(No Model.) 2 Sheets—Sheet 1.

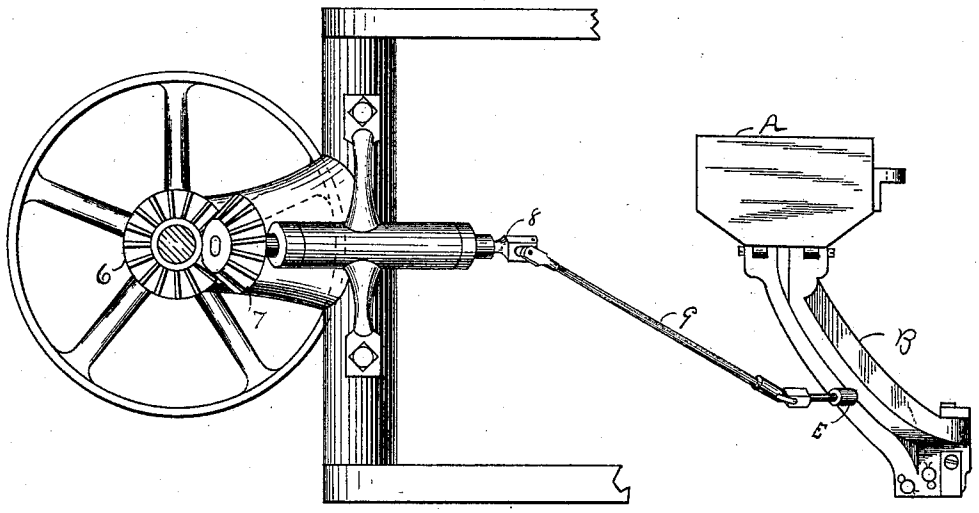
J. E. MATZELIGER, Dec'd.

G. W. MOULTON, Administrator.

TACK SEPARATING AND DISTRIBUTING MECHANISM.

No. 423,937. Patented Mar. 25, 1890.

Fig. 1.



WITNESSES:

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(No Model.) 2 Sheets—Sheet 2.

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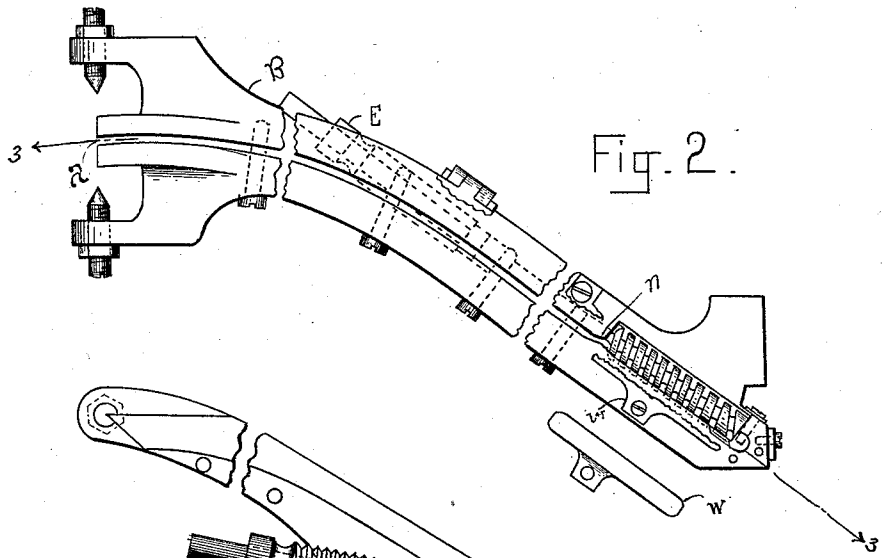

Fig. 2.

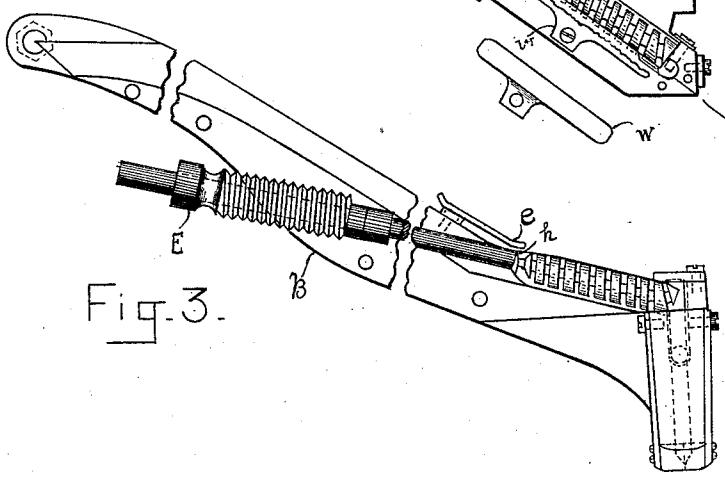

Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

JAN EARNST MATZELIGER, OF LYNN, MASSACHUSETTS; GEORGE W. MOULTON ADMINISTRATOR OF SAID MATZELIGER, DECEASED.

