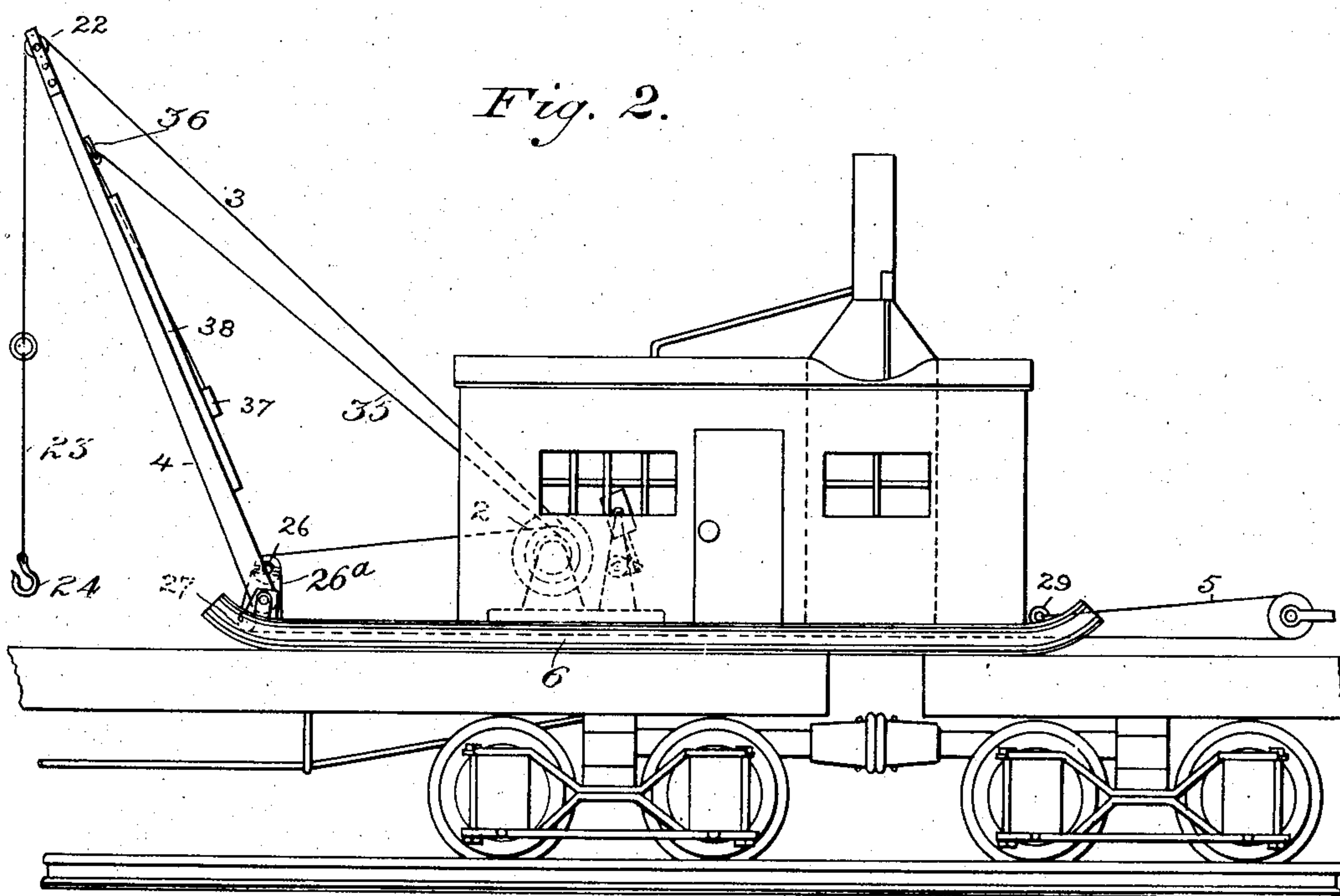
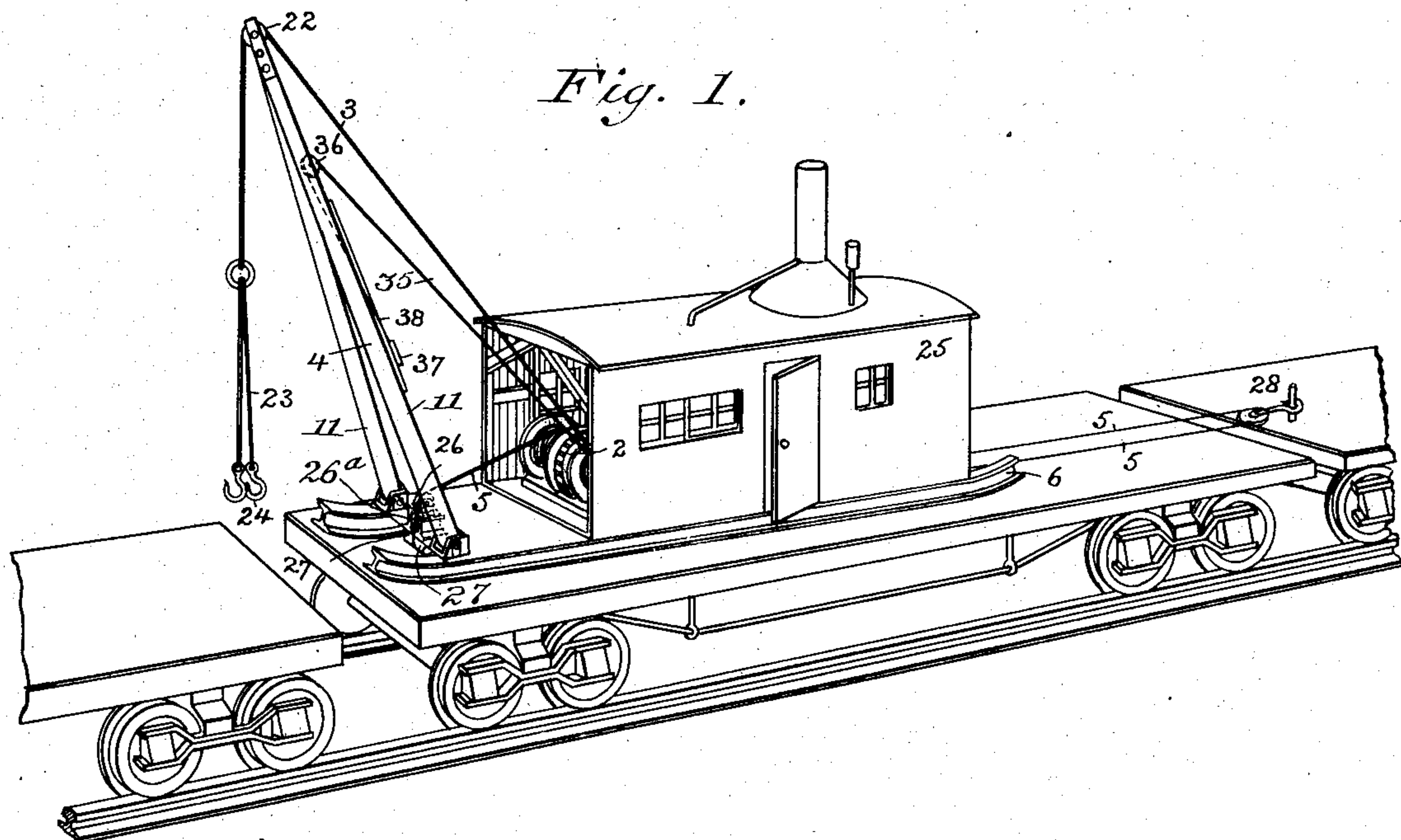


