

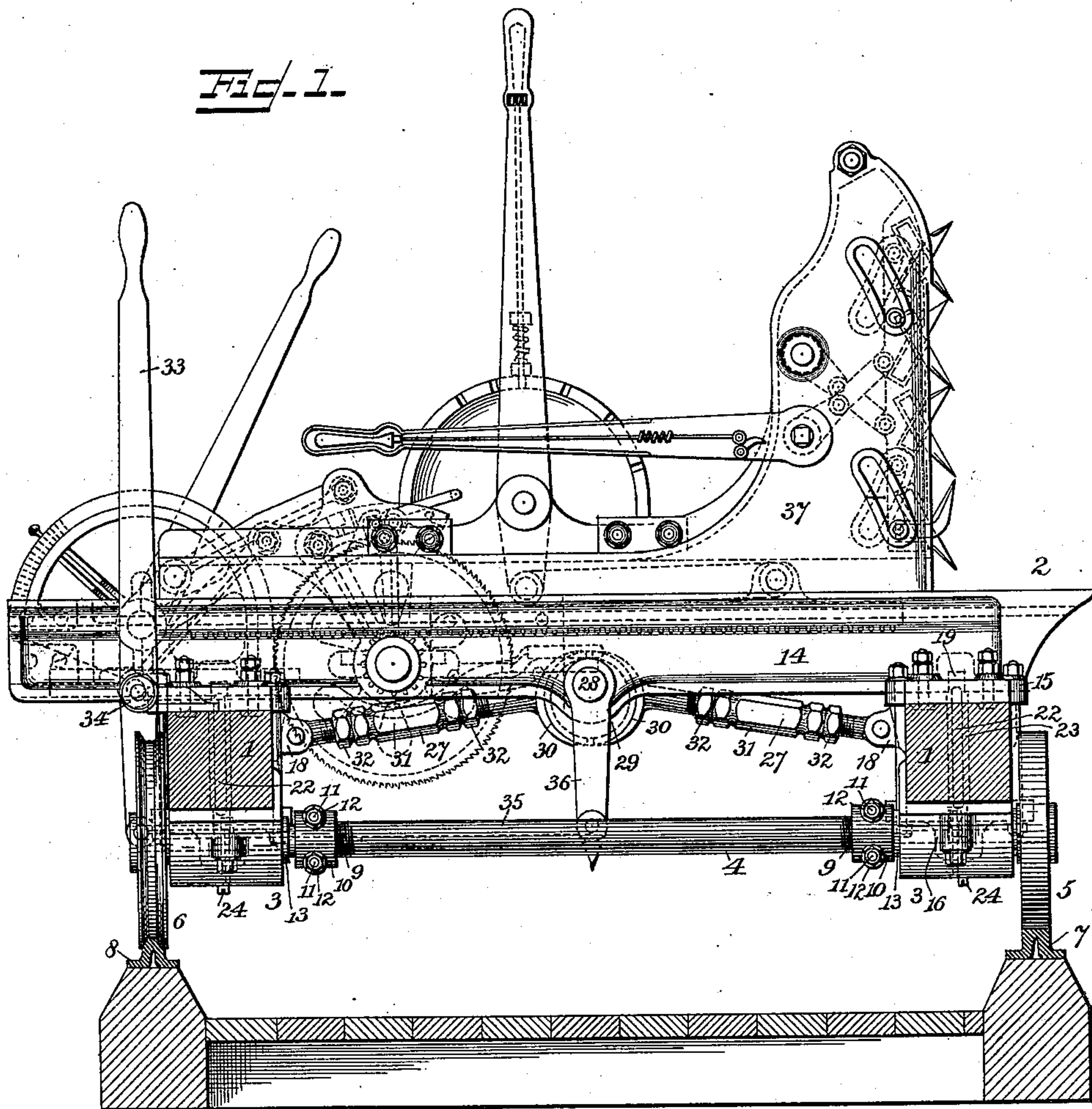
(No Model.)

4 Sheets—Sheet 1.

N. SHAW.
SAWMILL CARRIAGE.

No. 549,540.

Patented Nov. 12, 1895.



Inventor

Noah Shaw

Witnesses

Chas. H. Curran
John N. Tiggers

By His Attorneys.

C. A. Snow & Co.

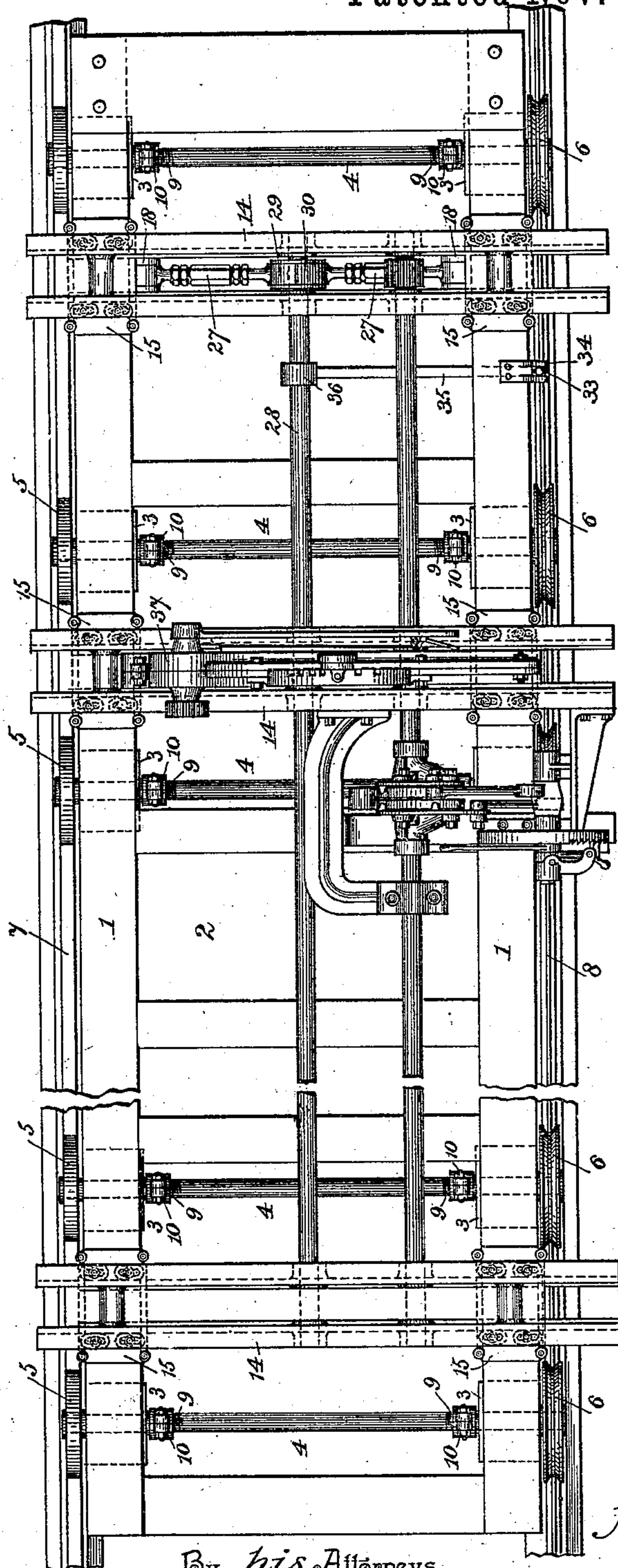
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Chas. Snow & Co.

