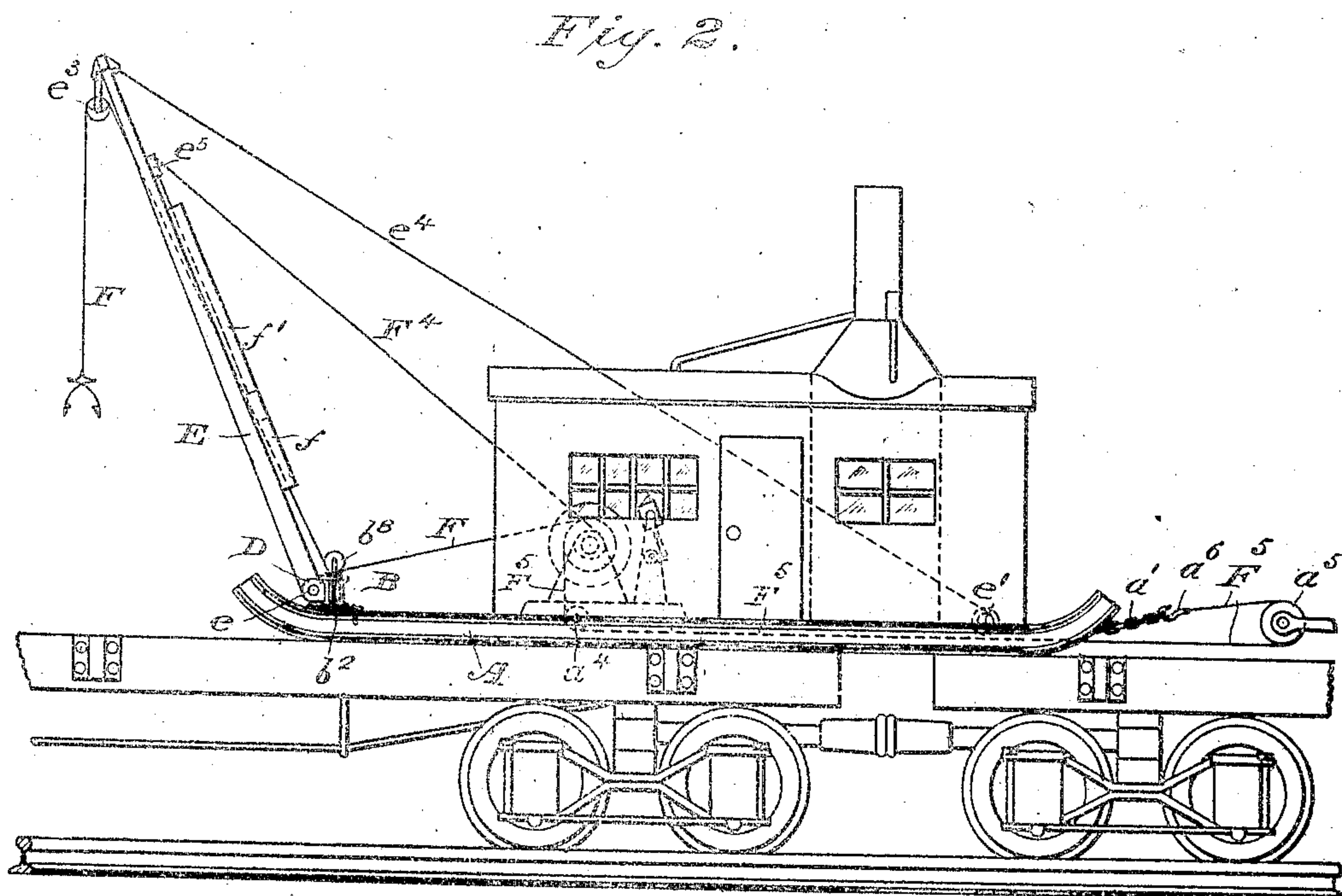
