

(No Model.)

3 Sheets—Sheet 1.

W. S. LIVENGOOD, W. H. CHADBOURNE
& J. M. GIBBONS.
BALING PRESS.

No. 495,944.

Patented Apr. 18, 1893.

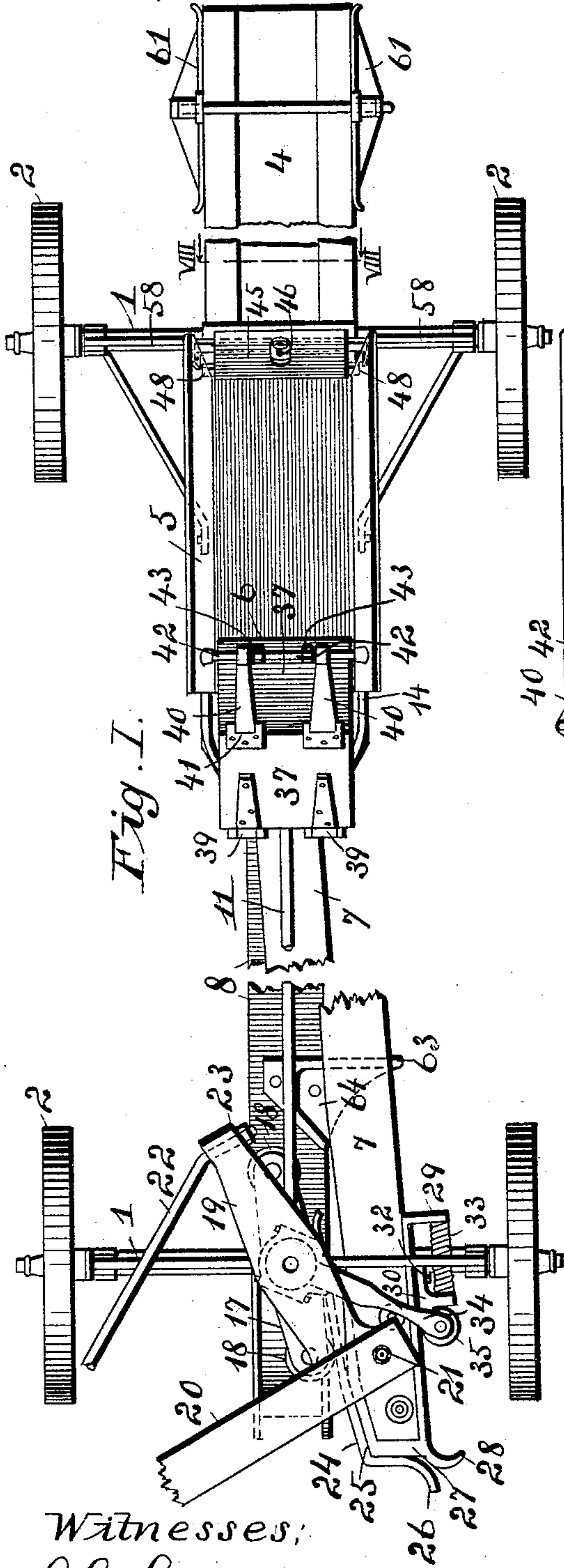


Fig. I.

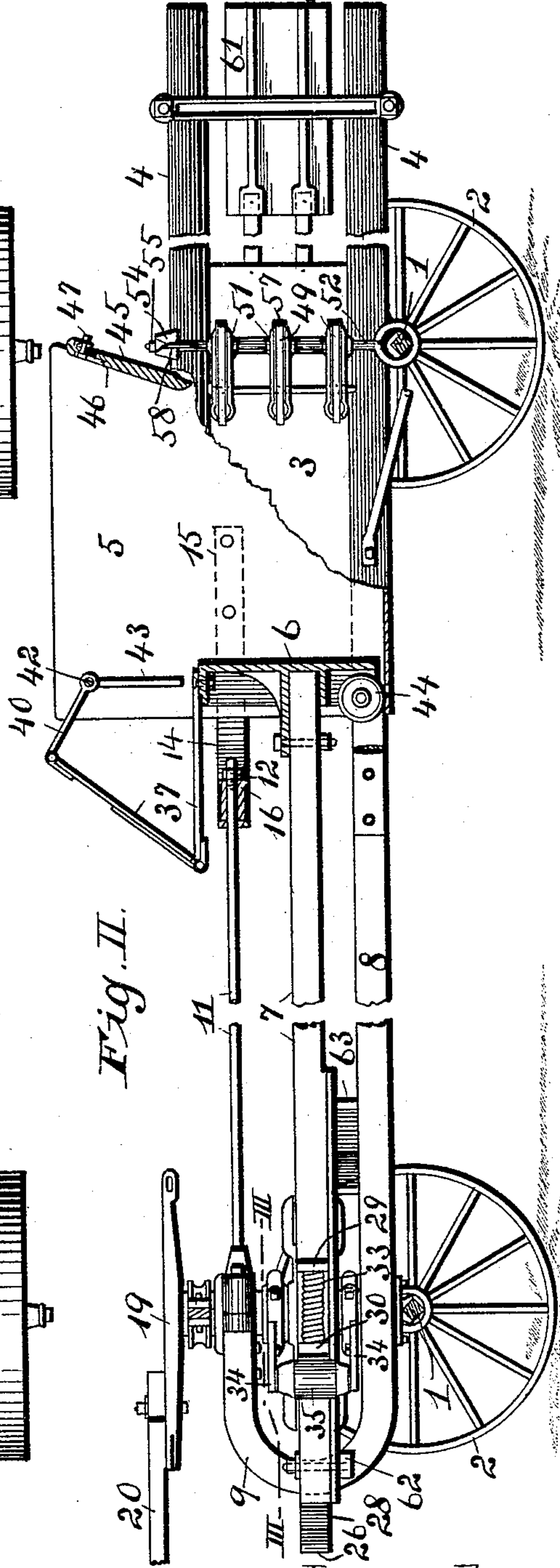


Fig. II.