No. 833,794.

PATENTED OCT. 23, 1906.

J. R. McGIFFERT.  
PORTABLE LOG LOADER.  
APPLICATION FILED DEC. 30, 1904.

3 SHEETS—SHEET 1.



WITNESSES:

A. E. Merkel  
C. M. Norling

INVENTOR:

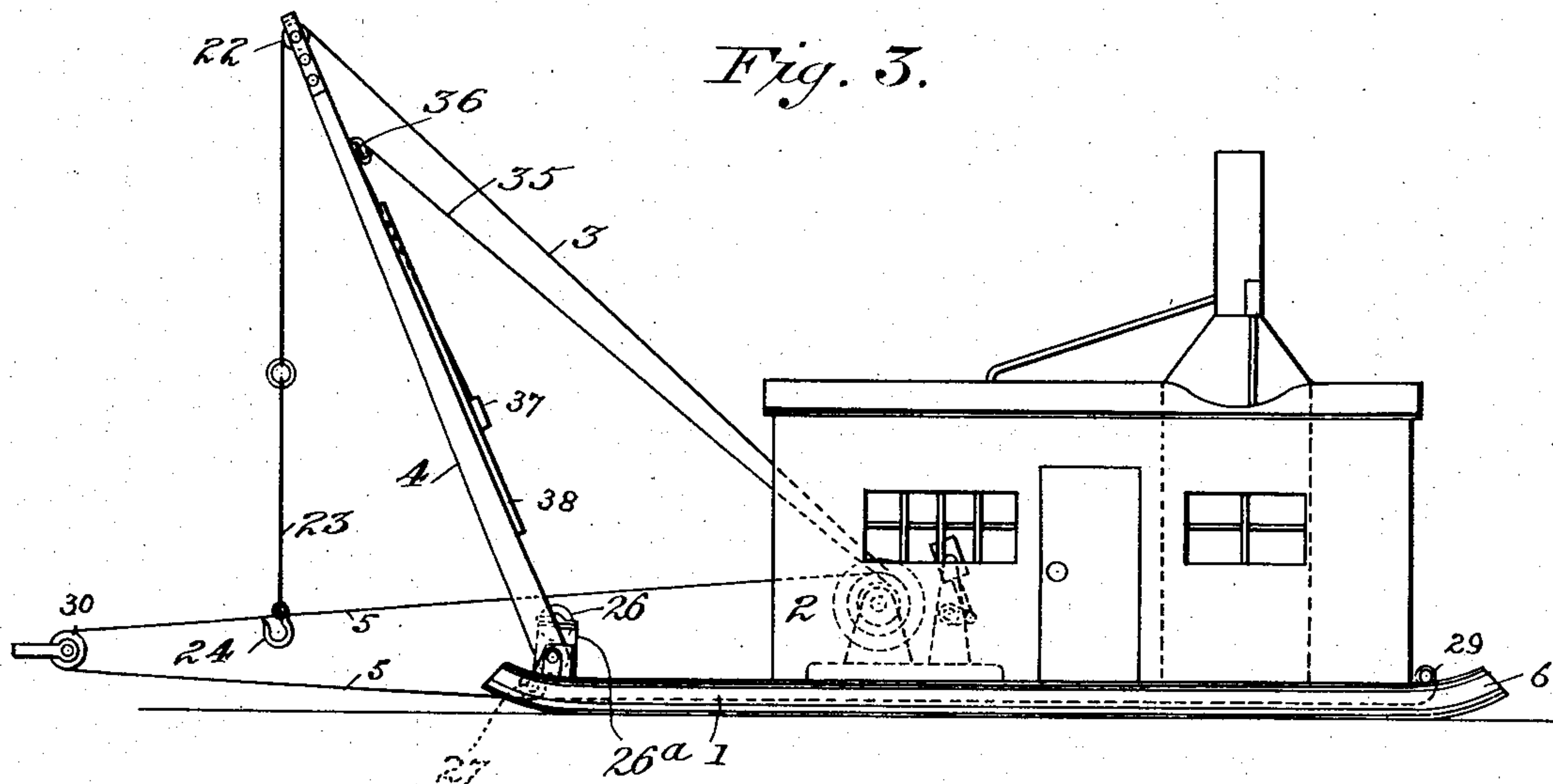
John R. McGiffert  
by his attorney  
J. D. Fay