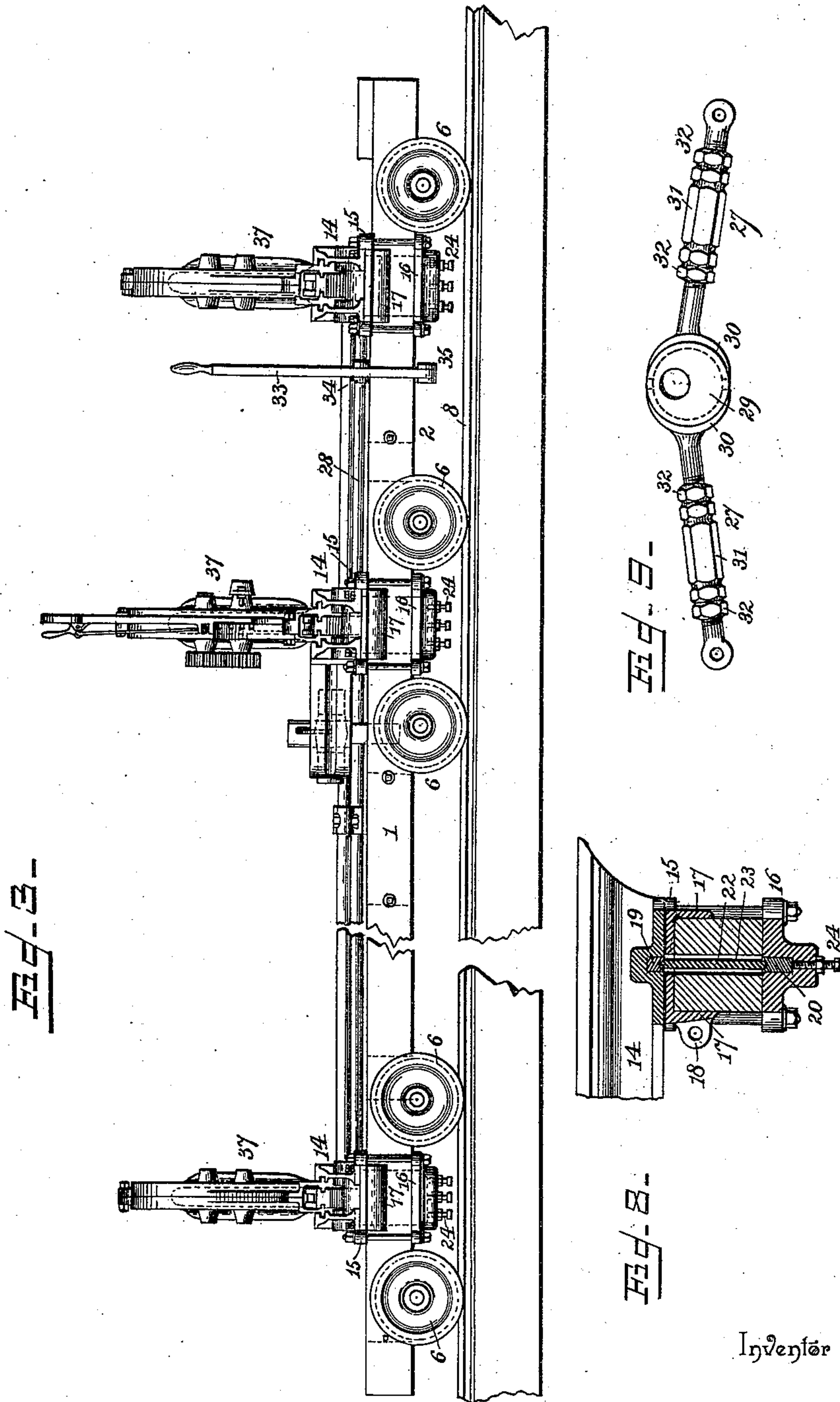
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Witnesses

Charles C. Curran
John N. Siggers

By his Attorneys,

Noah Shaw

C. A. Snow & Co.

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4 Sheets—Sheet 4.

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Fig. 4.

