

No. 610,565.

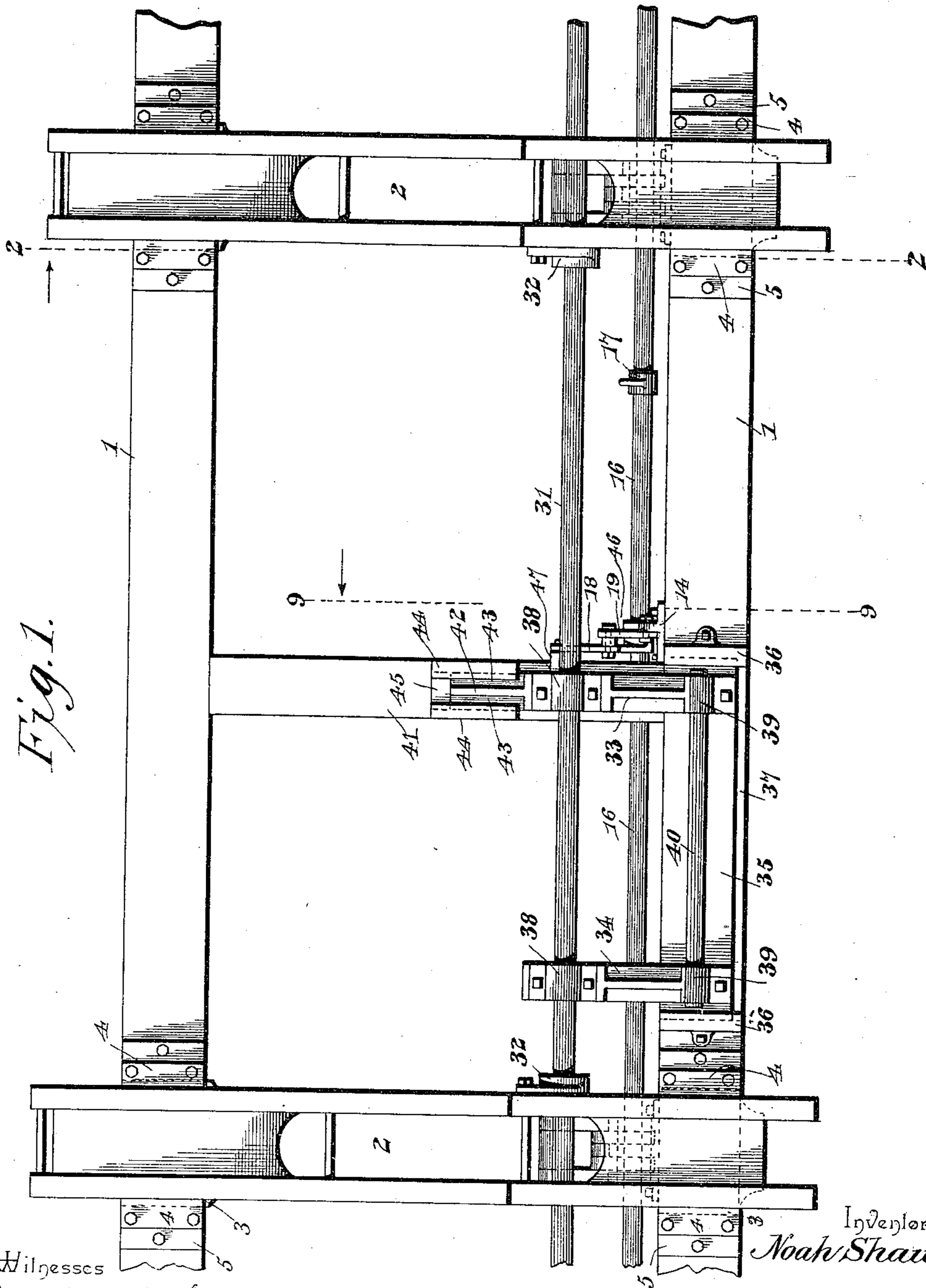
Patented Sept. 13, 1898.

N. SHAW.  
SAWMILL CARRIAGE.

(Application filed Dec. 31, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses  
Jas E. McLaughlin  
J. P. McLaughlin

By *his* Attorneys.

*C. A. Snow & Co.*

Inventor  
Noah Shaw

No. 610,565.

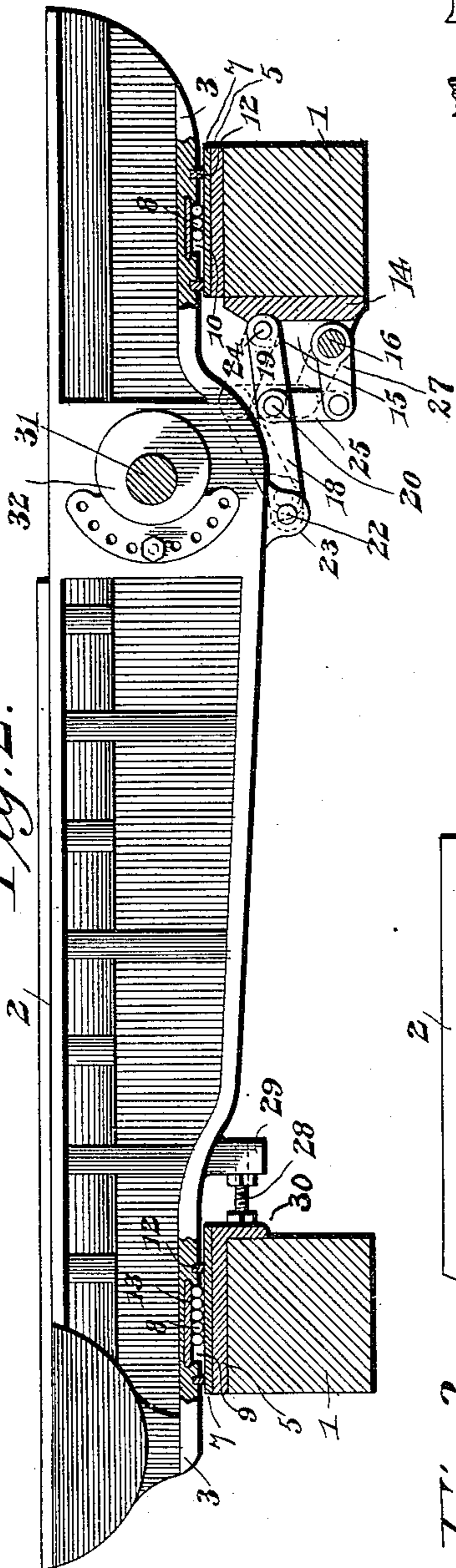
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Fig. 2.