No. 833,794.

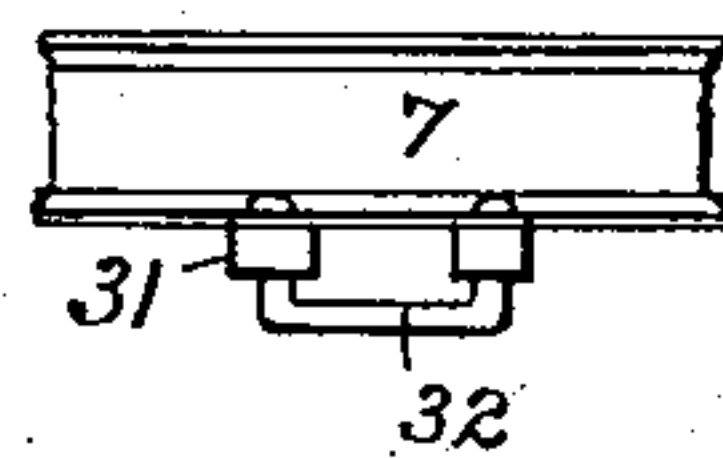
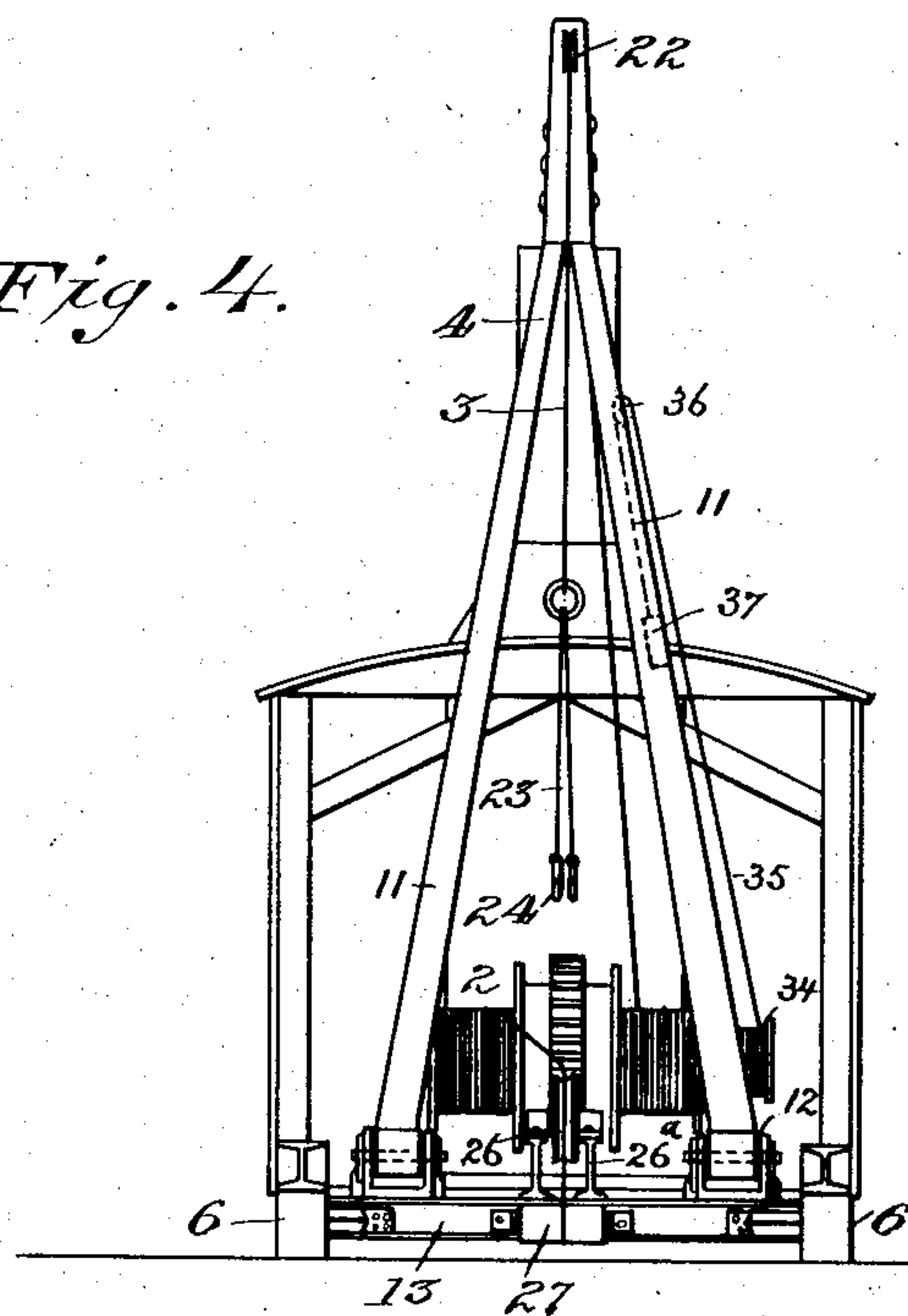
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3 SHEETS—SHEET 2.



