(No Model.) 3 Sheets—Sheet 1.

S. PERRY.

NAIL FEEDING APPARATUS.

No. 332,826. Patented Dec. 22, 1885.

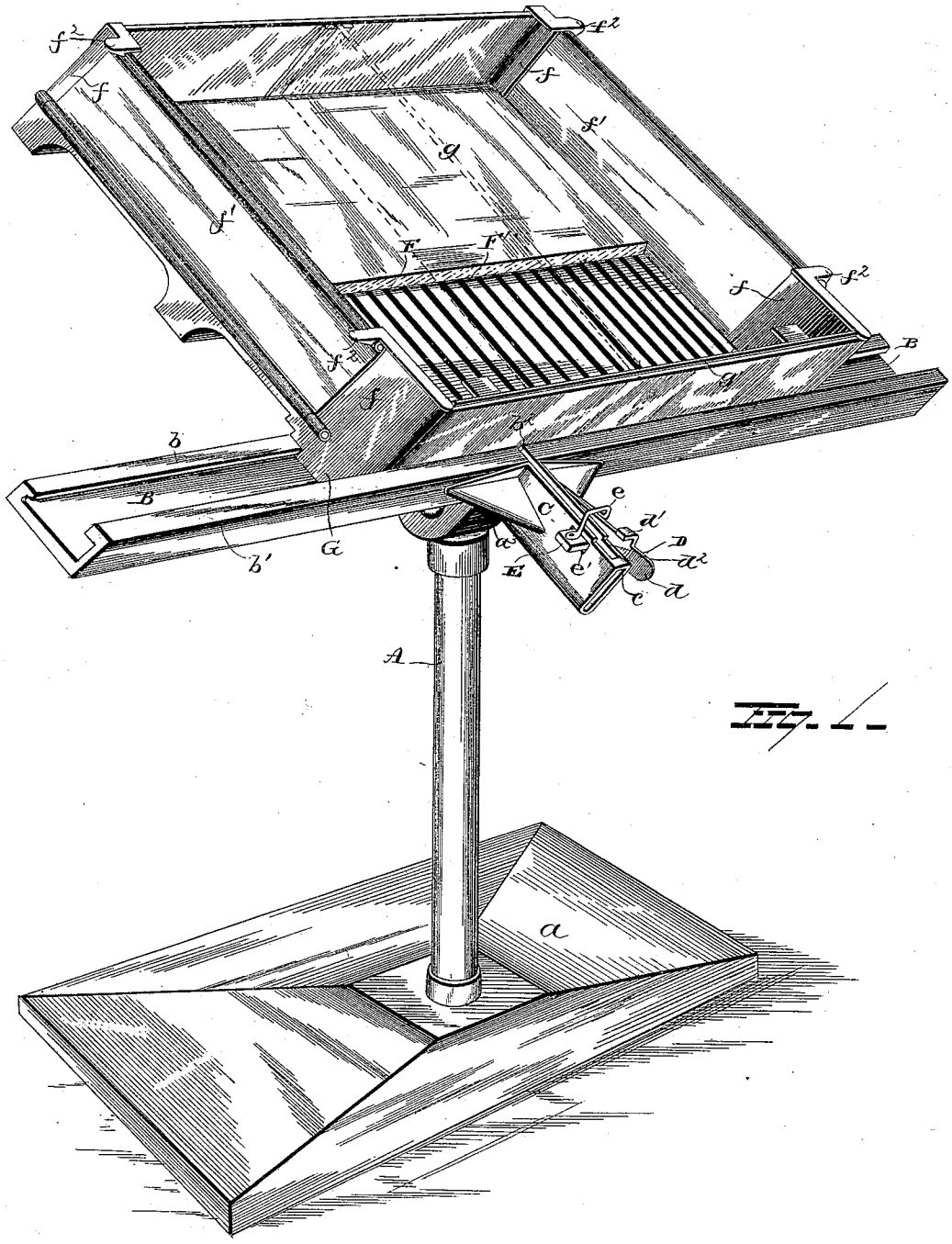


Fig. 1.

WITNESSES
Geo. F. Bowring.
S. G. Nottingham

INVENTOR
Stuart Perry.
By Wm. Simpson.
Attorney

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 2.