Witnesses

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Fig. 3.

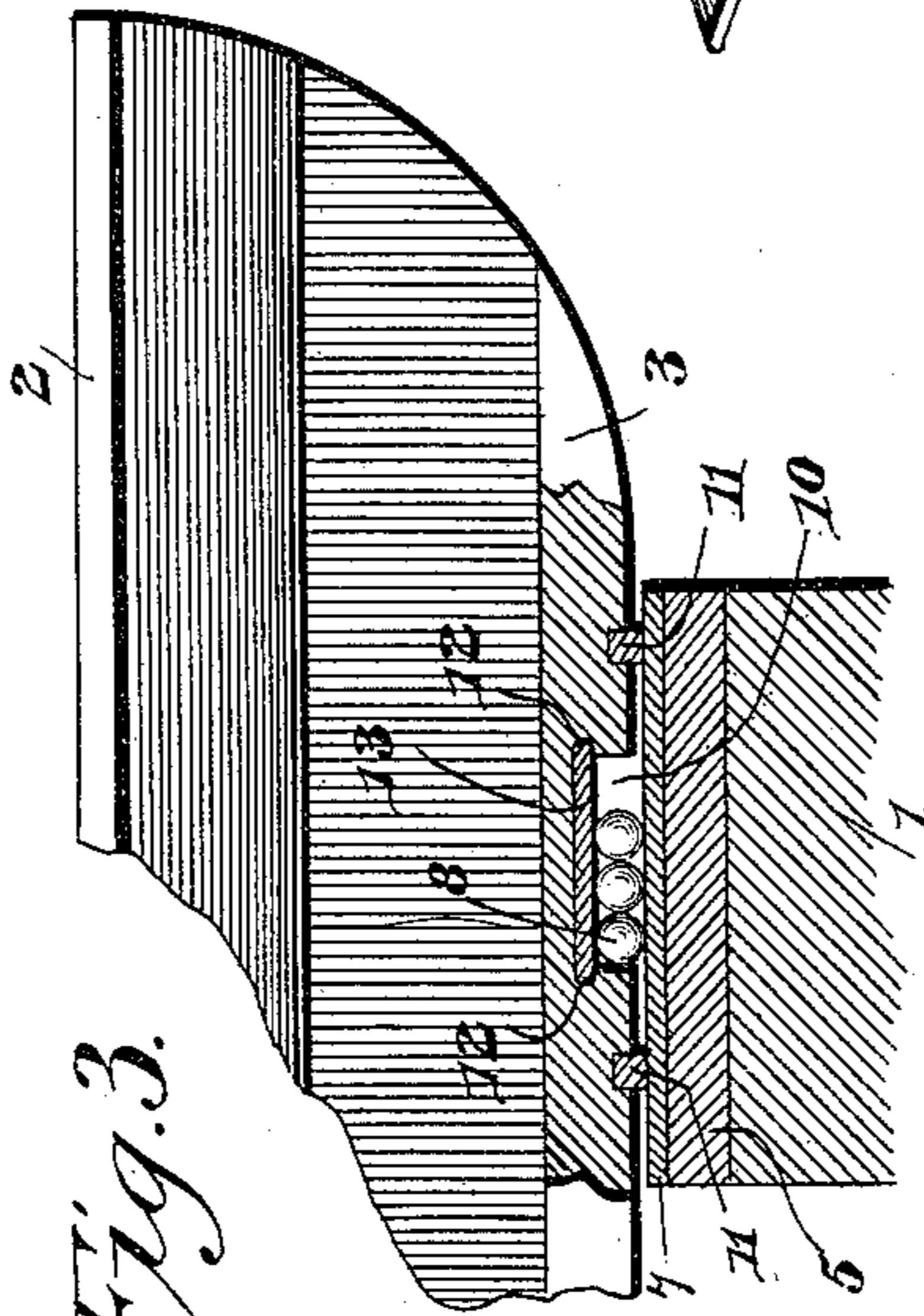


Fig. 6.