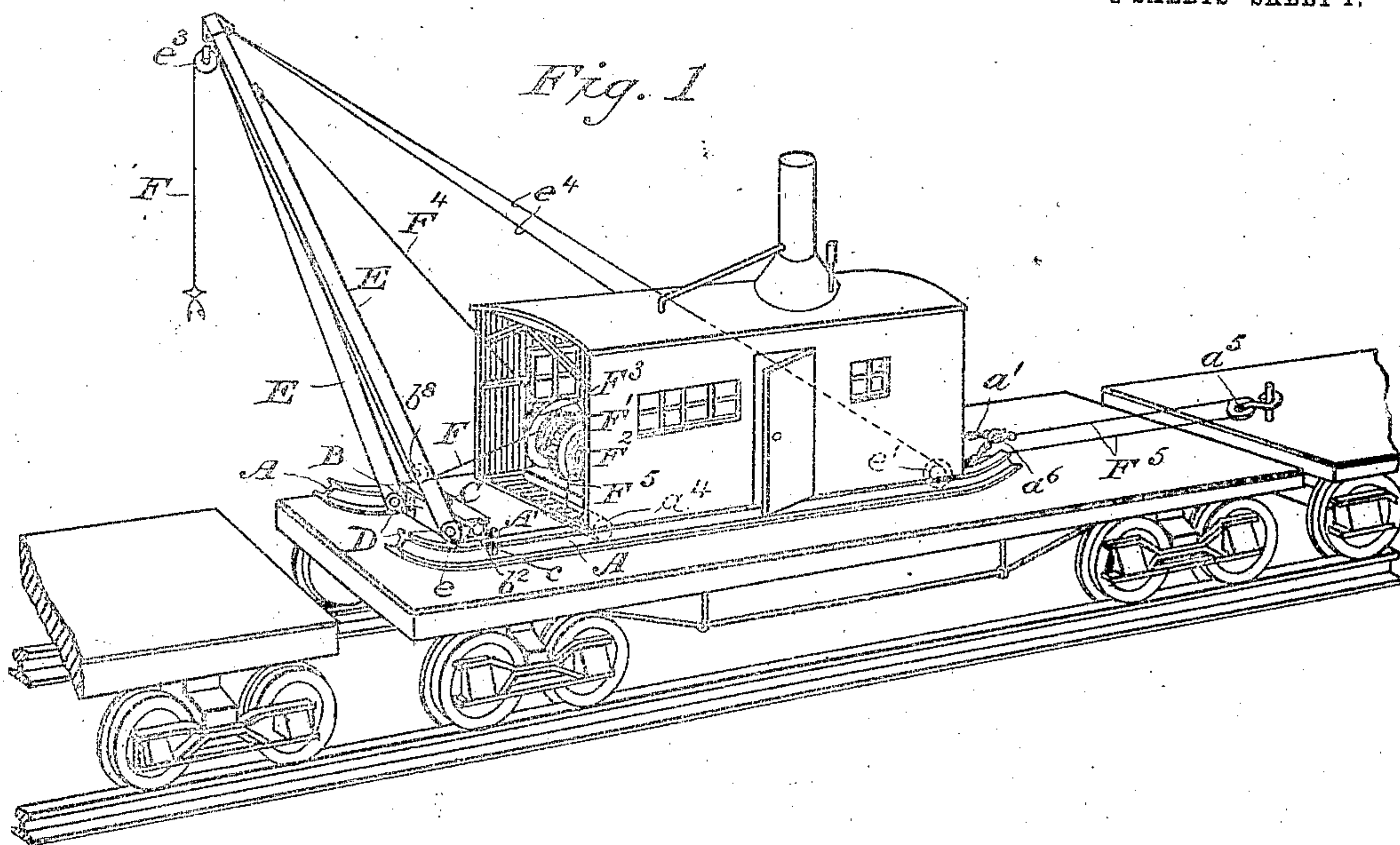