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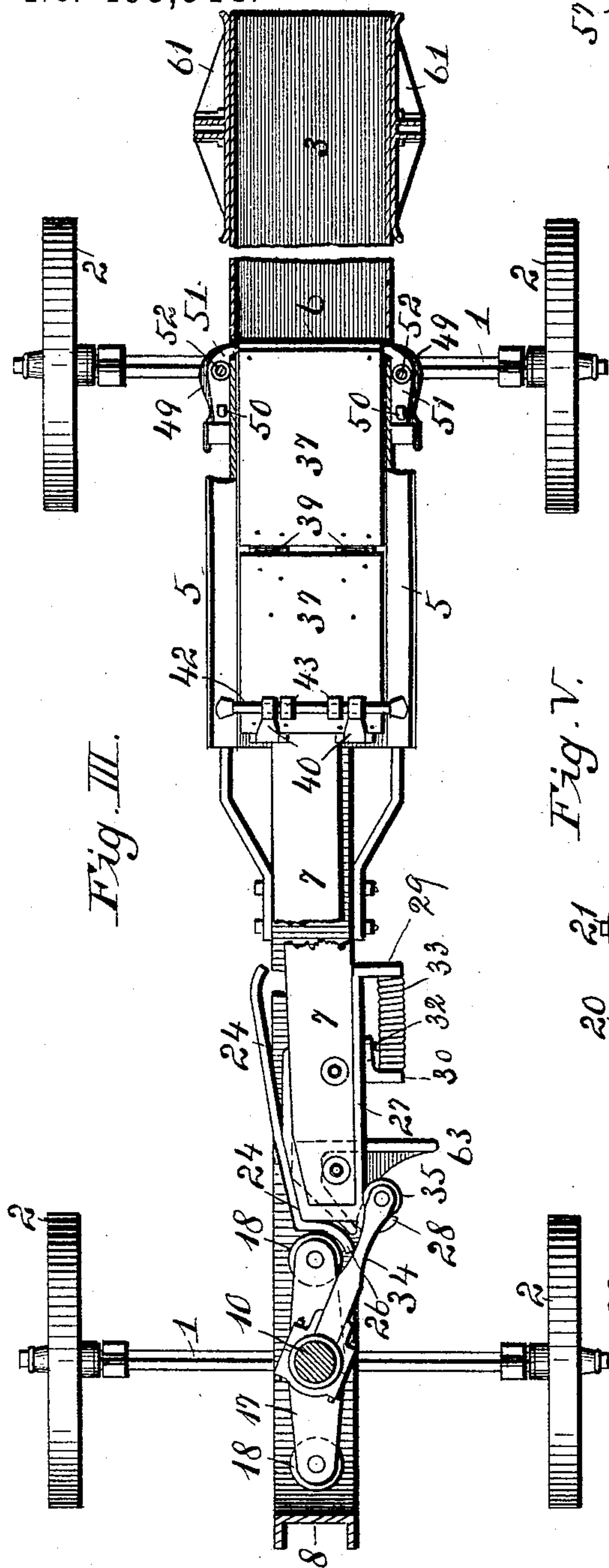


Fig. III.