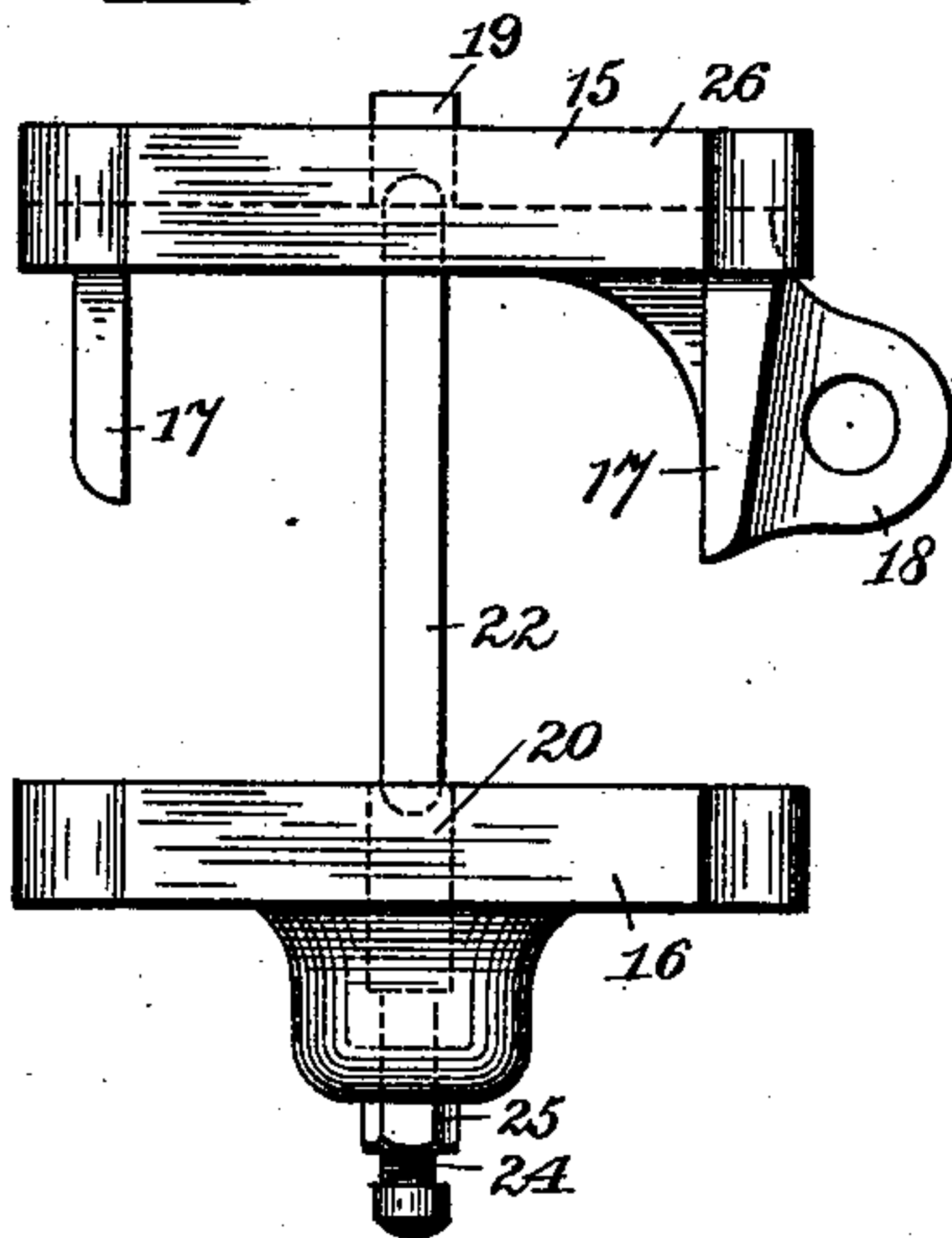


Fig. 5.

