

(No Model.)

2 Sheets—Sheet 1.

S. W. LADD.
TACKING MACHINE.

No. 510,976.

Patented Dec. 19, 1893.

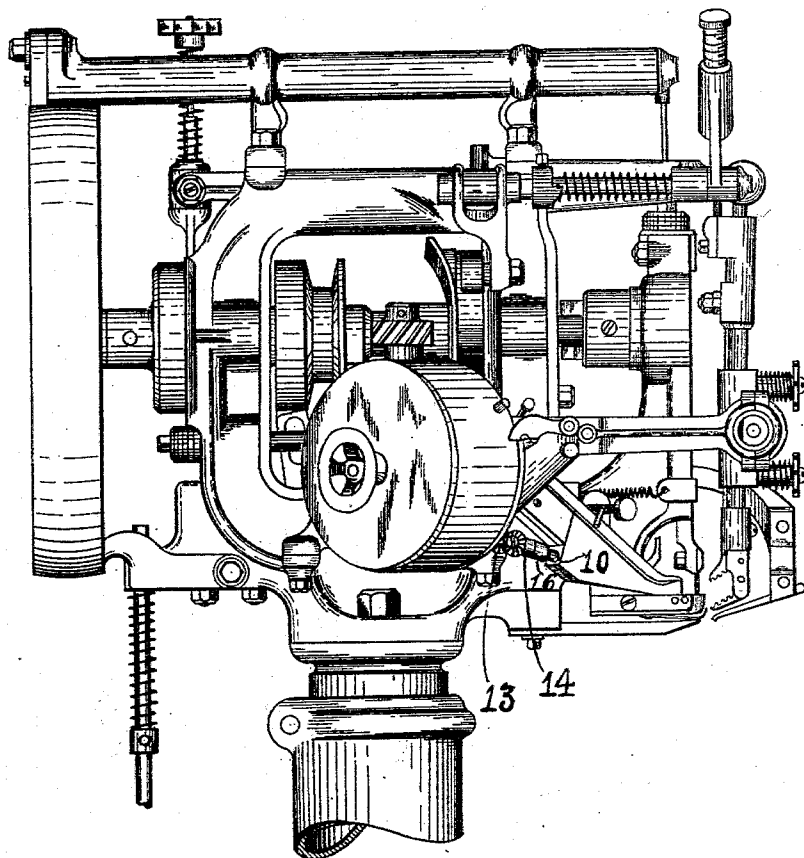


Fig. 1.