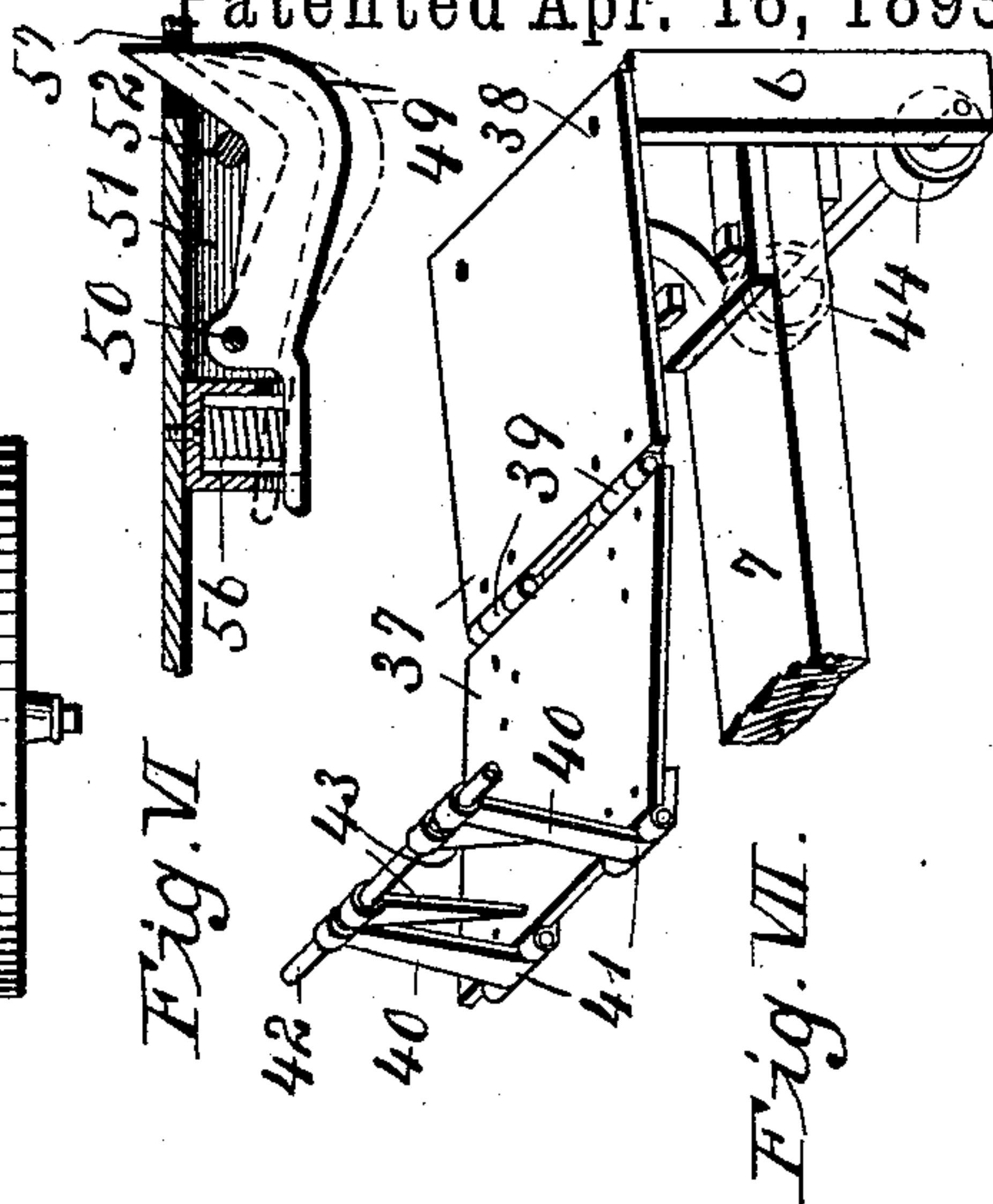


Fig. VI.



Fig. V.

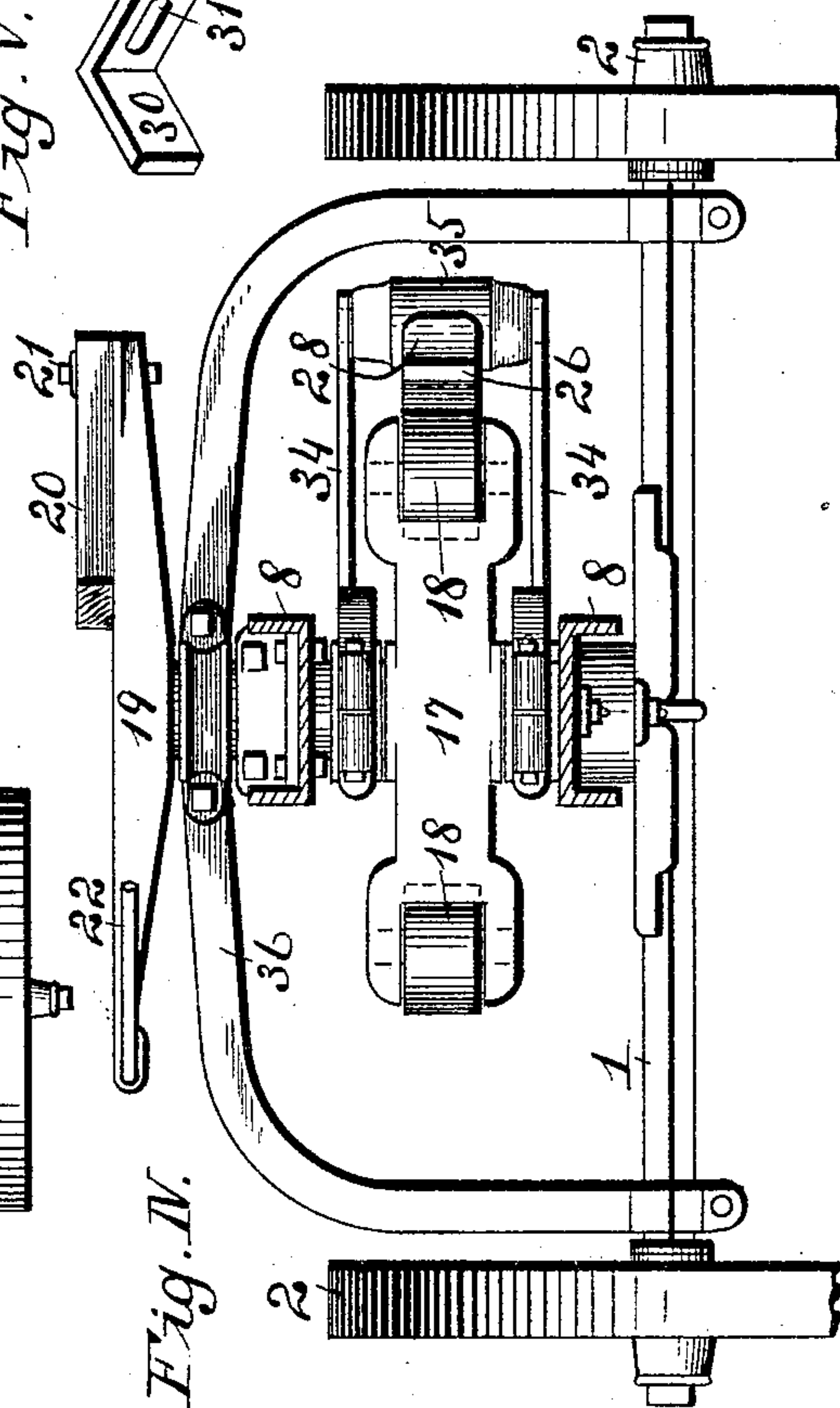


Fig. IV.