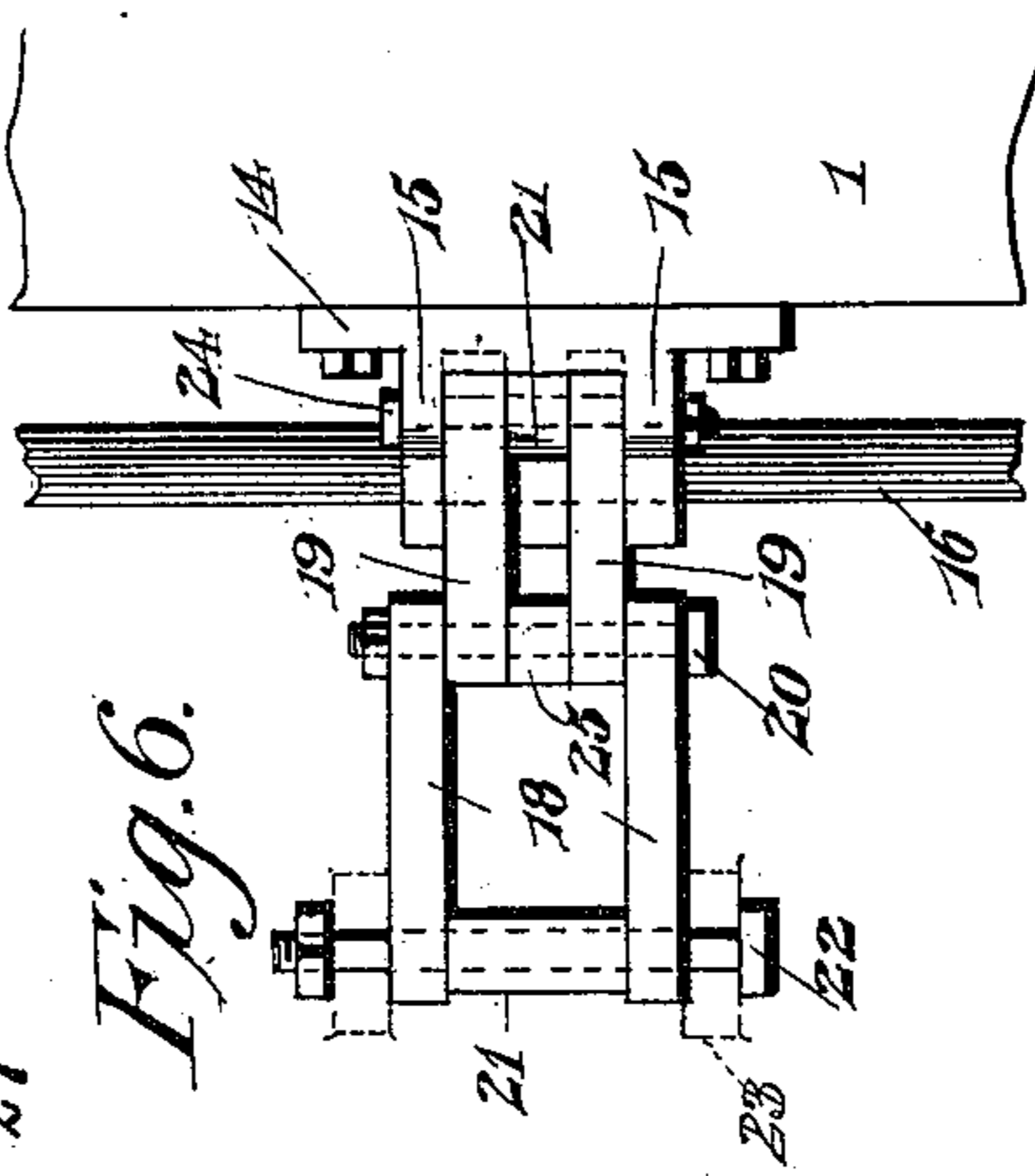


Fig. 5.

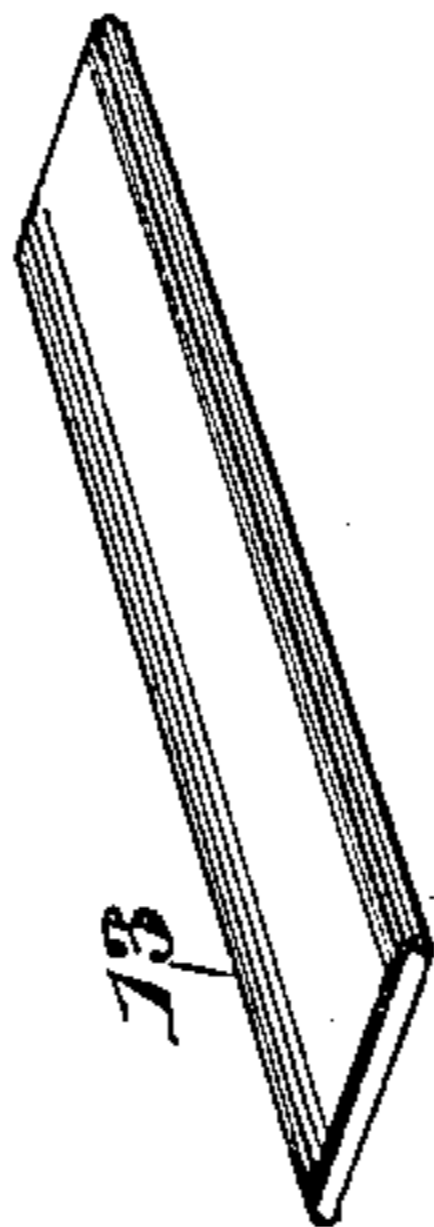


Fig. 4.