No. 833,748

PATENTED OCT. 23, 1906.

J. R. McGIFFERT.
LOG LOADING MACHINE.
APPLICATION FILED DEC. 30, 1904.

2 SHEETS--SHEET 1.



WITNESSES:

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INVENTOR:

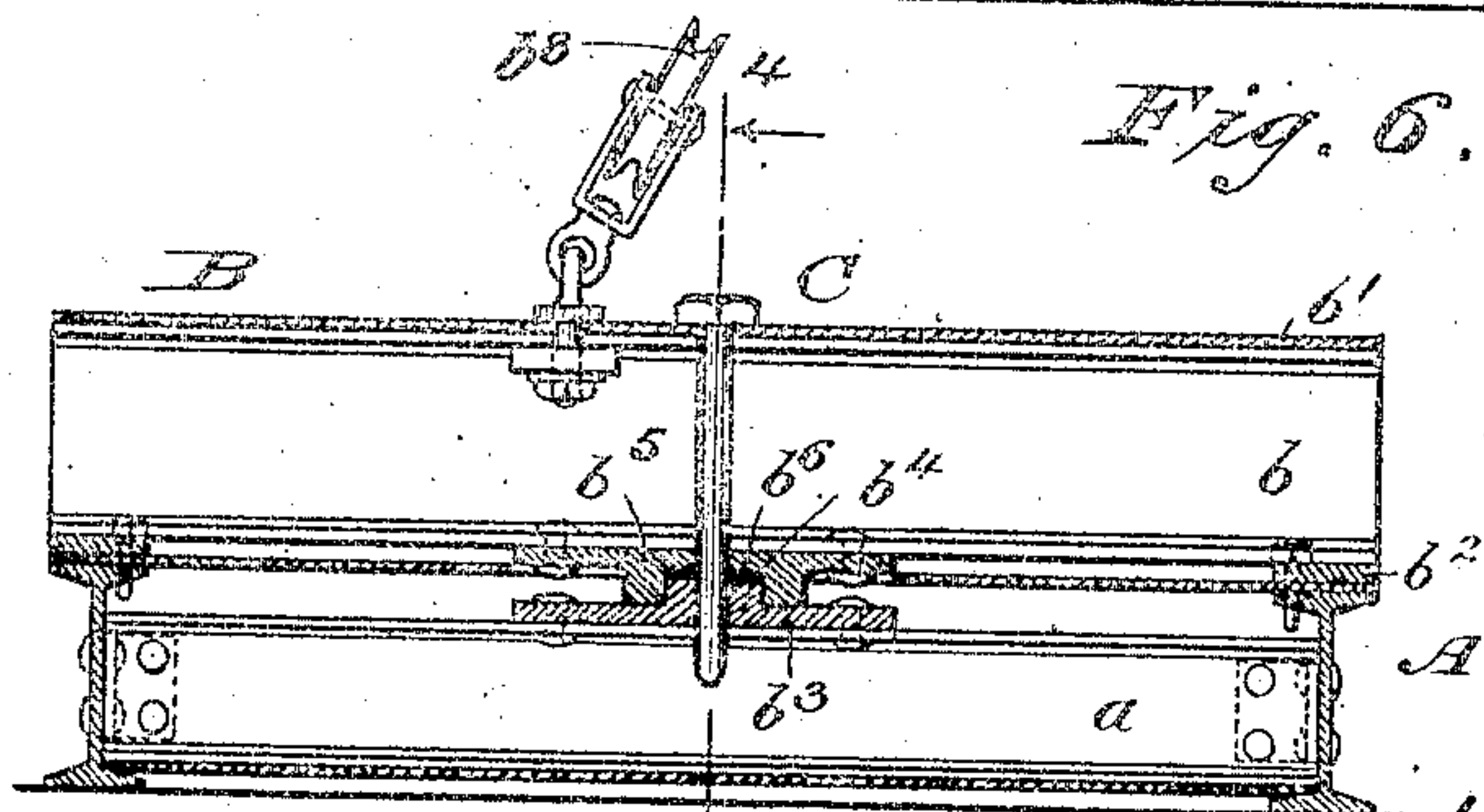
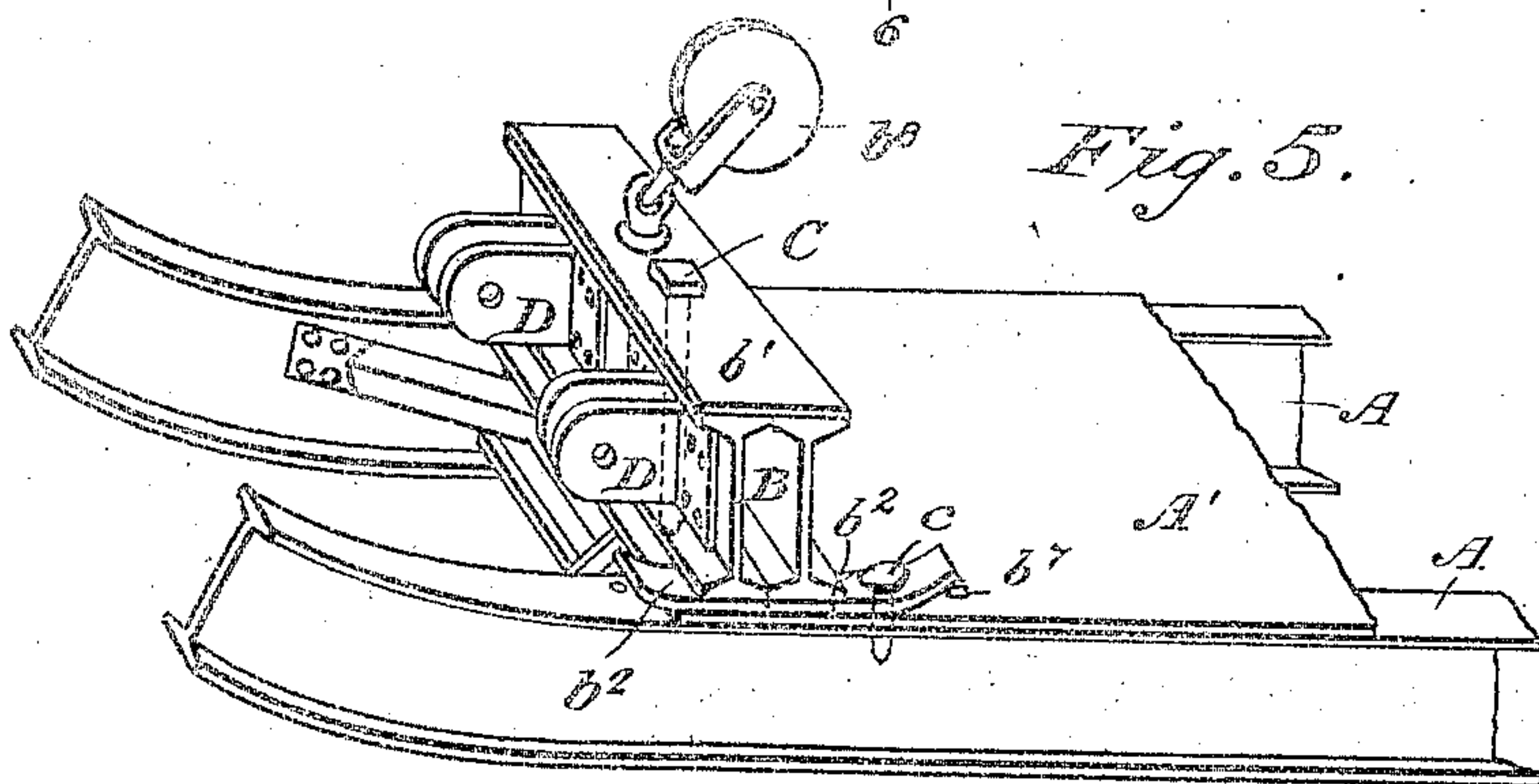
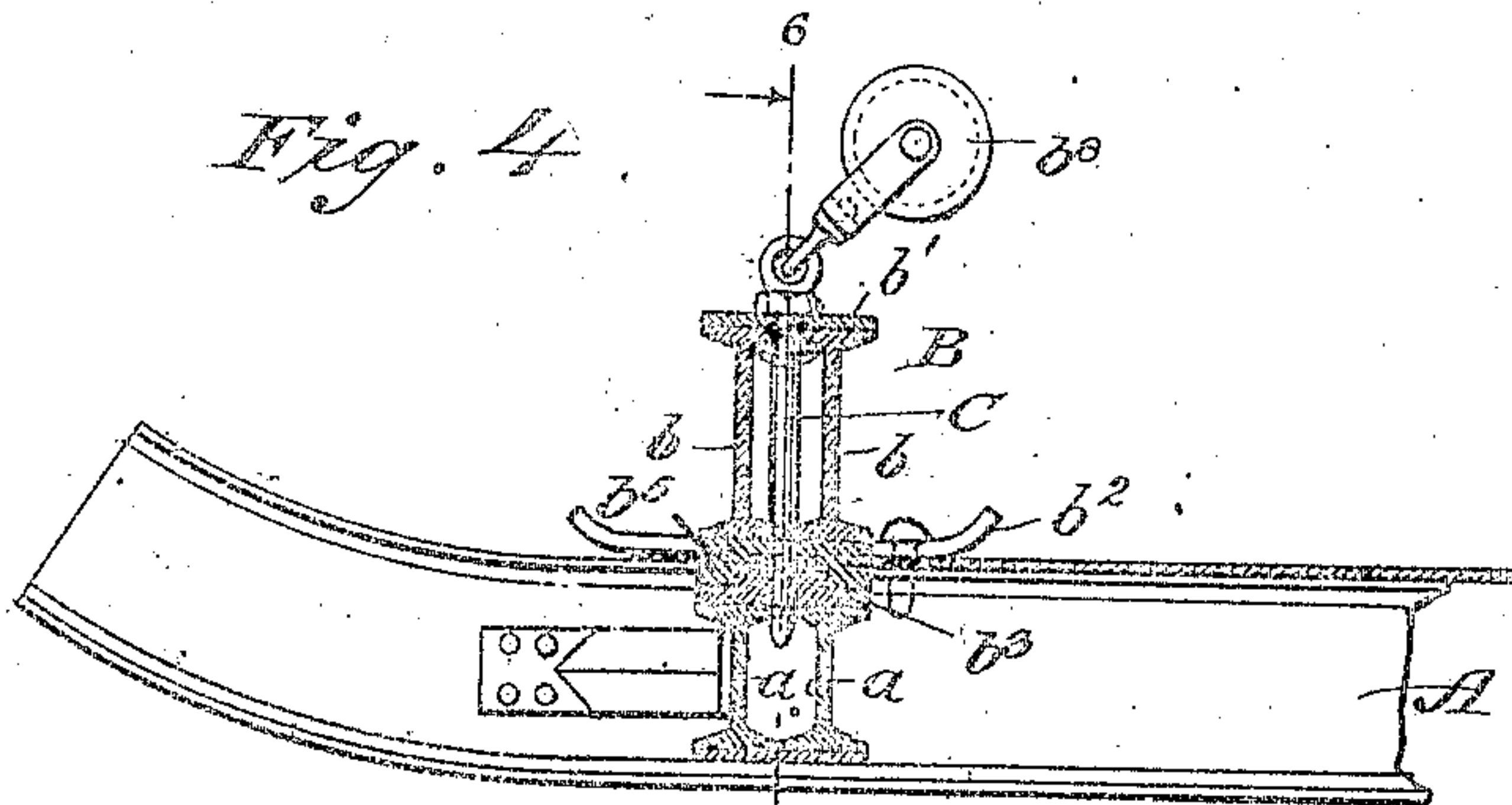
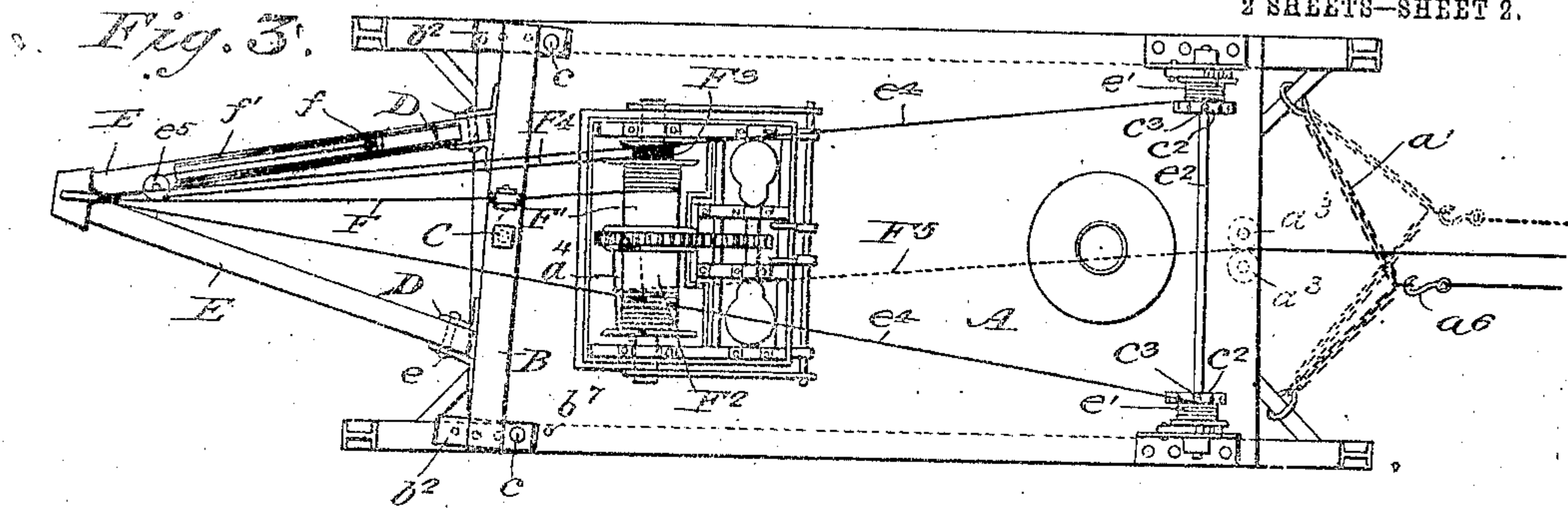
INVENTOR:
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN R. MCGIFFERT, OF DULUTH, MINNESOTA, ASSIGNOR TO CLYDE IRON WORKS, OF DULUTH, MINNESOTA, A CORPORATION OF MINNESOTA.