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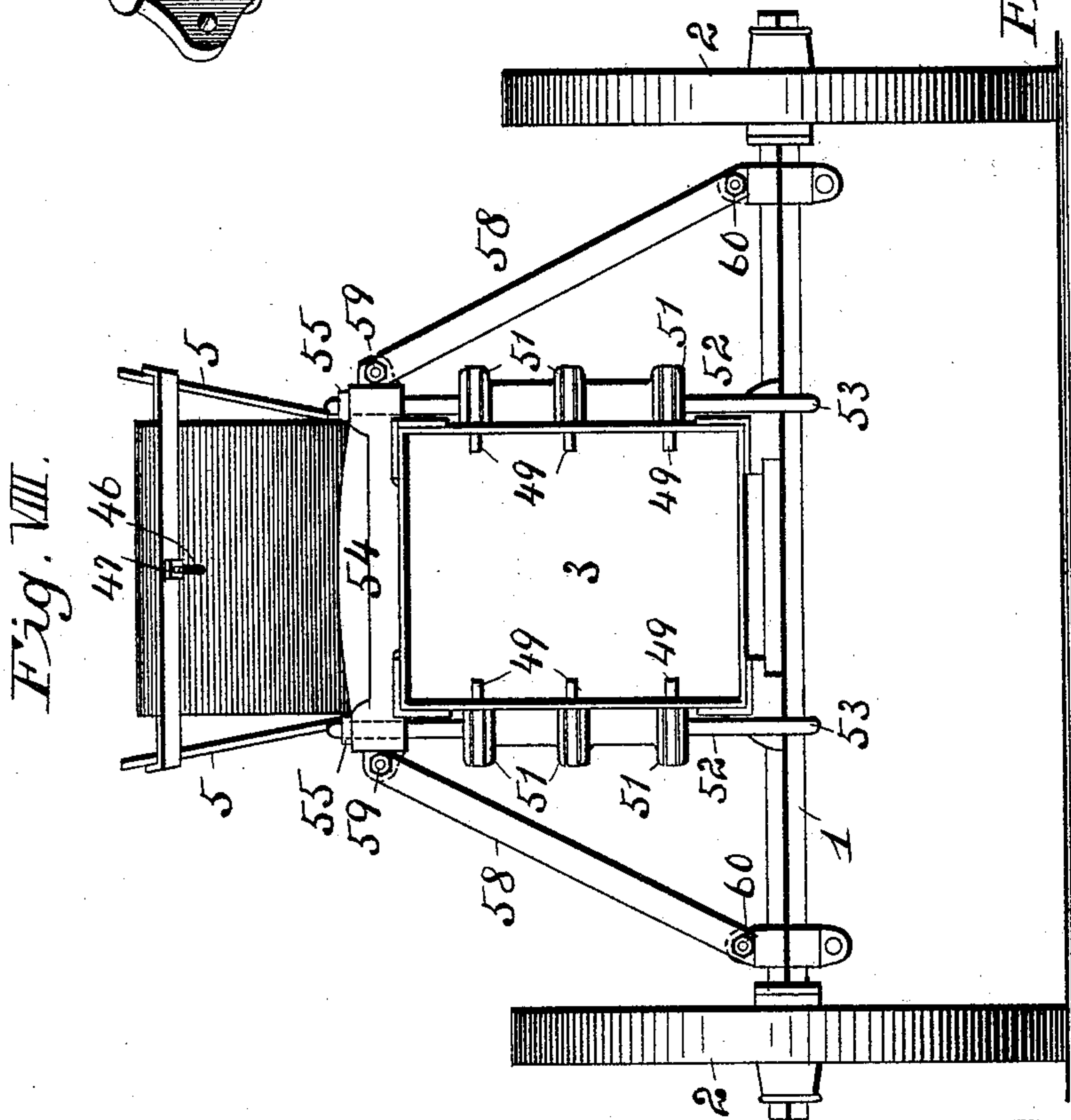
