(No Model.) 2 Sheets—Sheet 1.

J. E. MATZELIGER.

NAILING MACHINE.

No. 421,954. Patented Feb. 25, 1890.

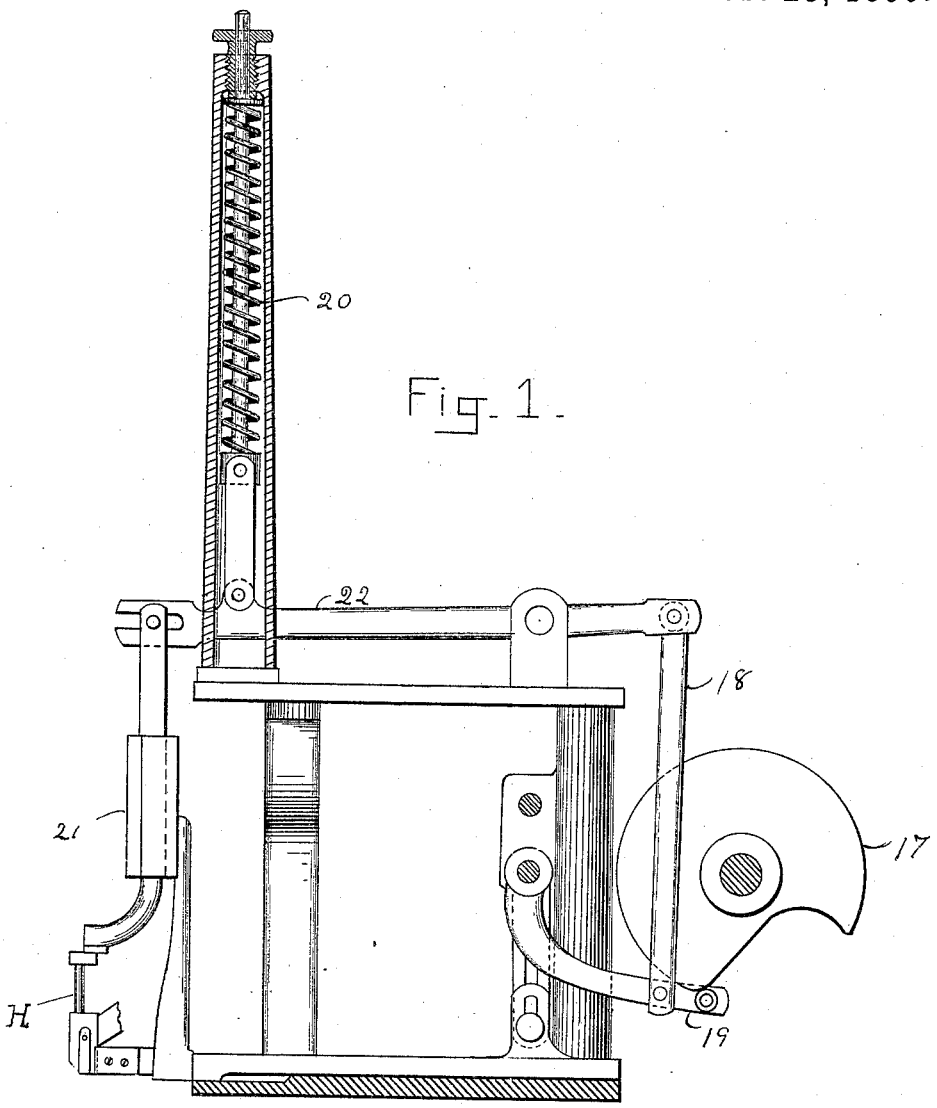

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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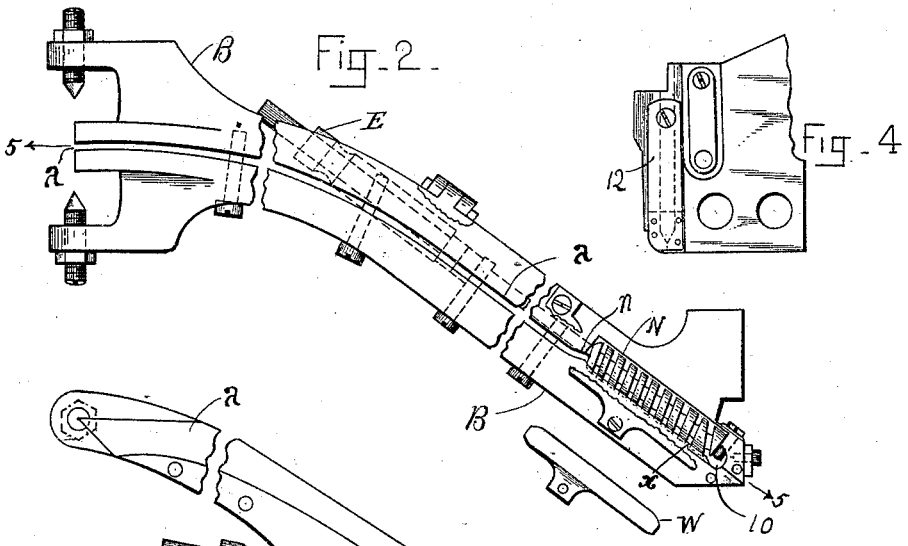

Fig. 2.