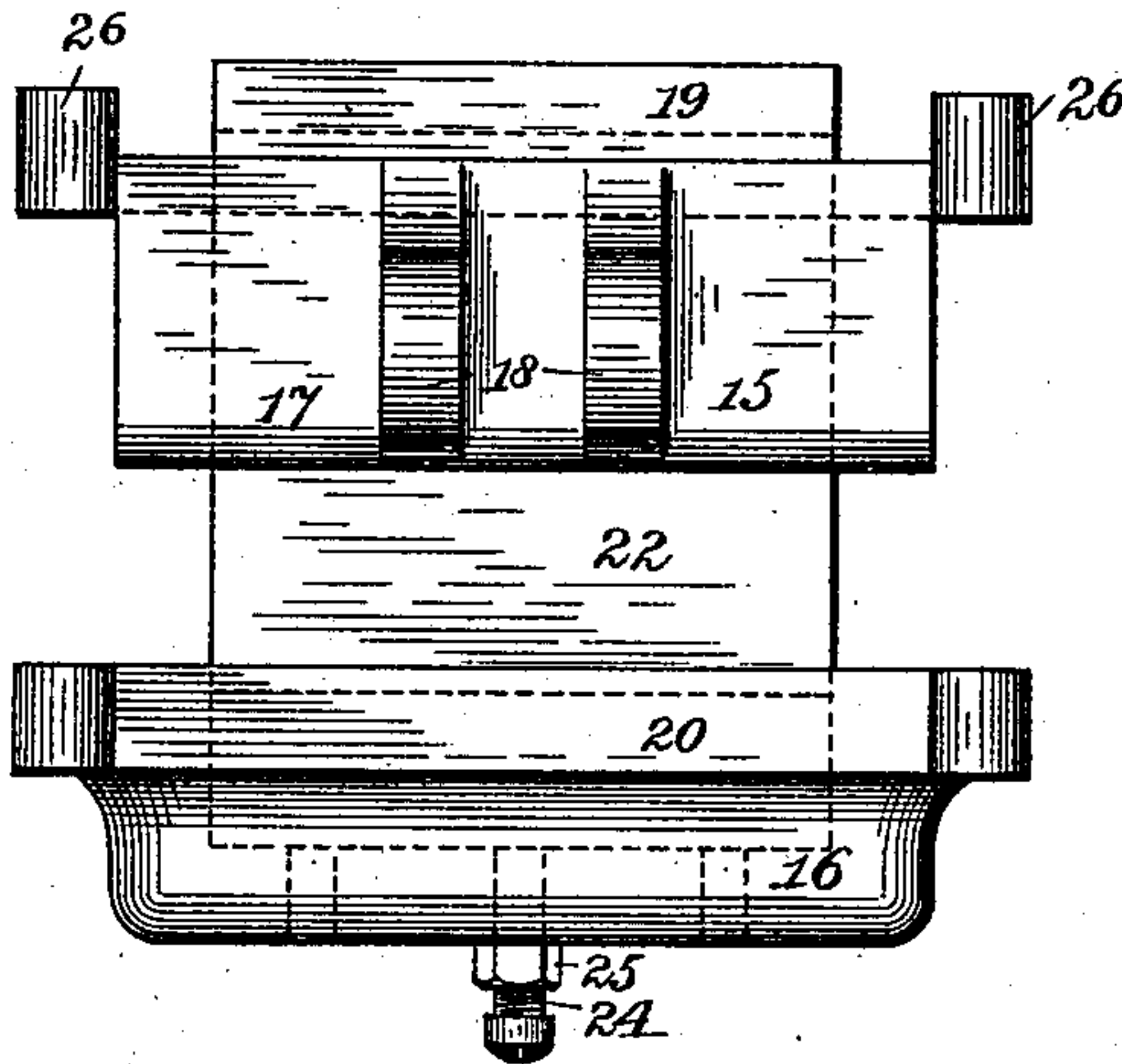


Fig. 6.

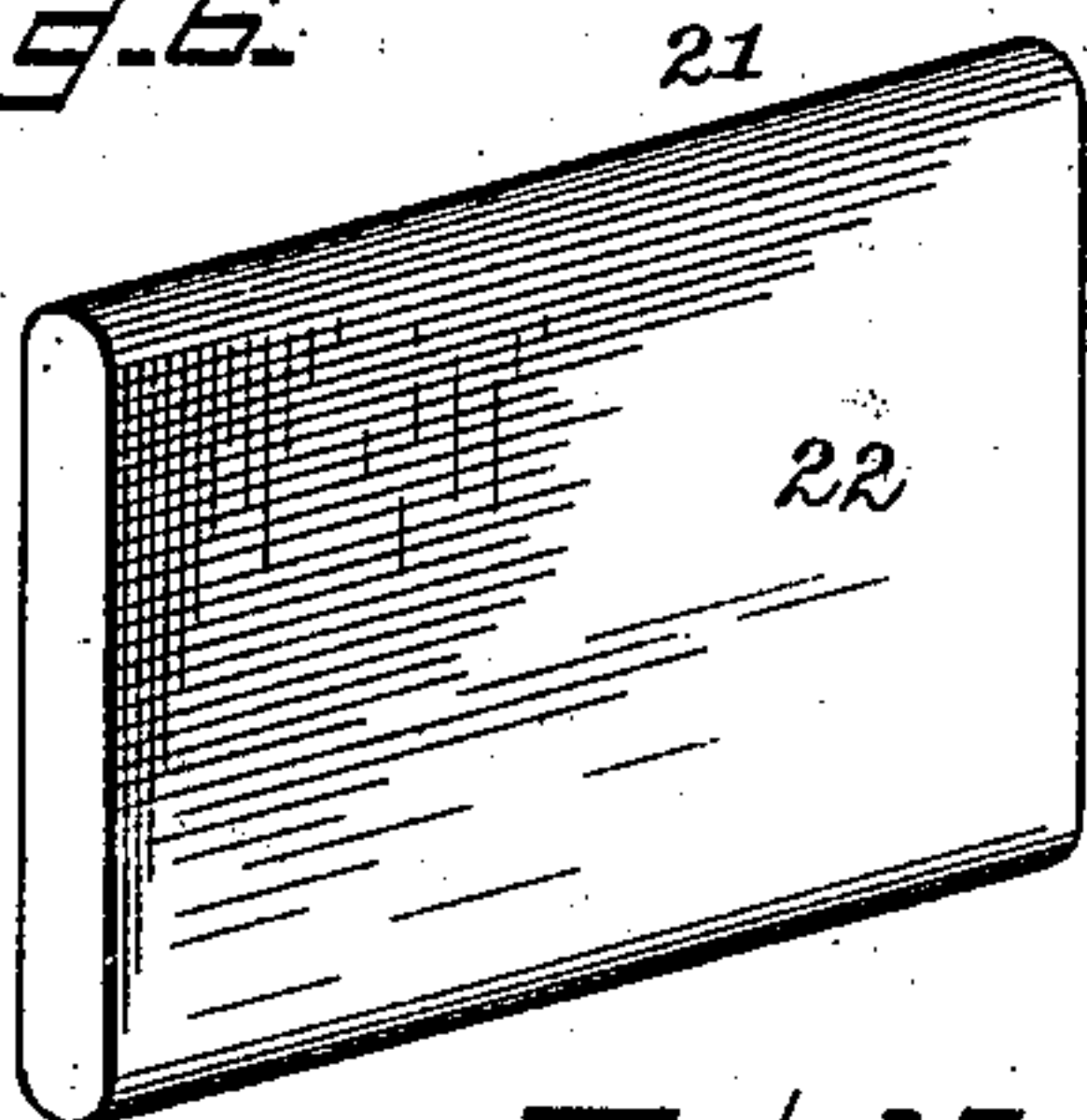


Fig. 7.

