Oct. 23, 1923. 1,471,354

J. H. POPE

DISTRIBUTING APPARATUS

Filed June 20, 1919 4 Sheets-Sheet 1

Fig. 6.

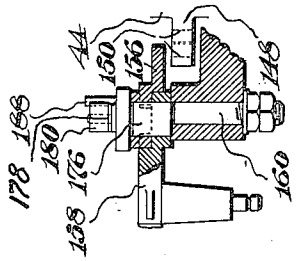
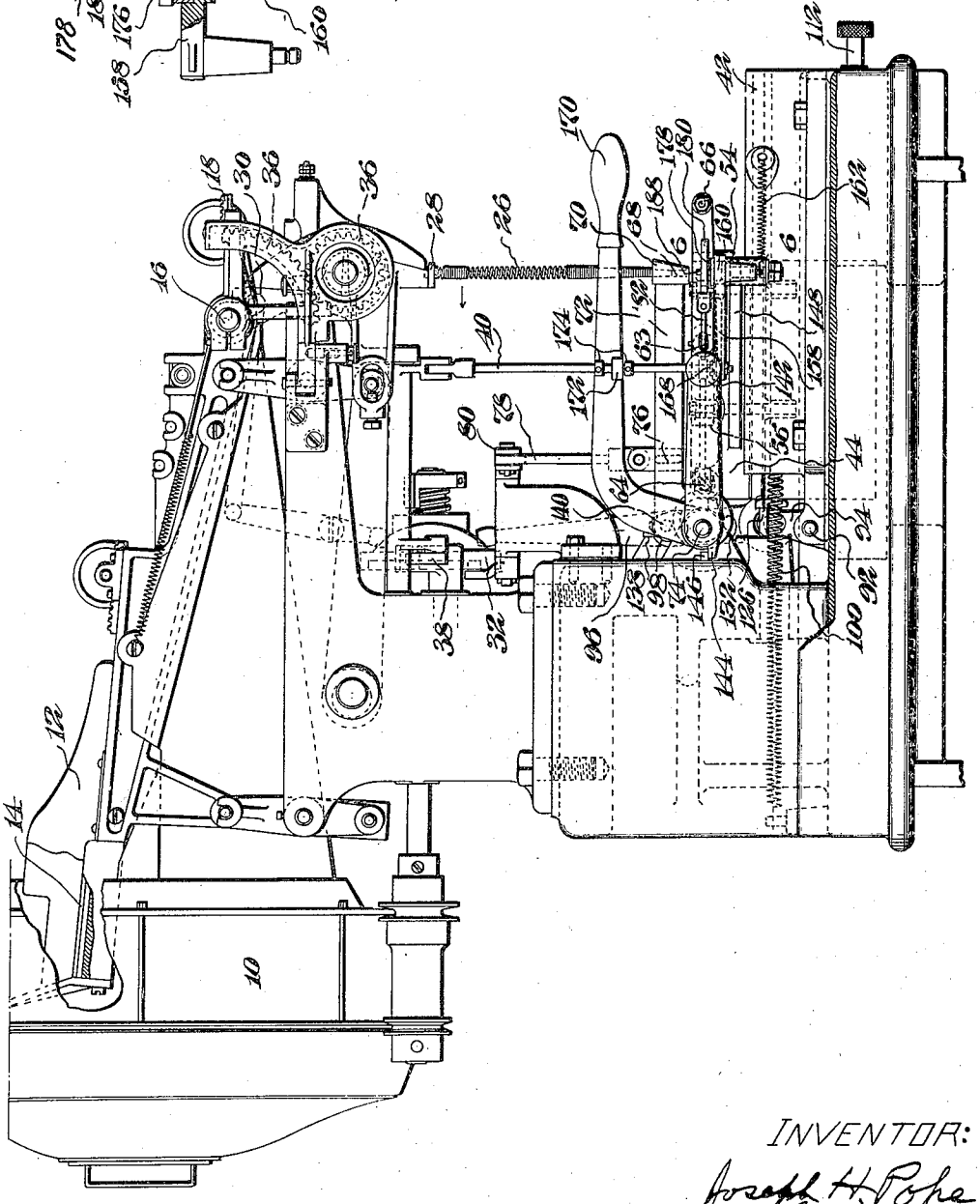


Fig. 1.



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DISTRIBUTING APPARATUS

Filed June 20, 1919 4 Sheets-Sheet 2

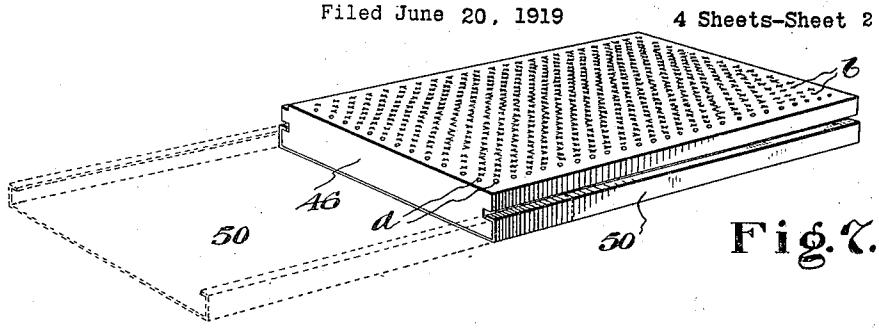


Fig. 7.