S. PERRY.

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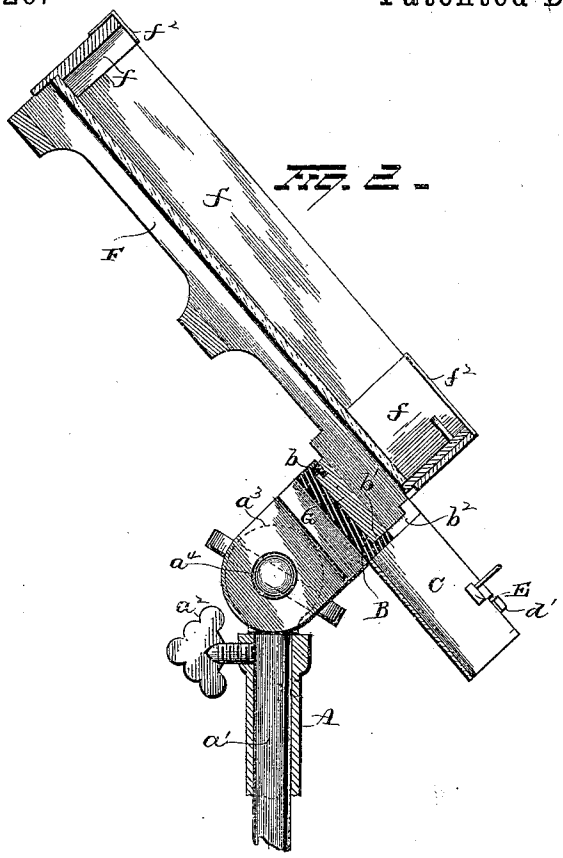


Fig. 2.

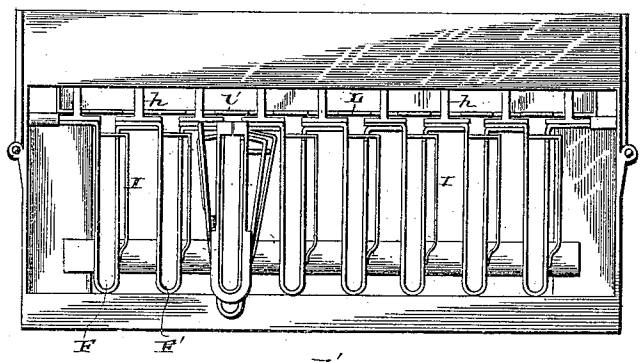


Fig. 3.

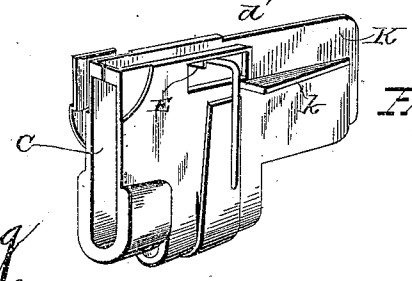


Fig. 5.

WITNESSES

Geo. F. Downing

S. G. Nottingham

INVENTOR

Stuart Perry.

By H. A. Seymour.

Attorney

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 3.

S. PERRY.

NAIL FEEDING APPARATUS.

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Fig. 3.

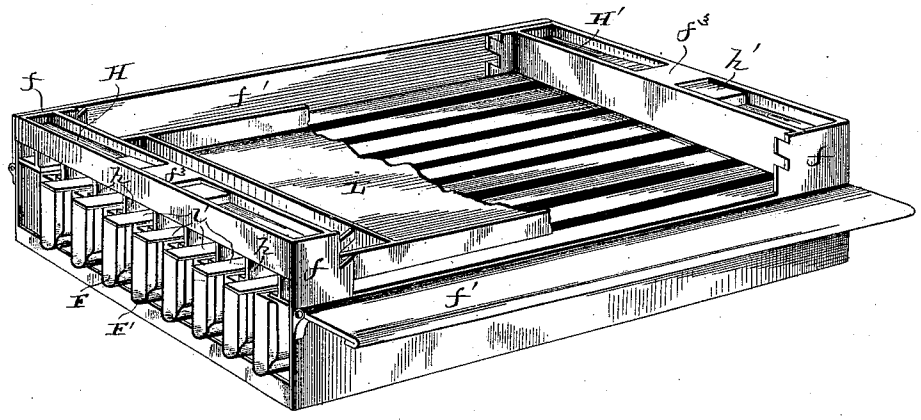


Fig. 4.

