

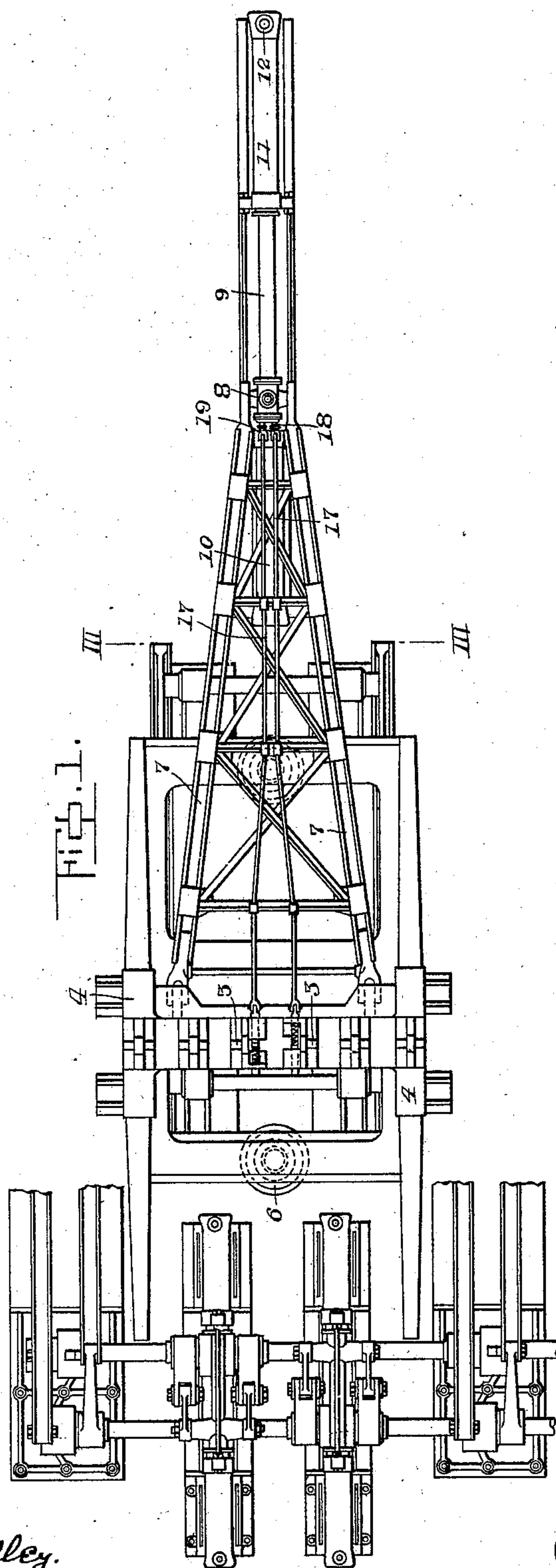
No. 857.283.

PATENTED JUNE 18, 1907.

S. V. HUBER.
FEED TABLE FOR ROLLING MILLS.

APPLICATION FILED DEC. 1, 1905.

3 SHEETS—SHEET 1.



WITNESSES:

