

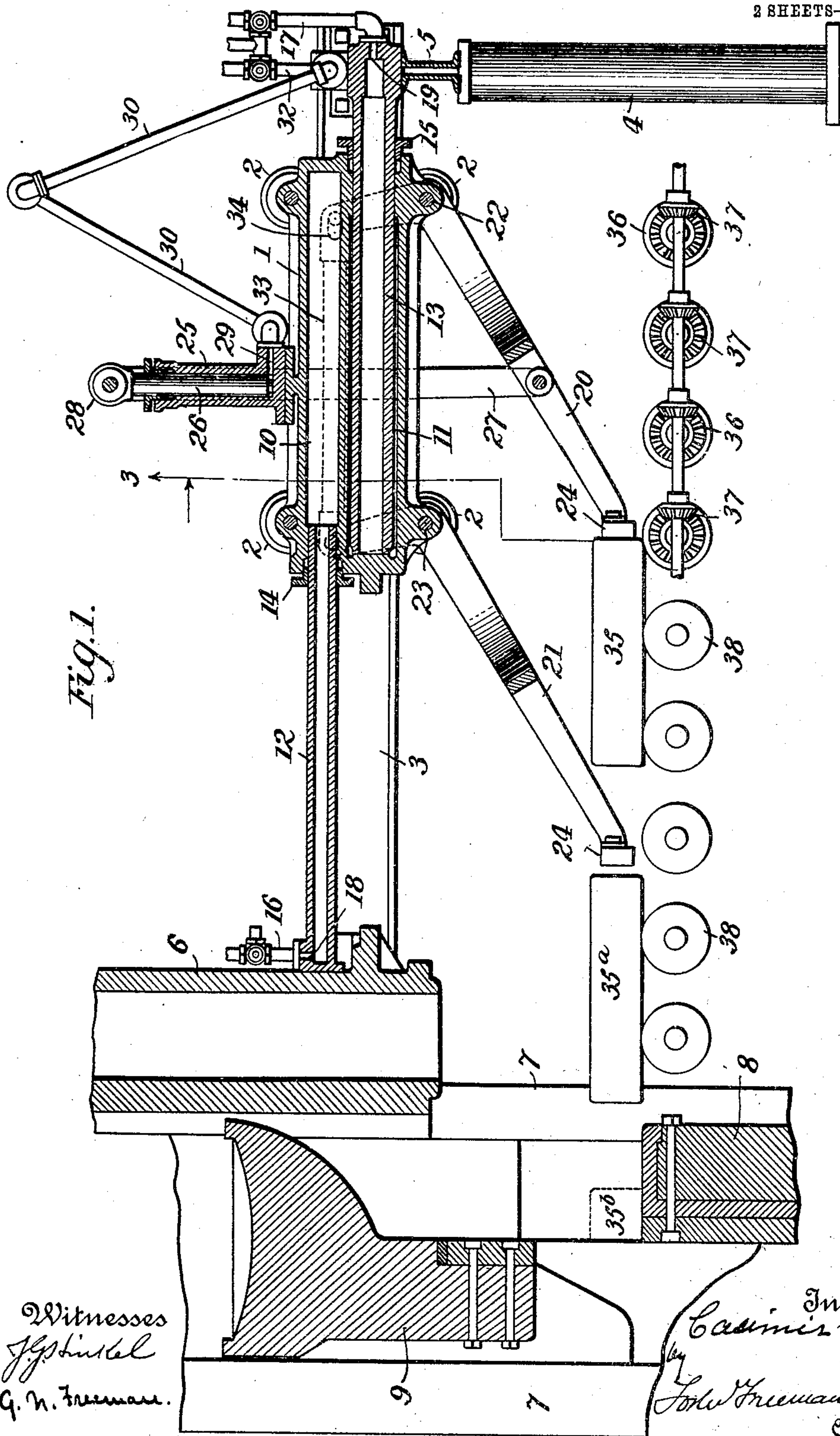
No. 791,940.

PATENTED JUNE 6, 1905.

C. VON PHILP.  
FEEDING DEVICE FOR SLABS, BILLETS, &c.

APPLICATION FILED MAR. 26, 1904.

