

J. D. STOW.
FEED FOR HEADERS.
APPLICATION FILED JAN. 13, 1909.

929,892.

Patented Aug. 3, 1909.
3 SHEETS—SHEET 1.

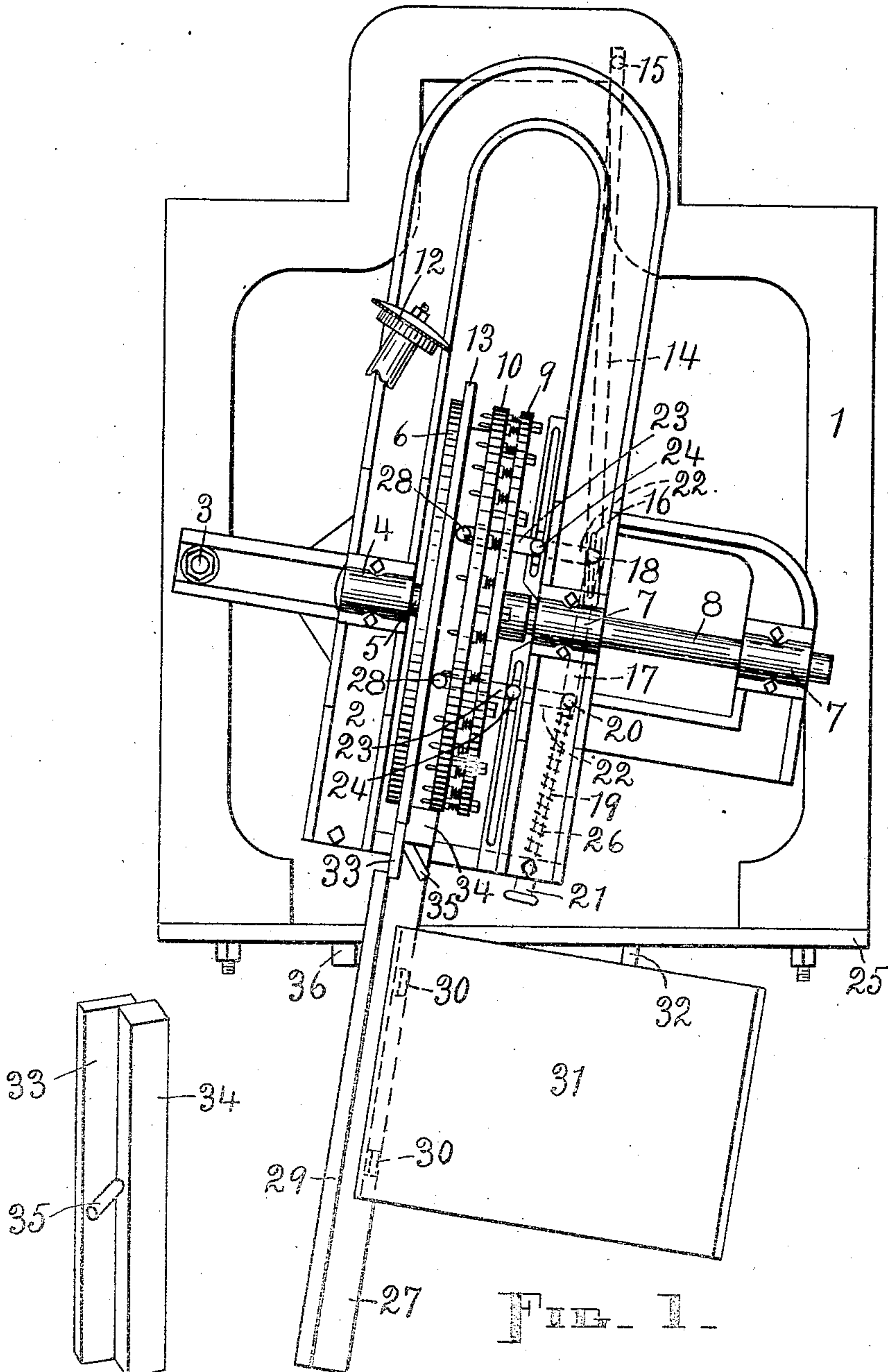


FIG. 2.