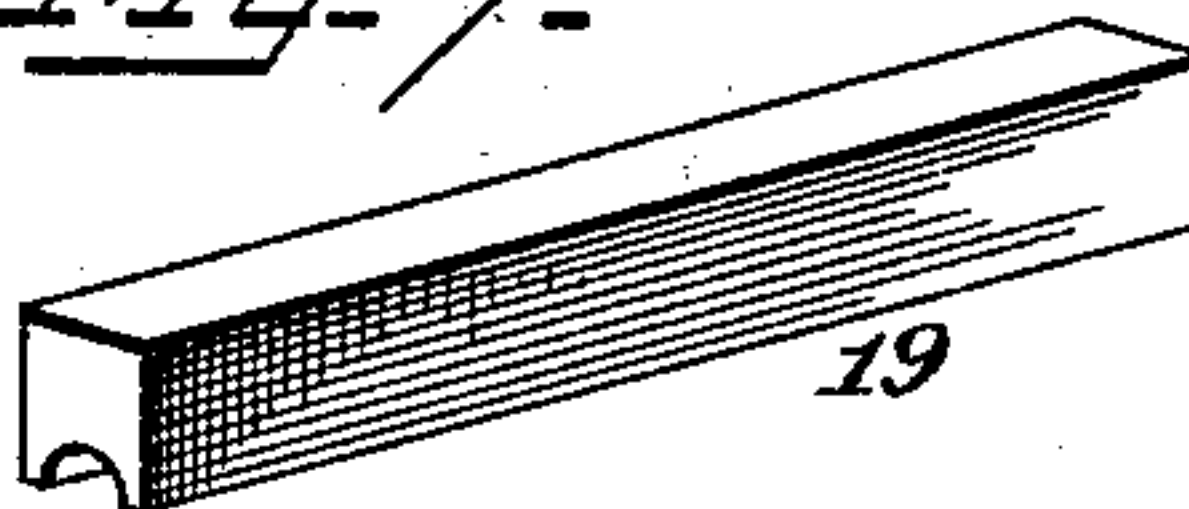


Fig. 11.

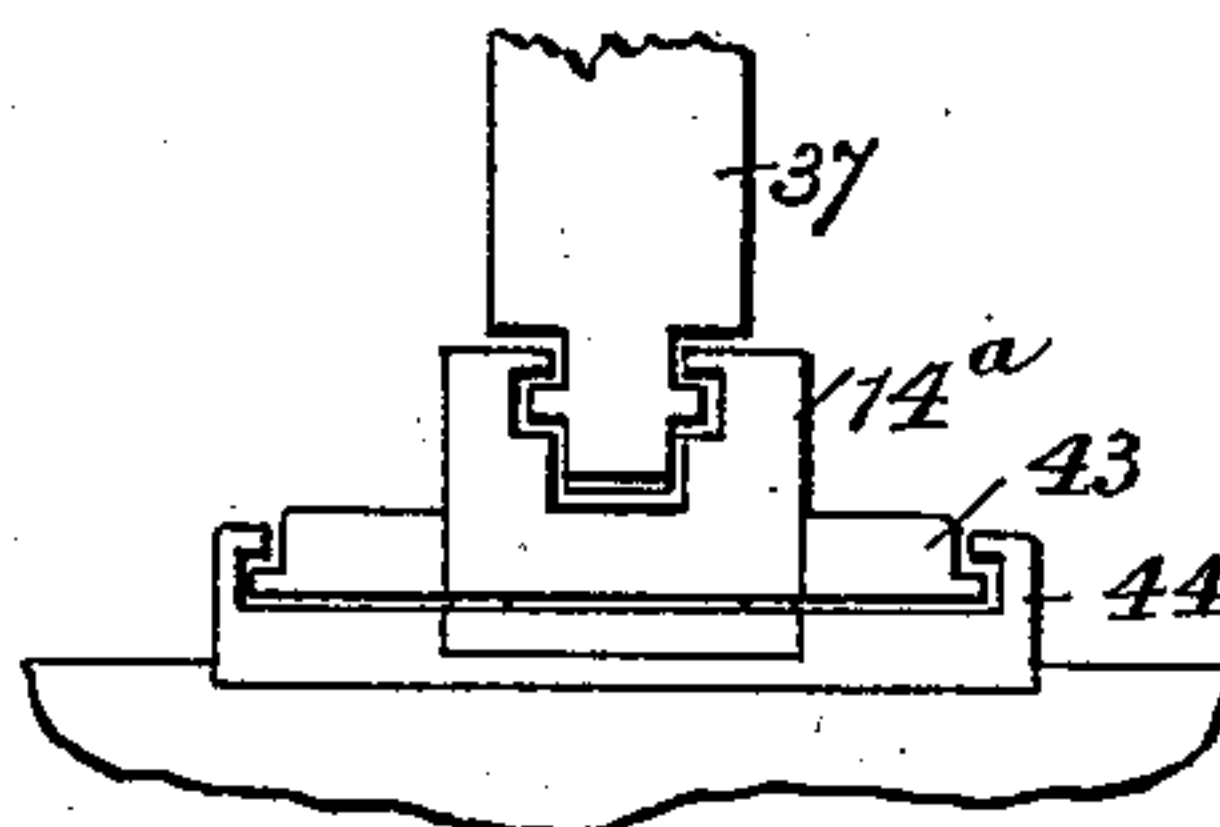
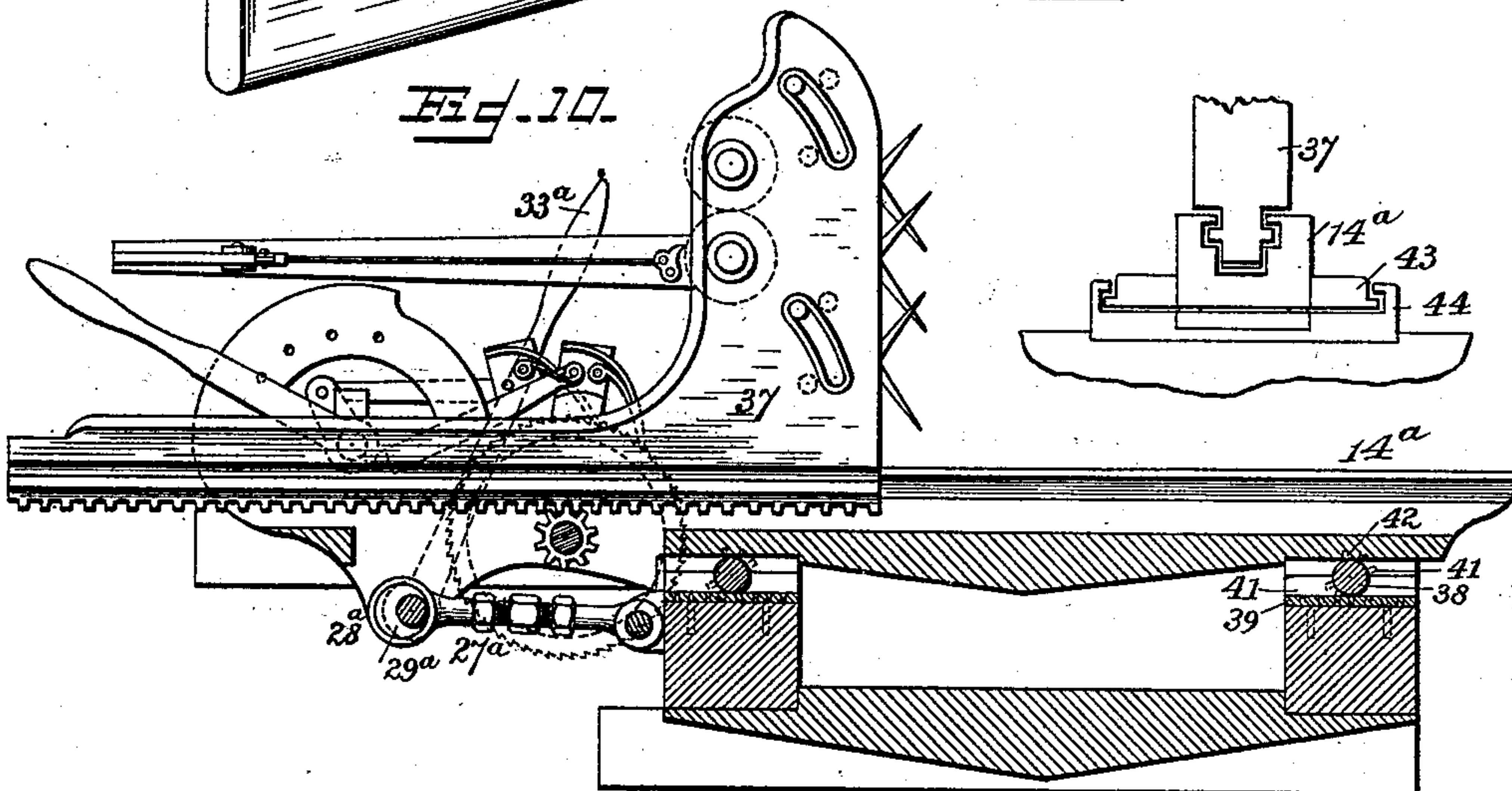