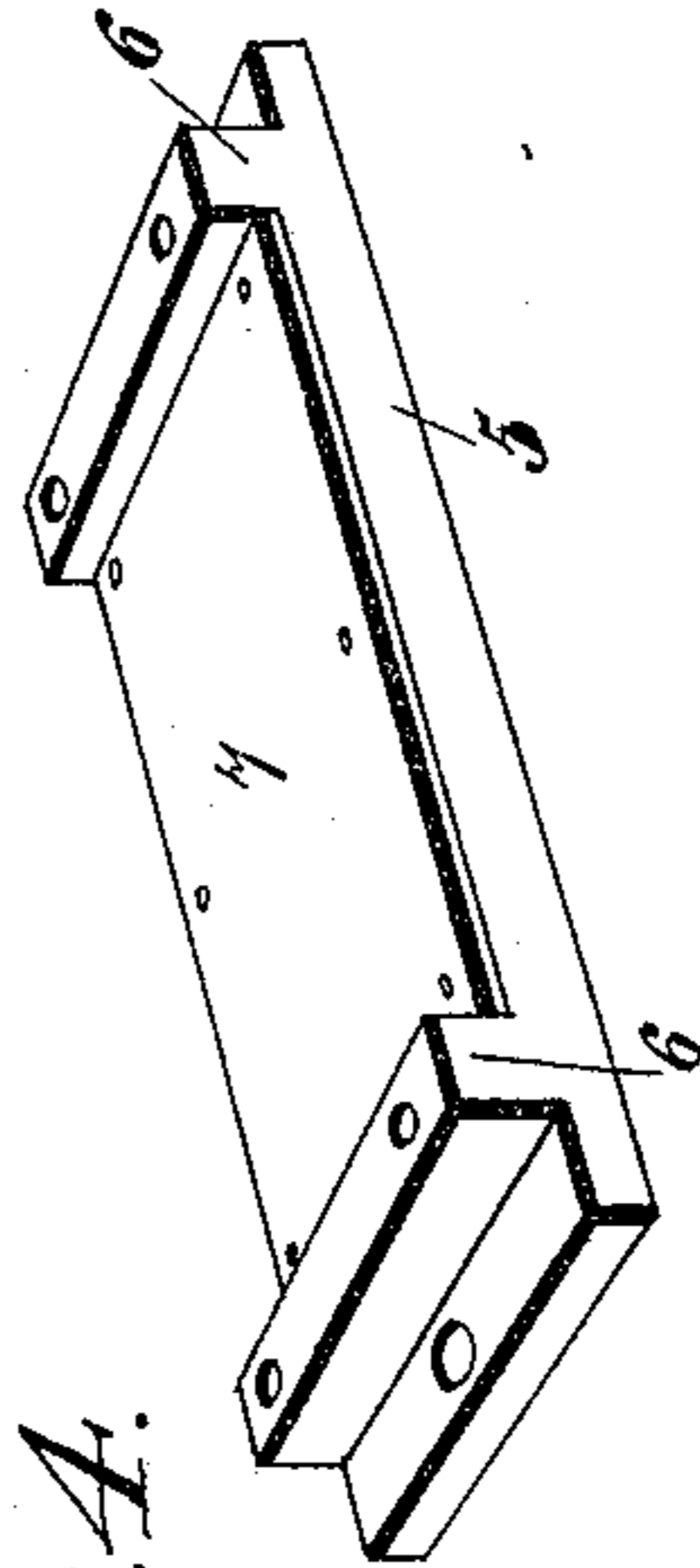


Fig. 7.



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3 Sheets—Sheet 3.

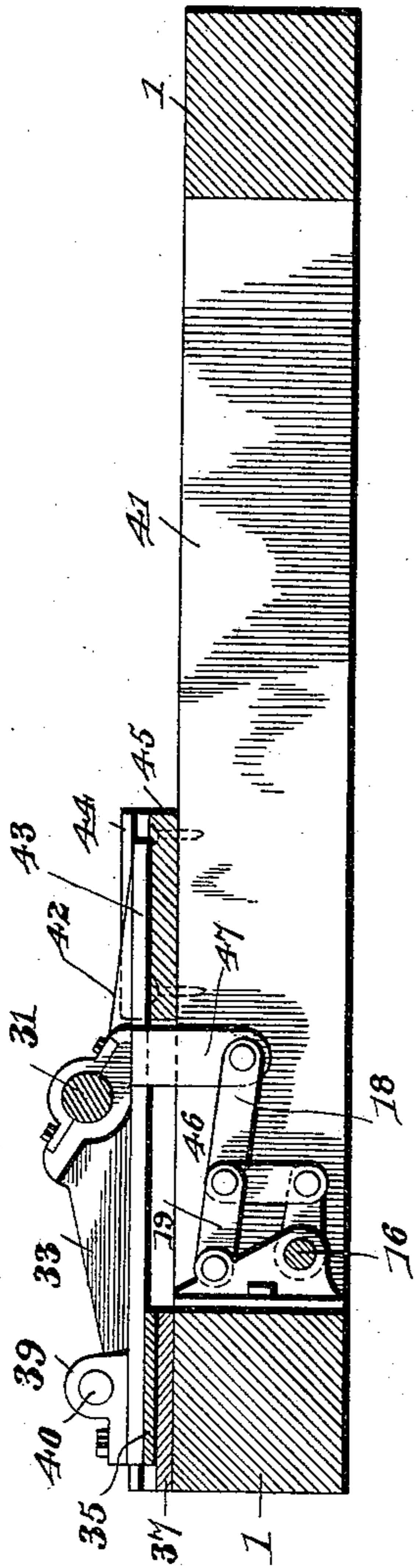


Fig. 9.