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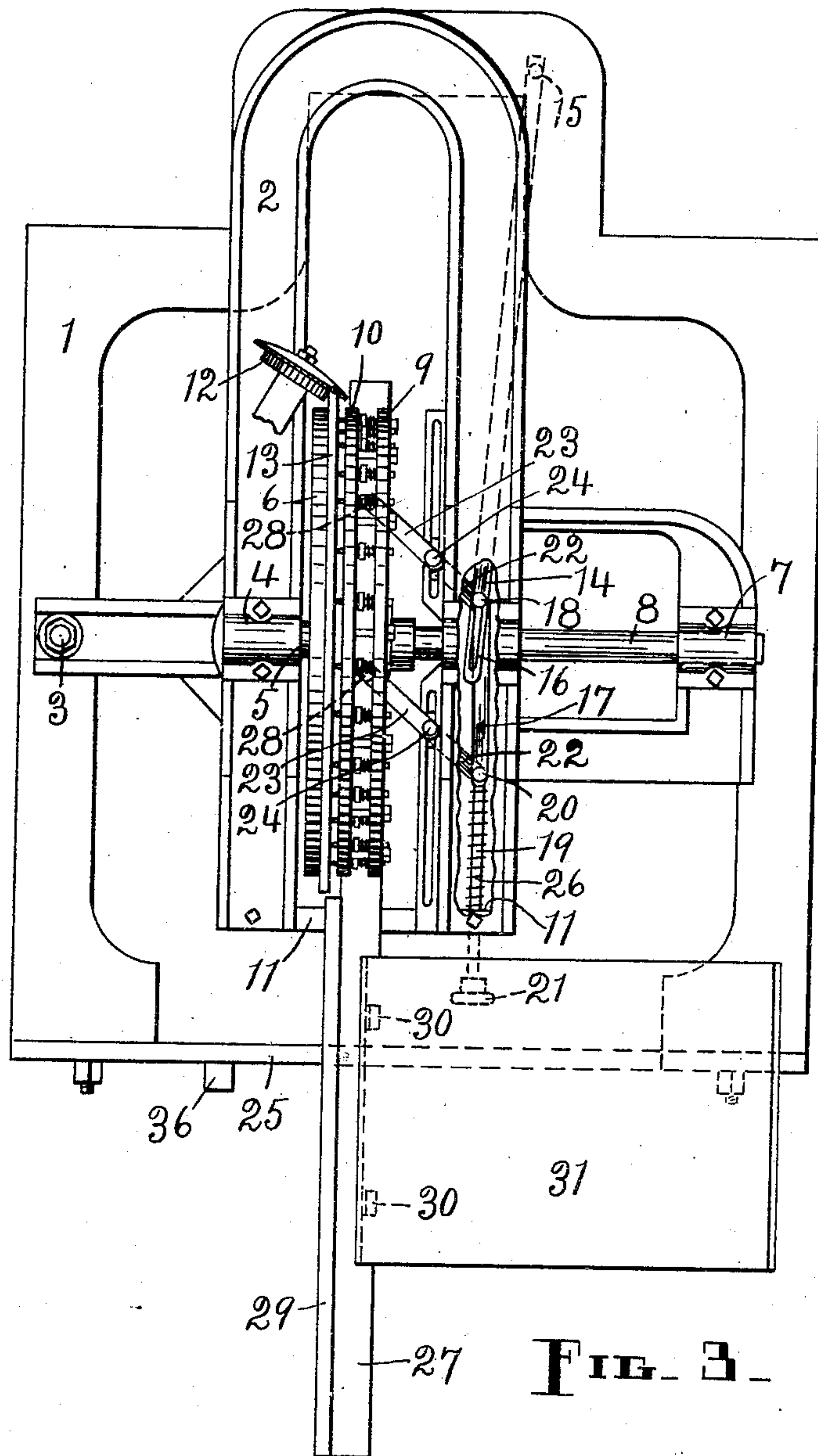