*Fig. 4.*



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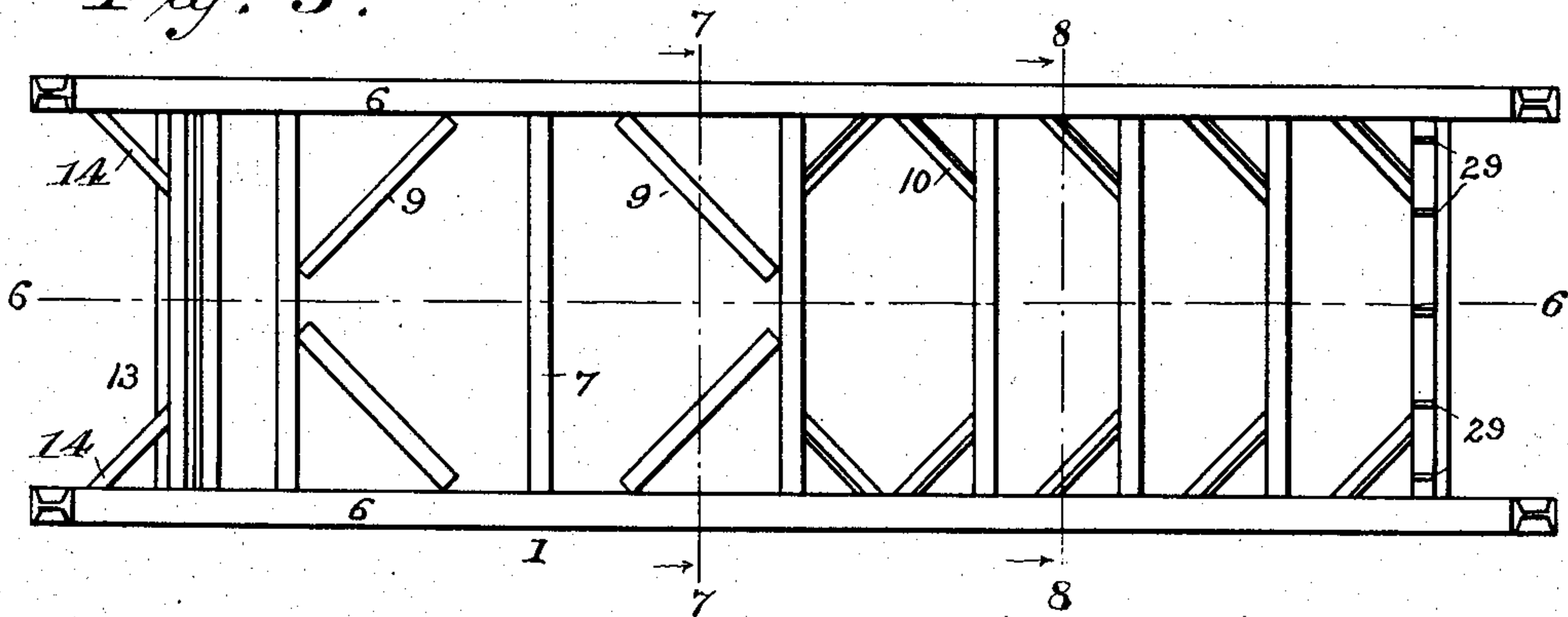
No. 833,794.

PATENTED OCT. 23, 1906.