Fig. 4

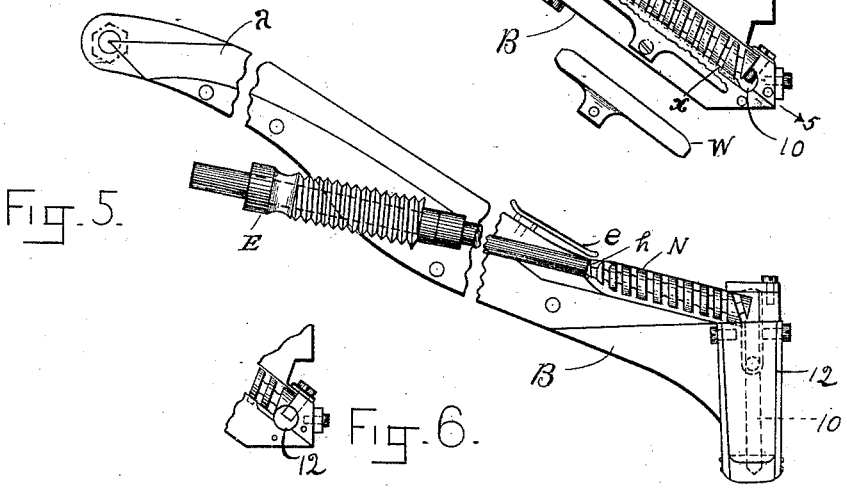

Fig. 5.

Fig. 6.

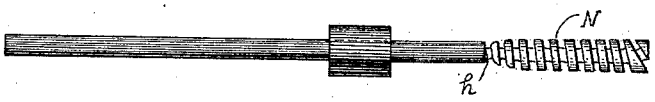

Fig. 3.

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UNITED STATES PATENT OFFICE.

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

NAILING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 421,954, dated February 25, 1890.

Application filed October 13, 1888. Serial No. 287,988. (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 and Nail Distributing and Driving Mechanism, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to improvements in mechanism whereby tacks and nails are received in bulk promiscuously and are separated and discharged one at a time into an object supported for receiving the same, as hereinafter more fully described.

In the accompanying 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 chute and separator. Fig. 3 is a view of the separator detached. Fig. 4 is a side elevation of the receiver detached and is on an enlarged scale. Fig. 5 is an elevation of a section on line 5 5 of Fig. 2. Fig. 6 is a plan view of a detail, to be referred to hereinafter.

In operation the tacks are placed into a hopper and are shifted therefrom to the raceway-channel *a* of the chute. The chute is inclined and smoothly polished, so that the tacks gravitate downward along said raceway to the separator N, which is located beyond the lower end of the chute and has a guide *x* at one side. The mechanisms whereby the tacks are shifted into the raceway and whereby they are separated and discharged therefrom are separately claimed in other applications for Letters Patent of the United States therefor respectively filed in the United States Patent Office and numbered 289,687 and 287,903. They are also further described in connection with the mechanism herein claimed as the subject-matter of this invention in an application for Letters Patent of the United States for improvements in lasting-machines filed in the United States Patent Office August 14, 1885, Serial No. 174,378, to which applications reference is had.

At the end of the chute B is a receiver, which is a block or case provided with a well or chamber 10 for receiving the tack or nail, as shown. The receiver is made in two parts suitably hinged together and adapted to open outward in order to let the tack through, as hereinafter described. The receiver-chamber is pointed at the bottom, so as to line and direct the tack. The walls of the receiver are held together by suitable springs 12 12, against which the walls are opened when the tack goes through. The tacks, having entered the chute-raceway, gravitate downward to the separator N, and are separated and deposited, one at a time, in the receiver. The tack is engaged from the raceway by the separator-thread, and is carried forward in the channel between the guide *x* and the separator until it falls from the end thereof into the receiver-well. The guide *x* is a straight edge parallel to the line of the shaft upon a part of the chute, as best shown in Fig. 2. The receiver is preferably fixed to the end of the chute, and it is desirable to have the tack carried well over the receiver before it leaves the separator, to the end that it may be sure to make a proper descent into the receiver-well. To this end it is necessary for the separator to extend over the receiver-well; but it is also necessary for it to withdraw in time to permit the driver H to descend for driving the tack. For these reasons the angle of the thread of the separator-screw, near the outer end thereof, is changed abruptly to an angle of about forty-five degrees to the axis of the shaft, as represented, and the end of the separator is beveled off on the side opposite to said angle in the screw. The separator is positioned relatively to the receiver-well and chute, so that during a portion of its revolution the end of its thread reaches over the receiver-well, as shown in Fig. 5, at which moment the tack is dropped. A further movement of the separator presents the beveled or shorter side thereof to the receiver, at which moment the receiver-well is unobstructed and the driver is permitted to descend. Said driver consists of a metallic rod, which is lifted by a cam 17 through intermediate levers 18 19 22, as represented in Fig. 1. The driver is depressed by a spring 20. It is supported in a journal 21.

In operation the driver descends into the receiver-well and discharges the tack through the bottom of the receiver into an object supported under the same, to which end the re-

ceiver-walls are opened by the descending driver. It will be understood that a receiver might be employed which could be detachable from the chute, and, having received its tack from the separator, could be moved to a distant point for the driving operation. This would only require the receiver to be made detachable from the chute and such mechanical supports as any ordinary mechanic would devise.

I claim—

1. A feeding device for nails, &c., provided with a separator consisting of a threaded shaft having the terminal portion of the screw-thread changed abruptly to a great angle to the axis, substantially as described.

2. The combination, in a nail-feeding device, of a chute having an inclined raceway, a separator consisting of a single-threaded shaft extending from the lower end of the raceway, a guide x in the form of a strip at one side of the separator, and a receiver consisting of a block having a tack-receiving chamber open at the upper end, to which the end of the separator extends, substantially as set forth.

3. The combination of a raceway, driver, receiver, and feeding-screw consisting of a threaded shaft cut away at the free end for the passage of the driver into the receiver, substantially as described.

JAN EARNST MATZELIGER.

Witnesses:
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