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INVENTOR
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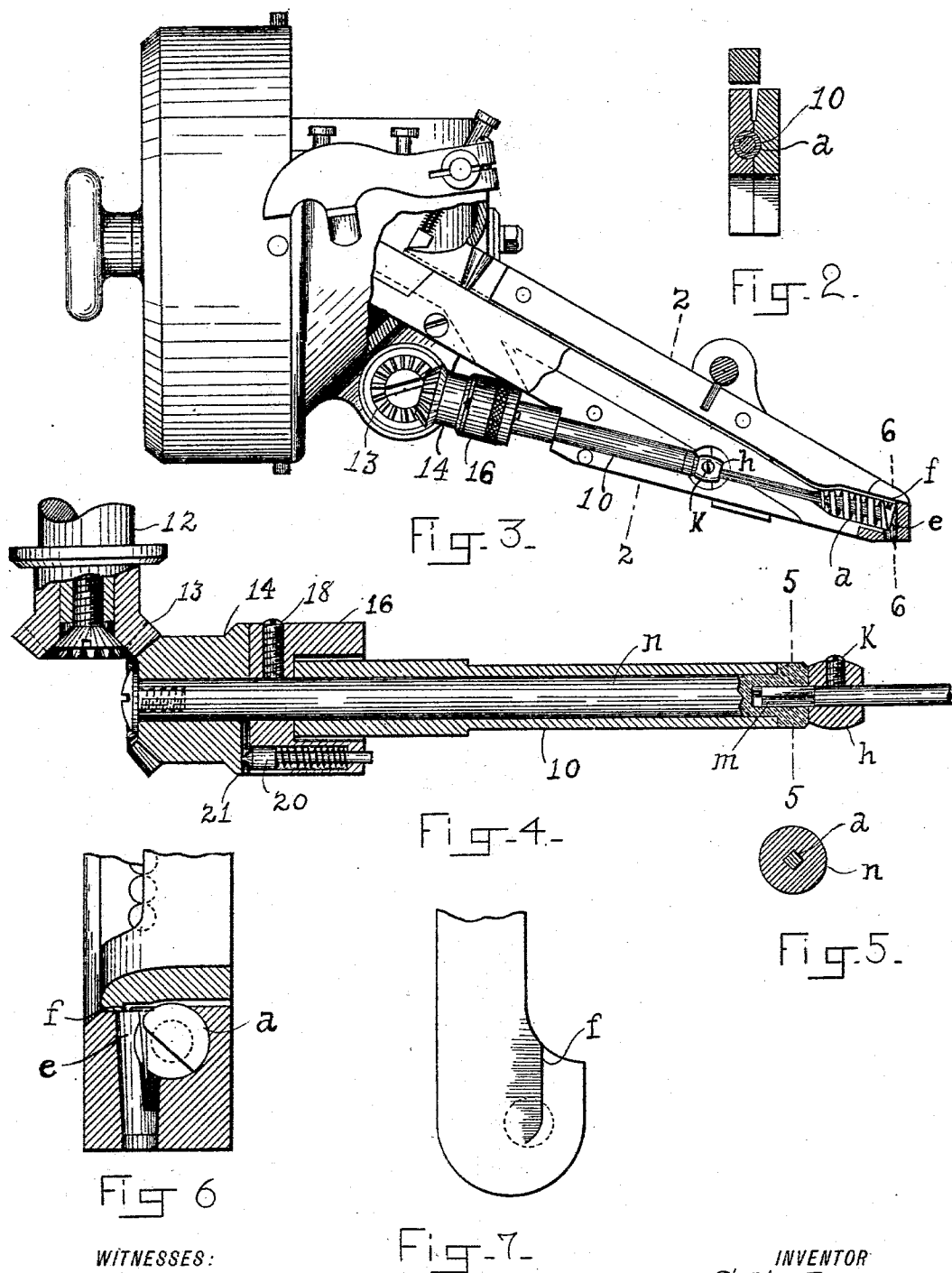
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WITNESSES:

L. H. S. Ladd
C. E. Hamill.

INVENTOR
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UNITED STATES PATENT OFFICE.

SHERMAN W. LADD, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO
THE CONSOLIDATED HAND METHOD LASTING MACHINE COMPANY,
OF NASHUA, NEW HAMPSHIRE.

TACKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 510,976, dated December 19, 1893.

Application filed August 1, 1892. Renewed June 9, 1893. Serial No. 477,117. (No model.)

To all whom it may concern:

Be it known that I, SHERMAN W. LADD, of Somerville, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain Improvements in Tack and Nail Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention is an improvement on the mechanism described in Letters Patent of the United States No. 423,921, and which is further modified, described and claimed in an application by me for Letters Patent, now pending in the United States Patent Office, Serial No. 374,554.

In the drawings, Figure 1 is a side elevation representing my invention as forming the component part of a lasting machine, for a description of which see Letters Patent of the United States, No. 423,922. Fig. 2 is an elevation of a section on line 2, 2, of Fig. 3. Fig. 3 is a side elevation, partly in section to better represent details. Fig. 4 is a plan of a longitudinal section of the worm-shaft and its driving gear. Fig. 5 is an elevation of a section on line 5, 5, of Fig. 4. Fig. 6 is a sectional perspective on line 6, 6, of Fig. 3. Fig. 7 is a plan of the under face of that portion of the cover to the tack chute which rests above the distributing-worm.

In the present instance my invention relates to that part of the mechanism embodying and directly connected with the tack-distributing-worm, whereby the tacks are separated and discharged, one by one, to the driver. It will be understood that the tacks gravitate down the race-way of the tack chute to the spindle of the tack-distributing worm, *a*, where they are engaged, one by one, and are carried forward by the revolving distributor-worm to the receiving-tube, *e*, into which they are dropped from the end of the distributing-worm. (See Figs. 3 and 6.) It is found to be important that the tack should be suspended and carried well over the chamber of the receiving tube, (Fig. 6,) before it is discharged from the worm, all to the purpose that the tack may drop freely and straight downward. To insure the tack being thus carried into the desired position, I

have provided a tack-guide, *f*, (Fig. 6,) by which the tacks, as they are carried along by the distributor-worm, are caused to bear and be guided inwardly, all the time holding close up to the distributor-worm until well over the central part of the receiving chamber, (see Fig. 6,) in which position they are freed from engagement with the walls of the receiving-chamber, when dropped by the distributor-worm.