LOG-LOADING MACHINE.

No. 833,748.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed December 30, 1904. Serial No. 238,978.

To all whom it may concern:

Be it known that I, JOHN R. MCGIFFERT, a citizen of the United States, and a resident of Duluth, county of St. Louis, State of Minnesota, have invented a new and useful Improvement in Log-Loading Machines, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to log-loading machines, its object being to provide a log-loading device simple in operation and economical in construction.

The said invention consists principally in a modification of a log-loading machine shown and described in the application for United States Letters Patent filed by me even date herewith, Serial No. 238,977.

The said invention consists of means hereinafter fully described, and particularly set forth in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying my invention, the disclosed means, however, constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure 1 represents a perspective view of a log-loading device embodying my invention and mounted upon a flat logging-car. Fig. 2 represents a side elevation of such device similarly mounted. Fig. 3 represents a plan view of said device. Fig. 4 represents, on an enlarged scale, a sectional view of one end of the sliding base of the loader and the derrick-base attached thereto. Fig. 5 represents a perspective view of said base end and derrick-base. Fig. 6 represents a detail cross-section taken upon the plane indicated by line 6 6, Fig. 4.

The loader embodying my invention as illustrated in the drawings includes a lower sliding frame having two side members A A, preferably made of I-beams, as shown, which are provided with upturned ends, whereby the said frame may be drawn upon the surface of the ground or upon the upper surface of logging flat-cars in either direction. These I-beams or side members are connected and braced in a suitable manner to form a rigid structure and covered with a suitable flooring A', preferably steel plates, such construction

being specifically described and claimed in the above-mentioned copending application. Upon the front end of the base A and preferably immediately above two transverse I-beams *a a*, which form part of the bracing for the side members, is mounted a derrick-base B. This base consists of two transversely-located I-beams *b b*, parallel with each other and connected at their upper surface by means of a top plate *b'*, as shown in Figs. 4 and 5. The ends of the I-beams rest upon and are secured to shoes *b²*, provided with upturned ends and loosely resting upon the upper surface of the flooring and immediately above the side members or I-beams of the base, as shown. Passing vertically through openings in the top and bottom plates and the flanges of the I-beams *b b* and *a a* is a king-bolt C, which holds the derrick-base in place and at the same time permits it to have a pivotal motion upon the axis of said bolt. A pivotal bearing is formed by a lower member *b³*, secured to the top of the beams *a a* and formed with a pivot *b⁴*, and an upper member *b⁵*, secured to the bottom of the beams *b b* and formed with a socket *b⁶* for receiving the pivot *b⁴*, the flooring being cut away at this point to provide for the described construction.