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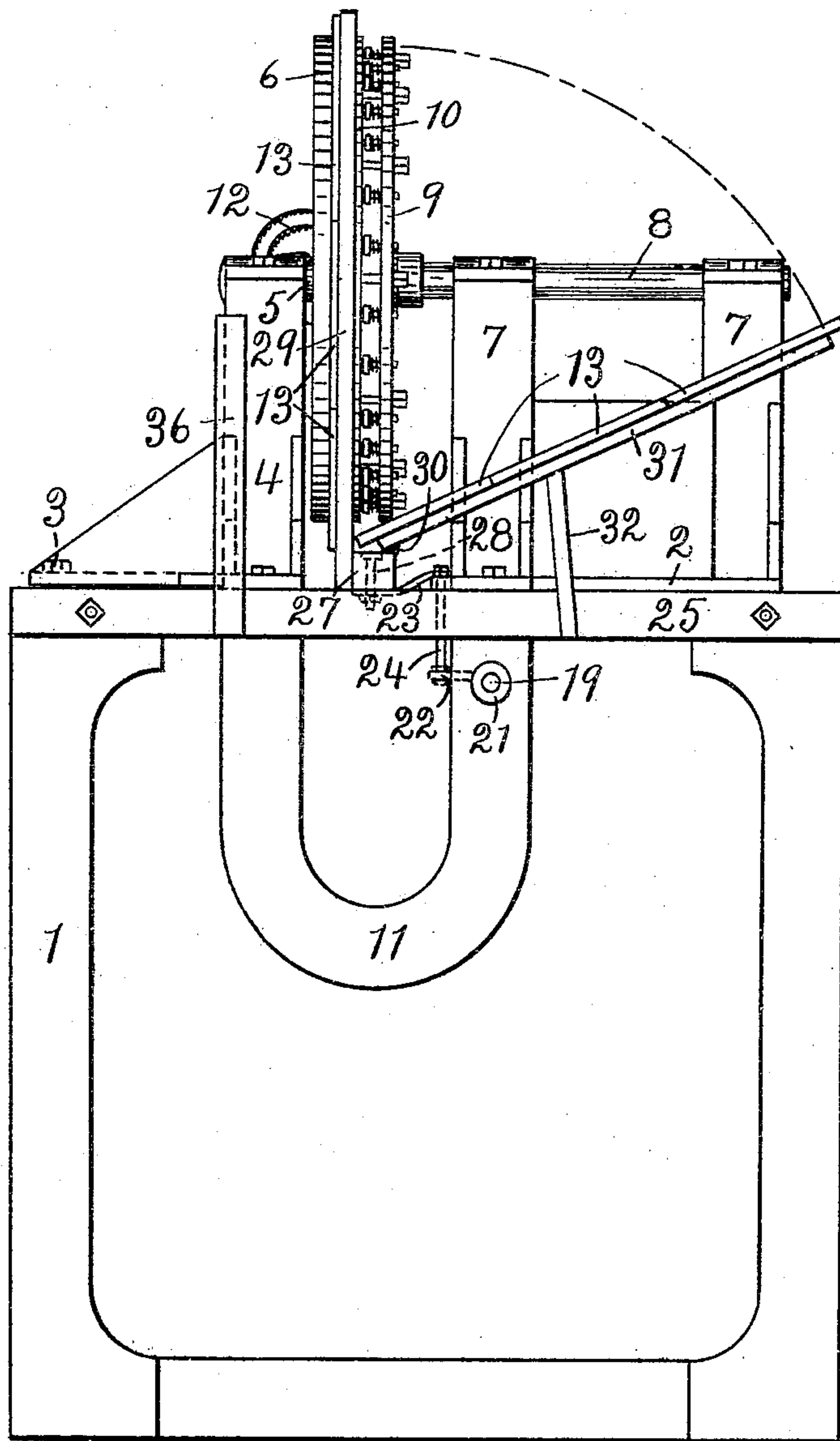