H. Douglas
Herbert Bradley.

INVENTOR

Sigmund V. Huber,
by
Christy & Christy, Atty's

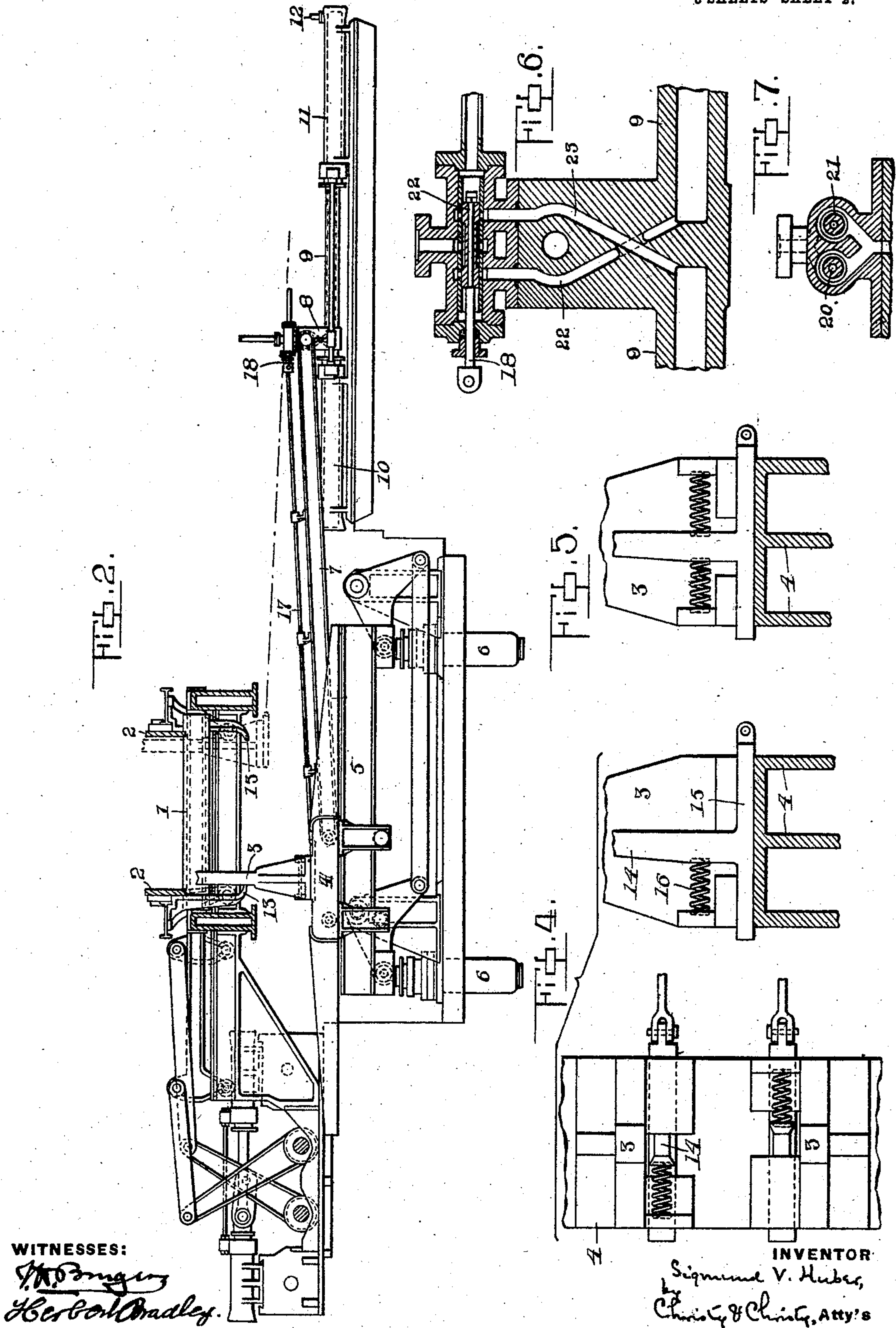
No. 857,283.

PATENTED JUNE 18, 1907

S. V. HUBER.
FEED TABLE FOR ROLLING MILLS.

APPLICATION FILED DEC. 1, 1905.

3 SHEETS-SHEET 2.



No. 857,283.

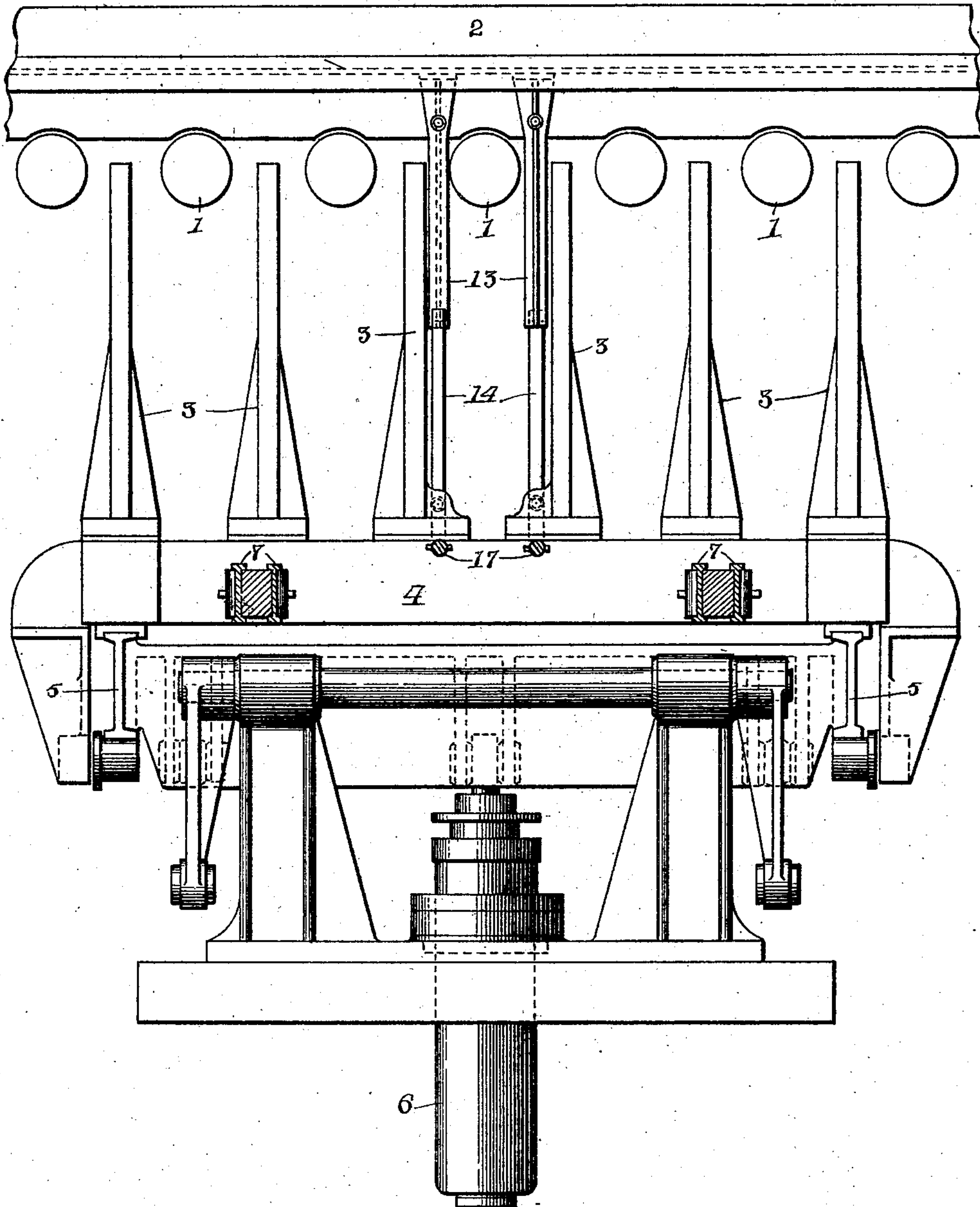
PATENTED JUNE 18, 1907.

