

No. 776,461.

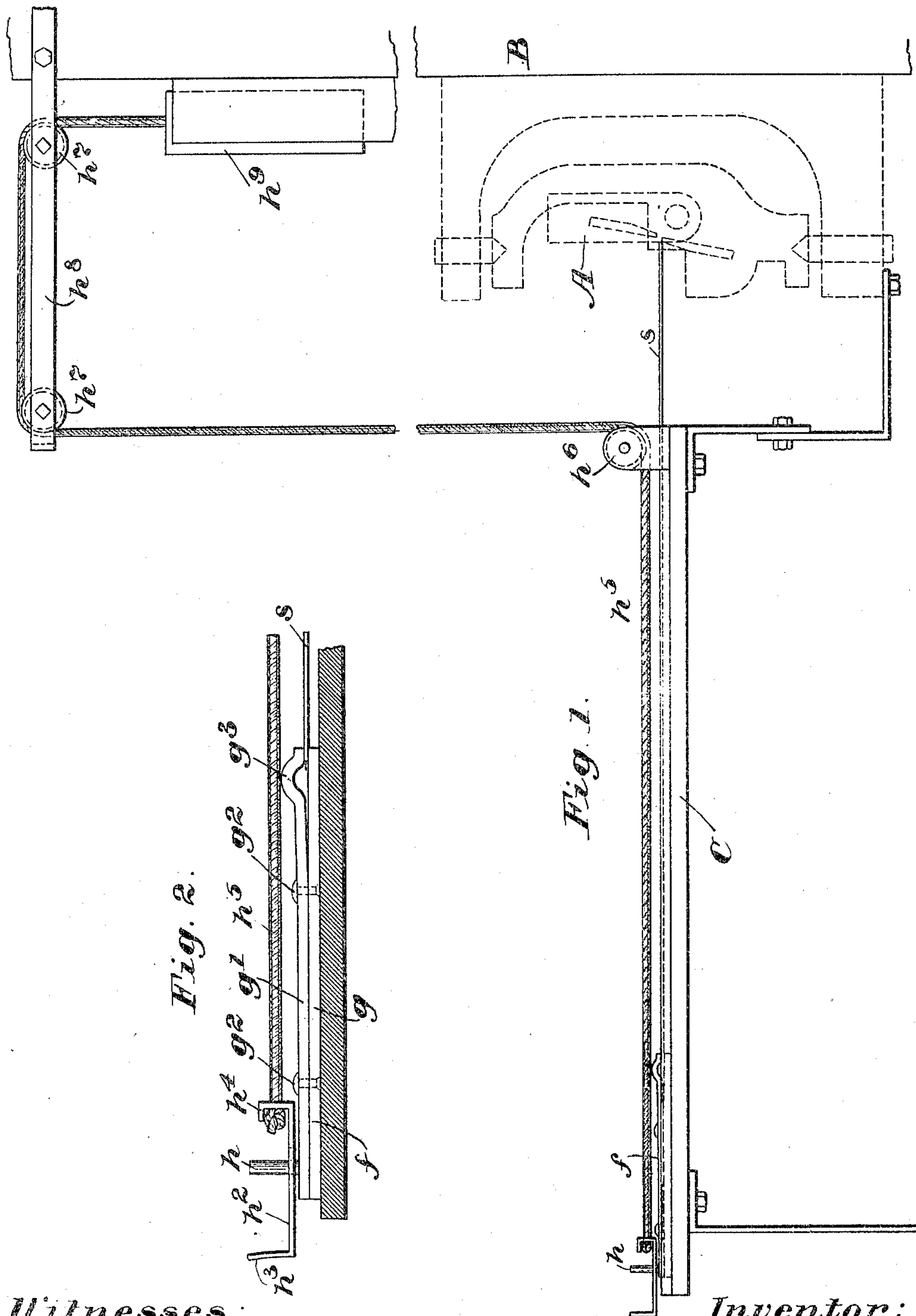
PATENTED NOV. 29, 1904.

C. B. GARDINER.  
FEEDING MECHANISM FOR NAIL PLATE MACHINES.

APPLICATION FILED DEC. 15, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:  
Herac A. Crossman.  
Evvitt S. Emery.

Inventor:  
Charles B. Gardiner.  
by Emery, Booth & Powell  
Attys.