2 SHEETS—SHEET 1.

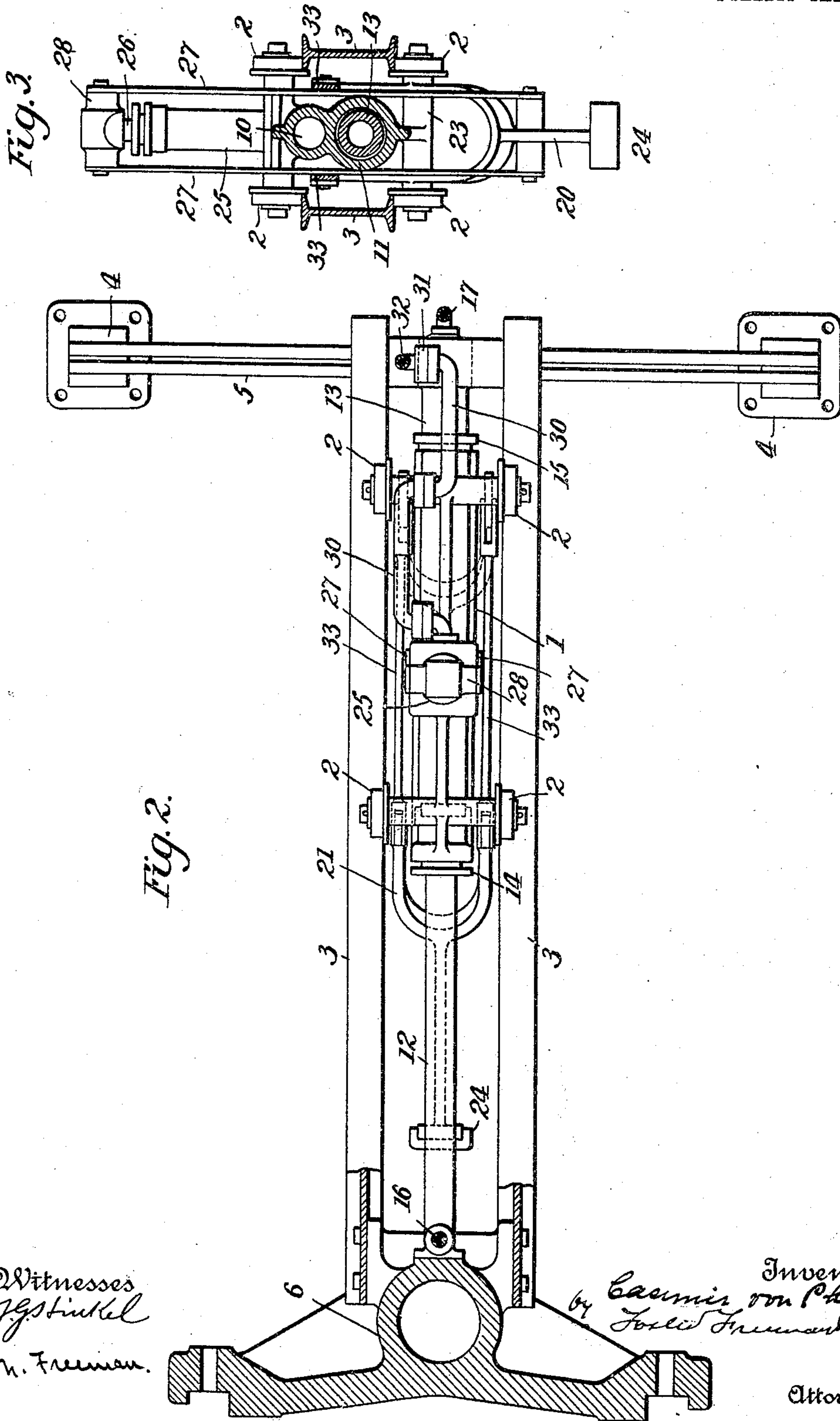


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Witnesses  
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# UNITED STATES PATENT OFFICE.

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## FEEDING DEVICE FOR SLABS, BILLETS, &c.

SPECIFICATION forming part of Letters Patent No. 791,940, dated June 6, 1905.

Application filed March 26, 1904. Serial No. 200,213.

*To all whom it may concern:*

Be it known that I, CASIMIR VON PHILP, a citizen of the United States, residing at Bethlehem, Northampton county, State of Pennsylvania, have invented certain new and useful Improvements in Feeding Devices for Slabs, Billets, &c., of which the following is a specification.

My invention relates to feeding devices for slabs, blooms, billets, and other similar articles which are to be operated upon by shears, punches, presses, or similar devices, and more particularly where the articles are too heavy to be handled by hand.

It has for its object to provide a simple, cheap, and effective device for feeding such articles for such purposes; and to these ends the invention consists in the various features of construction and arrangement of parts having the general mode of operation and adapted to accomplish the purposes substantially as hereinafter more particularly set forth.