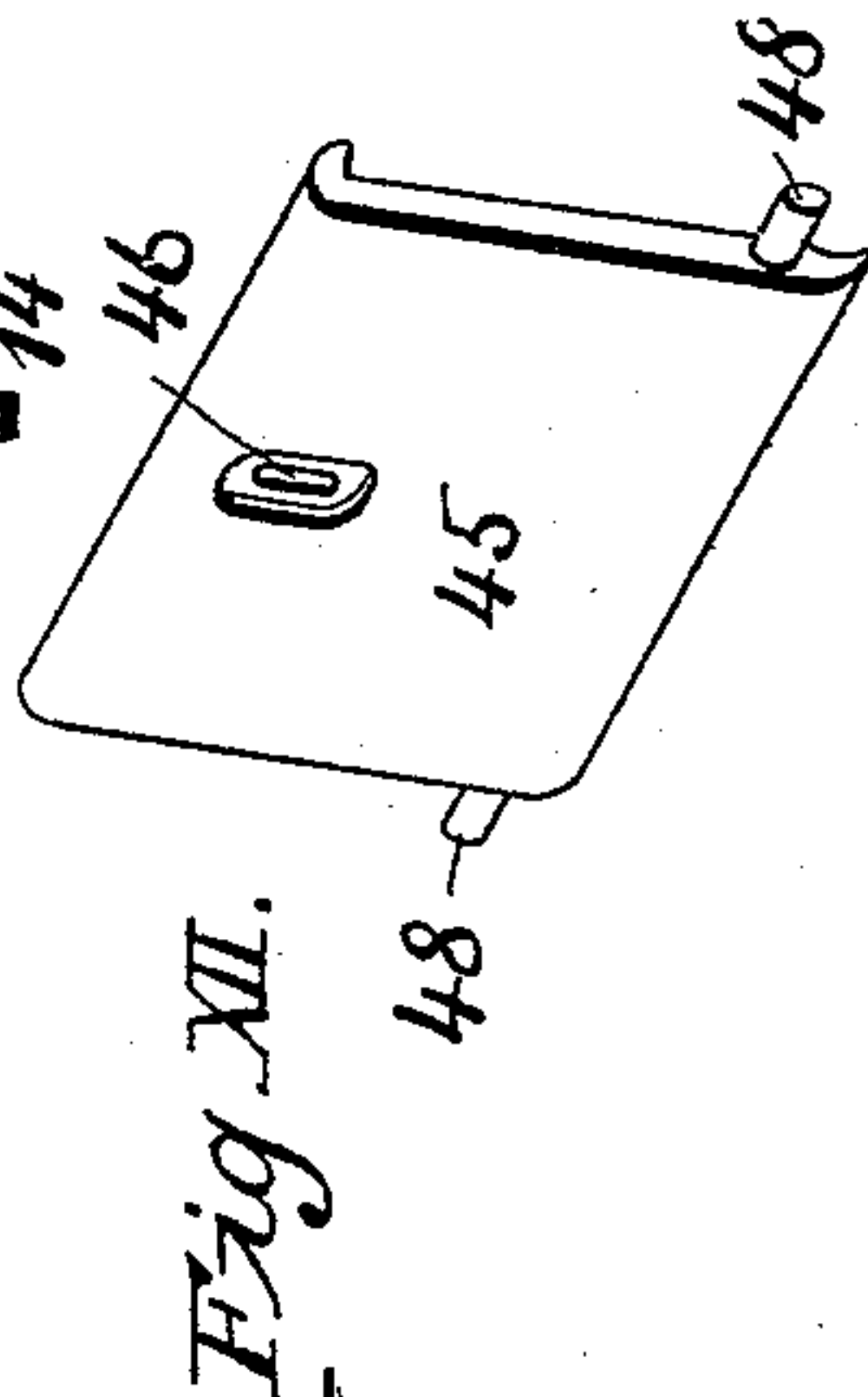
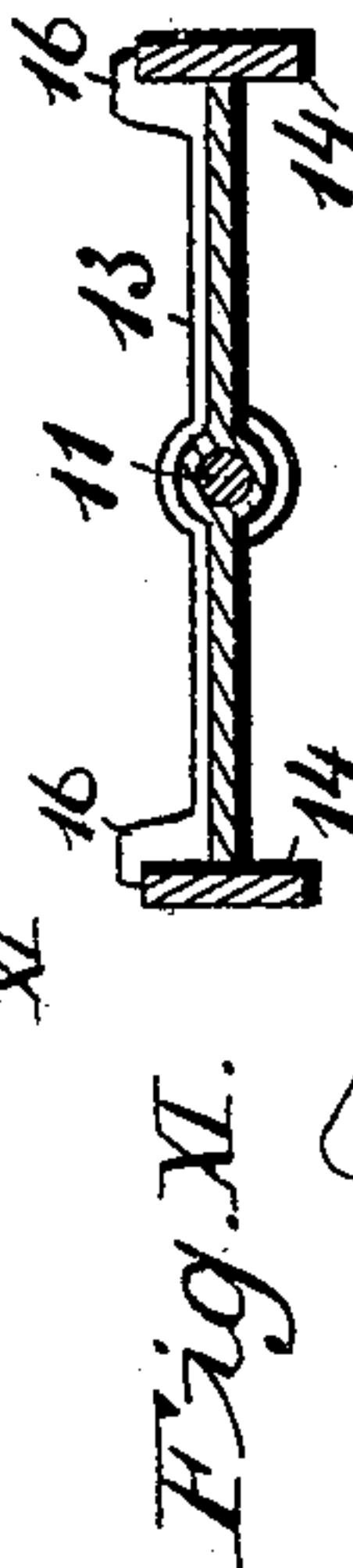
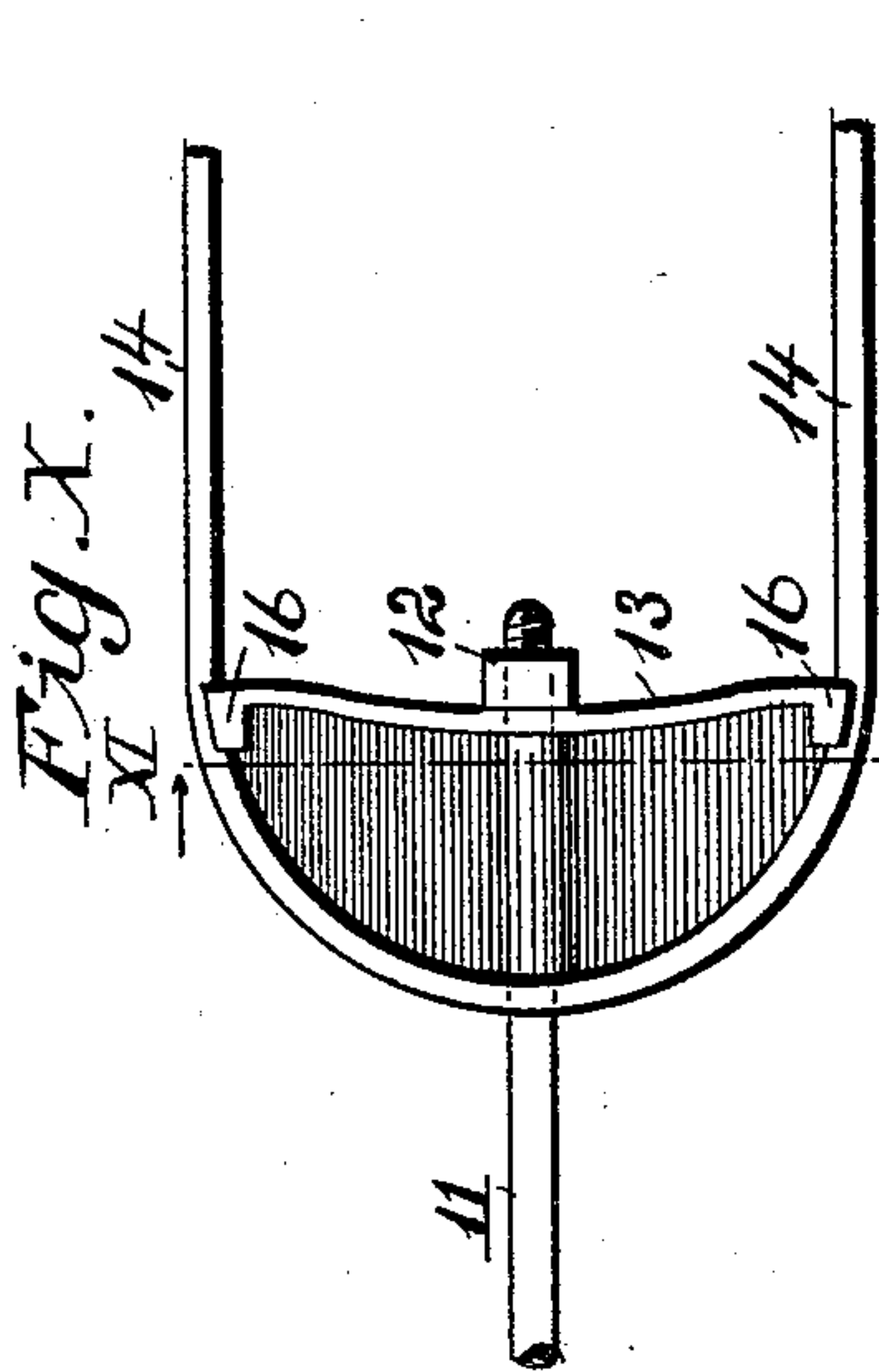