S. V. HUBER.
FEED TABLE FOR ROLLING MILLS.

APPLICATION FILED DEC. 1, 1905.

3 SHEETS—SHEET 3.

Fig. 3.



WITNESSES:

Herbert Bradley

INVENTOR

Sigmund V. Huber,
by *Christie & Christy, Atty's*

UNITED STATES PATENT OFFICE.

SIGMUND V. HUBER, OF PITTSBURG, PENNSYLVANIA.

FEED-TABLE FOR ROLLING-MILLS.

No. 857,283.

Specification of Letters Patent.

Patented June 18, 1907.

Application filed December 1, 1905. Serial No. 289,797.

To all whom it may concern:

Be it known that I, SIGMUND V. HUBER, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful Improvements in Feed-Tables for Rolling-Mills, of which improvements the following is a specification.

In the operation of rolling mills especially in such as effect an edging of the piece, laterally movable side plates or guides are employed for holding the piece on edge while being fed to the rolls. Also in connection with such rolling mills manipulators are employed for turning the article on its axis. It sometimes occurs in the operation of these two mechanisms that portions of the manipulators will be in under one of the side or guide plates when raised vertically to turn the article and in such case the manipulator will strike against the guide plate and tear it from the table or do other serious damage.

The object of the invention described herein is to provide suitable means whereby the passing of the manipulators under the guide plates is prevented.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings forming a part of this specification Figure 1 is a top plan view of a portion of a rolling mill having my improvements applied thereto. Fig. 2 is a side elevation of the same; Fig. 3 is a sectional detail view on a plane indicated by the line III—III Fig. 1; Fig. 4 shows detail views on an enlarged scale of the shifting arms; Fig. 5 illustrates a modification of the construction shown in Fig. 4; and Figs. 6 and 7 are sectional detail views of the valve mechanism.

In the practice of my invention the table is constructed in the usual or any suitable manner, having positively driven rolls 1, whereby the article may be shifted back and forth to and from the rolls. In order to support the article during the edging process I employ guide plates 2 which are supported upon carriages movable back and forth so as to move the guide plates toward and from each other, by any suitable or known mechanism for that purpose. The ingot manipulator consists of vertical posts 3 secured to a movable carriage 4 mounted upon rails 5 which are adapted to be raised and lowered by any suitable means as the fluid pressure

cylinders 6 to move the posts up between the feed rollers. This carriage 4 is connected by bars 7 to a cross head 8 secured to the plunger 9 of fluid pressure cylinders 10 and 11. For the usual or normal operation of the manipulator the ends of the cylinders 10 and 11 are connected by suitable pipes 12 to a valve mechanism in the pulpit whereby fluid can be admitted to one cylinder and exhausted from the other in accordance with the desired movement of the manipulator.

