No. 607,940. Patented July 26, 1898.

B. F. MAYO.

NAIL ASSORTING MECHANISM.

(No Model.) (Application filed Aug. 24, 1897.)

Fig. 3.

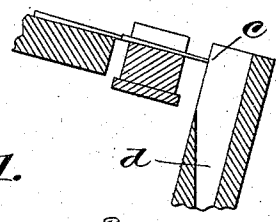


Fig. 5.

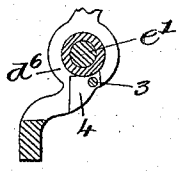


Fig. 1.

Fig. 2.

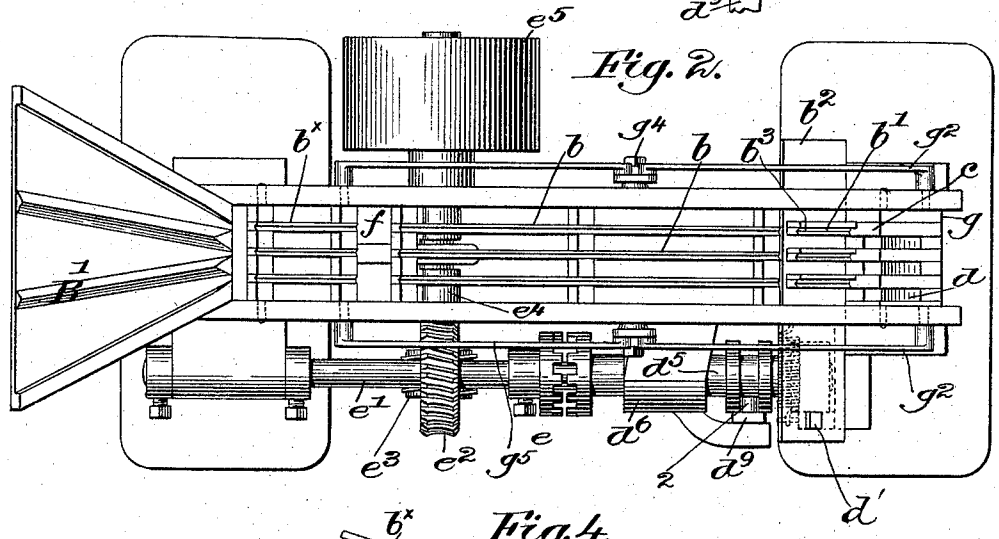
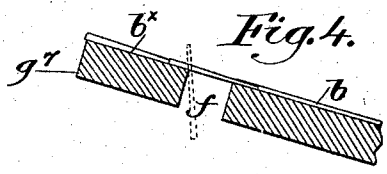


Fig. 4.



Witnesses:

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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NAIL-ASSORTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 607,940, dated July 26, 1898.

Application filed August 24, 1897. Serial No. 649,320. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. MAYO, of Salem, county of Essex, State of Massachusetts, have invented an Improvement in Nail-Assorting Mechanism, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

In another application filed concurrently herewith I have shown a series of raceways having coöperating with them a device to discharge the nails laterally from the raceways; but herein I have so constructed each raceway that it is composed, essentially, of a plurality of parts, one above and normally in line with the other, one part of each raceway being laterally movable with relation to the other part thereof, thus permitting a nail resting on the lower part of said two-part raceway to be carried by the lateral movement of said part or by a relatively lateral movement of one of said parts with relation to the other aside, so that said nails may escape and be discharged into a suitable pocket located at one side of the vertical plane of the main body of the raceway.

Figure 1 in side elevation represents a sufficient portion of a nail-assorting mechanism to enable my invention to be understood; Fig. 2, a top or plan view of the machine shown in Fig. 1, and Figs. 3, 4, and 5 are details to be described.

The base or bed A has erected on it suitable legs B, said legs supporting the working parts, including the hopper B′ and the body B^2 of the raceway-frame.

Herein I have shown the body or frame as provided with three raceways composed of two parts or sections $b\,b'$, the sections b' being herein shown as laterally movable with relation to the sections b above them. The sections have, as shown, longitudinal grooves at their top sides for the reception of the nails to be assorted, said nails being fed from said hopper onto said raceways. At the lower extremities of the two-part raceways I have placed a series of stops c, they being located at the ends of the laterally-movable parts b' of the two-part raceways. The parts b' are erected on a common actuating device b^2, (shown as a slide-bar,) and each of the shorter race-sections b' has at one side of it a preliminary stop b^3, which when the raceway-sections b' are moved laterally out of line with the main or longer parts b of the raceways act as stops to hold back the next nails behind the nails then resting on the movable shorter sections, with their points against the stops c. When the shorter sections b' are so moved sidewise or laterally out of line, the points of the nails resting against said stops c are carried laterally away from said stops, when the said nails slide from the said shorter sections, point first, into suitable pockets d, leading to any usual or suitable nail block or device to contain the assorted nails to be subsequently driven.