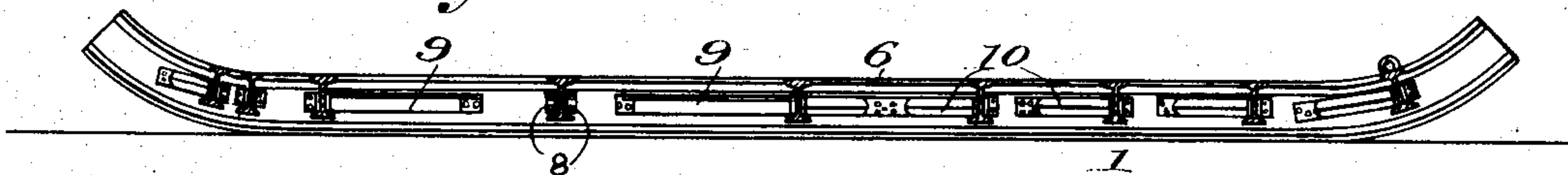
J. R. McGIFFERT.  
PORTABLE LOG LOADER.  
APPLICATION FILED DEC. 30, 1904,

3 SHEETS—SHEET 3.

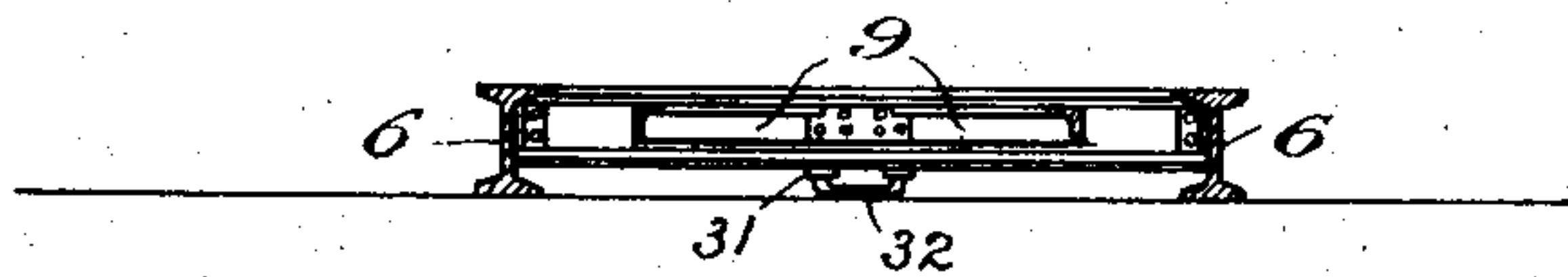
*Fig. 5.*



*Fig. 6.*



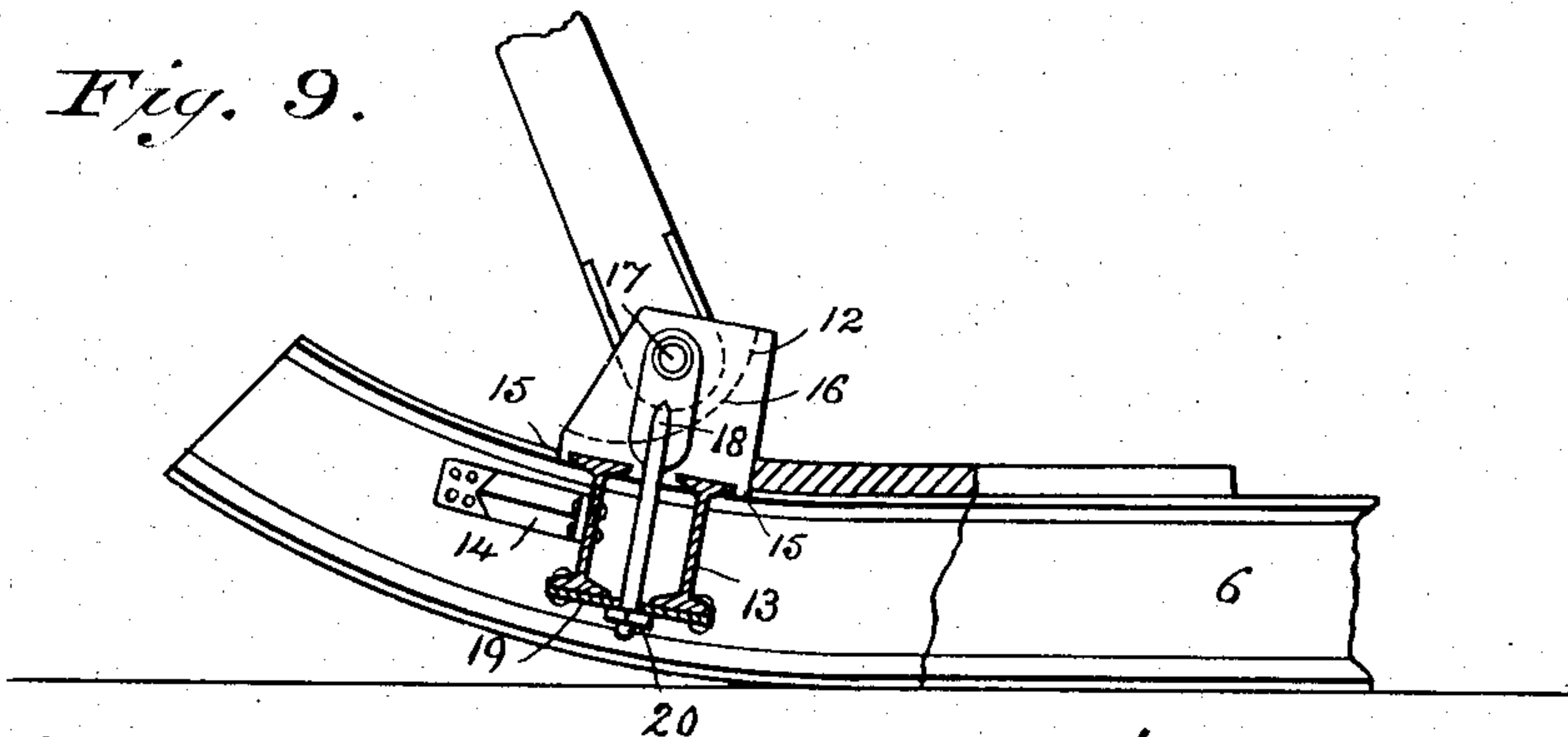
*Fig. 7.*



*Fig. 8.*



*Fig. 9.*



WITNESSES:

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INVENTOR:

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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.

## PORTABLE LOG-LOADER.

No. 833,794.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed December 30, 1904. Serial No. 238,977.

