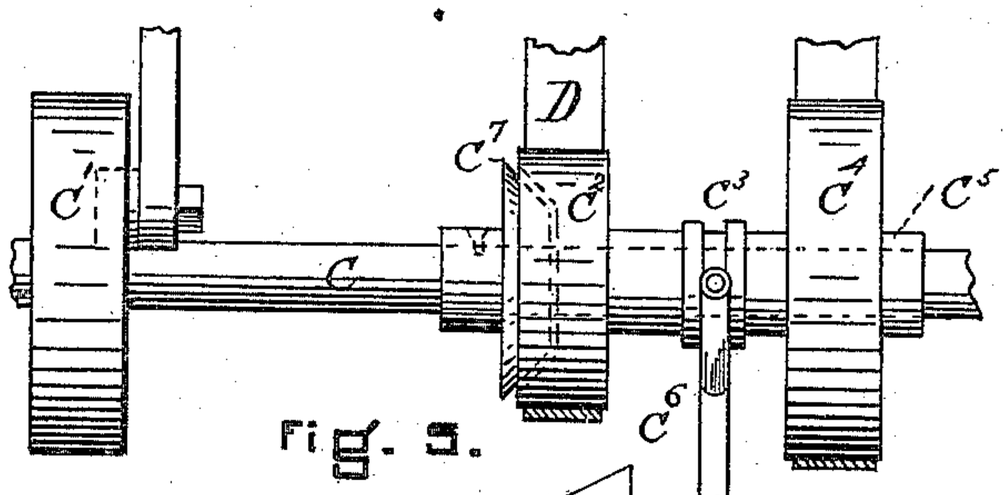

Fig. 5.

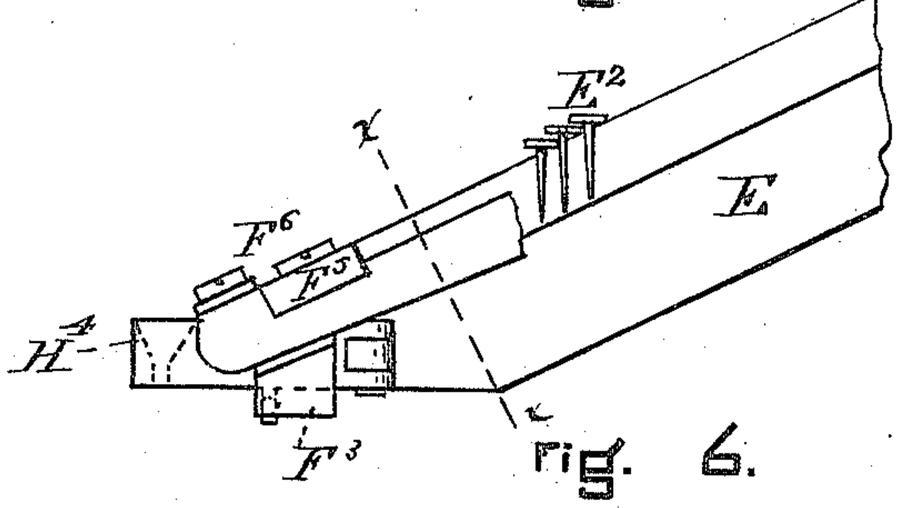

Fig. 6.

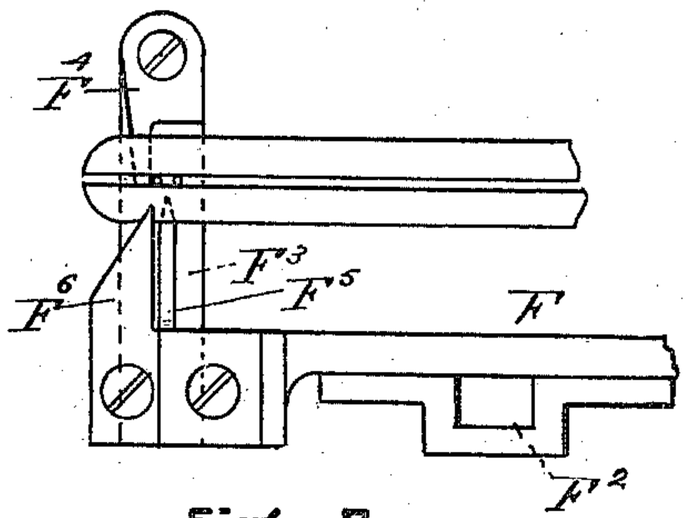

Fig. 7.