A series of holes *b⁷* are drilled through the flanges of the side members of the base upon arcs having their centers upon the king-bolt axis, two of which may be caused to register, respectively, with two holes respectively formed in the shoes *b²*. By means of these registering holes and pins *c c* the said derrick-base may be fixed in various angular positions transversely of the sliding base, the said base being capable of moving upon the king-bolt axis when the pins *c c* are temporarily removed, the shoes *b²* sliding upon the loader-base during such movement. Upon the front of the forward beam *b* are secured two sockets D for receiving the lower ends of two boom members E E, joined at their upper ends, as shown. These lower ends are pivoted in the sockets by means of horizontal pins *e e*, passing through suitable holes formed in the socket-plates and boom members. The upper end of the boom, which is formed by the two boom members E E, is held by two cables *e⁴ e⁴*, which extend rearwardly and have their extremities wound upon two small drums *e' e'*, mounted to rotate separately.

rately upon a common shaft e^2 . These drums are held against rotation by suitable ratchet mechanisms and are provided with disks c^2 c^2 , having peripheral holes c^3 for receiving a bar.

5 By means of a bar and the ratchet mechanism the drums may be separately rotated to wind up the cables, and thereby raise the top of the boom, so as to cause the boom to swing toward either side of the car, as will be readily understood.

10 Mounted upon the sliding base is suitable cable-operating mechanism consisting of a boiler, an engine, and drums operated by the latter. A cable F is wound upon one of these drums F' and passes under a guiding-pulley b^8 , mounted upon the pivotal derrick-base B , passing from such guiding-pulley upwardly around a pulley e^3 , secured to the top of the boom, and thence downwardly, as shown.

20 Suitable log-gripping means are secured to the end of said cable. A second smaller drum F^3 , fixed to the shaft of drum F' , has wound upon it a cable F^4 , which passes upwardly around a block e^5 and has attached to its end a sliding weight f , which is guided in a suitable guideway f' , secured to one member of the boom. This cable is wound upon its drum in a direction opposite that in which the cable F is wound upon its drum, so that

30 the said weight tends to unwind said cable F and lower the end thereof automatically in a manner described in the above-mentioned copending application. A third cable F^5 is wound upon a third drum F^2 and passes downwardly and when in use rearwardly around a guiding drum or roller a^4 , Fig. 2, as shown in dotted lines. At the rear end of the sliding base A , transversely thereof and having its ends secured near the side members, is a chain a' , as shown in Figs. 1 and 3.

40 Two adjacent horizontal guiding-pulleys a^3 a^3 (shown in dotted lines in Fig. 3) are also provided at the rear of the base, being mounted below the floor thereof and equidistant from its central line. The axis of the guiding drum or roller a^4 , as shown in Fig. 3, is inclined to the axis of the loader, so as to be substantially at right angles with the line of the cable F^5 as it passes from such roller to

50 the guiding-pulleys a^3 a^3 .

When it is desired to move the above-described mechanism rearwardly to the next car, the cable F^5 is passed backwardly between pulleys a^3 a^3 and around a sheave a^5 , which is secured in a suitable position to the said next car. From the said sheave the cable is passed to the chain a' , and a hook a^6 , with which the cable end is provided, is attached to one of the links of the chain, as

60 shown in full lines in the drawings. By actuating the cable-operating mechanism it will be seen that the structure will be drawn backwardly, as described. When the hook is attached to the middle link of the chain,

65 the loader is drawn back in a straight line.

When the train, however, is standing upon a curve, the hook may be caused to engage a link at one side of the middle link, and the structure is thus caused to travel at an angle to its longitudinal axis. It will therefore be seen that it may be transferred under various conditions. To move the structure forwardly, the cable F^5 is passed to the next forward car around a sheave (not shown) suitably secured thereto and then passes backwardly and is attached to the chain a' , as previously described. In this manner the mechanism is moved backwardly and forwardly, as is described in said copending application.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any one of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention—

1. In a log-loading machine, the combination of a movable base, cable-operating mechanism, a cable, fixed means for receiving a running loop of said cable, and a chain secured to said base and transversely thereof to which the end of said cable may be attached.

2. In a log-loading machine, the combination of a movable base, a derrick-base pivotally mounted upon said main base, such derrick-base comprising parallel beams secured together, a derrick-boom mounted upon said derrick-base, and means for fixing said derrick-base in various angular positions with reference to said movable base.