*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 Portable Log-Loaders, 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.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means 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 my improved log-loader located upon a logging-train and in position for operation. Fig. 2 represents a side elevation of the loader, showing the same when it is being moved from one car of a train to another. Fig. 3 represents a side elevation of the loader, showing the tackle and hauling-cable arranged to pull the loader in an opposite direction from that shown in Fig. 2. Fig. 4 represents an end elevation of the loader looking at the derrick end thereof. Fig. 5 represents a top plan view of the structural steel or iron base of the loader. Fig. 6 represents a longitudinal vertical central section through the same, taken on lines 6 6 of Fig. 5. Fig. 7 represents a transverse vertical section taken upon the line 7 7 of Fig. 5. Fig. 8 represents a similar transverse sectional view taking upon the line 8 8 of Fig. 5. Fig. 9 represents an enlarged detailed view, partially in section and partially in elevation, showing the mounting of one of the derrick-sockets. Fig. 10 represents a detailed view showing a portion of one of the cross-bars of the derrick-base and illustrating guide-pulleys used in directing the position of the hauling-cable.

This invention contemplates the provision of an apparatus which is so constructed that it may be located upon one of the flat logging-cars of a logging-train, so as to be moved along with the same train as it is being loaded, the device at the same time being capable of ready movement from one car to another of the train as the successive cars become loaded.

In the accompanying drawings I have illustrated my invention as developed in a practical form, in which is shown a supporting-base 1, formed preferably of iron or steel. This base carries a hoisting mechanism 2, which may be of ordinary construction and which is capable of operating a hoisting rope or cable 3, the said rope or cable passing over a sheave or pulley carried by a derrick 4. The base also carries means for properly directing the hauling-cable 5, which can be readily adjusted so that the hoisting means may be utilized for operating the loader in either direction.

The base 1 is usually formed of side beams or runners 6, which I in practice prefer to make I-beams. These runners are turned upwardly at their ends a suitable distance to facilitate the movements of the base back and forth upon the logging-cars or upon the ground, as may be desired. The runners 6 are connected at intervals by cross-beams 7, which are preferably also of I-beams, the latter being bolted or riveted at their ends to the runners 6. I preferably connect these transverse beams 7 with the runners 6 by means of angle-plates 8, which are riveted to the webs of the transverse beams 7 and also to the webs of the runners 6. The transverse beam 7 should be made, as illustrated in the drawings, of less depth than the runners, so as to give ample clearance between them, and thus facilitate the movement of the base upon the flanges of the runners, the structure being further braced by means of diagonal corner brace-bars 9 and 10. The brace-bars 9, which are preferably of angle-iron, have one of their flanges cut away at the end, so that the other flange may be bent at such an angle as to lie snugly against the webs of the transverse beams and the runners, to which webs these ends are riveted or bolted. The corner-braces 10 I also prefer to form of angle-bars; but their ends are flattened and bent to one side, so as to hold the angle-bars with their edges at the top and bottom, as shown in Fig. 8. The end flanges in this instance are also riveted or bolted to the webs of the transverse beams and the runners of the base. By means of these braces the base is made exceedingly strong and stiffened against strains in all directions.

At one end of the base is mounted a suitable derrick-boom 4, which is preferably formed



of a pair of beams or poles 11, which meet at their upper ends and are there secured together in a suitable manner, while at their lower end they are spread apart and are pivotally mounted in sockets. The latter are supported by transverse bars or beams 13, mounted upon the runners 6. These beams are preferably two in number and are placed comparatively close together and are braced at their ends by diagonally-arranged brace-bars 14, Fig. 9. These bars support the socket-plates 12 of the derrick 4. The socket-plates 12 are formed with downwardly-projecting flanges 15, which overhang the outer flanges of the beams 13, as clearly shown in Fig. 9. The socket-plates are preferably formed with upwardly-opening sockets in their upper surfaces, which may be curved at the bottom, as indicated at 16, the side walls of the socket receiving the lower end of the derrick 4. A pivot-pin 17 is passed through the said side walls and the end of the derrick, whereby the derrick is pivotally secured to the base. Eyebolts 18 serve the double purpose of holding the socket-plates or boxes 12 in position, as well as the pivot-pin 17 of the derrick. The upper end of the derrick carries a sheave or pulley 22, over which the hoisting-cable 3 passes, one end of said cable running to the hoisting-engine 2, while the other end carries a crotch chain or cable 23, provided with log-gripping hooks 24 at its ends. Suitable means (not shown) for raising and lowering the derrick and for holding it in any desired position are provided. Such means would preferably consist of guy-ropes attached at one end to the end of the derrick and secured at the other to the rear portion of the base.

The hoisting-engine is preferably inclosed in a suitable housing, as 25, the end of which is open to permit the hoisting and hauling cables to enter the housing, as shown in Figs. 1, 2, and 3.

The log-loader by virtue of the base described, with the runners provided with up-turned ends, is especially adapted for use upon the tops of flat-cars commonly used for logging purposes. The loader is designed to rest upon the top of these cars and to be moved from one car to the other as the cars of the train are successively loaded with logs. The elongated runners or I-beams 6 easily reach across the space between the cars and are of ample strength to support the weight of the machinery carried thereon. The runners form good support for permitting the loader to slide along the surface of the cars. The hoisting machinery is employed for drawing the log-loading mechanism from one place to the other. When it is desired to move the loader backwardly upon the cars, the hauling-cable 5 is carried over pulley 26, which is mounted upon standards 26<sup>a</sup>, secured to the beams 13, and thence passes downwardly