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2 SHEETS—SHEET 2

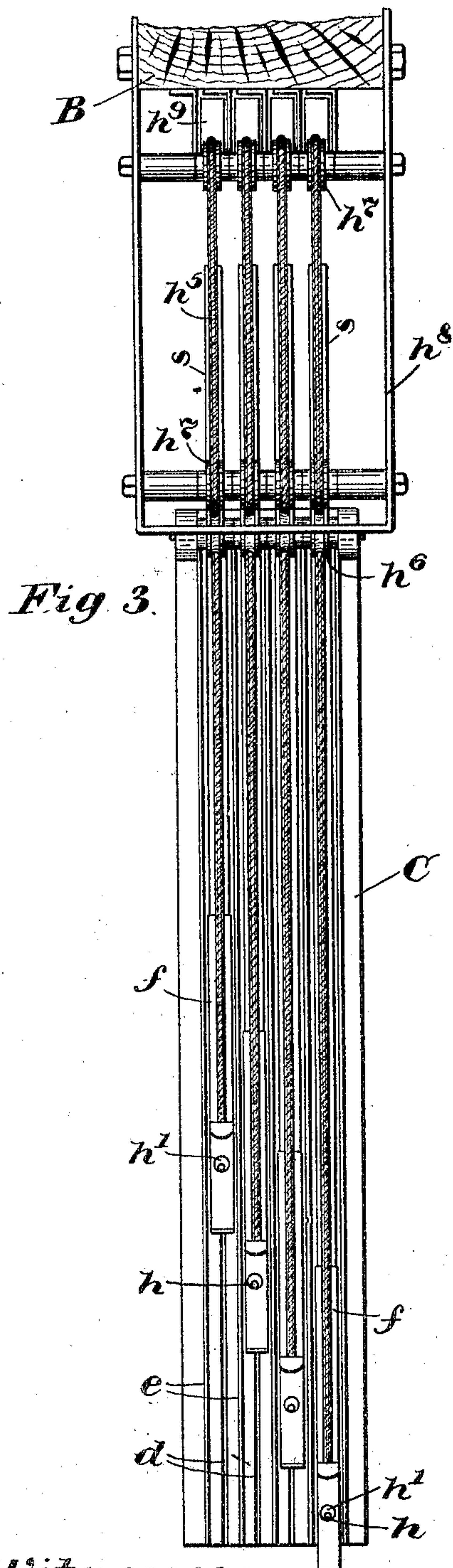


Fig. 3.