FIG. 4.

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UNITED STATES PATENT OFFICE.

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FEED FOR HEADERS.

No. 929,892.

Specification of Letters Patent.

Patented Aug. 3, 1909.

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To all whom it may concern:

Be it known that I, JAMES D. STOW, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Feed for Headers, of which the following is a specification.

My invention relates to improvements in machines known as headers and designed to cut out barrel heads, and particularly to means for delivering or feeding the heading to such machines; and the invention consists essentially of a horizontal slide-way which projects back under the gripping head of the machine and forward in front of said machine and is provided with a vertical guide, for the heading, and a table hinged to said slide-way upon which the heading is first placed preparatory to being introduced into the machine, together with such old parts and members of the machine as are needed to operate the new elements and to coöperate therewith, and with a certain peculiar pusher that I prefer to use in connection with the heading, all as hereinafter set forth.

The heading, which is to be cut round with a beveled periphery in the usual manner to form the barrel head, consists of one or more, generally three, rectangular pieces of board of the proper thickness, and these pieces are arranged in the header with their contiguous longitudinal edges butted and having an approximately horizontal direction. Heretofore much difficulty has been experienced in properly placing the rectangular pieces in the gripping head of the machine, preparatory to trimming their outer edges into the usual shape, and much time expended in the operation, and the object of my invention is to provide simple and inexpensive but durable and convenient means for doing this work, whereby a great saving in time, labor and trouble is effected in a header equipped with this feed and the capacity of such header nearly or quite doubled in consequence. I attain this object by the means illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a header equipped with my attachment, only the essential parts of the header relative to the attachment being shown; Fig. 2, a perspective view of the pusher used in connection with said attachment; Fig. 3, a top plan

view of said header and attachment, similar to Fig. 1 excepting that the movable members are differently positioned, and Fig. 4, a front elevation of the machine as shown in Fig. 3.

In the first view the gripping head of the machine is shown out of action, while in the third and fourth views such head is shown in active position.

A heading is represented in Fig. 1 as having just been introduced into the gripping head by means of the pusher, said head not having yet closed on said heading, and the same heading is represented in Figs. 3 and 4 in the grasp of the gripping head in process of being trimmed by the cutter. The pusher appears in the first view, and a heading consisting of three pieces of board is shown on the table in readiness to take the place of the heading in the gripping head in the last view. In Fig. 3 a portion of the movable frame of the header is broken out to show to better advantage some of the actuating mechanism below for the feed device or attachment.

Similar figures refer to similar parts throughout the several views.

The following old parts of a header are illustrated: An open-top vertical bed 1 which constitutes the floor support or main frame of the machine, a horizontal oscillatory frame 2 resting and movable on said bed to which it is pivoted at 3, a bearing 4 for a stud 5 upon which is mounted a disk 6, bearings 7—7 for a suitably driven shaft 8 upon which two disks 9 and 10 are mounted, said bearings being carried by said frame 2, a depending U-shaped connection 11 between the front ends of said frame 2, a suitably supported and driven trimmer or cutter 12 located behind said disk 6, when the latter is normally disposed, in position to operate on a heading 13 when said heading is in place between said disks 6 and 10 and they are in operative position relative to said cutter, a long lever 14 having its rear end pivoted at 15 to said bed and slotted at its front terminal at 16, a short lever or link 17 having its rear end pivoted at 18 to the slotted part of the lever 14, an actuating rod 19 slidably mounted in the right-hand branch of the connection 11 and having its rear end pivoted at 20 to said link, said rod being provided with a knob which serves as a stop 21 on its outer end, two arms 22, and two