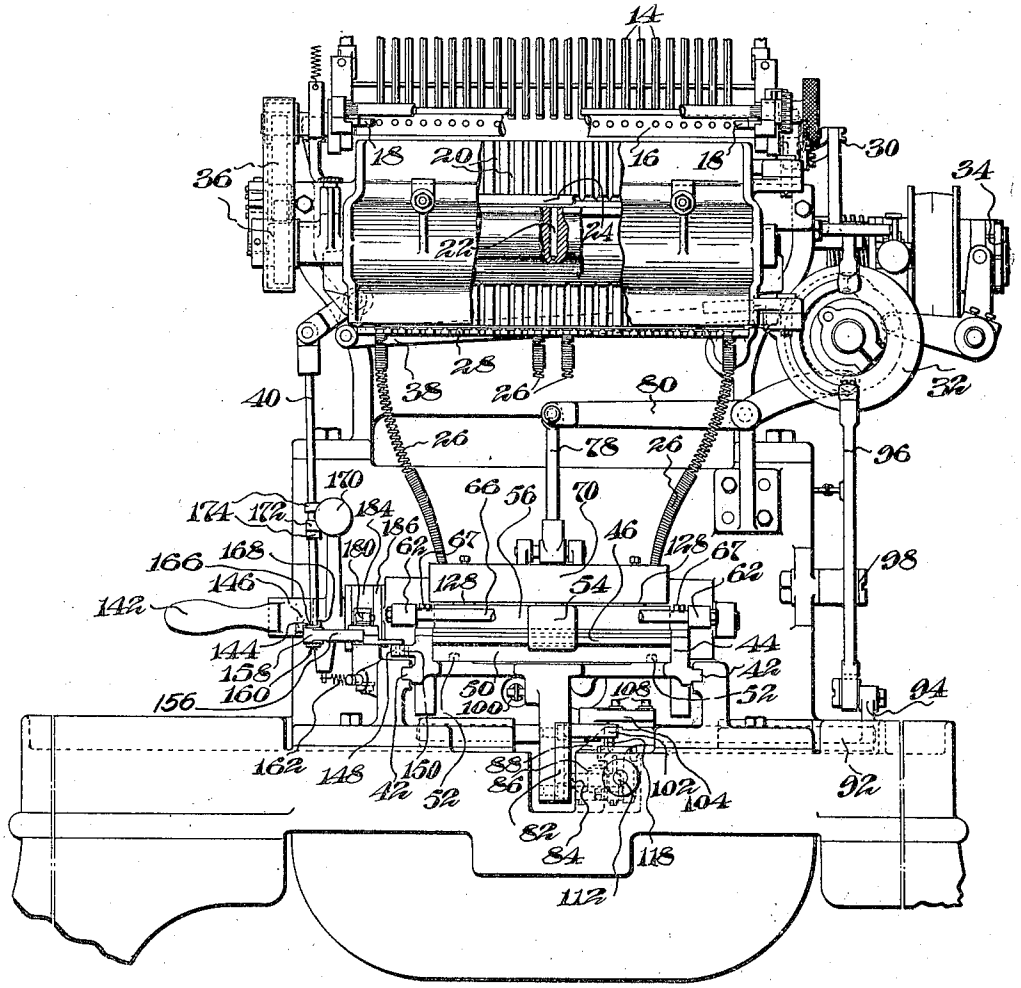


Fig. 2.