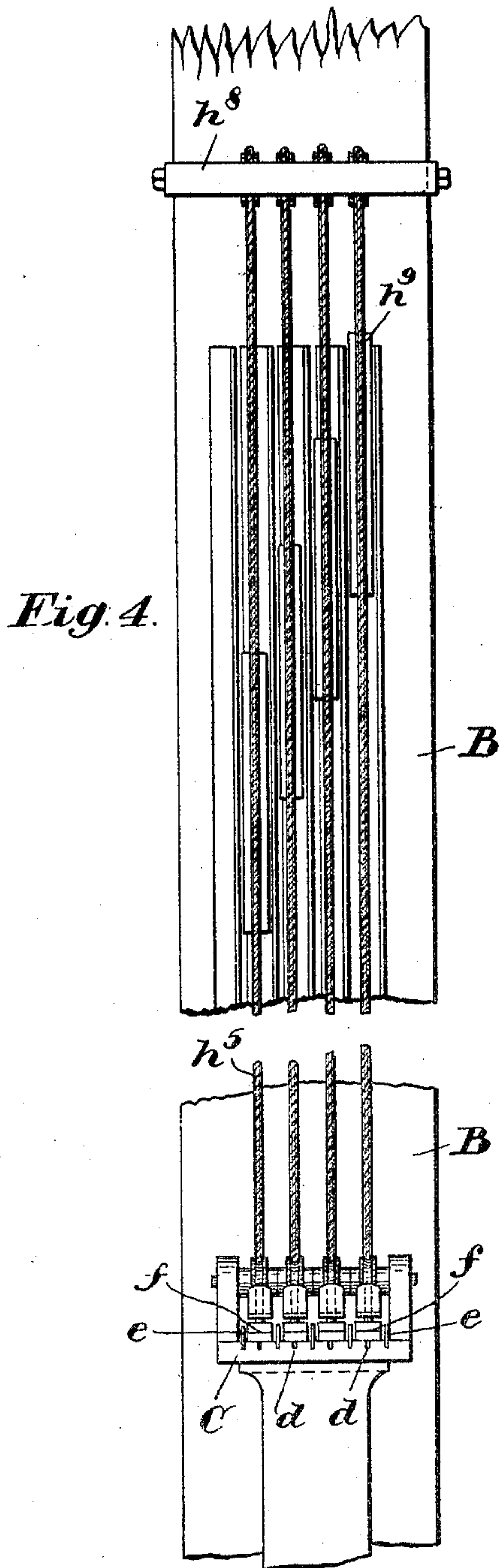


Fig. 4.

Witnesses:

Horace A. Crossman.  
Ernest S. Emery.

Inventor:

Charles B. Gardiner.  
by Emery, Booth & Powell  
Attys



# UNITED STATES PATENT OFFICE.

CHARLES B. GARDINER, OF RAYNHAM, MASSACHUSETTS.

## FEEDING MECHANISM FOR NAIL-PLATE MACHINES.

SPECIFICATION forming part of Letters Patent No. 776,461, dated November 29, 1904.

Application filed December 15, 1903. Serial No. 185,296. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES B. GARDINER, a citizen of the United States, and a resident of Raynham, in the county of Bristol and State of Massachusetts, have invented an Improvement in Feeding Mechanism for Nail-Making Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the making of nails it is common to mount the machine on the side of a post or support, and the several strips or bars of metal from the end of which the nails are successively cut are fed to this machine along suitable guideways provided therefor upon a table in front of the machine.

Prior to my invention it has been the usual custom to provide clamps adapted to be attached to the outer ends of the strips or bars, and these clamps have had depending hooks or eyes which projected through slots in the bottoms of the feedways and have had attached to their ends underneath the table weighted cords, so arranged that the weights would tend to feed the bars or strips always up to the nail-making machine. An objection to this arrangement has been that the feeding-weight, acting from the under side of the table, has tended to buckle or lift the bar or strip from the table, thus rendering it more apt to vibrate and jump from its feedway, and also by reason of the uncertainty of its presentation to the machine producing ununiform results in the nail-making.

My invention aims to improve feeding mechanism of this sort in a way that will cause the bars or strips always to be presented with certainty, uniformity, and without unnecessary vibration to the nail-making device, and one also which will permit the bars or strips at all times to be conveniently removed or replaced wherever their ends may be along the feedways.

To enable my invention to be understood, I will first describe the same in connection with the best embodiment thereof known to me, it being understood, however, that my invention is not limited to the particular embodiment disclosed.

In the drawings, Figure 1 in side view shows a feed mechanism illustrating my invention; Fig. 2, an enlarged sectional detail showing the means for engaging and feeding a bar; Fig. 3, a top or plan view of Fig. 1, and Fig. 4 an end view of Figs. 1 and 3.

In the particular embodiment of my invention selected for illustration herein and shown in the drawings, referring first to Fig. 1, the nail-making machine is typified in dotted lines at A, it being shown as mounted in customary manner upon a suitable post or support B.

In front of the machine and supported in any suitable manner is the feed-table C. This table (see Figs. 3 and 4) is provided along its top surface with a plurality of parallel grooves  $d$ , and in certain of these grooves, as desired or required, are inserted division beads or strips  $e$ , which form between them feedways for the strips or bars to be fed. These division-strips  $e$  may be spaced in the grooves provided therefor, according to the width of strips to be operated upon for the time being. The strips  $s$ , from which the nails are to be cut, are shown as flat strips rectangular in cross-section, and at their rear or outer ends they are engaged, respectively, by suitable clamps  $f$ , preferably spring-clamps. Each of these clamps (see Fig. 2) preferably consists of an under member  $g$  and an upper member  $g'$ , secured together, as by rivets  $g^2$ , the projecting ends of the said strips  $g$   $g'$  constituting resilient fingers adapted to seize between them and hold firmly the end of the strip  $s$  to be fed thereby. As herein shown, the upper member  $g'$  has an offset bend at  $g^3$  for the reception of an opening-bar by which to spread the jaws of the clamp for the insertion or removal of the strip  $s$ .