arms 23, one each of such arms being rigidly attached to one of two pivots 24 inserted in the frame 2, and the back arm 22 being pivotally connected with said lever and link at 5 18 while the forward arm 22 is pivotally connected with said link and rod at 20. The disks 6, 9 and 10 together form the gripping head for the heading 13, and said disk 10 is provided on the face adjacent to said disk 6 10 with the usual points or spurs to insure a firm grasp of said heading. The disk 10 is connected by pins with the disk 9 and springs are interposed between said disks, as is customary in members of this kind, so that 15 the two disks must rotate together and yet may have independent movement longitudinally of their axes, such movement of the disk 10, however, being subject to the action of said springs. Thus it is that the gripping head grasps the heading with a yielding 20 force and therefore neither grips it too tightly nor holds it too loosely. The disk 9 is moved with the disk 10 toward and away from the disk 6 by the proper mechanism 25 (not shown). The actuating mechanism for the arms 23, including the arms 22 which are nevertheless and in reality continuations of said arms 23 on a different level, is practically all below the frame 2, and said arms 30 22 and 23 have always an angular relation to the general direction of the other members of such mechanism, although the angles vary as the positions of the parts are changed. The aforesaid general direction of certain 35 of the parts of the actuating mechanism for the arms 23 is from front to back of the machine at the right of the gripping head, and said arms together with the arms 22 extend toward said head, the former projecting beneath some portions of it. Further illustration and description of old parts is believed not to be necessary, beyond calling attention to the fact that the header is provided with suitable mechanism for swinging the frame 40 2 about its pivot 3, and otherwise furnished with all necessary equipment.

To the front of the bed I have added a cross-bar 25 at the top, and to the lever mechanism just described I have added a 50 spring 26. The spring 26 encircles the rod 19 between the connection 11 and the pivot 20 and so has a tendency to force the parts immediately under its influence rearward. The cross-bar 25 and the spring 26 together 55 with the elements described below comprise the new elements which have been combined with the header to make up my invention.

A narrow, horizontal slide-way 27 is loosely mounted on the cross-bar 25 so that it 60 will slide freely thereon, and such slide-way projects forward some distance from said bar and extends backward beneath the gripping head. The ends of the arms 23 which are opposite the pivots 24 are pivoted at 65 28—28 to the underside of the slide-way 27.

Secured at the bottom to the left-hand edge of that portion of the slide-way 27 which is forward of the gripping head is a vertical guide 29, and having its left-hand edge 70 hinged at 30—30 to the top of the same portion of said slide-way is a table 31, there being sufficient space between said guide and said table at all times to accommodate a heading 13. A rest 32 is attached to the 75 cross-bar 25 to receive the table 31 and retain it in an oblique position when down, as best shown in Fig. 4. The table 31 is capable of being turned off into a vertical position parallel with the guide 29. The broken arc in Fig. 4 indicates the course of 80 the outer or upper edge of the table when turned up or down. The table is located some distance in from the front end of the slide-way 27.

The heading 13 originally is cut sufficiently large to provide for trimming it off 85 round by the cutter 12 to form the barrel head, and the slide-way 27 is situated the proper distance below the gripping head to position said heading, in the manner presently to be explained, so that it can be 90 grasped by said gripping head well inside of the edges and thus leave enough material projecting on all sides to insure a complete and perfect barrel head at the end of the 95 trimming operation.

A pusher, which I prefer to employ in connection with the heading, consists of a guide 33 which is about as thick as the heading 13, a support 34 affixed to said guide 100 longitudinally and projecting in front of the working edge of the same for a distance approximately equal to the distance between the top of the slide-way 27 and the bottom of the disks 6, 9 and 10 or any of them, 105 they all being of the same diameter, and a handle 35. The manner in which this pusher is used will be made clear from the following description of the operation of the feed.