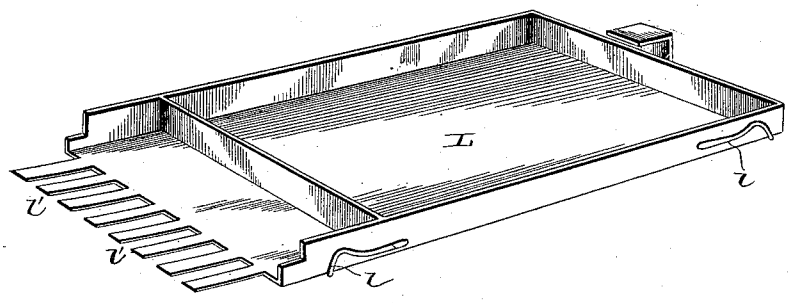


Fig. 7.

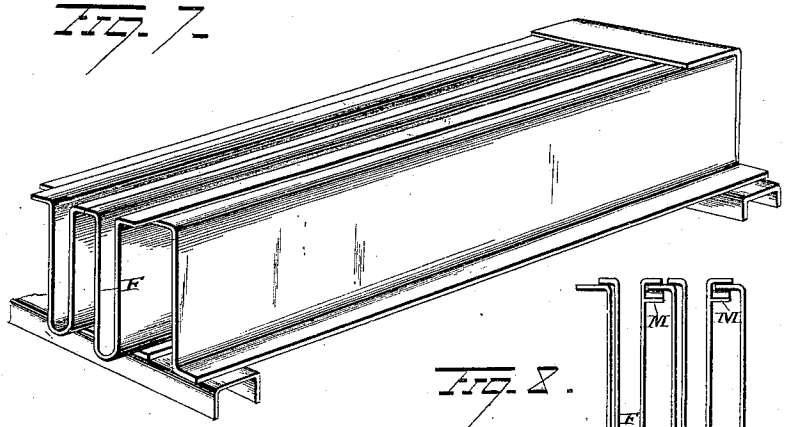


Fig. 8.

WITNESSES

Geo. F. Bowring.

S. G. Nottingham

INVENTOR

Stuart Perry.

By H. A. Seymour

Attorney

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

STUART PERRY, OF NEWPORT, NEW YORK.

NAIL-FEEDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 332,826, dated December 22, 1885.

Application filed July 2, 1885. Serial No. 170,497. (No model.)

To all whom it may concern:

Be it known that I, STUART PERRY, of Newport, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Nail-Feeding Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in tack and nail feeders.

The object is to provide a nail-feeding device which shall by the direct or indirect action of the hand in removing a nail by the head present a second nail in a position to be similarly removed, and so on for any desired number, depending upon the capacity of the magazine.

A further object is to provide a magazine which shall be capable of adjustment to suit nails and tacks of different sizes.

A further object is to provide a series of magazines inseparably connected and adapted to supply nails and tacks to a common feeding device.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of the feeding apparatus supported upon a standard in universal adjustment, showing a magazine of non-adjustable construction having a transparent cover. Fig. 2 is a vertical section of the same. Fig. 3 is a view of the feeding device, of a form adapted to be attached to a suitable harness on the workman, the magazine being of an adjustable construction and having an opaque cover. Fig. 4 is a view of the opaque cover. Fig. 5 is an end view of the device shown in Fig. 3, showing the removable feed device in position on the end of one magazine-section, and Fig. 6 is a detached view of the feed device. Fig. 7 is a modified form of adjustable magazine. Fig. 8 is a detached view of one section of the same.