The bottom of the clamp described is preferably flat and rests flat upon and substantially across the entire width of the bottom of the particular feedway in which it is to travel, so that it has a firm steadying bearing without any tendency whatever to wedge or cramp. At its rear end (see Fig. 2) each clamp  $f$  is shown provided with a vertical pin or post  $h$ , adapted to enter an enlarged eye  $h'$  (see Fig. 3) in a pull-plate  $h^2$ . This pull-plate at its outer end has an upturned finger or handle



$h^3$ , and at its inner end has an upturned and inwardly-flanged ear  $h^4$ , through an aperture in which is passed and suitably secured a rope or cord  $h^5$ , which leads in the direction of the machine and above the strip  $s$  to and about a stationary pulley or sheave  $h^6$ , thence upward over the stationary sheaves  $h^7$ , mounted in a bracket  $h^8$ , said cord carrying at its end a depending weight  $h^9$ . This weight acts through the rope  $h^5$  to pull the clamp  $f$  toward the machine, and thereby to feed the strip to the cutting appliances of the machine. Obviously the arrangement of this pulling-cord  $h^5$  above the strip  $s$  tends, if at all, to flex or bow said strip downwardly, so as to keep it always in firm contact throughout its length with the bottom of the feedway for that particular strip. The pull on the cord thus exerts a steadying action upon the strip rather than a disturbing or unsteadying action, as in prior feeding mechanisms, as described, where the cord operates from beneath. Furthermore, as herein arranged and shown, the said cord  $h^5$  bears upon the upwardly-curved and bent portion  $g^3$  of the upper clamp member, and thereby positively holds the gripping end of said clamp, and of course the strip held thereby, downwardly upon the bottom of the feedway. It will be noticed also that the pin  $h$  is without a knob or hook upon its upper end and the pull-plate is maintained in engagement with it by the pull upon the cord connected to the plate, so that there is provided a form of connection which permits of most ready disengagement of the pull-plate from the clamp at any point, coupled with certain engagement while in operation.

In the operation of the machine several strips are fed simultaneously, one strip in advance of the next, so that the operator, who usually has charge of two machines, may be constantly occupied in renewing the strips, one of the several strips usually running out about as fast as the operator is able to apply a clamp to a new strip and place it in position. In this way only one set of cutting appliances out of many is idle at any one time.

By making the feedways open at their upper sides or tops and throughout the entire widths of the feedways it is possible to remove a strip from its feedway irrespective of the position of the end of the strip and its clamp in and along that feedway, and this is also facilitated by the particular arrangement and construction of the clamp and pull-plate

used in connection therewith, for, as here shown and described, it is a comparatively easy matter for the operator to disengage the pull-plate by lifting it from the finger or post  $h$ , and then similarly lifting the clamp and strip from the feedway, all of which have been practically impossible in mechanisms for this purpose as heretofore provided.

As here shown, the several pulleys or sheaves  $h^6$  and  $h^7$  for the respective strips may be mounted upon common pivots and in common supports.

My invention is not limited to the particular embodiment thereof here shown and described, but obviously may be varied within the spirit and scope of my invention.

I claim—

1. In feeding mechanism for a nail-making machine the combination with a table presenting a plurality of parallel, longitudinal grooves, of a series of division strips or beads interchangeably inserted therein for providing a plurality of variable width feedways, and feeding means arranged to move in said ways.

2. In a feeding mechanism for a nail-making machine the combination with one or more feedways of a feeding-clamp movable along each of said ways, said clamp provided with means for the attachment of pulling means and with an upwardly-projecting portion cooperating with said pulling means to hold said clamp in its feedway.

3. In a feeding mechanism for a nail-making machine the combination with one or more feedways of a feeding-clamp movable along each of said ways, said clamp provided with means for the attachment of pulling means and with means at the forward end thereof cooperating with said pulling means to hold said clamp in its feedway.

4. In a feeding mechanism for a nail-making machine the combination with one or more feedways of a spring feeding-clamp movable along each of said ways, said clamp provided with means for the attachment of pulling means and with a tool-receiving socket to receive a tool to open said clamp.

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

CHARLES B. GARDINER.

Witnesses:

JESSE F. HALL,

HARRY S. JANES.