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DISTRIBUTING APPARATUS

Filed June 20, 1919 4 Sheets-Sheet 3

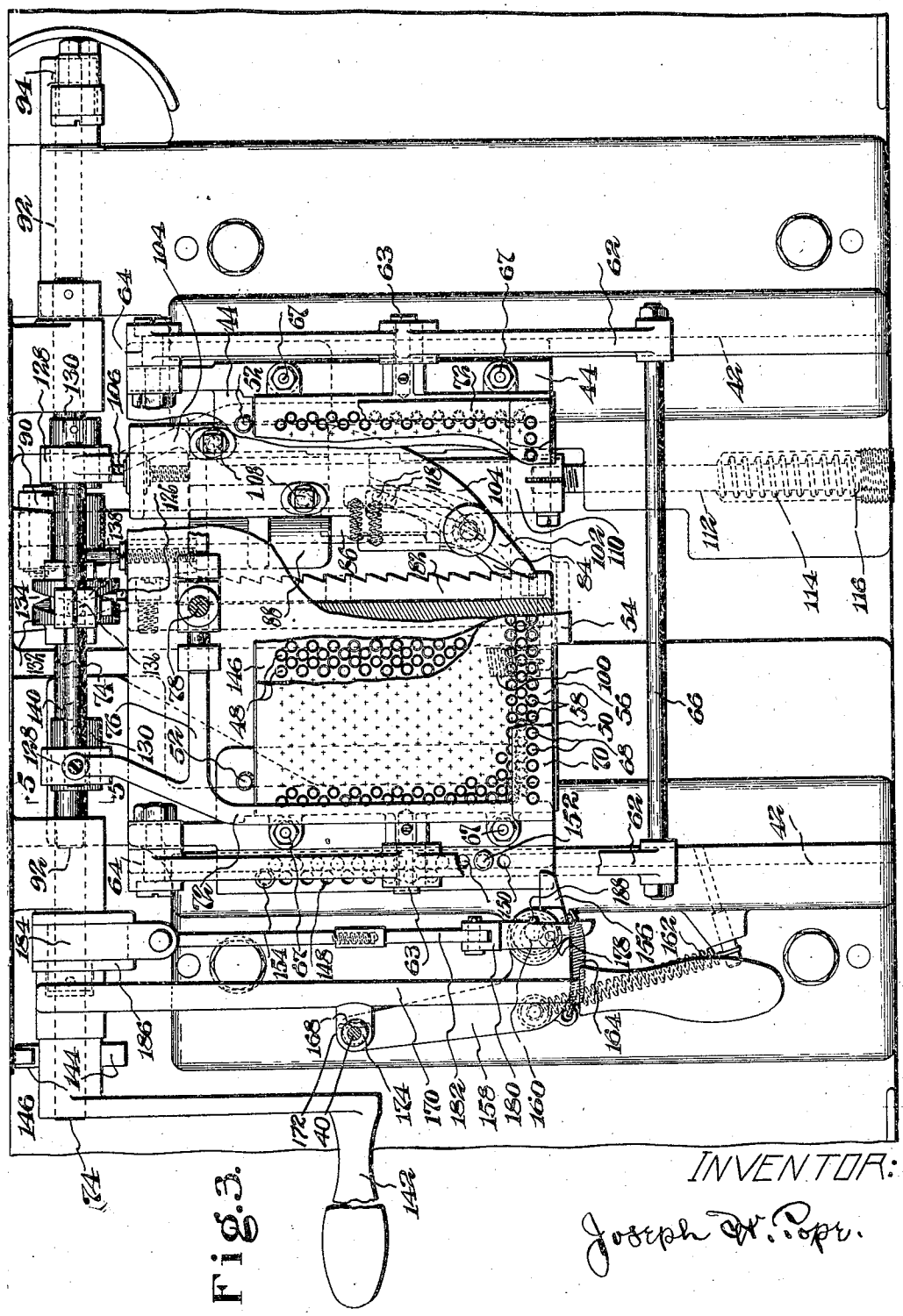


Fig. 3.

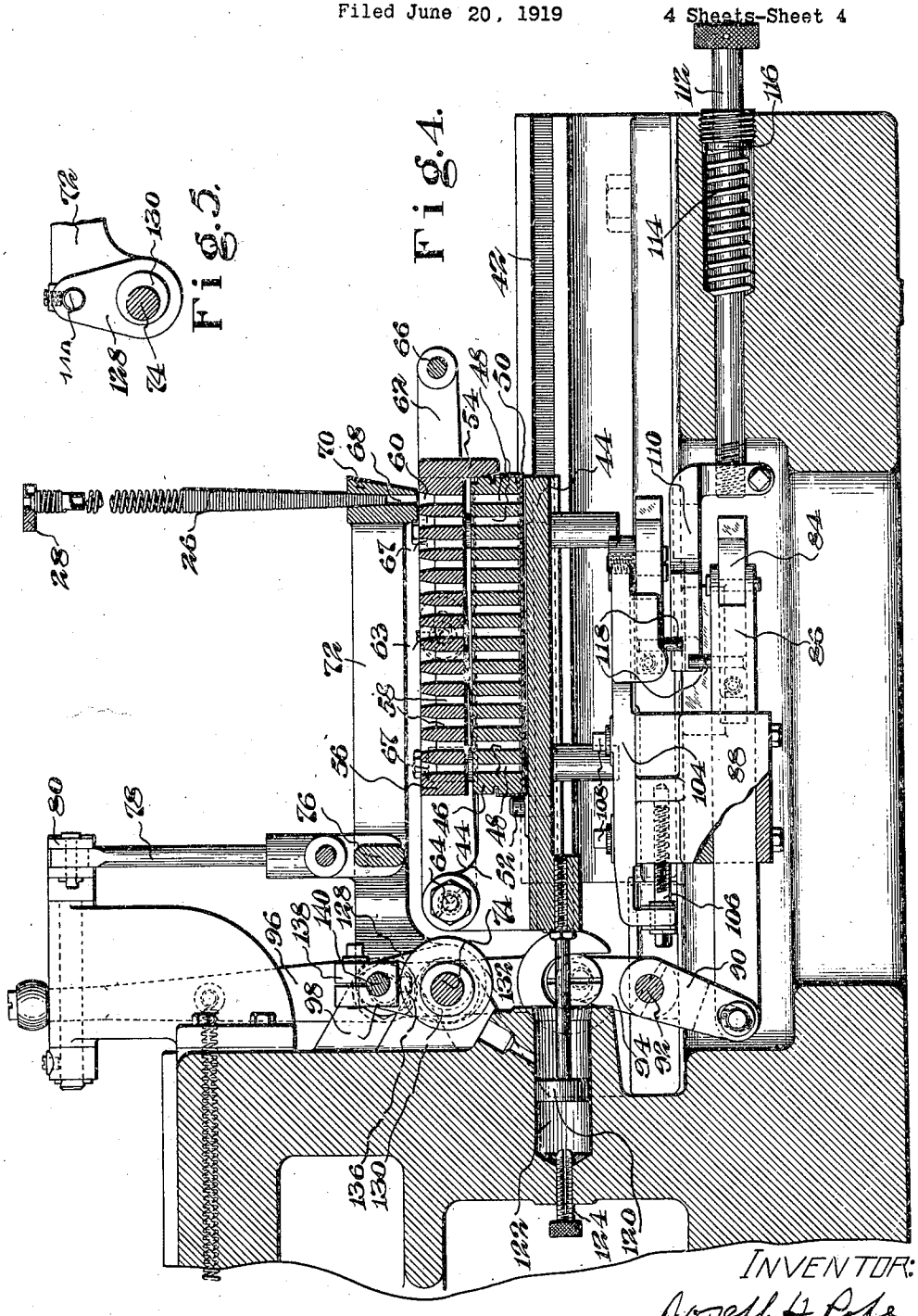
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Oct. 23, 1923. 1,471,354

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DISTRIBUTING APPARATUS

Filed June 20, 1919 4 Sheets-Sheet 4



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Patented Oct. 23, 1923. 1,471,354

UNITED STATES PATENT OFFICE.

JOSEPH H. POPE, OF HAMILTON, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

DISTRIBUTING APPARATUS.

Application filed June 20, 1919. Serial No. 305,466.