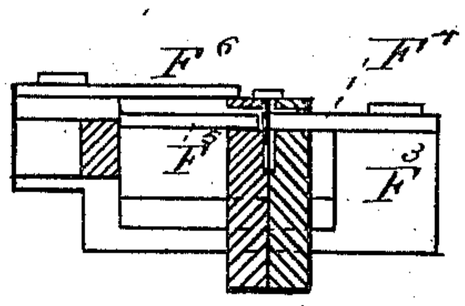

Fig. 8.

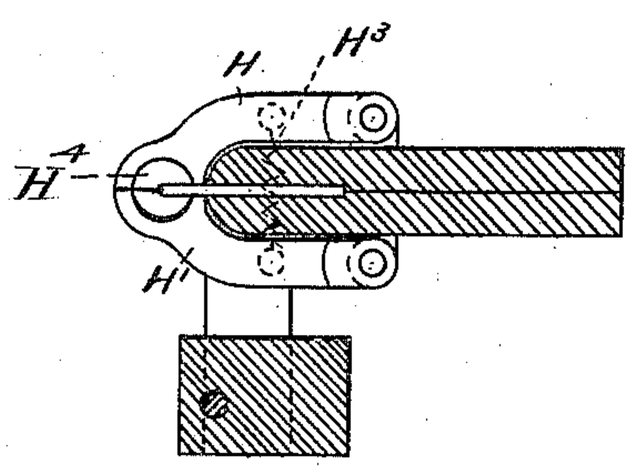

Fig. 9.

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TACK-DRIVING MECHANISM FOR LASTING BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 341,823, dated May 11, 1886.

Application filed October 12, 1885. Serial No. 179,731. (No model.)

To all whom it may concern:

Be it known that I, ROBERT ASHE, of Somerville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Tack-Driving Machines for Lasting Boots and Shoes, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention has for its object the construction of a machine that shall be sure in its action and not liable to get out of order, and simple in construction. These objects I attain by the mechanism shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my machine. Fig. 2 is an elevation of a part viewed from the opposite side from which Fig. 1 is taken, showing the device for stopping the tack-driving mechanism when the boot or shoe is removed. Figs. 3 and 4 illustrate the details. Fig. 5 shows in elevation the main shaft, driving-pulley, friction-pulley, and clutch and cam for operating the driving mechanism. Fig. 6 is a longitudinal section of a part of the tack slide or trough and some of its connecting parts. Fig. 7 is a plan of the same. Fig. 8 is a section taken on line X X of Fig. 6, and Fig. 9 is a detail showing the parts that are immediately connected with delivering the tack to the action of the driver.

In the drawings, A represents the post upon which the machine is supported.

B and B′ are parts which constitute the frame-work of the machine, and to which the working parts are attached.

C, Figs. 1 and 5, is the main shaft of the machine. Upon the shaft C, I have a quill, C^5, Fig. 5, attached to one end of which is the driving-pulley C^4 and to the other end the pulley C^2. The quill C^5 and its attached pulleys C^2 C^4 can be moved slightly lengthwise on the shaft C by means of the lever C^6, which operates in the groove C^3, Fig. 5.

The interior of the pulleys C^2, together with the cone C^7, which is rigidly attached to the shaft C, form a friction-clutch, so that when desirable the shaft C may be made to revolve, and through the cam C′ operate the tack-driving mechanism.

D, Figs. 1 and 5, is the belt extending from the pulley C^2 to the worm-wheel D′, which, acting through the gear D^2, operates the tack-supplying wheel D^3. (See Figs. 1 and 4.) The wheel D^3 is located in the tack-reservoir D^4, and surrounds the end of the tack-trough E, as shown, so that in its revolutions it is constantly taking tacks from the lower part of the reservoir D^4 and carrying them in the recesses *d*, Fig. 4, above the trough E and dropping them upon it, so as to keep the said trough E constantly supplied with tacks. This action of the tack-supplying wheel D^3 is going on whether the tack-driving mechanism is at work or not, so that the tack-trough E is always full of tacks, these tacks being in position, as illustrated at E^2, Fig. 6, the trough E being sufficiently inclined, so that the tacks E^2 will slide down by their own gravity to the delivery-recess H^4, Figs. 1 and 9.