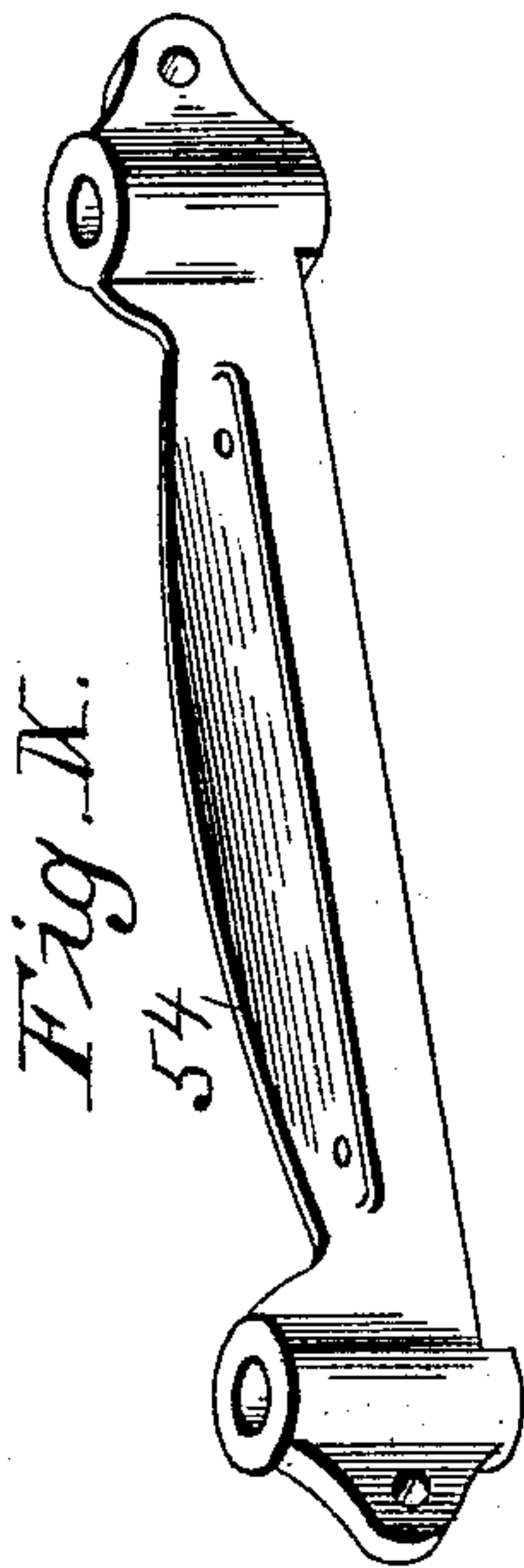
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UNITED STATES PATENT OFFICE.