around a roller 27 and backwardly beneath the base 1 to a sheave 28, secured at any point to the rear of the loader. (See Fig. 1.) The cable passes around the said pulley and then to the rear end of the loader, where it is secured to any one of a series of eyes 29. By operating the hoisting mechanism to wind in the hauling-cable 5 the machine is pulled toward the sheave or pulley 28. When it is desired to move the loader in the opposite direction, a sheave or pulley 30 is employed, arranged some distance in front of the loader, and the cable after passing beneath the base 1 from the rear end thereof passes over said pulley 30 and then to the drum of the hoisting-engine, so that when the said engine winds in the cable the loader will be pulled toward the pulley or sheave 30, as indicated in Fig. 3. It will thus be seen that the hoisting mechanism can be employed for pulling the loader in either direction and by means of the eyes 29 the cable may be attached at various points along a line running transversely of the base, whereby the loader may be caused to move angularly with reference to its longitudinal center line. The roller 27 is preferably an elongated one and is pivotally mounted on the front of the front cross-beam 13. The sheave or pulley 26 is so mounted as to have considerable lateral play between the standards 26<sup>a</sup>, which support said pulley, so that the pulley will accommodate itself to the position of the hauling-cable as it comes from the drum of the hoisting-engine 2. The hauling-cable 5 in passing beneath the base 1 is guided by parallel pulleys 31, which are supported by a U-shaped bolt or bar 32, secured to the under surface of one of the transverse beams 7. These pulleys thus keep the cable in a central position beneath the base 1.

The attachment of the hauling-cable to the rear end of the loader is made adjustable, the said cable being preferably provided with a hook or other attaching means at its end, so that it may be secured to any one of a series of eyes or other securing means 29, arranged upon the rear transverse beam 7 of the base. When the loader is to be pulled in a straight line from one point to another, the cable is secured to the central eye or fastener 29. If, however, the train upon which the loader is mounted is standing upon a curve, so that the loader should be moved in a direction at an angle to its original position, the end of the cable 5 is secured to one of the eyes or fasteners upon either side of the center eye and at such a distance therefrom as may be required for giving the proper direction to the loader. In this simple manner the movement of said loader can be easily and completely adjusted to suit the varying conditions.

The hoisting-engine 2 employed is preferably provided with a plurality of cables and drums, one of said drums winding the hoist-



ing-cable 3 in and out, while the other operates the hauling-cable 5. In operating the hoisting-cable 3 it is preferable to have means for quickly unwinding the cable from the drum of the engine after the load has been deposited upon the car, so that the cable can be easily and quickly pulled again to the point where a new load is to be received. For accomplishing this quick return of the cable I provide one of the drums with a smaller drum 34, upon which is wound a return-cable 35. This cable passes upwardly to a pulley or sheave 36, mounted upon one leg of the derrick, and thence to a weight 37. The weight 37 slides in a guideway 38, secured to the leg of the derrick which carries the sheave 36, and when the hoisting-drum is released from the engine, so that it may run free, the weight 37 will descend in the guideway 38 and unwind the drum 34, which is attached to the hoisting-drum of the engine. Since the diameter of the drum 34 is less than the diameter of the hoisting-drum, the weight will not be raised to as great a height as the crotch-chain is raised by the cable 3. When the hoisting-drum is released, the weight operating upon the drum 34, of less diameter than the hoisting-drum, will move the said drum very quickly, and the hoisting-cable can be rapidly paid out. In this simple manner the hoisting-rope can be drawn upwardly for obtaining a new log or other load by the operator controlling the crotch-chain without excessive labor and in an expeditious manner.

In operating my improved loader it is preferably mounted upon the flat logging-cars of a logging-train, though of course it can be used upon the ground, the runners facilitating its movement from place to place, while the hauling-cable can be attached to objects secured to the ground.

In beginning to load a train the loader is placed near one end of the train—say upon the second car of the train—so that its derrick-boom overhangs the first car in the train. The train is then moved opposite the piles of logs at the side of the track, and the derrick is used for hoisting the logs and placing them upon the first car. After the first car has been loaded the hauling-cable is carried to the sheave 28, which is secured to one of the cars upon the rear portion of the train. By operating the engine in the housing the cable 5 will be caused to draw the loader upon its runners 6 from the second car to the third car, so that the said loader is then in position to load logs upon the second car, which it previously occupied. This operation is continued until all the cars in the train have been loaded except the last car, which carries the loader.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as re-

gards 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 portable log-loader, the combination with a slidable base, of means carried thereby for pulling said base at various angles to its longitudinal axis.

2. In a portable log-loader, the combination with a slidable base, of means carried thereby for pulling said base in either direction at various angles to its longitudinal axis.

3. In a portable log-loader, the combination with a base formed with runners of means mounted upon said base for pulling said loader, said base being provided with means whereby said pulling means may be attached thereto at various points in a line transverse relatively to said base.

4. In a portable log-loader, the combination of a base formed with runners, of hoisting mechanism mounted upon said base, a cable connected with said mechanism and means whereby said cable may be attached to one end of said base at various points in a line transverse relatively to said base.

5. In a portable log-loader, the combination with a base formed of side structural beams serving as runners and cross-beams rigidly connecting the same, said cross-beams being of a less depth than said side beams; of laterally-adjustable means carried by said base for pulling it from place to place at various angles to its longitudinal center line.

6. In a portable log-loader, the combination with a base formed of side beams having vertical webs and horizontal flanges and cross-beams connecting such side beams at their upper edges, the lower edges of said side beams projecting below said cross-beams and forming runners for the base; of adjustable means carried by said base adapted to pull the loader in either direction at various angles to its longitudinal axis.