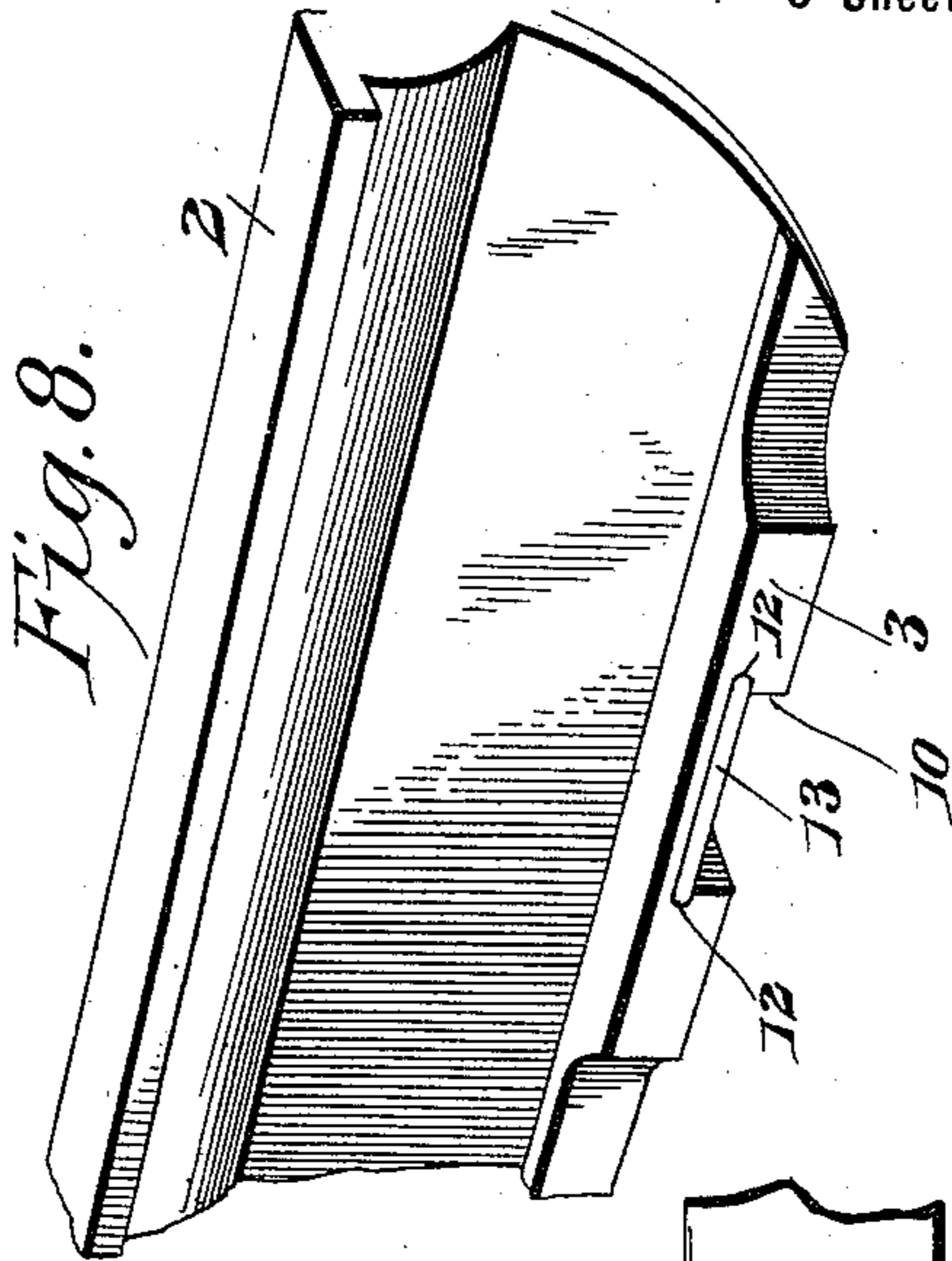


Fig. 8.