To all whom it may concern:

Be it known that I, JOSEPH H. POPE, a citizen of the United States, residing at Hamilton, in the county of Essex and State of Massachusetts, have invented certain Improvements in Distributing Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

My invention relates to distributing apparatus, and more particularly to such apparatus for arranging nails which are to be employed for attaching heels to shoes.

In the magazine method of supplying nails to heeling machines, said nails are delivered by a distributor to a receiver, which may be in the form of a block, there being holding devices, as openings, into which the desired number of nails are fed. The magazine block thus supplied is then ready for application to a heeling machine, by which the nails are utilized. The openings are preferably arranged in series to which the distributor successively delivers, the series equaling in number the nails to be employed in each heel-attaching operation, and the openings in each series corresponding to the number of heels which are to be attached with nails taken from a particular block. A convenient receiving block is rectangular in form and of a size about 5¼ by 6½ inches, these dimensions being controlled by conditions at the heel-attaching machine. In this area there have heretofore been placed thirteen series of nail-holding openings, approximately ⅛ of an inch in diameter, each individual series including twenty-four openings extending longitudinally of the block, the series succeeding one another transversely of said block in a direction at right angles to the series. The holding openings are loaded, series after series, by a distributing apparatus until there are enough of these to give the necessary nails for securing each heel for the class of work in hand, provided this does not exceed thirteen. In the heel-attaching machine the nails are fed from the block to the nailing mechanism in series taken at right angles to those above defined. That is, they are used in series which individually lie transversely of the block and contain thirteen nails, or fewer, until twenty-four series along the length of the block have been fed for heeling twenty-four shoes. For fastening some types of heels, as upon men's heavy shoes, thirteen nails are not sufficient, as many as twenty-five sometimes being used; but in the block which has just been described, considering for the purposes of the present invention only the arrangement of series with reference to its loading, the number of series having their openings alined across the block cannot be increased from thirteen to twenty-five, because the relative magnitude of the diameter of the openings and the width of the block makes this impossible. In view of such conditions, an object of this invention is to provide, in a distributing apparatus, for the reception, within a predetermined area, of a larger number of series of holding devices than is possible when the devices in the successive series are alined. This I accomplish by the use of a receiver having its series of holding devices disposed in differently arranged sets which extend between one another, the devices of successive series preferably being differently alined. For the reception of nails I have shown a block, in which are parallel, staggered series of openings. With the block or other receiver co-operates a delivery means, and there is means for producing relative movement between the receiver and delivery means to cause the supply to the different sets of holding devices. I prefer to move the delivery means into co-operation with one set of holding devices or another, this being illustrated as accomplished by an oblique movement.

Another object of the invention is to give automatic control of the delivery to the receiver for any one of the sets of holding devices, as the stopping of the feed of nails to the openings in the receiver block. In accomplishing this, I have means identified with each set of holding devices for controlling relative movement between them and the delivery means, together with means adapted to determine for which set the movement shall be controlled. Preferably there is a common selecting means, which both controls movement between the delivery means and receiver, and determines the

particular set of holding devices with reference to which control is to be exercised. That is, by a single actuating member, as a shaft, the operator may arrange for the delivery of nails to one or another set of series of nail-holding openings and for simultaneously stopping the delivery in connection with the particular set which is receiving nails.

An additional object of the invention is to insure the proper delivery of nails to the holding openings of the receiver. This I accomplish by a novel arrangement of guide member having openings for respective alinement with the receiver openings. It is preferably movable into and out of cooperation with the receiver to permit the application or removal of the latter. The guide member is interposed between the delivery means and the receiver and serves to prevent long nails held in the receiver openings from interfering with the adjacent openings by becoming inclined over them as the delivery means releases successive series by moving from the receiver. This guide member may also perform a double function, being mounted upon the receiver support and engaging the receiver to separably secure it upon said support.

In the accompanying drawings, illustrating one of several possible embodiments of my invention,

Fig. 1 is a side elevation thereof;

Fig. 2 is a front elevation, parts being broken away;

Fig. 3 is an enlarged, broken top plan view of the nail-receiver and more closely associated parts;

Fig. 4 is a vertical longitudinal section therethrough;

Fig. 5 is a vertical sectional detail on the line 5—5 of Fig. 3;

Fig. 6 is a detail, in sectional elevation, of the mounting for the feed-controlling projection; and

Fig. 7 is a perspective view of the receiver block.

The general organization of the apparatus for distributing nails may be as illustrated in my Patent No. 1,005,303, dated October 10, 1911. The nails are supplied by a rotatable drum 10 to a reciprocatory feeding mechanism 12, including nail-ways 14 and a suitable balancing device (not illustrated), which causes their delivery, heads foremost, to a series of openings in an oscillatory discharge roll 16. In these openings successive series of nails are temporarily retained by a stop-bar 18, and then, upon the oscillation of the roll, are discharged through conduits 20 into pockets in an oscillatory reversing roll 22, being controlled in their travel by a gate 24. From the reversing roll, when it is turned through approximately 180 degrees, the nails fall into a series of tubes or conduits 26 suspended from a head bar 28. The discharge roll receives its movement through a lever system 30, operated by a cam disk 32 frictionally driven from the main power shaft 34. Gearing 36 transmits the rotary movement of the discharge roll to the reversing roll. A retaining bar 38 normally holds the disk 32 against rotation, and it may be released for operation of the discharge roll and reversing roll by a vertically movable tripping rod 40.