7. In a portable log-loader, the combination with a base formed of longitudinally-disposed I-beams having their ends turned upwardly to form runners, transversely-disposed beams joining the upper edges of said I-beams, and diagonal braces between said longitudinal and transverse beams; of laterally-adjustable means carried by the loader and adapted to guide the same at different angles to its longitudinal axis.

8. In a portable log-loader, the combination with a slidable base, of a hauling mechanism mounted thereon, such hauling mechanism comprising a winding-drum, a cable having one end attached to said drum and the other end to said base, and cable-directing means arranged to permit the looping of said cable at either end of said base.

9. In a portable log-loader, the combina-



tion of a supporting-base, an engine, and drum operated thereby, both mounted upon said base, a cable wound upon said drum, a guiding-pulley on the front of the base adapted to receive said cable and a guiding-pulley beneath said base also adapted to receive said cable.

10. In a portable log-base, the combination of a frame forming a supporting-base and provided with runners, an engine carried by said base, hoisting means including a cable operated by said engine, the said cable passing around one end of the base, and thence beneath it to the other end, so that it may be extended at either end of the said base and employed for pulling the loader in either direction; and laterally-adjustable guiding means for said cable.

11. In a portable log-loader, the combination of a base formed of side beams made of structural material of suitable depth, transversely-disposed commercially-rolled beams of a less depth than said runners connecting the upper edges of the side beams or runners, a derrick supported on said base, a hoisting-engine also mounted thereon, and an operating-cable extending from the engine and around one end of the base and then to the other end thereof for use in pulling the loader in either direction.

12. In a portable log-loader, the combination with a base formed of side beams having flat bottom portions and upturned ends, such beams serving as runners, transversely-disposed I-beams of a less depth than said side beams connecting the same at their upper edges, and diagonal angle-braces joining said transverse beams and runners; of means carried by the base for moving it from place to place, said means being adapted to effect such movement at varying angles.

13. In a portable log-loader, the combination of a base formed of structural bars secured together, the side bars being of greater depth than the other bars so as to form runners, an engine mounted on said base, a winding-drum operable by said engine, guide-pulleys carried by said base, a cable extending from the drum around said pulleys and beneath said base, such cable being connected with the base in such a manner that it may be looped at either end of the loader, and means for laterally varying the point of attachment of said cable to said base.

14. In a portable log-loader, a base formed of structural material, and comprising the combination of side flanged beams forming runners, transverse beams connecting the runners made of less depth than the runners so as not to touch the surface over which the loader is moving, corner-braces applied to the webs of the transverse beams and the runners for strengthening the structure, and hoisting means carried by the said base.

15. In a portable log-loader, the combina-

tion of a base formed of structural material, the side beams of said base being deeper than the other beams of said base and forming runners, an engine carried by the base, a pulley supported above one end of the base, an antifriction-roller below the same at the lower edge of the said base end and a cable extending from the engine over the pulley and about the roller to the other end of the base, whereby the cable may be looped at either end of the loader for pulling it in either direction.

16. In a portable log-loader, the combination of a base formed of structural metal comprising transverse and longitudinal beams secured together; socket-plates mounted on the transverse beams of said base, such socket-plates having flanges for engaging such transverse beams; eyebolts for holding said socket-plates in position; a derrick having its lower ends mounted in said socket-plates; and pivot-pins for holding such derrick ends in said socket-plates.

17. In a portable log-loader, the combination of a slidable or moving base, a hauling-engine and drum carried by said base, a hauling-cable wound upon said drum, a pulley for directing the same around the end of the base, means for directing the cable toward either end of the base, means for securing the cable to said base and means for holding the cable in such relation to the ends of the loader that the latter may be pulled in one direction or the other upon the logging-cars of a train.

18. In a portable log-loader, the combination of a movable base, hoisting mechanism, including a drum, mounted thereon, a hoisting-cable engaging said drum, directing and guiding means mounted on the base, a sheave positioned beyond the end of the frame, the said cable being passed over the same, and means for securing the end of the cable to the end of the frame.

19. In a portable log-loader, the combination of a base provided with runners upon which it may be moved from car to car upon the logging-train, a hauling-engine carried by said base, means at one end of the base for directing the cable about said end, a sheave located beyond the other end of the base around which the cable is passed, a series of eyes or connecting means secured at different places transversely of the base, and means for securing the end of the cable into one or the other of said connecting means at the center or upon either side thereof to direct the movement of the loader in a straight line or in an angular direction.

20. In a portable log-loader, the combination of a sliding base, a derrick carried near one end thereof, a hoisting engine and drum, a hoisting rope or cable extending from said drum over the upper end of the derrick and thence downwardly, and means carried by a



beam of the derrick for assisting in unwinding the cable comprising a second cable, and a weight sliding on said beam for operating the said second cable.

5 21. In a portable log-loader, the combination of a base, a derrick on one end thereof, hoisting mechanism including a drum carried by the base, a quick-return cable connected with said drum and extending over a sheave  
10 upon the derrick, a weight sliding upon the derrick and means carried by the derrick for guiding the said weight.

22. In a portable log-loading machine, the combination of a base, a pivoted derrick  
15 thereon, a hoisting-engine, a hoisting-drum,

a smaller drum mounted upon the shaft of the hoisting - drum, a quick - return cable wound upon said smaller drum, a sheave carried by the derrick for guiding the said quick-return cable, a guideway secured to the said 20 derrick and a weight at the end of the quick-return cable moving in said guideway and assisting in unwinding the hoisting-cable from its drum.

Signed by me this 10th day of December, 25  
1904.

JOHN R. MCGIFFERT.

Attest:

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