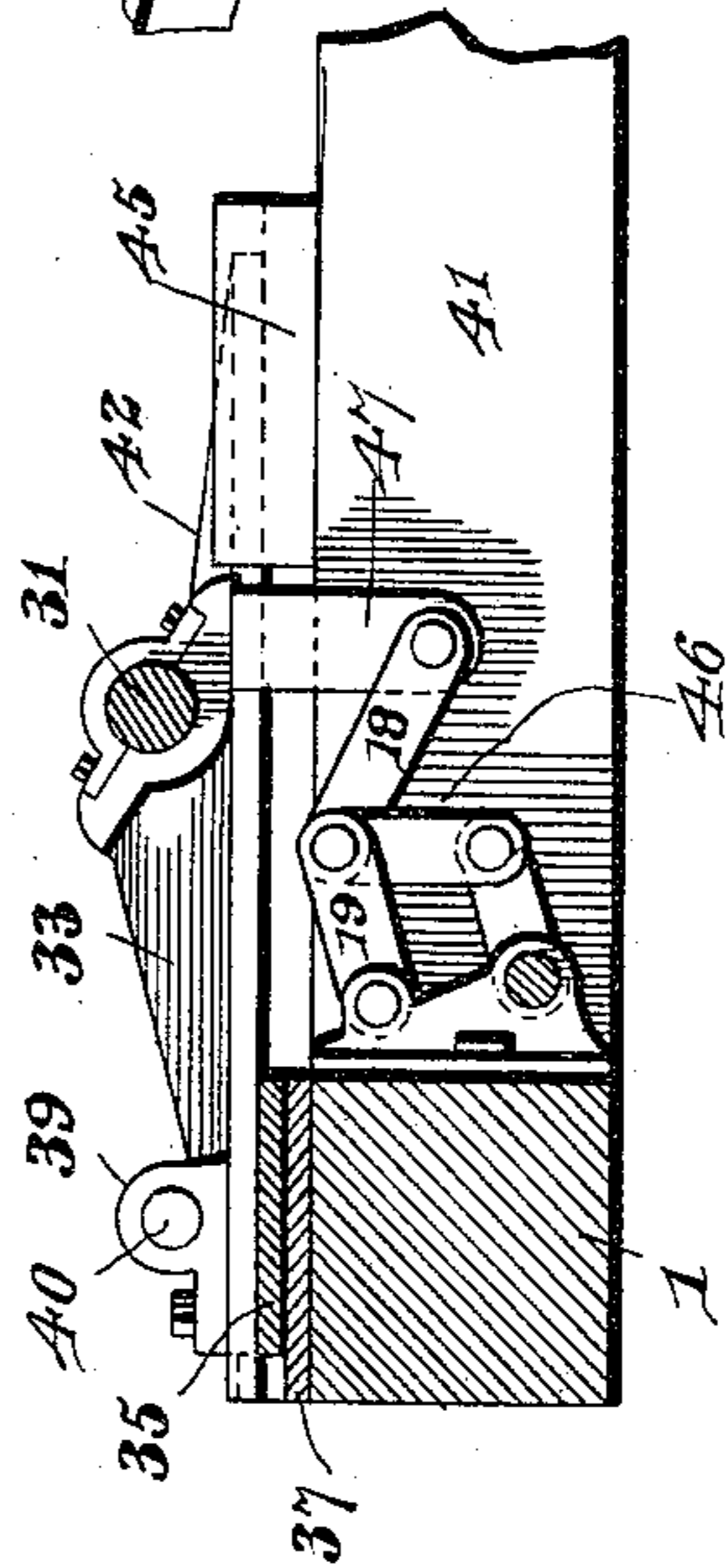


Fig. 10.

Witnesses

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# UNITED STATES PATENT OFFICE.

NOAH SHAW, OF EAU CLAIRE, WISCONSIN.

## SAWMILL-CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 610,565, dated September 13, 1898.

Application filed December 31, 1897. Serial No. 665,153. (No model.)

*To all whom it may concern:*

Be it known that I, NOAH SHAW, a citizen of the United States, residing at Eau Claire, in the county of Eau Claire and State of Wisconsin, have invented a new and useful Sawmill-Carriage, of which the following is a specification.

This invention relates to sawmill-carriages, and refers particularly to the type of sawmill-carriage disclosed in my pending application, Serial No. 609,089, filed October 16, 1896, and in another contemporaneously-pending application of even date herewith.

The present invention has for its object the provision of new and useful mechanism for offsetting and onsetting head-blocks which shall provide for a quick and easy adjustment thereof and which shall be so constructed as to become automatically locked at the completion of the onsetting movement, so as to positively prevent the head-blocks from "kicking" backward. In connection with the means for offsetting and onsetting the head-block the invention also contemplates an improved auxiliary support for the set-shaft and the set-works, which support will firmly brace the set-shaft between the head-blocks and which will freely reciprocate with the head-blocks and provide positive means for holding the set-shaft in a proper relation to the head-blocks in order to prevent any liability of the lumber varying in thickness. The improved auxiliary support is intended to be so arranged as to be entirely out of the way of the log, so that the latter will have no bearing at any point except on the oppositely-located head-blocks.

A further object of the invention is to improve the antifriction-bearings for the head-blocks, so that these bearings shall be rendered very durable, while at the same time serving to reduce the friction of the head-blocks on the carriage-frame to a minimum.

With these and other objects in view the invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed, and while the improvements are susceptible to various modifications the preferred manner of arranging the improvements for use is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a sawmill-carriage embodying the improvements contemplated by the present invention and showing the knees, the set-up mechanism for the same, and the set-works removed. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is an enlarged detail sectional view of the antifriction-bearing for the ends of each head-block. Fig. 4 is a detail in perspective of one of the chair-plates for the head-blocks. Fig. 5 is a similar view of the wear-plate for the roll-recesses of the head-blocks. Fig. 6 is a detail plan view of the toggle offset mechanism for each head-block. Fig. 7 is a detail view, partly in section, of the forked adjusting-arm carried by the offset-shaft. Fig. 8 is a detail in perspective of a portion of a head-block, showing more clearly the manner of positioning the wear-plate for the roll-recesses. Figs. 9 and 10 are detail sectional views on the line 9 9 of Fig. 1, showing different positions of the toggle-adjusting mechanism for the auxiliary support for the set-shaft and set-works.

Referring to the accompanying drawings, the numerals 1 1 designate the opposite parallel longitudinal side beams of a sawmill-carriage frame, the remainder of the frame and the wheels thereof not being illustrated, as the same form no part of the present invention. Arranged transversely of the carriage-frame, above the side beams 1 thereof, are the longitudinally-movable head-blocks 2, which head-blocks occupy their usual positions and are longitudinally movable to provide for offsetting and onsetting the logs.

The head-blocks 2 are provided at their opposite ends and lower side edges with the slide-flanges 3, which slidably engage with the flanged guides 4, projected from the upper side of the chair-plates 5, which plates are secured to the upper faces of the side beams 1, directly beneath the head-blocks, which work thereover. The chair-plates 5 serve to hold the head-blocks in their proper relative positions and at the same time permit of the necessary longitudinal movement thereof to offset and onset the log. The chair-plates 5 are provided with vertical flanges 6, forming a part of the flanged guides 4, and between these vertical flanges the said chair-plates have fastened on the upper faces thereof by

any suitable means the flat steel wear-plates 7, which provide a durable wearing-surface for the groups of antifriction-rolls 8, which are interposed between the chairs and the portions of the head-blocks working therein.

Each head-block is provided in its lower face, near the front and rear ends thereof, with roll-recesses 9 and 10, which recesses extend transversely across the face of the head-block and accommodate for movement therein the antifriction-rolls 8, it being observed that said recesses are slightly longer than the combined diameters of the rolls to facilitate a free movement of the head-blocks and that the front recess 9 is longer than the rear recess 10, so as to receive a greater number of rolls than the rear recess, as there is greater pressure on the front ends of the head-blocks directly beneath the logs than at the rear ends thereof. This particular feature is not claimed herein, as the same is described and claimed in my pending application, Serial No. 609,089, hereinbefore referred to.