In ways 42 in the base of the apparatus is mounted to slide a carriage or support 44, upon the upper horizontal face of which is mounted a receiver having nail-holding devices. In the present instance, this receiver consists of a block 46 provided with vertical openings 48 for the nails, which are releasably retained in the openings by a slide 50 movable across the lower face of the block. Such a receiver is adapted for employment in a magazine system for supplying nails to a heel-attaching machine. The particular utilization of the receiver is not, however, directly concerned in the present invention. It will be sufficient to say that the nails in the receiver are to be used in connection with making a plurality of pairs of shoes, and that there may be necessary for the operation upon each shoe a number of nails up to a certain maximum. For this purpose, the openings in the block are arranged in series succeeding one another in a direction at an angle to the extension of the individual series, they preferably being parallel to one another and to opposite edges of said block. In the present instance, the successive series extend transversely of the ways 42, and thus transversely to the direction of movement of the block, each series having twenty-four openings, this corresponding to each shoe of twelve pairs to be heeled, and there being as many of these series as the maximum number of nails which are to be employed for the attachment of a single heel. It is important that the receiving block shall be relatively small in its horizontal dimensions to permit its introduction into the heel-attaching machine to which the nails are to be supplied; yet the closeness with which the adjacent openings may be spaced from one another is limited by the size of the openings themselves. For this reason the openings in successive series are not alined, but are staggered, so that the series are disposed in two symmetrical sets, one set consisting of thirteen series *a*, while the other set includes the intermediate series *b*. Each set, it will be observed, has the openings of its plural series alined in the direction of movement of the block, but with the openings of the different sets differently alined. By this arrangement, in which the openings of each

set extend between those of adjacent sets, the maximum number of openings may be disposed within a block of predetermined area without interference.

The block 46 is held upon its support against a stop 52 by a depending projection 54 from a templet or guide member 56, in which are guide openings 58 registering with the openings 48. The openings 58 are tapered at 60 to facilitate the introduction of the nails. The templet is preferably pivoted upon arms 62 near its center at 63, these arms being fulcrumed at 64 upon the inner end of the carriage. The opposite or forward ends of the arms are connected by a cross-bar 66. Adjustable contact members 67, arranged in pairs at opposite sides of the templet, bear upon the upper face of the carriage and position the templet parallel to the receiver block when it is lowered into co-operation therewith. It is to be noted that the templet serves by its projection 54 to lock the receiver in place, and also directs the nails into the openings 48 and holds them in a substantially vertical position clear of the adjacent openings. The delivery tubes 26 from the reversing roll extend to a row of openings 68 in a foot-bar 70, there being one of these openings for each nail-holding opening 48 in a transverse series of the sets *a* or *b*. The foot-bar is carried at the extremities of the arms 72, 72 mounted to turn about a horizontal shaft 74 journaled in the frame of the apparatus at the rear of the carriage. From a cross-bar 76, joining these arms, a link 78 connects to a lever 80 fulcrumed upon the frame and operated by the cam-disk 32 to swing the foot-bar clear of the templet at regular intervals. This and other movements of the foot-bar will be later described.

Depending from the carriage 44 is a ratchet-plate 82, having a horizontally extending series of teeth. These teeth are engaged by a feed-pawl 84 pivoted upon a slide 86 movable through a bearing block 88 mounted below the ways. Articulated to the slide is an arm 90 upon a rock-shaft 92 journaled in the frame at the inner end of the ways. The rock-shaft also carries an arm 94, pivoted to a lever 96 fulcrumed at 98 upon the frame, and contacting with a cam face upon the disk 32. When the pawl 84 is reciprocated by this actuating mechanism, the carriage with the receiver-block is fed forward in steps equal to the distance between the series of openings of either set against the tension of a spring 100 joining the under side of the carriage to the frame. The carriage is retained in the position to which it is advanced by the feed-pawl by a pawl 102 pivoted upon a plate 104 movable upon the top of one of the ways and arranged for adjustment longitudinally thereof by a screw 106, it being fixed in position by screws 108. This adjustment provides for the stopping of the series of nail-receiving openings in correct alinement with the openings 68 of the foot-bar. To release the pawls 84 and 102 to allow the tension of the spring 100 to return the carriage to its initial position, a contact member 110 is fixed upon the inner end of a rod 112 mounted to move through an opening in the front of the frame. The contact member is held normally outward by a spring 114 contained in a recess through which the rod passes and contacting with the bottom of said recess and with a collar 116 threaded into the outer extremity of the opening. When this member 110 is forced in against the tension of its spring, an inclined surface at one of its edges contacts with pins 118, 118 fixed upon the pawls, and forces said pawls out of engagement with the ratchet teeth. In its return to normal under the tension of the spring 100, the carriage is cushioned by a pneumatic check device, consisting of a piston 120 projecting from the rear of the carriage and entering a cylinder 122 formed in the frame. An air valve 124 enables the operator to control the checking effect of the pneumatic device. The carriage is stopped with the first or a desired adjacent series of its openings in alinement with the openings of the foot-bar by a long adjustable stopscrew 126 threaded through a portion of the frame.

As has already been pointed out, each step of the feeding pawl advances the carriage through a space equal to the distance between successive series of the nail-holding openings in their sets *a* or *b*, and, to determine which set shall have a series initially presented to the delivery openings 68 in the foot-bar when the carriage is in contact with the stop-screw 126, there is a relative movement of adjustment between the bar and receiving block. I have here shown the bar as thus adjustable. The arms 72 have at their inner ends downward enlargements 128, in which are openings to receive eccentrics 130 upon the shaft 74, these being elongated to permit a travel of the arms upon them. Fixed to the shaft between the arms is a disk 132, in the periphery of which is a cam-groove 134. Entering this groove is a pin 136 depending from a block 138 adjustably clamped to a rod 140 connecting the arms 72 above the shaft 74. Fixed upon one extremity of the shaft is a crank 142, movable substantially through 180 degrees between stop-projections 144, 144 from the hub of the crank, these projections engaging a lug 146 upon the frame to limit the rotation of the shaft. Rotation of the crank to positions determined by its stops communicates to the foot-bar an oblique movement, the eccentrics 130 shifting the foot-

bar a distance equal to that between the adjacent series of the different sets *a* and *b*, so that the openings in the foot-bar are brought over one or the other, while, simultaneously, the cam-groove 134 carries the block 138 laterally of the ways to bring the openings of the foot-bar and the nail-receiving openings of the selected set into alinement in this direction.