Starting with the parts disposed as in the 110 first view, to describe the operation, attention is called to the fact that the heading 13 has just been pushed along the slide-way 27 by the pusher in the hand of the operator, and that said heading is now between 115 the disks 6 and 10. After taking away the pusher and setting in operation the mechanism which swings the frame 2 back into position and closes the gripping head on the heading, the slide-way 27 is removed 120 from beneath said heading so as to enable it to revolve with said gripping head in operative relation to the cutter 12 which trims said heading and bevels the edge thereof in the customary manner. The removal 125 of the slide-way 27 from beneath the heading at this time or just before the gripping head commences to revolve is necessary, because said heading being rectangular could not revolve while in the grasp of said grip- 130

ping head if said slide-way remained under the same, and such removal is effected through the medium of the lever 14 and the associated pivotally-connected members.

5 To understand how the lever 14 and the associated pivotally-connected members operate to move the slide-way 27 on the cross-bar 25, it should be observed that, as disposed in Fig. 1, the pivot 18 is at the right
10 of a straight line connecting the pivot 15 with the bearing in the member 11 for the rod 19, that said rod is swung in the same direction, said bearing therefor in said member 11 being of a size and shape which permit of the necessary amount of lateral play
15 on the part of the rod, that each pair of rigidly connected arms 22 and 23 stands approximately at right-angles to the link 17 which is approximately parallel with the
20 vertical planes of the gripping head disks, and that said pivot 18 is a little in advance of the back end of the slot 16. As the frame 2 moves back, however, this arrangement undergoes a change in which the lever 14
25 swings to carry the pivot 18 to the other side of a similar line to that above mentioned, the lost motion provided by the slot 16 is taken up when the back end of said slot encounters said pivot 18, the link 17 and
30 the rod 19 are forced against the resiliency of the spring 26 forward or outward by said lever, the arms 22 and 23 are turned on their pivots 24, the pivotal points 18 and 20 moving ahead and the pivotal points 28 moving
35 rearward, and the slide-way 27 which is fastened to said arms 23 is actuated from under the heading in the gripping head. The lost motion just referred to enables the gripping head to close on the heading as
40 soon as the frame 2 begins to swing back and before the support afforded by the slide-way is withdrawn. The parts are now disposed as shown in Fig. 3 and the cutter 12 trims off and finishes the edges of the head-
45 ing which project from the gripping head in front and behind, above and below. While this heading is being formed into a barrel head, another heading is laid on the table 31, as shown in Fig. 4, with the front edge project-
50 ing beyond the front edge of said table in readiness to follow the first heading into the machine. As soon as this first heading has been cut into a barrel head the gripping head opens and allows such barrel head to
55 drop down out of the way, the frame 2 is swung forward and said gripping head ceases to revolve. Upon the swinging forward of the frame 2 the lever 14 is shifted to the right again as is also the rod 19 and
60 the spring 26 forces said rod inward as far as the stop 21 permits, with the result that the arms 22 and 23 assume right-angular positions relative to the link 17 and to the slide-way 27 and shift the latter to a posi-
65 tion beneath the open space between the

disks 10 and 6, the pivot 18 being left in advance of the back end of the slot 16 as before. The parts now stand once more as shown in the first view, and while thus dis-
posed the table 31 with the heading thereon 70 is turned up on its hinges 30 into a vertical position. Now the pusher is brought into play and applied to the projecting front edge of the heading which rests between the
75 guide 29 and the upstanding table 31 with its bottom edge on the slide-way 27, the pusher guide 33 being against the slide-way guide 29 with the back edge of said guide 33 against said heading and the pusher support
80 34 engaging the right-hand side of the heading. Next the table 31 is turned down onto its rest 32 and the heading, held between the guide 29 and the support 34, is moved rear-
wardly between the disks 10 and 6 as far as
85 said support will permit, the latter being wide enough to strike the front edge of said disk 10 and so limit the movement of the heading into the gripping head. The sev-
eral operations necessary to transform the heading into a barrel head follow in the 90
manner already fully explained.