Beyond the ends of each roll-recess each head-block carries the loose dust-guard strips 11, which dust-guard strips extend transversely of the head-block, across the lower face thereof, and contact with the flat steel wear-plate 7, so as to provide simple and efficient means for excluding dust from the rolls, and thereby obviating the possibility of the antifriction-bearings becoming clogged. The opposite walls of each roll-recess, at the base of the recess, are provided with longitudinal grooves 12, extending transversely of the head-block and receiving the side edges of a flat steel wear-plate 13, which is driven in place from one side of the head-block, as clearly illustrated in Fig. 8 of the drawings, and provides a hard durable wearing-surface for the base of the recess. So it will be observed that the antifriction-rolls of each group are interposed directly between the hardened wearing-surfaces 7 and 13.

To provide for the proper support of the mechanism for offsetting and onsetting the head-blocks, hanger-brackets 14 are secured to the forward or inner side of the rear side beam 1 of the carriage-frame directly beneath the head-blocks, and these hanger-brackets 14 are provided with offstanding bearing-ears 15, in which is journaled the horizontal offset-shaft 16, which is arranged longitudinally of the carriage-frame within the same and at the inner side of the rear beam 1. The offset-shaft 16 has secured thereto at a convenient point between the head-blocks an adjusting hand-lever 17, which is manipulated by the operator to provide for the offsetting and onsetting of the head-blocks, and the proper movement of each head-block is effected through the medium of a toggle offset mechanism operated in connection with the offset-shaft 16. In connection with each head-block there is employed a set of toggle-levers 18 and 19, which are pivotally connected at their

contiguous ends by the toggle-joint pivot-bolt 20, and in the toggle mechanism used for each head-block the toggle-levers 18 and 19 are in pairs, held spaced apart by the spacing sleeves or blocks 21, as clearly illustrated in Fig. 6 of the drawings. The pair of toggle-levers 18 for each head-block are connected at their forward ends to the connecting-bolt 22, which is fitted in the perforate bolt-lugs 23, projected from the under side of the head-block at a point between its ends. The other pair of toggle-levers 19 are pivotally connected by means of the pivot-bolt 24 to the hanger-bracket 14 above the plane of the offset-shaft 16, journaled therein. The toggle pivot-bolt 20, which connects the toggle-levers 18 and 19, has connected thereto the upper end of a link 25, the lower end of which link is pivotally fitted in the bifurcation 26 of the forked adjusting-arm 27, secured fast on the offset-shaft 16 and oscillating therewith to provide for elevating and depressing the joint of the toggle-levers, which movement causes the head-block to move forward and backward to carry on the offsetting and onsetting operations.

When the offset-shaft 16 is moved in a direction so as to "break" the joint of the toggle-levers and elevate the same to the position shown in dotted lines in Fig. 2 of the drawings, the head-blocks are quickly drawn backward to provide for offsetting the log. The other movement or onsetting movement of the head-blocks is effected by turning the offset-shaft 16 in a direction which causes the toggle-levers to be straightened out and the joint thereof lowered to the position shown in Fig. 2 of the drawings; and in this connection it is to be further observed that when the toggle-levers are straightened out the same form a lock which positively prevents the head-blocks from kicking backward during the sawing operation and consequently obviating the possibility of the lumber varying in thickness.

Each head-block is limited in its movement by means of a stop 28, preferably in the form of an adjustable screw secured in a lug 29 projected from the under side of the head-block and adapted to contact with the strike-flange 30, depending from the inner edge of the chair-plates 5 on the front side beam 1 of the carriage-frame.

The head-blocks 2 carry the usual knees, (not shown,) which are provided with the common set-up mechanism and adjusted through the medium of the ordinary set-shaft 31, arranged longitudinally within the carriage-frame and mounted in the bearings 32, fitted to the head-blocks, and in order to properly support the set-shaft and the set-works at a point between the head-blocks, so as to maintain said shaft and the set-works in a proper position relative to the blocks, a pair of auxiliary supporting-brackets 33 and 34 are employed. The auxiliary supporting-brackets 33 and 34 are spaced a suitable distance apart

and are connected at their outer or rear ends with a movable base-plate 35, sliding in ways 36 at the ends of a chair-plate 37, secured on the upper side of the rear beam 1 of the carriage-frame, thereby permitting the auxiliary supporting-brackets and set-shaft to move in unison with the head-blocks. The auxiliary supporting-brackets 33 and 34 terminate at their inner or front ends short of the longitudinal center of the carriage-frame, so as to be entirely out of the way of the log which rests on the head-blocks, and said auxiliary supporting-brackets are provided at the inner or front ends with bearing-boxes 38, which receive therein the set-shaft 31. Near their outer or rear ends the said brackets are further provided with bearings 39 for the extremities of the set lever-shaft 40, which shaft, in connection with the sliding base-plate 35 and the portion of the set-shaft 31 between the two brackets 33 and 34, provides a support for the set-works of the carriage; but since these set-works form no part of the present invention the same are not illustrated herein.

One of the auxiliary supporting-brackets 33, which is located at a point approximately centrally between the head-blocks, is arranged above the central cross-beam 41 of the carriage-frame and is provided beyond the bearing-box 38 with a slide-arm extension 42, having beveled side edges 43, slidably engaging the intumed guide-flanges 44 at the side edges of a guide-plate 45, secured on top of the cross-beam 41 at a point intermediate the side beams 1 of the carriage-frame. The said slide-arm extension 42 and flanged guide-plate therefor serve to hold the auxiliary supporting-brackets in a proper relative position and prevent the same being strained in an upward direction.