The number of series of openings in one or both sets in the receiving block 46 to which it may be desired to deliver nails will depend upon the number of such nails to be employed in each heeling operation. I provide automatic means for stopping the feed of the carriage when a predetermined number of actuations of the feeding pawl to be employed in each heeling operation. 48 beneath the openings in the foot-bar. At one side of the carriage are two rows of controlling openings 148 and 150, these rows being parallel and adjacent to the edge of the receiver block, when this is in place upon the support, and being equally spaced longitudinally of the ways in the same manner as the nail-receiving openings 48. Fitting in the controlling openings, with heads projecting above the carriage, are pins 152 and 154, which may be positioned in any one of their openings at the beginning of the operation to correspond to the series of nail-holding openings into which the last load of nails is to be delivered. As the carriage is fed forward step by step to receive the nails from the delivery tubes, the pins approach for contact with the extremity 156 of a controlling lever 158 pivoted upon a vertical pin 160 and drawn into the path of at least one of the controlling pins by a spring 162 connecting the lever with the frame. The end portion 156 is articulated to the main portion and held normally in the position illustrated in Fig. 3 of the drawings by a spring 164, it being so drawn by its spring against a contact face on the main portion of the lever that the two parts move together as a unit under contact with the end portion 156 of one of the controlling pins upon the outward movement of the carriage, while the portion 156 is free to yield and permit the carriage to be moved idly past it when traveling in the opposite direction. The outer extremity of the lever 158 has a surface 166 situated normally in alinement with the rod 40. When the rod is supported upon the surface 166, the stop-bar 38 is released from the driving disk 32, and the operation of the distributing apparatus follows; but, when the lever is swung in a clockwise direction, as viewed in Fig. 3 of the drawings, by the contact of one of the pins 152, 154 with its extremity 156, the supporting surface is carried from beneath the rod, allowing the latter to fall to return the bar 38 into engagement with the disk to stop the action of the apparatus. When the lever and stop-rod are in cooperation, the extent to which the former may be turned by its spring 162 is limited by an abutment 168 rising at the inner side of the supporting surface and bearing against the rod. To start the action of the apparatus after it has been stopped by the dropping of the rod, said rod may be returned to its raised position upon the surface 166 by a lever 170 fulcrumed on the frame and having at one side a lug 172 operating between collars 174, 174 fixed to the rod.

Whether or not the second set *b* of the series of nail-receiving openings 48 is presented to the delivery tubes for loading after the first set *a* has been loaded depends upon whether more nails are to be used for a single heel-attaching operation than there are series of openings in the set *a*. That is, up to a thirteen-nail load in the block, the openings *a* and the corresponding contact pin 152 only are employed; while, if from fourteen to twenty-five nails are desired, the requisite number of the series in the set *b* is loaded to make up the total. Since, then, the contact pin 154 will be set nearer the extremity 156 of the stop-lever 158 than is the pin 152, the apparatus includes means for positioning the element 156 for co-operation with the pin 152 only, and then for shifting it into co-operation with the pin 154. Preferably, this is effected as an incident to the operation of adjusting the foot-bar to aline its delivery openings with the sets of nail-receiving openings *a* and *b* of the block. The portion 176 of the pin 160 within the controlling lever 158 is eccentric, as illustrated in Fig. 6 of the drawings, the extent of this eccentricity being substantially equal to the distance between the rows of openings 148 and 150. Rising from the upper face of the eccentric is a crank pin 178 entering an opening in the under side of the pivoted end 180 of an eccentric rod 182. At the opposite extremity of this rod is a strap 184 surrounding an eccentric 186 on the shaft 74. When the shaft is turned by its crank to bring the foot-bar openings into co-operation with one or another of the sets of nail-receiving openings *a* and *b*, the rotation of the eccentric 186 causes the eccentric rod to rotate the vertical eccentric 176, thus placing the lever portion 156 in the path of the pin 152 when only the set of nail-receiving openings *a* is to be employed, and carrying it into the path of the companion pin 154 when nails are to also be taken from the set *b*. A pin 188 rising from the eccentric 176 contacts with the end 180 of the eccentric rod to limit the angle through which the eccentric 176 may be turned.

When the receiver block is to be loaded, the templet is raised, the block placed upon