WINFIELD S. LIVENGOD, WALTER H. CHADBOURNE, AND JAMES M. GIBBONS, OF KANSAS CITY, MISSOURI, ASSIGNORS, BY MESNE ASSIGNMENTS, TO JAMES E. KNIGHT AND EDWARD KELLY, OF SAME PLACE, AND WILLIAM A. ALDERSON, OF WESTPORT, MISSOURI.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 495,944, dated April 18, 1893.

Application filed July 13, 1892. Serial No. 439,907. (No model.)

To all whom it may concern:

Be it known that we, WINFIELD S. LIVENGOD, WALTER H. CHADBOURNE, and JAMES M. GIBBONS, all of Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Baling-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to certain new and useful improvements in baling presses, and our invention consists in certain features of novelty hereinafter described and pointed out in the "claims."

Figure I, represents a broken plan view of our improved press. Fig. II, is a side elevation of the same. Fig. III, represents a part plan view and section taken on line III, III, Fig. II. Fig. IV, represents a front elevation. Fig. V, is a detail perspective of the bracket with which the spring of the pitman for lessening the jar of the rebound is connected. Fig. VI, is an enlarged detail view of one of the retainers. Fig. VII, is an enlarged detail perspective of the folding apron. Fig. VIII, is a section taken on line VIII, VIII, Fig. I. Fig. IX, is an enlarged detail perspective of the cross-brace to which the rods connecting the axle with the same are secured. Fig. X, is a detail plan view of the brace connecting the baling chamber with the channel iron frame. Fig. XI, is a section taken on line XI, XI, Fig. X. Fig. XII, is an enlarged detail perspective of the tucker.

Referring to the drawings: 1, represents the axles, and 2, the wheels by which the press is supported.

3, represents the baling chamber having upper and lower frames 4.

5, represents a hopper through which the material is conveyed to the baling chamber.

6, represents a traverser and 7, a pitman for operating the same.

8, represents a channel iron frame having its rear end connected with the lower frame 4, of the baling chamber, having its forward end formed into a goose-neck shape, as shown at 9, said channel iron frame forming a bear-

ing for the upper and lower ends of the vertical shaft 10, for operating the pitman. By the use of U-shaped channel iron for the reach 8 with its flat face up, a stiffer and lighter frame is obtained, with thin surfaces, facilitating the fastening of the several plates thereto.

11, represents a rod connected at its forward end with the upper portion of the frame 8, and having its rear end adjustably secured by a nut 12, which holds said rod in contact with a casting 13, supported by a U shaped strap 14. The strap 14, is connected to each side of the baling chamber, as shown at 15.

16, represents lugs on the upper side of the casting 13, which rest on the strap 14, and thereby support the casting, said casting and strap having a central opening through which the rod 11 passes. By using a strap, as shown, with the casting placed within the same in the form of a spreader, any strain placed upon the rod 11, will not have a tendency to contract the sides of the baling chamber.

17, represents a trip lever which is secured to the vertical shaft 10, and is provided at each of its ends with rollers 18.

19, represents a cross head secured near the upper end of the vertical shaft 10, said cross head having a sweep 20, connected therewith, as shown at 21, and a brace rod 22, connecting the forward portion of the sweep with the opposite end of the cross head 19, as shown at 23.

24, represents an inclined spring bar connected with the forward end of the pitman, as shown at 25, said spring bar forming a bearing for the rollers 18 of the trip lever 17, in order to force the pitman backward, thus forcing the traverser into the baling chamber and compressing the material placed therein, said spring bar 24, having a curved portion 26, on its forward end, which acts as a guide for the rollers on the trip lever.

27, represents a casting secured to the forward end of the pitman, said casting having at its forward end a curved extension 28, and at its rear end on the outer side of the pitman 7, a right-angle extension 29.

30, represents a bracket having a slot 31,

and adjustably connected with the casting 27, by means of a bolt 32 passing through the slot; the slot and bolt connection permitting the bracket to slide in its connection with the casting. Interposed between the arm of the bracket 30, and the extension 29, of the bracket is a coil spring 33, said spring normally holding said bracket in its extreme forward position.

34, represents arms pivoted at their rear ends with the vertical shaft 10, and having a roller 35, at their outer ends, said roller bearing against the face of the casting 27. When in operation the trip lever forces the pitman backward, or from the position shown in Fig. I, to that shown in Fig. III, said arms will travel with the pitman to the position shown in Fig. III, at which time the roller 35, comes in contact with the curved extension 28, of the casting 27; thus always maintaining a close contact between said roller and the pitman. Then as the trip lever passes out of contact with the end of the pitman, and the pitman, by the pressure within the baling chamber, rebounds, the roller 35, on the arm 34, will come in contact with the movable bracket 30, and the spring 33, will be compressed, thus lessening the jar of the rebound.

36, represents an arched frame connecting the outer ends of the front axle with each other, and to which the upper end of the shaft 10, is journaled.

37, represents a folding apron having one of its ends connected with the upper portion of the traverser as shown at 38, the two sections of the apron being hinged to each other, as shown at 39, the opposite end of the apron being pivoted to arms 40, as shown at 41, said arms 40 being pivoted at their upper ends to a cross rod 42, supported by the hopper 5. As the pitman is forced forward in compressing a charge, the folding apron 37, will pass from the position shown in Fig. II, to the position shown in Figs. III, and VI, thus closing up the mouth of the baling chamber and allowing a fresh charge of material to be placed in the hopper preparatory to feeding the same into the baling chamber when the traverser recedes from the same. When the traverser is at its extreme backward limit, the apron 39, will assume the position shown in Fig. II.