Fig. 10.



Inventor

Noah Shaw,

Witnesses

Chas. H. Ourand
John H. Siggers

By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

NOAH SHAW, OF EAU CLAIRE, WISCONSIN.

SAWMILL-CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 549,540, dated November 12, 1895.

Application filed January 23, 1894. Serial No. 497,800. (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.

The invention relates to improvements in sawmill-carriages.

Heretofore great loss has been incurred in the sawing of lumber on account of the carriage carrying the head-blocks and log not being held rigidly in place while the boards are being sawed from the logs, there being more or less movement out of a straight line, and the result of this loss has in one instance experienced amounted to about one million feet of lumber out of a lot of twenty million feet sawed, and the cause is in the main due to the improper manner of offsetting employed, and not, as has generally been believed, to want of skill of the mill-sawyer, who usually has to bear the blame. These losses have generally been experienced with those sawmill-carriages in which the carriage or the frame of the carriage moves transversely of the latter with the head-blocks in effecting the operation of offsetting.

The object of the present invention is to provide a simple and comparatively inexpensive sawmill-carriage which will be adapted at the end of each forward cut to offset the log from the saw to prevent the latter from coming in contact with the log in gigging back and being dragged off the wheels on which it runs, and also to prevent it from causing great injury to the lumber, as well as the destruction of the mechanism of the carriage and the sawmill, which damage would occur if the log during the operation of gigging back were allowed to remain in the same position with respect to the saw that it occupied during its forward movement to effect the cut.

A further object of the invention is to reduce the friction incident to the operation of offsetting to the minimum; to hold the head-blocks when in position for sawing rigidly with the carriage without any liability of accidental transverse movement of them; to obviate the objections above enumerated, and to enable the knees to be adjusted independ-

ently of one another to conform to any irregularity or the natural taper of a log.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a transverse sectional view of a sawmill-carriage constructed in accordance with this invention. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation of the sawmill-carriage. Fig. 4 is a detail view illustrating the manner of adjustably connecting the shifting standards with the top and bottom plates of the carriage-frame. Fig. 5 is a side view of the top and bottom plates. Fig. 6 is a detail view of one of the shifting standards. Fig. 7 is a detail view of the upper bearing-plate of one of the standards. Fig. 8 is an enlarged detail sectional view of one of the side beams, showing the connection between the head-blocks and the carriage. Fig. 9 is a detail view of the eccentric. Fig. 10 is a transverse sectional view of a sawmill-carriage, showing a modification of the invention. Fig. 11 is a detail view showing a modification of the head-block.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 1 designate longitudinal beams of a sawmill-carriage frame 2, provided with suitable bearings 3 for axles 4, on the ends of which are journaled wheels 5 and 6. The wheel 5 has a flat tread and runs on a corresponding track bar or rail 7, and the wheel 6 has a grooved periphery and runs on an oppositely-beveled track bar or rail 8, which conforms to the configuration of the tread of the wheel, whereby the sawmill-carriage is prevented from moving transversely of the length of the track. Each axle 4 is provided adjacent to the inner end of each bearing 3 with a threaded portion 9, and mounted thereon is an interiorly-threaded collar 10, composed of two sections connected by upper and lower bolts 11, which clamp the sections tightly on the axle to prevent any accidental unscrewing. These collars greatly contribute to the rigidity of the frame and are adapted to take up any lost motion. When it is desired to adjust the col-

lar 10, the nuts 12 of the bolts thereof are loosened to permit the collar to be turned on the threaded portion 9, and after proper adjustment the nuts are again tightened to clamp the sections. The bearings 3 for the axles are rigidly and immovably secured to the saw-carriage frame in order that the latter may have no transverse movement on the axles, and they are provided with caps 13 for oil or other lubricants.