The movable sections of the raceway may derive their movement, as herein shown, from a lever d', pivoted at d^2 and actuated in one direction by a suitable cam d^3 and in the opposite direction by a suitable spring d^4. The cam is fast on a short shaft d^5, having its bearings at d^6, said shaft having at one end a suitable clutch, as d^7, and also a grooved hub d^8, which is entered by a stud or roller 2 of a lever d^9, pivoted at d^{10}, said lever being used to move said clutch to the left, viewing Figs. 1 and 2, to engage the continuously-moving clutch part e, fast on shaft e', having a worm-toothed gear e^2, which is engaged and rotated by a worm e^3, fast on a crank-shaft e^4, provided at one end with a pulley e^5, driven by any usual or suitable belt, said crank-shaft having a connected link e^6, which is attached to the leg B and imparts a vibrating or shaking motion to the hopper and the raceways sufficient to keep the nails running down said raceways one after another.

Herein I desire to load the nails in any usual block point first, and to provide for this the raceway is permanently divided or separated, as at f, to leave a space through which

any nails getting onto the raceway from the hopper head first may drop and so leave the raceway entirely, only the nails leaving the hopper point first coming onto the part b of the raceway. The stops c may be attached, as shown, to a slide-bar g, having at its ends suitable pins, projections, or equivalent means to enter suitable guideways g' on the body B^2.

The slide-bar g is shown as connected by a link g^2 with a lever g^3, pivoted at g^4, and the opposite end of said lever is herein shown as connected by a link g^5 with a suitable pin or projection g^6, extended from the end of the bar g^7, having erected on it the preliminary starts $b^\times$ of the two-part raceways b b'. By turning this lever g^3 the bars g and g^7 may be simultaneously moved in opposite directions to thus adjust the position of the stops c with relation to the portions b' of the raceway and the preliminary starts $b^\times$ with relation to the upper ends of the raceways b, so that the apparatus may be readily adjusted to enable any desired length of nail to be handled on the raceways. When the shaft d^5 has been given one complete rotation, to thus move the raceway portions b' laterally and then let them be returned into their normal position, the said shaft must be instantly stopped, and to do this the collar d^8, fixed on the shaft d^5, may be provided with a lug 3 to strike a cam 4, fast on the bearing d^6. (See detail, Fig. 5.)

It will be obvious from the foregoing description that the stops c act to arrest the nails coming down the raceways b and that said stops are a necessary coöperative part of said raceway portions b, and it will also be obvious that the raceway portions b', having the preliminary stops b^3, also coact.

Herein I have shown the portions b' as adapted to be moved laterally with relation to the portions b to effect the discharge of the nails point first; but it will be understood that the same result could be effected by a relative lateral movement between the parts b and c, on the one hand, and the parts b' and b^3, on the other hand, so this invention is not necessarily restricted to moving a particular one of the said two portions. It will also be understood that the movable sections b' will not exceed in length the nails to be controlled by them, and consequently if the nails vary very much in length the lengths of the sections b' will be changed to suit the particular nails to be acted upon, and the stops c are therefore made adjustable, so that they may occupy the desired position with relation to the portions b' to adapt the said stops to nails of the lengths being handled in the apparatus.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a nail-assorting mechanism, a raceway separated into a plurality of sections adapted to insure the travel of a nail from one into the other section when the individual portions of said sections are in the same vertical plane, and a stop to rest the leading end of the nail, combined with means to effect relative lateral movement of one portion or section of said raceway with relation to the other portion or section thereof, to insure the discharge of nails, substantially as described.

2. In a nail-assorting mechanism, a raceway separated into a plurality of sections adapted to insure the travel of a nail from one into the other section when the individual portions of said sections are in the same vertical plane, a stop located below the endmost section for the nail resting on said section and coming from the section above, combined with a preliminary stop on the endmost section, to act as a stop for the nail next back of the one to be discharged, and with means to effect relative lateral movement of one portion or section of said raceway with relation to the other portion or section thereof, to insure the discharge of the nails, substantially as described.

3. In a nail-assorting mechanism, a raceway separated into a plurality of sections adapted to insure the travel of a nail from one into the other section when the individual portions of said sections are in the same vertical plane, a stop located below the endmost section for the nail resting on said section and coming from the section above, combined with a preliminary stop on the endmost section, to act as a stop for the nail next back of the one to be discharged, and with means to effect relative lateral movement of one portion or section of said raceway with relation to the other portion or section thereof, a hopper, and a preliminary start located above the uppermost section of said raceway and separated therefrom by a space to insure the discharge of all nails leaving the hopper head foremost, substantially as described.

4. The raceway sections or portions b, combined with a movable actuator upon which is mounted a series of raceway sections or portions b', and suitable preliminary stops b^3, combined with a series of stops for the ends of the nails lying on the raceway-section b', and means to actuate said parts for the discharge of nails, substantially as described.

5. In a nail-assorting mechanism, a raceway separated into a plurality of sections adapted to insure the travel of a nail from one into the other section when the individual portions of said sections are in the same vertical plane, combined with means to effect relative lateral movement of one portion or section of said raceway with relation to the other portion or section thereof, to insure the discharge of nails, and a series of pockets normally out of line with said raceway-sections when the nails are traveling from one to the other section, said pockets receiving the nails from the laterally-movable sections, substantially as described.

6. In a nail-assorting mechanism, a raceway composed of two portions b and b', and pre-

liminary starts; and a series of stops; combined with means connecting said preliminary starts and stops whereby they may be simultaneously adjusted to accommodate the raceway to nails of different lengths, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJAMIN F. MAYO.

Witnesses:
GEO. W. GREGORY,
EMMA J. BENNETT.