3. In a log-loading machine, the combination of a main base provided with side members, a derrick-base pivoted upon said main base and having its ends provided with shoes slidably resting thereon, and means for fixing said derrick-base in various angular positions with reference to said main base.

4. In a log-loading machine, the combination with a main base, of a derrick-base pivotally mounted thereon, such derrick-base comprising parallel beams secured together, sockets borne thereon, and means for securing said derrick-base in various angular positions with reference to said main base.

5. In a log-loading machine, the combination with a main base, of a derrick-base pivotally mounted thereon, such derrick-base comprising parallel beams joined by plates, shoes secured to the ends thereof and slidably resting on said main base, and means for fixing said derrick-base in various angular positions with reference to said main base.

6. In a log-loading machine, the combination of a main base provided with side members, a derrick-base pivoted upon said main base and having its ends provided with shoes slidably resting thereupon, said shoes having upturned ends, and means for fixing said derrick-

rick-base in various angular positions with reference to said main base.

7. In a log-loading machine, the combination of a movable base, cable-operating mechanism mounted thereon, and including a drum, a cable wound upon the latter, and a guiding-roller on said base and below the drum adapted to receive and guide said cable.

8. In a log-loading machine, the combination of a movable base, a derrick mounted at one end of the latter, cable-operating mechanism mounted on said base, a cable operated by said mechanism, and guiding means comprising a roller below the latter adapted to receive and guide said cable, whereby the latter may be led beneath the said operating mechanism.

9. In a log-loading machine, the combination of a slidable base, a derrick-boom mounted thereon so as to swing vertically and horizontally, means for securing said boom horizontally in various angular positions relatively to said base, adjustable means for securing said boom vertically, cable-operating mechanism, a cable, fixed means for receiving a running loop of said cable, and a chain secured to said base and transversely thereof to which the end of said cable may be attached.

10. In a log-loading machine, the combination of a slidable base, a derrick-boom mounted thereon so as to swing vertically and horizontally, means for securing said boom horizontally in various angular positions relatively to said base, adjustable means for securing said boom vertically, cable-guiding means in said base, cable-operating means mounted on said base, and two cables operated thereby, one running over said boom and adapted to hoist logs, the other passing over said cable-guiding means and adapted to be looped beyond said base at either end.

11. In a log-loading machine, the combination of a slidable base, a derrick-boom mounted thereon so as to swing vertically and horizontally, means for securing said boom horizontally in various angular positions relatively to said base, adjustable means for securing said boom vertically, cable-guiding means in said base, winding-drums mounted on said base, two cables operated thereby, one running over said boom

and adapted to hoist logs, the other passing over said cable-guiding means and adapted to be looped beyond said base at either end, and means for attaching the free end of such last-named cable to said base at various angles to the axis thereof.

12. In a log-loading machine, the combination of a slidable base, a derrick-boom mounted thereon so as to swing vertically and horizontally, means for securing said boom horizontally in various angular positions, relatively to said base, adjustable means for securing said boom vertically, and log-hoisting means comprising a cable passing over said boom, a winding-drum operating said cable, a second drum connected with said first drum, and a gravity-operated cable connected with said second drum and adapted to unwind said hoisting-cable.

13. In a log-loading machine, the combination of a movable base, a cable-operating mechanism mounted on said base, a cable operated by said mechanism, and cable-guiding means, comprising a roller turning on an axis inclined relatively to the axis of said loader-base.

14. In a log-loading machine, the combination of a movable base, cable-operating mechanism mounted on said base, a cable operated thereby, and cable-guiding means comprising a roller turning on an axis inclined relatively to the axis of said loader-base, and a pair of horizontal pulleys adjacent to each other and equidistant from the center of said base.

15. In a log-loading machine, the combination of a base; cable-operating mechanism supported thereby; a cable; an element providing means whereby the latter may be attached to said base in any one of a plurality of positions in a line transverse to the longitudinal axis of the base; fixed means intermediate of the cable ends about which said cable is rove; and means for guiding said cable substantially parallel with the longitudinal axis of said base irrespective of the position in which the cable is attached to the latter.

Signed by me this 10th day of December, 1904.

JOHN R. MCGIFFERT.

Witnesses:

E. M. NORLING,
A. E. MERKEL.