TACK SEPARATING AND DISTRIBUTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 423,937, dated March 25, 1890.

Application filed October 31, 1888. Serial No. 289,687. (No model.)

To all whom it may concern:

Be it known that I, JAN EARNST MATZELIGER, of Lynn, county of Essex, and Commonwealth of Massachusetts, have invented certain Improvements in Tack Separating and Distributing Mechanism, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to mechanism whereby tacks are received in bulk and separated and distributed one at a time at intervals.

In an application for Letters Patent of the United States filed in the Patent Office August 14, 1885, Serial No. 174,378, the mechanism constituting this invention is represented as a component part of a lasting-machine. In this application the invention described relates specifically to mechanism whereby tacks are taken from a raceway and discharged one at a time at positive intervals to a suitable receiving device; but as an aid in more fully understanding this invention reference is had to the Letters Patent above referred to.

In the drawings, Figure 1 is a side elevation of a mechanism embodying this invention. Fig. 2 is a plan view of the lower section of the tack-chute. Fig. 3 is an elevation of a central section of Fig. 2. Fig. 4 is a view of the tack-separator detached.

The tacks are placed into the hopper A in bulk, and are shifted therefrom to the raceway-channel *a* of the chute B. The mechanism whereby this is effected and the manipulation thereof is fully described in said application, Serial No. 174,378. It is noted here that the tacks, having entered the raceway, are suspended, their heads bearing on the chute, their bodies projected downwardly in the raceway. The chute is inclined and smoothly polished, to the end that the tacks shall gravitate downward without assistance other than the natural jar of the working parts.

The separator is located at the lower end of the chute at one side of a guide or guard X. (See Figs. 2 and 3.) Said separator is represented in Fig. 4. It consists of a shaft having a spirally-formed thread emerged therefrom and extended to the end thereof. The tack-raceway terminates at the upper end of the separator-screw, as shown in Figs. 2 and 3.

The separator has its shank journaled in a bushing E, which bushing is screw-threaded and screwed into a socket formed in the walls of the chute. The thread of the separator commences at the point *h* (see Figs. 3 and 4) and lifts gradually from the shaft of the separator to attain its full size greater in diameter than the shaft about three turns from the starting-point. It is at the point *h* where the screw engages the tack to separate it from the row of tacks in the raceway above, and the screw-thread is made to gradually contract in diameter at this point, in order that it may work up to and engage close under the head of the tack, for a tack thus engaged may be carried forward by the screw without cramping. Over the raceway *a* at the engaging-point is a presser-foot *e*, which prevents the tack from being lifted by the separator during the operation of getting hold of it; but the presser yields upwardly to prevent the tack from being unduly cramped or crowded. The position of the separator in the raceway and the channel of its screw is such that tacks coming down the raceway pass under the foot, and when opportunity offers the foremost tack of the line sets forward into the channel of the separator. Each complete revolution of the separator brings its channel into position for receiving a tack. As the separator next begins to revolve the said foremost tack is engaged by the separator-thread, which, coming in behind the tack, separates it from the line and carries it forward, guided between the separator and the guide X. By the same thread all approach for the other tacks is cut off until the separator completes its revolution and again presents the open channel to receive the next foremost tack. To facilitate the taking of the tack, a slight lateral curve is made in the chute-raceway at the taking-point, as shown in the drawings, and a cap *w* may extend over the separator to prevent the tacks from lifting at *n*.

The separator is made to revolve by any suitable mechanism; but the devices I have employed for this purpose are represented in the drawings, and comprise a driving-shaft and the intermediate rods and gears 6 7 8 9, arranged and connected with the separator-shaft, as represented. By each complete revolution of the separator a tack is removed from

the raceway into one end of the separator-channel and a tack is also discharged from the separator at the opposite end of its channel.

A suitable device (many kinds of which are plainly suggested) may be provided for receiving the tack as it falls from the separator, or it may be allowed to fall at random.

In the drawings I have represented a receiver at the end of the chute which is provided with a cavity for receiving the discharged tack, and from which it is ejected by a suitable driver mechanism into an object supported beneath the receiver; but such matters and other details of construction represented herein are separately claimed in other applications for Letters Patent of the United States therefor, serially numbered 287,903 and 287,988, and to which reference is had for a description thereof.

I claim—

1. In a nailing-machine, the combination, with an inclined chute, of a spiral separator secured to the lower end thereof, said chute being provided with a slot the lower end of which is curved laterally at the junction of the chute with the separator, substantially as described.

2. In a nailing-machine, the combination, with the slotted tack-chute, of a spiral separator and a screw-threaded bushing for supporting the separator, and whereby it may be adjusted longitudinally to or from the lower end of the slot or raceway *a* of the chute, substantially as described.

JAN EARNST MATZELIGER.

Witnesses:

C. H. DELNOW,

C. B. TUTTLE.