In the absence of the spring 26 the shifting mechanism for the slide-way 27 can be actuated to move said slide-way into opera-
95 tive position beneath the open gripping head by grasping the stop or knob 21 and forcing the rod 19 inward to locate the link 17 and the arms 22 and 23 as does said spring at this stage of the operation. Without the
100 action of the spring or the hand the necessary movement of the parts in question would not take place, because when the frame 2 swings forward and the lever 14 shifts to the right the pivot 18 at the end
105 of these latter movements would then be left in the forward part of the slot 16 and the connected members be located accordingly.

36 is a vertical stop fastened securely to the cross-bar 25 at the left of the slide-way
110 27 and its guide 29 and so situated as to serve as an abutment or buffer for said slide-way when the same is shifted to bring it into operative position relative to the gripping head.

The terms "heading" and barrel "head" 115 as herein used apply to the parts before and after finishing, respectively, each being considered as a unit regardless as to whether or not there be more than one piece in it.

What I claim as my invention, and desire 120 to secure by Letters Patent, is—

1. A feed, for headers, comprising a suitably supported slide-way provided on one side with a guide, and a table attached to the other side of said slide-way and adapted to
125 be swung upward.

2. A feed, for headers, comprising a suitably supported slide-way provided on one side with a guide, a table attached to the other side of said slide-way and adapted to
130

be swung upward, and a rest for said table when turned down.

3. The combination, in a header, with a feed comprising a suitably supported movable slide-way provided on one side with a guide, and a table attached to the other side of said slide-way and adapted to be swung upward, of means to shift said slide-way.

4. The combination, in a feed for headers, with a suitably supported slide-way provided on one side with a guide, of a pusher constructed and arranged to bear against said guide and at the same time to engage the front edge and the side opposite that which is contiguous to the guide of a heading on said slide-way.

5. The combination, in a feed for headers, with a suitably supported slide-way provided on one side with a guide, and a table attached to the other side of said slide-way and adapted to be swung upward with a heading thereon, of a pusher constructed and arranged to bear against said guide and at the same time to engage the front edge and the side opposite that which is contiguous to the guide of a heading left on the slide-way by said table.

6. The combination, in a header, with the gripping head and the operating mechanism for the same of the machine, of a laterally-movable slide-way loosely supported by said machine, pivotally-mounted arms in pivotal connection with the inner portion of such slide-way, and means to actuate said arms to move said slide-way into and out of operative position relative to said gripping head.

7. The combination, in a header, with the gripping head and the operating mechanism for the same of the machine, of a slide-way loosely supported by said machine, means to move said slide-way into and out of operative position relative to said gripping head,

and a pusher constructed and arranged to actuate a heading on the slide-way into the gripping head and to encounter the latter before the edge of said heading which is engaged by said pusher passes into the gripping head.

8. The combination, in a header, with the bed, the gripping head and the operating mechanism therefor, and the horizontally-swinging frame upon which such gripping head is mounted, of a slide-way loosely supported by the machine, and operating mechanism for said slide-way, such mechanism comprising a lever pivoted at one end to said bed and having a slot in its other end, a rod slidably-mounted in a part of said frame and having a stop on its outer end, a link connecting the inner end of said rod with the slotted part of said lever, and arms pivotally attached to said frame and pivotally connected with said lever, rod and link.

9. The combination, in a header, with the bed, the gripping head and the operating mechanism therefor, and the horizontally-swinging frame upon which such gripping head is mounted, of a slide-way loosely supported by the machine, and operating mechanism for said slide-way, such mechanism comprising a lever pivoted at one end to said bed and having a slot in its other end, a rod slidably-mounted in a part of said frame and having a stop on its outer end, a link connecting the inner end of said rod with the slotted part of said lever, arms pivotally attached to said frame and pivotally connected with said lever, rod and link, and means to tension said rod and link rearwardly.

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Witnesses:

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