Referring to the accompanying drawings, wherein I have illustrated a preferred embodiment of the invention, Figure 1 is a vertical sectional view of the feeding or pushing device arranged in connection with a shear. Fig. 2 is a plan view of the feeder or pusher, showing part of the frame of the shear in section; and Fig. 3 is a transverse section of the pusher on the line 3, Fig. 1, looking in the direction of the arrow.

While, as above indicated, my invention is adapted to be used as a feeder or pusher for many and various articles and to be used in connection with various machines or devices operating upon the articles, I have chosen to illustrate my invention in connection with a shear and have shown sufficient of such a device to enable those skilled in the art to make use of my invention in such or similar connections, it being understood that the feeder or pusher can be adapted or arranged for use in conjunction with any desired machine operating upon the article without departing from the spirit of my invention. The feeder or pusher is adapted to be operated by fluid-pres-

sure of some sort, and I have illustrated it as operating by a motor operated by hydraulic pressure and shall so describe it, without, of course, limiting the invention to the particular character of the operating medium.

The feeder comprises, among other things, a frame or carrier 1, which is adapted to travel on a suitable way, and in the present instance is provided with wheels 2, mounted upon a track shown as consisting of I-beams 3. This track or way can be supported in any suitable manner, and in the present instance I have shown standards 4 4, supporting cross-beams 5, on which one end of the track or way is supported, while the other end is shown as connected to a part of the housing of the shear is represented by the parts 7 7, to one of which is attached the fixed jaw or cutter 8, while the movable jaw or cutter 9 can be reciprocated in the housing in any suitable way. (Not shown.) I deem it preferable to attach the way directly to the shear or other machine in connection with which the feeder or pusher is operated; but of course it will be understood that it need not be permanently attached and that the way may be supported in any desired manner, as by a duplication of the standards 4 and cross-beams 5.

Some means must be provided for operating the carrier 1, and in the present instance I have shown the carrier as being provided with a motor having two cylinders 10 and 11, formed in the body of the carrier, and connected to operate in conjunction with these cylinders are the plungers 12 and 13, these plungers being shown in the present instance as hollow and as being fixed to some suitable support at their outer ends—as, for instance, the frame 6 and cross-beams 5, respectively. These plungers being thus fixed fit the cylinders, and the latter are provided with suitable stuffing-boxes 14 15 or similar means in the usual manner and for the usual purpose. Means for supplying motor fluid are connected to these plungers at or near their outer ends, and I have shown pipes 16 17



adapted to be connected to some suitable source of supply and provided with suitable cocks or controlling devices for the motor fluid and connected to the interior of the plungers through the openings 18 19, respectively.

Connected to move with the carrier are one or more feeding and pushing arms, two being shown in the present instance, and these arms 20 and 21 are shown as pivotally connected to the carrier 1 at the points 22 and 23, respectively. While the shape of these arms may vary, they are shown as being provided with a cross piece or head 24, which may be of any suitable shape according to the article in connection with which the device is to be operated. Means are provided for moving this pusher arm or arms, and while these means may vary I have shown a cylinder 25 mounted on the carrier 1 and provided with a plunger 26, which plunger is connected to the arm 20 by links 27, connected to the cross-head 28 of the plunger. The cylinder 25 is provided with an opening 29 to receive the motor fluid, and I have shown a flexible or jointed pipe 30 connected to the cylinder and to a stationary connection 31, to which a proper supply-pipe 32 is attached, provided with means for controlling the motor fluid. In case there is a plurality of pusher-arms, as in the present instance, it is desirable that they be operated together and by a single cylinder, and so the arms are connected by some suitable device—as, for instance, the link 33, which is shown connected to the bell-crank extensions of the pusher-arms—and one of the connections, as 34, is loose or elongated, so as to permit the movement of one of the arms, as 21, without necessarily moving the other, in the manner hereinafter set forth.

The slab, billet, or other article 35 may be brought into operative position in any suitable way, preferably by the driven rollers 36, arranged in any suitable support and driven by any suitable means, indicated by the bevel-gears 37, and is shown as resting upon some of the idle rolls 38 in a position to be manipulated by the pusher.