It is necessary that the auxiliary supporting-brackets 33 and 34 and the parts connected therewith shall move in unison with the head-blocks, and to insure this result a toggle offset mechanism 46 is employed in connection with the offset-shaft 16 and the auxiliary supporting-bracket 33. The toggle offset mechanism 46 is a duplicate in construction of the toggle offset mechanism for the head-blocks, herein described, with the single exception that the toggle-levers 18 and 19 are not made double or in pairs and the toggle-lever 18 is pivotally connected to a depending arm 47, projected from the auxiliary supporting-bracket 33 at one side thereof. The movement of the offset-shaft 16 provides for the simultaneous and uniform operation of the offset mechanism for the head-blocks and the auxiliary supports for the set-shaft, so that these parts will move together in the offsetting and onsetting movements.

Various modifications of the improvements herein described will suggest themselves to those skilled in the art, and it will be understood that changes in the form, proportion, and the minor details of construction may be

resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a sawmill-carriage, the carriage-frame, chairs mounted on the front and rear frame-bars and provided at their upper sides with wear-plates, a longitudinally-movable head-block arranged at its ends in said chairs and provided in its lower face with roll-recesses, metal wear-plates fitted in the roll-recesses at the base thereof, dust-guard strips arranged beyond the roll-recesses in the line of movement of the parts, and antifriction-rolls working in said recesses between the opposite wear-plates, substantially as set forth.

2. In a sawmill-carriage, the carriage-frame, a longitudinally-movable head-block arranged transversely above the carriage-frame and provided in its lower face above the frame-bars with roll-recesses disposed transversely of the head-block and open at their ends, a flat metal wear-plate fitting on the base of each recess and engaging with the walls thereof, said plate being adapted to slide laterally through the open ends of the recess, and antifriction-rolls arranged in the roll-recesses, substantially as set forth.

3. In a sawmill-carriage, the carriage-frame, a member supported transversely above the frame and movable independently thereof, an offset toggle mechanism disposed below the movable member, and respectively connected with said member and one of the frame side beams, and an offset-shaft extending longitudinally of the frame and supported by one of the side beams thereof in a plane below the toggle mechanism, said longitudinally-disposed shaft having an operating connection with the joint of said mechanism, substantially as set forth.

4. In a sawmill-carriage, the carriage-frame, a longitudinally-movable head-block supported transversely of the frame and movable independently thereof, a set of toggle-levers supported on one of the side beams of the carriage-frame and connected with the head-block, and an offset-shaft supported by the same side beam which supports the toggle-levers and having a connection with the joint of said toggle-levers, substantially as described.

5. In a sawmill-carriage, the carriage-frame, a longitudinally-movable head-block supported transversely of the frame and movable independently thereof, a set of toggle-levers supported on one of the side beams of the carriage-frame and connected with the head-block, said toggle-levers being arranged so as to aline and form a lock to prevent backward movement of the head-block, and an offset-shaft having a link connection with said toggle-levers to offset and onset the head-block, substantially as set forth.

6. In a sawmill-carriage, the carriage-frame, a longitudinally-movable head-block support-

ed transversely of the frame, a hanger-bracket fitted to the forward side of the rear beam of the frame, the offset-shaft mounted in said bracket, a set of toggle-levers pivotally connected at their contiguous ends and respectively connected with the head-block at its under side and with said hanger-bracket above said offset-shaft, an adjusting-arm secured fast on the offset-shaft, and a link connection between said adjusting-arm and the pivotal joint of the toggle-levers, substantially as described.

7. In a sawmill-carriage, the carriage-frame, longitudinally-movable head-blocks arranged transversely of the frame and provided with bearings, the set-shaft journaled in said bearings, an auxiliary support for the set-shaft located between the head-blocks and comprising a pair of auxiliary supporting-brackets having a common sliding support arranged on the carriage-frame, and bearing-boxes for the set-shaft, and means for simultaneously reciprocating the head-blocks and the auxiliary support, substantially as set forth.

8. In a sawmill-carriage, the carriage-frame, longitudinally-movable head-blocks arranged transversely of the frame and provided with bearings, the set-shaft journaled in said bearings, an auxiliary support for the set-shaft located between the head-blocks and comprising a sliding base-plate mounted on top of the rear frame-beam, and a pair of auxiliary supporting-brackets extending forwardly from said base-plate and having bearings for the set lever-shaft and for the set-shaft, one of said supporting-brackets being provided

beyond the bearing for the set-shaft with a slide-arm extension working in a stationary guide on the carriage-frame, and similar offset mechanism connected with the head-blocks and with the auxiliary support to provide for the simultaneous reciprocation of these parts, substantially as described.

9. In a sawmill-carriage, the carriage-frame, longitudinally-movable head-blocks having bearings for the set-shaft, and an auxiliary support for the set-shaft comprising duplicate bearings or brackets having a common sliding support on the carriage-frame, substantially as set forth.

10. In a sawmill-carriage, the carriage-frame, the movable head-blocks having bearings for the set-shaft, and an auxiliary support for the set-shaft arranged between the head-blocks and supported for movement on the upper face of the carriage-frame at the rear side, substantially as set forth.

11. In a sawmill-carriage, the carriage-frame, the movable head-blocks, and an auxiliary support for the set-shaft having a sliding engagement with the upper face of the rear carriage-beam, and one side of said support being extended forwardly and having a sliding engagement with the carriage-beam in advance of the set-shaft, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

NOAH SHAW.

Witnesses:

JOHN H. SIGGERS,  
HAROLD H. SIMMS.