In carrying out this part of my invention, as represented in the present instance, I construct the top end portion of the tack chute with a bead, *f*, projecting downwardly from its under side and in the position desired for suitably aligning and guiding the tacks. (See Figs. 6, 7, and 3.) The tack-distributing-worm bears its discharge end against the inner wall of the tack-receiving tube, *e*, (Fig. 3,) and has its shank or spindle end entered in a suitable socket, *m*, formed in the revoluble shaft, *n*, (Fig. 4,) and carries an adjustable collar, *h*, which may be adjusted by means of screw, *k*, all this to permit longitudinal motion and adjustment of the distributor-worm. The driving-shaft, *n*, is journaled to permit a revolution in a supporting-sleeve, 10, (Fig. 4,) which is detachably connected with the block of the tack-chute, as shown in Fig. 3. Rotary motion is imparted to the shaft, *n*, from a suitable driving shaft, 12, by gear connections, shown in Fig. 4. The gear, 13, is made fast to the driving-shaft and intermeshes with the gear, 14, which is supported to turn on the end of the shaft, *n*. On the shaft, *n*, is a collar, 16, which is fixed adjustably to the shaft by means of a screw, 18, and which carries a spring-actuated, conical-ended clutch-pin, 20, adapted to yieldingly engage in a recess, 21, suitably formed in gear, 14, all as shown in Fig. 4. The connections described as interposed between the driving-shaft, 12, and worm driving-shaft, *n*, are designed in order to obviate the breakage incident to the worm and its connections by reason of tacks becoming unduly wedged between the worm and its surrounding walls so as to cramp and stop the same. It will be understood that in case such an incident occurs, with the construction described, the abnor-

mal resistance of worm-shaft, *n*, operates to disengage clutch-spindle, 20, from its gear, 14, and so permits the shaft, *n*, to remain stationary and allows a continuous revolution of the shaft, 14, and driving shaft 12.

It will be understood that the tack-distributor-worm is so proportioned in relation to the race-way channel, as to take from the channel and deposit into the receiving chamber a tack at each revolution of the distributor, the whole working in connection with a driving mechanism that is timed relatively so as to drive the tack between the operations of discharge. If then, a stoppage of the tack-distributor occurs, and its relation to connecting parts is disturbed, such relation must be re-established in order to keep up the uniform regularity of receiving and timely discharging the tack. To this end it is that I employ the enlarged adjustable collar, 16, and its yielding clutch spindle, 20, from which it will be understood that the operator, by grasping, with one hand, the collar, 16, may, at any time, stop the distributor-worm to remove an improperly lodged tack, or to examine or in any wise inspect the distributing mechanism, and whenever the inspection is completed, the hold is released at a time when the clutch, 20, engages in the socket of gear, 14, whereby the continuity is re-established.

For a description of the tack hopper and mechanism whereby the tacks are deposited and adjusted in the race-way, as also for a more specific understanding of the construc-

tion and operation of parts herein represented. See Letters Patent No. 423,921.

I claim—

1. In combination, the revoluble tack distributor, the rotating driver shaft, the spring-actuated clutch-pin, 20, supported to turn with the distributor and yieldingly engage in a recess of the driver-shaft, against which the distributor is revolved, and means by which the distributor is held against rotation of the driver-shaft, substantially as described.

2. The combination of tack-chute the distributor-worm, journaled to permit rotary movement therein and adjustable longitudinally, a revoluble shaft engaging the distributor-worm to revolve the same and adjustable means for holding the distributor-worm in different longitudinal positions, substantially as described.

3. In combination, the tack chute, the revoluble distributing worm, the rotating driver-shaft and yielding clutch interposed between the shaft and distributor, against which the distributor is revolved and means, consisting of the enlarged collar, 16, by which the distributor is held against rotation of the driver shaft, substantially as described.

Signed at Boston, Massachusetts, this 22d day of July, A. D. 1892.

SHERMAN W. LADD.

Witnesses:

E. E. HAMILL,

J. FOSTER BISCOE.