A represents a hollow standard set in a suitable base-block, *a*, and provided with a male telescope-section, *a'*, which is secured in the desired vertical and rotary adjustment in the standard A by means of a thumb-screw, a^2. The upper end of the section *a'* is provided with a perforated head, a^3, adapted to form a bearing for the stem of a clamp-screw, a^4, by means of which the guide-bar B is secured to the section *a'* in the desired rotary adjustment in a vertical plane. The guide-bar B is L-shaped in cross-section and provided with a groove, *b*, along the upper edge of its face, and with a shoulder, *b'*, along the lower edge. The base of the guide-bar is provided about midway with a transverse slot, b^2, with which a spout or feeding device, C, secured to the outer or lower side of the bar B, registers. The width of the spout C corresponds with the width of one of the magazine-sections, and its depth to the length of the longest nail which it is designed to use. The top of the spout is open and the bottom preferably, but not necessarily, closed. The upper corner on the outer end of the spout is, however, provided with a cross bar or strap, *c*. A thin spring-bar, D, is secured at its upper end to the side of the spout C, and extends along the upper portion of the side to a point near the lower or outer end of the spout, where it terminates in a flat thumb-plate, *d*. The tension of the spring tends to hold the bar D normally a slight distance away from the side of the spout. The bar D is provided with a laterally-extending dog, *d'*, which, when the bar is pressed toward the spout, advances across the upper edge of the same at the cut-away or shouldered part d^2, the upper face of the dog being about flush with the upper edge of the spout located above it. The bar D is further provided with a second dog, E, which is secured to the end of a bent arm, *e*, the latter extending up and over the spout and down to a point slightly below its upper edge. The dog E is preferably provided with a rubber, leather, or wooden face to enable it to grasp the nail or tack and hold it securely in position, and is adapted to extend through a slot, *e'*, in the side of the spout and press against the shank of one or more nails in the spout when the bar D is in its normal position.

F F', &c., represent a series of magazines inseparably connected together parallel to one another, and each adapted to retain a series of nails or tacks with the edges of their heads resting on the top edges of the groove-walls. The bottom of the group of inseparable maga-

zines F F', &c., at the lower end is provided with a projection, G, extending transversely across the group, and adapted to fit and slide within the groove in the face of the guide-bar B. The group of magazines, when in position on the guide-bar, rest with their upper faces flush with the upper face of the spout C, and as the group is slid along on the guide-bar the lower ends of the several magazine-sections are brought into position to register with the spout, the latter forming an uninterrupted extension of the magazine-section in communication therewith. The upper side of the group of magazines is surrounded by an upright wall consisting of the stationary ends *f* and the hinged sides *f'*. The latter are adapted to turn down and admit of the superfluous stock of nails or tacks being brushed off to the right and left when the magazines have become been filled. The hinged sides *f'* are conveniently locked in upright adjustment by means of spring-catches f^2.

g represents a transverse cover, preferably of glass, which is adapted to rest over the group of magazines, in near proximity to the heads of the tacks or nails in position in the magazines, to prevent the same from becoming displaced by a jar or otherwise, and at the same time admit of the workman noticing at a glance where any clogging or other trouble occurs. The cover should be located at such a height above the heads of the nails that they may have a free sliding motion, and yet not be allowed to tilt and overlap one another. A vertically-sliding gate, *g'*, is located at the feed end of the group of magazines to shut off the feed from the magazine to the spout whenever desired.

The whole is operated as follows: Cover the face of the group of magazines with nails of the desired size and agitate them until they assume the proper position in the magazines; then turn down the side doors and brush the superfluous nails off to the right and left; place the cover over the heads of the nails and the group of magazines in position in the guide-bar, with one of the magazine-sections registering with the spout; turn and tilt the magazines into the desired position for the workman and lock them in position by means of the screws a^2 a^4; elevate the gate *g'* and allow the pressure from the series of nails in the magazine-section to bear upon those in the spout, if any are already there; if not, to slide down into contact with the dog E. By placing the thumb and forefinger on opposite sides of the spout, in a position to take a nail by the head, the spring-bar D is pressed toward the side of the spout, and the nail held by the dog E is allowed to move forwardly into contact with the dog *d'*. When the thumb and finger are released, the nail in contact with the dog *d'* slides downwardly in position to be removed by the thumb and finger, the preceding nail is caught by the dog E, and the operation may be repeated until the nails from the magazine-section in use are exhausted. The group of magazines is now slid along until a second magazine-section registers with the spout, when the feed continues as before. By means of removable partitions running lengthwise of the magazines a portion of them may be supplied with nails or tacks of one size and another portion with those of another size, the distance between the walls of one of the magazine-sections being such as to admit of the use of nails of two or more different sizes. It might be advisable, too, under certain circumstances, to use more than one spout in connection with a group of many magazine-sections and have the different spouts feed nails of different sizes. If a magnetic hammer were used, it would be necessary to have the spout constructed of non-magnetic material and the free end of the spring D composed of magnetic material, so that in picking up a nail by the head the hammer would attract the bar D and cause it to approach the side of the spout in a manner similar to that above described; or the spring-bar D might be operated by the finger of the workman, as before, and the nail lifted by the magnetized hammer-head.