the carriage against its stop 52 and locked thereon by lowering the templet until the openings of the block and templet are alined and the projection 54 engages the front of the block. Let it be assumed, that in using the apparatus the receiver blocks are to be loaded for attaching heels with fifteen nails each. For this purpose, the pin 152 is placed in the last opening of the row 148, and the pin 154 in the second opening of the row 150. The crank 142, at the beginning of the operation, occupies the position illustrated in the drawings. Then, when the carriage is in contact with the stop-screw 126, the openings 68 of the foot-bar will be positioned above the first series of openings of the set *a*. The operator starts the apparatus by raising the lever 170 to carry the rod 40 upon the supporting surface 166. The distributor then delivers a load of nails through its tubes 26 into the guide openings 58 of the templet, through which they fall into the first series of receiving openings of the block. The foot-bar is thereupon raised by its lever system, and the carriage with the block and templet thus freed is fed one step so that the second series of the set of openings *a* is alined with the delivery openings of the foot-bar. Following this the foot-bar descends, interference of the nails with this movement being prevented by the templet, and a second load of nails is fed. This continues until the last series of this set has been loaded, at which time the pin 152 contacts with the extremity 156 of the stop lever. The latter is thereby swung about its fulcrum to remove the supporting surface from beneath the stop-rod, which falls and brings the bar 38 into stopping engagement with the driving disk 32. There have thus been supplied thirteen nails of the load for a heel. The operator then returns the carriage to its initial position, and revolves the crank 142 until the other stop 144 contacts with the projection 146. The resultant oblique movement of the foot-bar, under the influence of the eccentrics 130 and cam-groove 134, brings the first series of the set of nail-receiving openings *b* beneath the foot-bar, and simultaneously the eccentrics 186 and 176 carry the lever portion 156 across the end of the row of controlling openings 150. The apparatus may then be started by again lifting the lever 170, and the first two series of the set *b* are loaded, the action of the apparatus being stopped by the contact of the pin 154 with the lever portion 156 in the same manner as already described. The arrangement of the series of nail-receiving openings in plural sets is not only advantageous in bringing about the grouping of the greater number of openings within the area in which they must be placed, but also enables the operator to supply, for a nailing operation, different lengths of nails, since the first set may be loaded with nails of one character, and other sets with nails of different character, as of different lengths.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a distributing apparatus, a receiver having series of article-holding devices disposed in differently arranged sets and with the devices of each set extending between those of another set.

2. In a distributing apparatus, a receiver having series of article-holding devices, with the devices of successive series differently alined and said series extending between adjacent series in a direction transverse to their alinement.

3. In a nail-distributor, a block having parallel staggered series of nail-holding openings, each series having its openings extending between the openings of adjacent series.

4. In a distributing apparatus, a receiver having series of article-holding devices disposed in differently arranged sets, means for delivering articles to the receiver, and means for producing relative movement between the receiver and delivery means to cause the delivery to different series of holding devices.

5. In a distributing apparatus, a movable receiver having series of article-holding devices extending transversely to the direction of movement, the devices of successive series being alined in such direction of movement, the receiver being provided with other series of holding devices arranged in alternation with those first mentioned and being differently alined in the direction of movement, means for delivering articles to the receiver, and means for producing relative movement between the receiver and the delivery means to cause the delivery to different series of holding devices.

6. In a distributing apparatus, a movable receiver having series of article-holding devices disposed in differently arranged sets, means for delivering articles to the receiver, and means arranged to produce relative movement between the receiver and delivery means to cause the co-operation of the delivery means with a particular set of holding devices.

7. In a distributing apparatus, a movable receiver having series of article-holding devices disposed in differently arranged sets, means for delivering articles to the receiver, means for producing relative movement between the receiver and delivery means to cause the delivery to different series of holding devices, and means arranged to produce relative movement between the receiver and delivery means to

cause the delivery to different sets of holding devices.

8. In a distributing apparatus, a movable receiver having series of article-holding devices disposed in differently arranged sets, means for delivering articles to the receiver, means for moving the receiver to cause the delivery to successive series of holding devices of one set, and means arranged to move the delivery means into cooperation with a particular set of holding devices.

9. In a distributing apparatus, a movable receiver having series of article-holding devices disposed in sets differently arranged transversely to the direction of movement, means for delivering articles to the receiver, and means arranged to move the delivery means into co-operation with a particular set of holding devices.

10. In a distributing apparatus, a movable receiver having series of article-holding devices, means for delivering articles to the receiver, and means arranged to produce relative oblique movement of the receiver and delivery means to change the delivery from one series to another.

11. In a distributing apparatus, a movable receiver having a series of article-holding devices extending transversely to the direction of movement and another series of holding devices differently arranged transversely of the receiver, means for delivering articles to the receiver, and means arranged to produce relative oblique movement to the receiver and delivery means to change the delivery from one series to the next.

12. In a distributing apparatus, a receiver having series of article-holding devices, means for delivering articles to the receiver, power-operated means for advancing the receiver to successively bring series of holding devices into co-operation with the delivery means, and operator-controlled means for moving the delivery means through the space between adjacent series.

13. In a nail-distributor, a block having series of nail-receiving openings, each series extending across the block and said series succeeding one another in a direction at an angle to the extension of the individual series, different series being differently arranged across the block, means for delivering nails to a series of openings, and means for moving the delivery means and block relatively to bring different series into co-operation with the delivery means.

14. In a nail-distributor, a block having series of nail-receiving openings, each series extending across the block and said series succeeding one another in a direction at an angle to the extension of the individual series, the openings of alternate series being differently alined in the direction of succession of the series, means for delivering nails to a series of openings, means for advancing the block step by step to bring alternate series of openings into co-operation with the delivery means, and means arranged to transfer the delivery means from one alinement to another.

15. In a nail-distributor, a block having series of nail-receiving openings, each series extending across the block and said series succeeding one another in a direction at an angle to the extension of the individual series, the openings of successive series being differently alined in the direction of succession of the series, means for delivering nails to a series of openings, means for advancing the block step by step to bring alternate series of openings into co-operation with the delivery means, and means arranged to transfer the delivery means from one alinement to another and to simultaneously shift the delivery means to change the delivery from one series of openings to the next.

16. In a nail-distributor, nail-delivery means, a nail-receiver, means for feeding the receiver beneath the delivery means, an actuating member, and means carried by the actuating member for moving the delivery means obliquely to the direction of feed.

17. In a nail-distributor, nail-delivery means, a nail-receiver, means for feeding the receiver beneath the delivery means, an actuating member, means carried by the actuating member for moving the delivery means in the direction of feed, and independent means mounted upon the actuating member for moving the delivery means transversely to the direction of feed.