By reference to Fig. 2 it will be seen that the side plates or posts, 3, might be moved while the latter are in their lowered position into alinement with each other, and the posts raised when in such position, thereby damaging the feed table. In order to prevent this, I provide a mechanism which will so automatically control the movements of the carriage 4 independent of the usual control from the pulpit, as to prevent one of said parts, *i. e.*, the side plates or posts being placed in such relation to the other as to interfere with the orderly operation of the mechanism. A convenient construction to this end consists in securing to the guides or side plates 2 depending fingers 13 which will project down into the path of movement of arms 14 movably mounted upon the carriage 4. It is preferred to employ two arms 14, one adapted to be shifted by the finger 13 on one guide plate and the other by a corresponding finger on the other guide plate and means are also provided whereby after the buggy 4 has been shifted so as to move the arm 14 out of contact with a finger 13, the controlling mechanism will return to normal position so that the movements of the manipulator may thereafter be controlled from the pulpit. A desirable way of mounting the arms 14 is shown in Figs. 3 and 4 and consists of slides 15 mounted in suitable guideways on the buggy 4 and having the arms 14 secured thereto. These arms are yieldingly held at one end of their range of movement by springs 16. The slides 15 are connected by rods 17 to the stems 18 and 19 of two three-way valve mechanisms 20 and 21. As shown in Fig. 6 the outlet ports of these valve mechanisms are connected by passages 22 and 23 to the cylinders 10 and 11 respectively, such connection being through the hollow plunger 9 as shown. It will be observed by reference to Fig. 1 that one set of the arms 14 is connected to one of the three-way valve mechanisms and the other arm to the other one of the

three-way valve mechanisms. If in the operation of the feed table the buggy 4 should be moved such a distance to the left as to bring an arm 14 into contact with the finger 13 depending from the guide or side plate 2, such arm and the slide 15 will be shifted thereby shifting one of the three-way valve mechanisms to admit fluid pressure into cylinder 10 and at the same time connect the cylinder 11 to the exhaust port of such mechanism, thereby shifting the buggy to the right until the arm 14 can be returned by its spring to normal position. This movement of the slide and arm to normal position will so shift the movable member of the three-way mechanism as to close both its inlet and outlet ports and thereafter the cylinders 10 and 11 may be operated in the usual manner.

It will be readily understood by those skilled in the art that a single slide 15 movable in both directions by contact with the fingers 13 depending from the side or guide plates and a single four-way valve mechanism can be employed, but such construction is not as desirable as that heretofore described for the reason that it is difficult to obtain two springs of equal tension and endurance so as to always return the arm 14 to normal position after being shifted out of contact with the fingers 13. And this return of the valve mechanism to normal position is desirable as otherwise the normal operation of the manipulator might be interfered with.

If while the side plates 2 are being shifted, the manipulator is in such position that the plates would strike the posts, the fingers 13 would shift the valve 22. If the pulpit valve is closed (as would generally be the case while the side plates are being shifted) the movement of the valve 22 would admit fluid pressure to one of the cylinders 10, 11 and open the exhaust from the other cylinders, thereby causing a movement of the manipulator with the side plates but controlled thereby. If on the other hand the pulpit valve is in position to admit fluid pressure to one of the cylinders as 11 and its exhaust from the other, a movement of one of the side plates, *e. g.*, the left hand plate in Fig. 2, to the right, would shift valve 22 to a position permitting exhaust from cylinder 11, and the flow of fluid pressure to cylinder 10 from which such pressure would escape through the exhaust port

of the pulpit. With the valve 22 and the pulpit valve in such position, fluid pressure would be flowing freely through both cylinders 10 and 11 without producing any effect or presenting any resistance to the movement of the pistons of said cylinders, and parts connected thereto, so that in such case the manipulator would be directly shifted by the side plates.

I claim herein as my invention:

1. A feed-table for rolling mills having in combination side plates, a manipulator, means for shifting the manipulator and means operative by the side plates for controlling the manipulator, substantially as set forth.

2. A feed-table for rolling mills having in combination side-plates, means for shifting the side-plates, a manipulator means for shifting the manipulator and means controlled by the side-plates for shifting the manipulator, substantially as set forth.

3. A feed-table for rolling mills having in combination side-plates, a manipulator, fluid pressure means for shifting the manipulator, and a valve mechanism operative by the side-plates for controlling the fluid pressure means, substantially as set forth.

4. A feed table for rolling mills having in combination side plates, means for shifting the side plates, and a manipulator movable by the side plates.

5. In a feed table for rolling mills, the combination of a manipulator, a slide movably mounted thereon, mechanism for operating the manipulator, and means adapted to be operated by the slide for controlling the operation of the manipulator operating mechanism.

6. In a feed table for rolling mills, the combination of a manipulator, a slide movably mounted thereon, means for shifting the manipulator, means controlled by the slide for controlling the manipulator shifting mechanism and means for returning the slide to normal position.

In testimony whereof, I have hereunto set my hand.

SIGMUND V. HUBER.

Witnesses:

CHARLES BARNETT,
FRIEDA E. WOLFF.