In Figs. 3, 4, &c., are shown a group of magazine-sections or inseparable magazines F F', &c., arranged in the same manner as those heretofore explained, but capable of being adjusted in width to suit nails of different sizes. They may be constructed of any suitable material, preferably of some metal having more or less elasticity—tinned sheet-iron, for example—and are conveniently made by bending the metal into shape, forming long narrow loops or magazines, open at the bottom excepting at or near the ends. The upper edges of the loops or magazines are turned at right angles to form laterally-extending flanges, by means of which the sections are soldered together. The upper face of the group is surrounded by a wall, as in the previously-explained form, having stationary ends and hinged sides. The ends *f* in this instance, however, are double-walled and open at the bottom and top, excepting where the top edges are united at the central portions by the cross-ties f^3. Between the two sides of each of the double-end walls are vertically-movable bars H H', which rest transversely across the upper faces of the magazine-sections, the former bearing directly upon the faces, or upon an elastic cushion interposed between the faces and bar, and the latter bearing directly upon a series of lugs, *h*, extending upwardly from the faces a distance sufficient to allow the heads of the nails to pass, or upon an elastic cushion interposed between the top of the lugs and the bar. A pair of wedges, *h'*, are adapted to fit between the upper sides of the bars H H' and the under sides of the ties f^3, and when forced home press the bars H H' into snug contact with the magazine-sections and hold them in the proper position. In order to narrow or broaden the magazines, the said wedges are loosened and the walls of the several magazine-sections

are crowded together or moved apart, as the case may be, and secured by the wedges *h'*.

The feed ends of the several magazine-sections are each provided with a spring-stop, I, secured at one end to the side of the magazine-wall, near its lower edge, and, extending upwardly, rests normally with its free end across the upper corner of the magazine, forming a stop to prevent the nails from sliding out of position.

The feeding device or spout is here represented as detachable, and is provided with a rearwardly-extending flat projection, K, adapted to rest in contact with the outside of one of the magazine-walls, and with a wedge-shaped projection, *k*, adapted to rest in contact with the outside of the opposite magazine-wall, and when slid into position forces the spring-stop I back from its position across the end of the magazine and leaves the nails free to slide into the spout. The construction of the dogs *d'* and E is also somewhat modified in this instance, the faces of the dogs being sharp and adapted to slip in between the shanks of the nails, instead of against them, and the two dogs being connected to a U-shaped spring-actuated arm pivoted to the bottom of the spout.

The shanks of the dogs E *d'* are preferably of such material that they may be bent so as to separate the two dogs sufficiently to admit two or more nails or tacks being separated at a time. The operation in this instance is, however, quite similar to that of the former construction, the spout in this instance being adjusted to the several magazine-sections as they are required, instead of adjusting the magazine-sections to it. The form shown and described in this latter instance is intended for use in connection with a suitable harness attached to the body of the workman, and to be carried about with him, as in upholstering and the like; but these adjustable magazines may be put in such form as to be used in the place of the non-adjustable group first described by simply attaching to their bottoms a transverse projection adapted to fit the groove in the face of the guide-bar B. The latter form of construction also shows an opaque cover, L, made, preferably, of tinned sheet-iron, and provided with vertically-adjustable legs *l* on its two sides adapted to hold it at the proper distance above the nail-heads. It also has a series of fingers, *l'*, adapted to reach between the lugs *h* and prevent the nails from displacement before reaching the spout.