Adjacent to each pair of head-blocks 14 are located upper and lower plates 15 and 16, secured, respectively, to the upper and lower faces of the longitudinal beams 1. The upper plate is provided with depending flanges 17, which embrace the sides of the adjacent longitudinal beam, and the inner flange is provided with a pair of perforated ears 18. The upper and lower plates 15 and 16 are firmly bolted to the longitudinal beam, and upper and lower bearing-plates 19 and 20 are mounted, respectively, in vertical openings or recesses of the head-blocks 14 and the lower or bottom plates 16. The bearing-plates 19 and 20 have their lower and upper edges, respectively, concavely grooved longitudinally and forming bearings for and receiving rounded upper edges 21 of a shifting or oscillating standard 22. The shifting or oscillating standard 22 is arranged in a vertical slot or opening 23 of the longitudinal beam, and it moves independently of the latter, which is absolutely stationary with relation to the standard and the truck of the sawmill-carriage. The lower bearing-plate 20 is mounted for vertical adjustment and is adjusted and secured at the desired adjustment by means of screws 24, provided with jam-nuts 25 and adapted to raise and lower the standard 22 to cause the latter to project above the upper face of the top plate or saddle 15 to hold the head-blocks out of contact therewith, whereby the head-blocks may be moved transversely of the carriage for offsetting a log with the minimum amount of friction and with great rapidity. The head-blocks are guided in this offsetting movement by upward-projecting flanges 26 of the top plate or saddle 15.

The perforated ears 18 have secured between them the outer ends of connecting-rods 27, which connect the head-blocks with the frame. The head-blocks move transversely of the frame for offsetting a log and are entirely independent of the frame in their offsetting movements, and they have journaled on them in suitable bearings a longitudinally-disposed shaft 28, which carries adjacent to each pair of head-blocks an eccentric 29. The inner ends of the connecting-rods, which are slightly upwardly and inwardly inclined, are provided with yokes 30, which are arranged on the eccentric 29, whereby when the eccentric is turned the head-blocks will be moved transversely of the sawmill-carriage to offset or onset a log. This connection between the head-blocks and the sawmill-carriage braces and holds the former firmly and securely in

position for making a cut and absolutely prevents any liability of accidental movement, which might deface or turn out imperfect lumber.

In order to enable the connections between the head-blocks and the sawmill-carriage to be adjusted with absolute accuracy, each connecting-rod 27 is composed of threaded inner and outer sections, which have their adjacent ends connected by a turnbuckle 31 to vary the length of the connecting-rod. The turnbuckle is polygonal to form a wrench-seat, and each section of the connecting-rod is provided with a jam-nut 32.

The shaft 28 is rocked by means of a hand-lever 33, arranged vertically at one side of the sawmill-carriage and fulcrumed on the frame between ears 34 and extending below the longitudinal beams and connected by a bar 35 with a depending arm 36 of the head-block-operating rock-shaft 28. The head-blocks may be readily and rapidly off or on set by the hand-lever 33, owing to the particular manner of mounting the head-blocks, which, although arranged between the upward-projecting flanges of the top plate 15 and slightly out of contact with the upper face of the top plate, are securely and rigidly held against accidental movement by the eccentric connections between them and the frame of the sawmill-carriage. The frame 2, the axles 4, and the wheels, which constitute the carriage proper, are incapable of transverse movement, and they serve to form a rigid and secure support for the head-blocks when the latter are in position for making a cut in a manner which would be impossible were the frame capable of transverse movement on the axles.

Each of the knees 37 is provided with separate set-up mechanism of any suitable construction to enable the knees to be adjusted separately with relation to the head-blocks on which they are mounted, in order that the knees may conform to any irregularity or the natural taper of a log. The knees are also provided with any suitable dogging mechanism.

By the construction heretofore described a log may be offset from a saw at the end of each forward movement or cut to enable it to be giggered back for another cut without coming in contact with the saw and without being defaced, and also without dragging the band-saw from off the wheels and otherwise injuring the mechanism of the sawmill, and in connection with this operation it will be apparent that the head-blocks are rigidly connected with the carriage by means adapted to permit the offset movement and capable of preventing accidental movement of the head-blocks at any time, and affording when the head-blocks are onset, preparatory to making a forward movement or cut, a connection between the head-blocks and the carriage as firm and as secure as though the head-blocks were mounted stationary on the carriage. It

will also be seen that the offsetting movement is accompanied by a minimum amount of friction, and that the top plates or saddles are relieved of wear, and that the head-blocks are enabled to make their offsetting movements without frictional resistance, which would result from contact with the top plates or saddles. The connecting-rods form oppositely-inclined braces, which support the head-blocks from both sides of the frame and equally distribute the strain throughout the carriage.

In Fig. 10 of the accompanying drawings is illustrated a modification of the invention. A single eccentric connecting-rod 27^a is employed, and this is arranged at one side of the sawmill-carriage frame. The head-blocks 14^a are provided with depending bearings, in which is journaled a longitudinal head-block-operating shaft 28^a, on which are mounted at intervals eccentrics 29^a. The adjustable connecting-rods 27^a are each provided at its outer end with a yoke, which is arranged on the eccentric 29^a, and the inner end of each connecting-rod is pivotally connected with the sawmill-carriage frame. The head-block-operating shaft 28^a is rocked by a hand-lever 33^a for producing the offsetting and onsetting operations.

In order to render the offsetting and onsetting movements of the head-blocks frictionless, antifriction-rollers 38 may be employed. These antifriction-rollers are interposed between the head-blocks 14^a and the sawmill-carriage frame, which is provided with wear-plates 39, and the latter have upward-extending flanges, which serve to retain the antifriction-rollers in proper position. Each end of each antifriction-roller may have cog-teeth 41, which are geared into short racks 42 of the plate 39 and the head-block, whereby the antifriction-rollers are positively retained in their operative position at right angles to the head-block.

The head-blocks may, as illustrated in Fig. 11 of the accompanying drawings, be connected with the sawmill-carriage frame by tongue-and-groove connections 43 and 44.

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.