18. In a nail-distributor, nail-delivery means including a row of conduits, a support, means for feeding the support beneath the delivery means at an angle to the row of conduits, a block mounted upon the support and having series of nail-holding openings extending parallel to the row of conduits, the series being arranged in sets differently alined in the direction of feed, and means arranged to cause the delivery conduits to register with a series of any one of the sets in preparation for the feed of the support.

19. In a nail-distributor, nail-delivery means including a row of conduits, a support, means for feeding the support beneath the delivery means at an angle to the row of conduits, a block mounted upon the support and having series of nail-holding openings extending parallel to the row of conduits, the series being arranged in sets differently alined in the direction of feed, a shaft, an eccentric and a cam carried by the shaft and co-operating with the delivery means the throws of the eccentric and cam corresponding respectively to the space between successive series of openings and to the difference in alinement of said series.

20. In a distributing apparatus, a receiver having series of article-holding devices disposed in differently arranged sets, means for delivering articles to the receiver, said receiver and delivery means being relatively movable, means for controlling the relative movement with respect to a plurality of sets of holding devices, and means arranged to determine for which set the movement shall be controlled.

21. In a distributing apparatus, a receiver having series of article-holding devices disposed in differently arranged sets, means for delivering articles to the receiver, said receiver and delivery means being relatively movable, means for controlling the relative movement with respect to a plurality of sets of holding devices, and selecting means arranged to cause the co-operation of one or another of the sets of holding devices with the delivery means, the selecting means also determining the particular set controlled.

22. In a distributing apparatus, a receiver having series of article-holding devices disposed in differently arranged sets, means for delivering articles to the receiver, said receiver and delivery means being relatively movable, means for controlling the relative movement with respect to a plurality of sets of holding devices, means arranged to move the delivery means into co-operation with one or another of the sets of holding devices, and means arranged to correspondingly move an element of the controlling means.

23. In a distributing apparatus, a receiver having series of article-holding devices disposed in differently arranged sets, means for delivering articles to the receiver, said receiver and delivery means being relatively movable, means for controlling the relative movement with respect to a plurality of sets of holding devices, means arranged to move the delivery means into co-operation with one or another of the sets of holding devices, means arranged to correspondingly move an element of the controlling means, and an actuating member common to the moving means.

24. In a nail-distributor, a block having series of nail-receiving openings succeeding one another in different alinement in the direction of progression of the series, means for delivering nails to the block, said block and delivery means being relatively movable, means for controlling such relative movement, said controlling means including rows of devices corresponding to the differently alined series of nail-receiving openings, and means arranged for determining which row of controlling devices shall be effective.

25. In a nail-distributor, a movable block having series of nail-receiving openings succeeding one another in different alinement in the direction of progression of the series, means for delivering nails to the block, a member movable with the block and provided with rows of controlling openings corresponding to the differently alined series of nail-receiving openings, there being pins for insertion in the controlling openings, operating mechanism for the block, mechanism for controlling the operating mechanism and including a contact member projecting into the path of movement of the pins in the controlling openings, and means arranged to vary the relation of the contact member to the rows of controlling openings.

26. In a nail-distributor, a movable block having series of nail-receiving openings succeeding one another in different alinement in the direction of progression of the series, movable means for delivering nails to the block, a member movable with the block and provided with rows of controlling openings corresponding to the differently alined series of nail-receiving openings, there being pins for insertion in the controlling openings, operating mechanism for the block, mechanism for controlling the operating mechanism and including a contact member projecting into the path of movement of the pins in the controlling openings, and means arranged to simultaneously move the delivery means and vary the relation of the contact member to the rows of controlling openings.

27. In a nail-distributor, nail-delivery means including a row of conduits, a support, means for feeding the support beneath the delivery means at an angle to the row of conduits, a block mounted upon the support and having a series of nail-holding openings extending parallel to the row of conduits, the series being arranged in sets differently alined in the direction of feed, and means arranged simultaneously to control the feeding means and to cause the delivery conduits to register with a series of any one of the sets in preparation for the feed of the support.

28. In a nail-distributor, a receiver having nail-holding openings, and a guide member movable into and out of co-operation with the receiver and provided with a group of openings, there being included in this group an opening corresponding to each receiving opening and all such openings of the group in the guide member being arranged for alinement simultaneously with the receiver-openings.

29. In a nail-distributor, a receiver having nail-holding openings, nail-delivery means movable into and out of cooperation with the receiver, and a guide member interposed between the receiver and delivery means and having guide openings corresponding to the nail-holding openings.

30. In a nail-distributor, a support, a re-

ceiver mounted thereon and having nail-holding openings, a member arranged to engage the receiver and having guide openings, said member being attached to the support for movement toward and from the receiver to thereby secure or release the receiver and carry its openings into or out of alinement with those of the receiver.

31. In a nail-distributor, a receiver having nail-holding openings, a guide member provided with openings arranged for respective alinement with the nail-holding openings and being mounted for movement into and out of cooperation with the receiver, and a delivery member movable into and out of co-operation with the guide member.

32. In a nail-distributor, a receiver having nail-holding openings, a guide member provided with openings arranged for respective alinement with the nail-holding openings and being mounted for movement into and out of co-operation with the receiver, means for moving the receiver and guide member across the delivery member, and means for moving the delivery member toward and from the guide member.

In testimony whereof I have signed my name to this specification.

JOSEPH H. POPE.

Certificate of Correction.

It is hereby certified that in Letters Patent No. 1,471,354, granted October 23, 1923, upon the application of Joseph H. Pope, of Hamilton, Massachusetts, for an improvement in "Distributing Apparatus," an error appears in the printed specification requiring correction as follows: Page 4, strike out present line 18 and insert instead the words *has brought a particular series of openings;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 1st day of January, A. D., 1924.

[SEAL.]

KARL FENNING,
Acting Commissioner of Patents.