The modified construction of the adjustable magazine represented in Figs. 7 and 8 consists of a magazine-section similar to that last described, and provided on one side with a pair of semi-elliptic springs, M, secured to the side wall of the magazine, having their free ends in close proximity to the under side of the flange at the top of the magazine. Each magazine-section is secured at one side to one of the walls or braces M by inserting the flange of said wall or brace between the springs and the flange of the magazine-section. Each succeeding section is secured to its adjacent wall or brace in the same manner, and the sections are thus held in the desired adjustment with sufficient firmness without the use of the wedges, and by soldering the edges, which are not provided with springs, to the partition-walls.

The above-described arrangement, taken as a whole, is well adapted to use in cobbling, basket-making, upholstering, and particularly so in any work where it is required to take a tack or sharp-pointed nail by the head and insert it in the work before driving.

It is evident that many slight changes might be resorted to in the form and arrangement of the several parts without departing from the spirit and scope of my invention—as, for example, the walls which surround the face of the inseparable group of magazine-sections might be made separable therefrom, and other methods of adjusting the magazines to receive different sizes of nails might be employed; hence I do not wish to be understood as limiting myself strictly to the construction herein set forth; but,

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

1. In a tack or nail feeding device, the combination, with a magazine for holding nails, of a spout connected therewith and having an open upper face or edge, for the purpose of permitting the nails or tacks to be grasped by the head, two movable stops or dogs attached to said spout and adapted to separate from a series of nails or tacks the foremost one and retain it in a position to be removed by grasping by the head between the thumb and fore-finger, and a bar or finger-piece for operating the dogs, substantially as set forth.

2. The combination, with a nail or tack feeding spout, of a spring-actuated dog having a face covered with rubber, leather, or equivalent flexible material, and adapted to engage the shank of one or more nails and check the line of nails from advancing after the foremost one has been separated for use, substantially as set forth.

3. The combination, with a magazine for holding nails, of a nail or tack feeding spout having an open upper face and a cross-bar or stop at the outer end thereof, a pair of dogs secured to the spout and adapted to mutually actuate each other, and a spring adapted to hold one of the dogs normally in engagement with the foremost nail but one, and force the said dog into the spout when the foremost nail is removed by its head, substantially as set forth.

4. The combination, substantially as described, with a group of magazines inseparably connected, and having adjustable channels for holding different-size nails or tacks, of a feeding-spout open at its upper edge, and provided with a cross-bar or stop at its lower edge,

and dogs adapted to separate from a series of nails the foremost one and retain it in a position to be removed from the spout, substantially as set forth.

5. The combination, with a nail-receptacle and a series of nail-magazines located therein, of a plate fitting snugly within the receptacle and forming a cover for holding the nails or tacks in the several magazines against displacement, substantially as set forth.

6. The combination, with a group of nail-magazines inseparably connected, of a transparent cover adapted to hold the nails or tacks against displacement, substantially as set forth.

7. The combination, with a receptacle for holding nails in bulk, and a group of magazines located therein, of a plate constructed to fit said receptacle and form a cover for the entire group of magazines, and legs, substantially as described, adjustably secured to said plate or cover, substantially as set forth.

8. The combination, with a receptacle adapted to hold tacks or nails in bulk, and a single feeding-spout having dogs for regulating the discharge of the nails or tacks, of a series of magazines located within said receptacle and adapted, by means substantially as described, to be brought into alignment with the spout for discharging the nails therein, substantially as set forth.

9. The combination, with a receptacle and a feeding-spout provided with spring-actuated dogs adapted to separate from a series of nails the foremost one and retain it in a position to be removed from the spout, of a group of nail-magazines located within the receptacle and adapted to be brought into alignment with the spout, and a removable partition, substantially as described, for dividing the receptacle into two compartments for nails or tacks of different sizes.

10. The combination, with a guide-bar having a groove or way therein and a feeding-spout secured thereto, of a nail-receptacle secured to said guide-bar and adapted to slide thereon, all arranged substantially as set forth.

11. The combination, with a guide-bar having a feeding-spout and a groove or guideway for the nail-receptacle, of the nail-receptacle secured to and adapted to slide on said bar, and a series of nail-magazines located within said receptacle and adapted to be brought into alignment with the feeding-spout, substantially as set forth.

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

STUART PERRY.

Witnesses:
J. F. WOOSTER,
DANIEL P. WOOSTER.