What I claim is—

1. In a saw mill carriage, the combination with axles and wheels, of a saw mill carriage frame rigidly mounted on the axles, head blocks mounted on the frame and having a limited movement transversely and independently thereof, and the rigid bracing connections hingedly attached to the sides of the frame and movably connected with the head blocks, substantially as described.

2. In a saw mill carriage, the combination with axles and wheels, of a saw mill carriage frame rigidly mounted on the axles, head blocks mounted on the frame and having a

limited movement transversely and independently thereof, the movable supports holding the head blocks slightly above the frame, and connections for operating and locking the head blocks against accidental movement on the frame, substantially as described.

3. In a saw mill carriage, the combination with axles and wheels, of a saw mill carriage frame rigidly mounted on the axles, head blocks mounted on the frame and having a limited movement transversely thereof, and the connections between the head blocks and the frame for supporting the former slightly above the latter and for operating and locking the head blocks against accidental movement on the frame, substantially as described.

4. In a saw mill carriage, the combination with axles and wheels, of a saw mill carriage frame rigidly mounted on the axles, head blocks mounted on the frame and having a limited movement transversely thereof, and the oppositely disposed rigid inclined connections extending transversely of the carriage frame from one side to the other, and having their outer ends secured to the frame and having their inner adjacent ends movably connected with the head blocks, substantially as described.

5. In a saw mill carriage, the combination of the saw mill carriage frame, axles, wheels, and independently constructed head blocks, the head block operating shaft, a lever connected therewith, the eccentric, the turn buckle rod, and means for connecting the head block with the frame, whereby it is allowed to offset independently of the saw carriage, substantially as described.

6. In a saw mill carriage, the combination with axles and wheels, of a saw mill carriage frame rigidly mounted on the axles and secured against transverse movement thereon, head blocks having a limited movement transversely of the frame and independently thereof, an eccentric carried by the head blocks, a connecting rod extending from the eccentric to the frame and forming a rigid brace and lock, and means for operating the eccentric, substantially as described.

7. In a saw mill carriage, the combination with axles and wheels, of a saw mill carriage frame mounted on the axles, the head-blocks having a limited movement transversely and independently of the frame, an eccentric carried by the head-blocks and located centrally thereof, the oppositely disposed inclined connecting rods extending from the eccentric to opposite sides of the frame and bracing and supporting the head-blocks, and means for operating the eccentric whereby the head-blocks are moved transversely of the frame independently thereof, substantially as described.

8. In a saw mill carriage, the combination with axles and wheels, of a saw mill carriage frame mounted on the axles, the head-blocks having a limited movement transversely and independently of the frame, a centrally dis-

posed longitudinally arranged shaft provided with an arm and journaled on and carried by the block-heads, an eccentric mounted on the shaft, the oppositely disposed connecting
5 rods extending from the eccentric to opposite sides of the frame, and an operating lever connected with the arm of the shaft, substantially as described.

9. In a saw mill carriage, the combination
10 with axles and wheels, of a saw mill carriage frame rigidly mounted on the axles and provided at opposite sides with openings, the head blocks mounted on the frame and having a limited movement transversely and independ-
15 ently thereof, the upper and lower bearing plates carried by the head-blocks and the frame, and the shifting or oscillating standards arranged in the openings of the frame and having their ends journaled on the bear-
20 ing plates and being vertically adjustable through said openings and supporting the head-blocks out of contact with the frame, substantially as described.

10. In a saw mill carriage, the combination
25 of a saw mill carriage frame, independently movable head-blocks mounted on the frame, the oscillating standards mounted on the frame and supporting the head-blocks out of contact with the same, and means for adjust-
30 ing the standards vertically, substantially as described.

11. In a saw mill carriage, the combination
35 of a saw mill carriage frame, independently movable head-blocks mounted on the frame, the upper and lower bearing plates carried by the head blocks and the frame, the shifting standards having their ends journaled on the bearing plates and supporting the head-blocks out of contact with the frame, and the screws
40 mounted on the frame and supporting the lower bearing plates and adapted to adjust the standards vertically, substantially as described.

12. In a saw mill carriage, the combination
45 of a saw mill carriage frame having longitudinal beams provided with vertical openings, the top bearing plates or saddles having upward extending guide flanges and provided with depending flanges embracing the sides
50 of the beams, the bottom plates provided with vertical recesses and having threaded openings below the recesses, independently movable head blocks mounted on the frame, the upper bearing plates carried by the head-
55 blocks, the lower bearing plates arranged in

the vertical recesses of the bottom plates, shifting standards arranged in the openings of the beams and having their upper and lower edges journaled on said bearing plates, and screws
60 arranged in the threaded openings of the bottom plates for adjusting the standards vertically, substantially as described.

13. In a saw mill carriage, the combination
65 of a saw mill carriage frame provided with bearings, an axle journaled in the bearings and provided adjacent to the inner ends thereof with threaded portions, and the interiorly threaded clamping collars arranged on the threaded portions of the axle, substan-
70 tially as described.

14. In a saw mill carriage, the combination
75 of a saw mill carriage frame provided with bearings, an axle arranged in the bearings and provided adjacent to the inner ends thereof with threaded portions, and the interiorly threaded collars arranged on the threaded
80 portions of the axle, and composed of two separable sections detachably connected at their ends and thereby clamped on the axle, substantially as described.

15. In a saw mill carriage, the combination
85 with axles and wheels, of a saw mill carriage frame rigidly mounted on the axles, head-blocks mounted on the frame and having a limited movement transversely and independ-
90 ently thereof, the oppositely inclined connecting rods having their outer ends hinged to the sides of the frame and composed of inner and outer sections adjustably connected, and means for movably connecting the inner ends
95 of the rods with the head blocks, substantially as described.

16. In a saw mill carriage, the combination
100 with axles and wheels, of a saw mill carriage frame rigidly mounted on the axles, head-blocks mounted on the frame and having a limited movement transversely and independ-
105 ently thereof, and the oppositely inclined connecting rods having their outer ends hinged to the sides of the frame and movably connected at their inner ends with the head-
110 blocks, substantially as described.

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

NOAH SILAW.

Witnesses:

E. V. SLAWSON,
J. R. BAKER.