Such being the general construction and arrangement of parts, either in the exact form illustrated or some equivalent thereof, the operation of the feeder or pusher may be stated as follows: The carrier is shown in the drawings as in its extreme backward position, and if now fluid-pressure is admitted through the opening 19 in the hollow plunger 13 into the cylinder 11 the carrier is forced forward, and the arms push the slabs 35 and 35<sup>a</sup> forward toward the shear, so as to bring them into the desired position to be operated upon, (indicated in the present instance by the dotted line 35<sup>b</sup>, which represents a slab which has been sheared.) Fluid-pressure is now admitted to the cylinder 25 and the plunger 26 operated to lift the arms 20 and 21 out of engage-

ment with their respective slabs. Then, the fluid being exhausted from the cylinder 11 and admitted to the cylinder 10 through the hollow plunger 12, the carrier is forced backward to its normal position, and the fluid being exhausted from the cylinder 25 the arms 20 21 are allowed to drop into the position shown in the drawings behind the slabs ready for another operation. It will be seen that in the present instance the slab 35, which has been brought into the position shown in any suitable way, is by the first operation moved into the position of the slab 35<sup>a</sup>, and the next cycle of operation brings it into position to be operated upon by the shear. If, for instance, the slab is too long for the space between the pushers 20 and 21, it is manifest that one of the arms, as 21, will not fall into the position shown, and so the link 33 is provided with an elongated slot, as aforesaid, so that one of the arms, as 21, may rest upon the slab, while the other arm, 20, can drop into its normal position behind the slab for the purpose of feeding it in the manner set forth. It will thus be seen that the carrier is reciprocated along its way, and the pusher-arms are moved therewith, and these arms are also given a vertical movement by means of the cylinder 25 and its connections, so that the arms may be said to have a four-motion feeding movement in operating upon the slabs or billets.

It is to be understood, of course, that the carrier can be moved to any intermediate position between the two extreme positions shown and that suitable valve-operating devices may be provided, so that the feeder can be rapidly and conveniently operated. It will further be seen that the carrier is provided with two cylinders having their open ends at opposite sides or ends of the carrier, and there are two stationary plungers, one at each end of the carrier, adapted to cooperate with the cylinders in the carrier to move the latter back and forth, and the motor fluid is admitted to the respective cylinders through the hollow plungers.

What I claim is—

1. In a feeding device of the character described, the combination with a way, of a frame or carrier mounted to travel on the way, a motor, and control device for reciprocating the carrier, a feeding or pushing arm connected to the carrier, and means moving with the carrier for adjusting the position of the feeding-arm, substantially as described.

2. In a feeding device of the character described, the combination with a way, of a carrier mounted to travel on the way, a motor and control device for reciprocating the carrier, a plurality of feeding or pushing arms connected to the carrier, means mounted on the carrier for adjusting the position of the arms, and connections between the arms whereby one may move independently of the other, substantially as described.



3. In a feeding device of the character described, the combination with a way, of a carrier mounted to travel on the way and provided with a motor consisting of reversed cylinders, stationary plungers operating with the cylinders, means for controlling the supply of fluid-pressure to the cylinders, pusher-arms connected to the carrier and moving therewith, and means connected to the carrier for adjusting the pusher-arms, substantially as described.

4. In a feeding device of the character described, the combination with a way, of a carrier mounted to travel on the way and provided with a motor consisting of reversed cylinders, stationary plungers operating with the cylinders, means for controlling the supply of fluid-pressure to the cylinders, pusher-arms connected to the carrier and moving therewith, a cylinder mounted on the carrier, a plunger fitting the cylinder, and connections between the plunger and arms for adjusting the same, substantially as described.

5. In a feeding device of the character described, the combination with a way, of a carrier mounted to travel on the way provided with a motor having two reversed cylinders, two hollow plungers connected to the way and fitting the cylinders, connections controlling the supply of fluid-pressure to the plungers, pusher-arms pivotally connected to the carrier, a cylinder mounted on the carrier, a plunger fitting the cylinder, connections between the plunger and arms, and flexible connections for controlling the supply of fluid to

said cylinder and plunger, substantially as described.

6. In a feeding device of the character described, the combination with a carrier and means for reciprocating it, of pusher-arms pivotally connected to the carrier, means connected to one of the arms for raising the same, and loose connections between the arms, substantially as described.

7. In a feeding device of the character described, the combination with a carrier and pusher-arms carried thereby, of two reversed cylinders with their open ends at opposite ends of the carrier, and two stationary plungers one arranged at each end of the carrier and cooperating with the corresponding open-ended cylinder, substantially as described.

8. In a feeding device of the character described, the combination with a carrier and its pusher-arms, of a motor device consisting of two cylinders with their open ends at opposite ends of the carrier, two hollow stationary plungers one arranged at each end of the carrier and cooperating with the corresponding open-ended cylinder, and means for controlling the motor fluid and delivering it to the cylinders through the hollow plungers, substantially as described.

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

CASIMIR VON PHILP.

Witnesses:

E. B. HOFFMAN,

WM. L. ACHENBACH.