43, represents pendants or arms extending downwardly from the rod 42, said arms preventing the material from passing back into the space between the sections of the apron and directing it into the baling chamber.

44, represents rollers journaled to the lower end of the traverser, which travel on the baling press frame and avoid friction in the operation of the traverser. At the rear end of the hopper 5, is a tucker 45, having a slot 46, through which a bolt 47, is inserted to secure the same to the hopper, said bolt and slot permitting of an upward and downward movement of said tucker. The lower end of the tucker is provided with lugs 48, on either side,

which limit the forward or rearward movement of the same. The operation of this tucker is as follows: By the bolt and slot connection when the traverser is forced forward with a charge of hay, the tucker will rise, guided by the lugs 48, working in slots in the side of the hopper and after the charge has been pressed, the tucker will fall by gravity tucking under the hay at the rear upper end of the charge and holding it thus from protruding into the baling chamber until the first charge is pressed by the traverser, and so on after each charge.

49, represents retainers for limiting the backward movement of the division boards, said retainers being pivoted as shown at 50, to castings 51, said castings being in turn secured to the baling press by means of stirrup rods 52, having their lower ends connected with the axle, as shown at 53, and having their upper ends connected with a cross frame 54, as shown at 55, said rods thus forming a firm brace for the baling chamber, connecting the axle with the top of the same, and at the same time forming a support for the castings 51, to which the retainers 49, are pivoted.

56, represents springs pressing against the rear end of the retainers in order to force the points of the same within the slots 57, in the sides of the baling press chamber.

58, represents brace rods connecting the cross frame 54, as shown at 59, with the axle 1, as shown at 60, said brace rods extending at an angle with the body of the press, thus forming a brace to prevent rocking or straining of the same on the support.

61, represents clamps for contracting the rear end of the press in order to form a bale of greater or less density.

62, represents a roller on the under side of the forward portion of the pitman, said roller, when the pitman has been forced forward coming in contact with a flange 63, of a bracket 64, said bracket being secured to the frame 8. The flange 63, with which said roller comes in contact permits the pitman to move laterally toward the center of the frame 8; but it limits its movement in that direction, so that on the rebound the pitman will always fly back on the same side of the power shaft, the flange against which the roller bears on its return being inclined, so as to force the pitman outwardly on its rebound.

We claim as our invention—

1. In a baling press, the combination of a baling chamber; a traverser operating therein; a pitman; means for operating said pitman; a channel iron reach or frame extending from the baling chamber to the front axle having a goose-neck in which the operating shaft is journaled; a U shaped strap 14 connected with the baling press; a casting supported by the U shaped strap, 14, and a rod for connecting said casting with the rear upper end of said channel iron; substantially as set forth and for the purpose described.

2. In a baling press, the combination of a

balancing chamber; a pitman; a traverser; means for operating said pitman; a channel iron frame having a goose-neck; a U shaped strap connected with the balancing press; a casting having lugs thereon, supported by said strap, and a rod connecting said casting and strap with the forward end of the channel iron; substantially as described and for the purpose set forth.

3. In a balancing press, the combination of a traverser; a pitman; a trip lever; an inclined face on the pitman with which said trip lever engages; a power shaft; arms pivoted to said power shaft, said arms forming a bearing against the outer side of the pitman; substantially as described and for the purpose set forth.

4. In a balancing press, the combination of a traverser; a pitman; a power shaft; a trip lever connected with said shaft; an inclined surface on said pitman, with which the trip lever engages; arms secured to the power shaft, having a bearing point at their outer ends; a hooked extension on said pitman with which said bearing point engages; a movable bracket secured to the pitman, and a spring connected with said bracket for lessening the rebound; substantially as and for the purpose set forth.

5. In a balancing press, the combination of the traverser; a pitman; means for operating the pitman, and a folding apron formed in sections pivoted to each other and connecting the traverser with a stationary portion of the press; substantially as and for the purpose set forth.

6. In a balancing press, the combination of a traverser; a pitman; means for operating said pitman; a folding apron having one of its ends connected with the traverser, said apron being in sections, and having its opposite end pivoted to a suitable support, and arms extending downwardly from said support; substantially as and for the purpose set forth.

7. In a balancing press, the combination of a traverser; a pitman; means for operating the pitman; a hopper; a tucker connected with the rear end of said hopper by a slot and bolt connection, and having lugs thereon working in slots in the sides of the hopper for preventing forward and rearward movement; substantially as described and for the purpose set forth.

8. In a balancing press, the combination of a balancing press frame; axles on which the frame is mounted; castings secured to the side of the press, the cross piece, rods, by which the castings are secured, connected at their lower ends with said axle, and at their upper ends with the cross-piece extending across the top of the balancing press; retainers pivoted to said castings and springs for holding the points of said retainers within the balancing chambers; substantially as and for the purpose set forth.

9. In a balancing press, the combination of a traverser; a pitman; a bearing point on said pitman; a bracket secured to the frame, and a V-shaped flange on said bracket with which said bearing point comes in contact in order to guide the pitman; substantially as and for the purpose set forth.

10. In a balancing press, the combination of a traverser; a pitman; a power shaft; a trip lever connected with said shaft; an inclined surface on said pitman, with which the trip lever engages; arms secured to the power shaft, having a bearing point at their outer ends, and an extension on said pitman with which said bearing point engages; substantially as and for the purpose set forth.

In testimony whereof we attach our signatures in the presence of two witnesses.

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WALTER H. CHADBOURNE.

JAMES M. GIBBONS.

Witnesses:

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