To prevent more than one tack being delivered at a time, I have the following device, (shown more particularly in Figs. 6, 7, and 8:) This device consists of a reciprocating bed-piece, F^3, which has upon it projections F^4 F^5 F^6, (see Figs. 7 and 8,) which are arranged to act similar to the escapement of a watch or clock—that is, when one of the points, F^4, for instance, passes through the tack-raceway, as shown in Figs. 7 and 8, sufficiently far to hold the tacks from sliding down, its corresponding point, F^5, is clear from the raceway; but at the next oscillation of F^3 it will enter the tack-way E′ above the last tack, and, as at the time of this entrance of F^5, F^4 is withdrawn so that the tack held by it can slide into receptacle H^4. At the next operation of the rod F^3 the tack held by F^5 will be released and retained by F^4 until another oscillation takes place—that is, one tack will be released at each oscillation of the bar F^3.

F^6, Figs. 6, 7, and 8, is a plate attached to the oscillating bar F^3, and forces the released tack into the throat under the driver-tacks. Oscillation is imparted to the bar F^3 by means of the lever F, Figs. 1 and 7. This lever F has a recess at F^2, in which the lower end of the lever F operates, the lever F^7 being pivoted to the frame of the machine at F^8, Fig. 1. The upper end, F^9, of the lever F^7 has attached to it a fixed pin, F^{10}. (See Figs. 1 and 3.) This pin F^{10} enters the cam-groove G, Fig. 3, formed in a bracket, G′, which is made fast to

the oscillating arm M, Figs. 1 and 3, so that at each up and down stroke of the arm M motion is communicated to the lever F, oscillating bar F^3, and escapement-points F^4 F^5 F^6.

I will now describe the tack-driving mechanism. M, Fig. 1, is the driving-rod, and is attached to a sliding part, M^4, which has upon its upper end a pin and friction block, M^3, which is embraced by the forked end M^2 M^2 of the lever M. This lever M is pivoted to the frame of the machine at M′ and is made to work by means of the cam C′. Cam-pin L′, Figs. 1 and 5, is attached to the lever L, which, swinging on the fixed pin L^2, acts through the pin L^3, pitman L^4, and pin L^5, and thus operates the lever M.

The tack-receiving hopper H^4, Figs. 1, 6, and 9, is formed at the junction of two levers, H H′, Fig. 9. These levers are pivoted to the part E by pivots *h h*, and held together by a spring, H^3. The receptacle H^4 is cone-shaped, and has in the lower part an opening just large enough for allowing the blade of the tack to pass through it, but not large enough to allow the head to go through, so that the tack will remain suspended until the driving-rod M strikes it, which will force it through, the levers H H′ yielding laterally to admit of the passage of the tack-head. The tack after leaving the receptacle H^4 passes through the hollow presser-foot.

To prevent the tack-driving mechanism from operating when the shoe is removed from the machine, I have the device shown in Fig. 2. This consists of a bell-crank lever, K K^3, which is pivoted to the frame of the machine, as shown at K′. The upper end, K^3, of this lever engages in a notch formed in the bracket-piece K^4 K^5, and is there held by K^2, unless thrown out by the means that I will now describe. The presser-foot H^5 is attached to a sliding part, H^6, which is guided by the screws H^7 H^7 in the slots *h h*. This slide H^6 has a projection, H^8, upon which the lower end, K, of the lever K K^3 rests. When the shoe is placed in position for being tacked, it forces the presser-foot H^5 and the slide H^6 upward. This causes the projection H^8 to force the lever K K^3 into such a position as to throw out its end K^3 from the notch in K^4. This action will leave the lever M free to operate so long as the shoe is in place.

I claim—

1. In a machine for driving tacks, the combination of the tack-trough E and reciprocating bed-piece F^3 with the escapement projections F^4 F^5 F^6, all operating together substantially as described, and for the purpose set forth.

2. In a machine for driving tacks, the combination of the driving-pulley C, quill C^5, sliding device C^3 C^6, and pulley C^2 with the shaft C, cam C′, lever F, link L^4, and working-lever M, all operating together substantially as described, and for the purpose set forth.

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