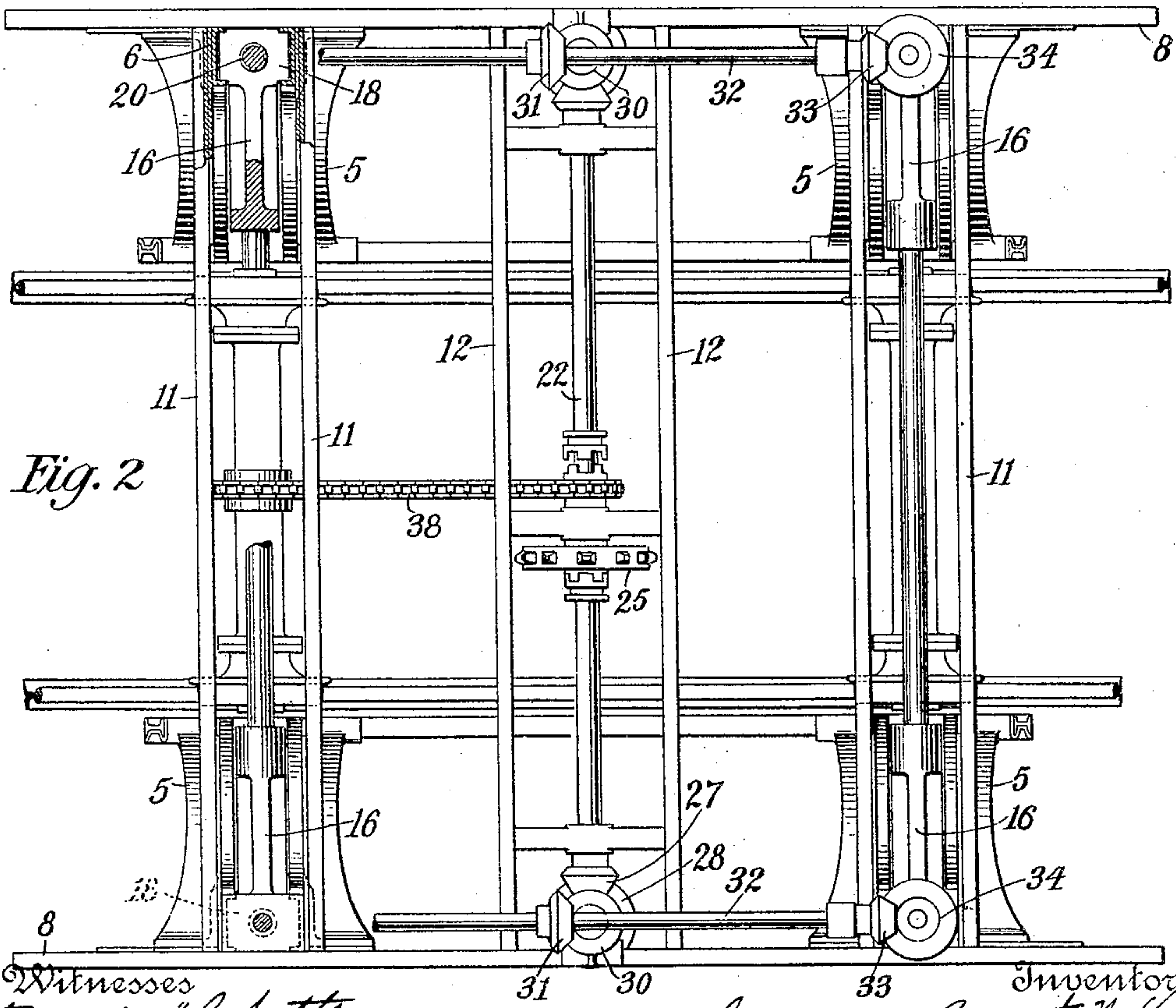
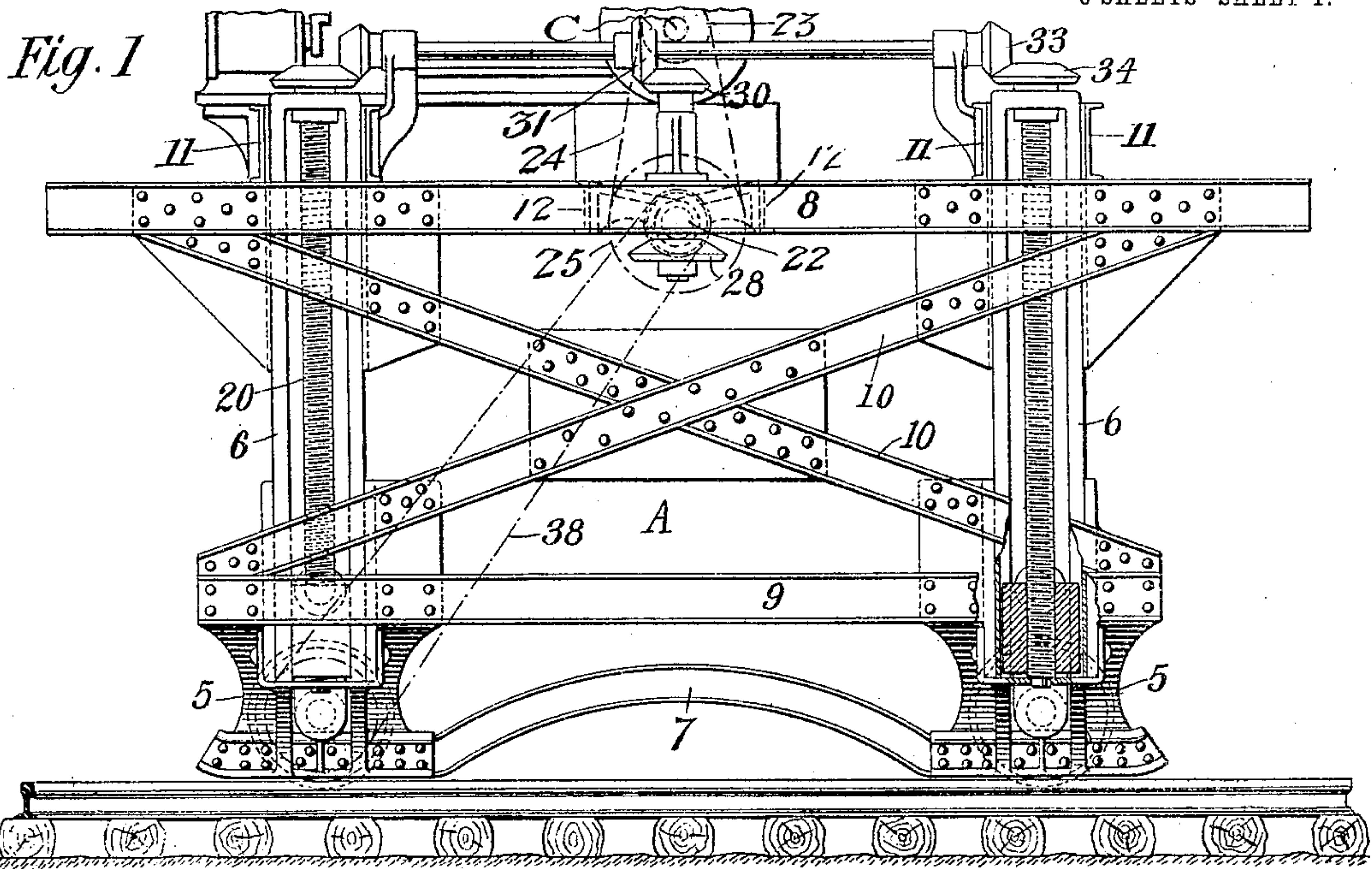


A. W. KURZ.  
LOG LOADING APPARATUS.  
APPLICATION FILED JUNE 28, 1905.

940,331.

Patented Nov. 16, 1909.

3 SHEETS—SHEET 1.



Witnesses  
Raphael Kitter  
P. B. Caramazza

Inventor  
August W. Kurz  
By his Attorneys  
Lifford & Bell

Fig. 3

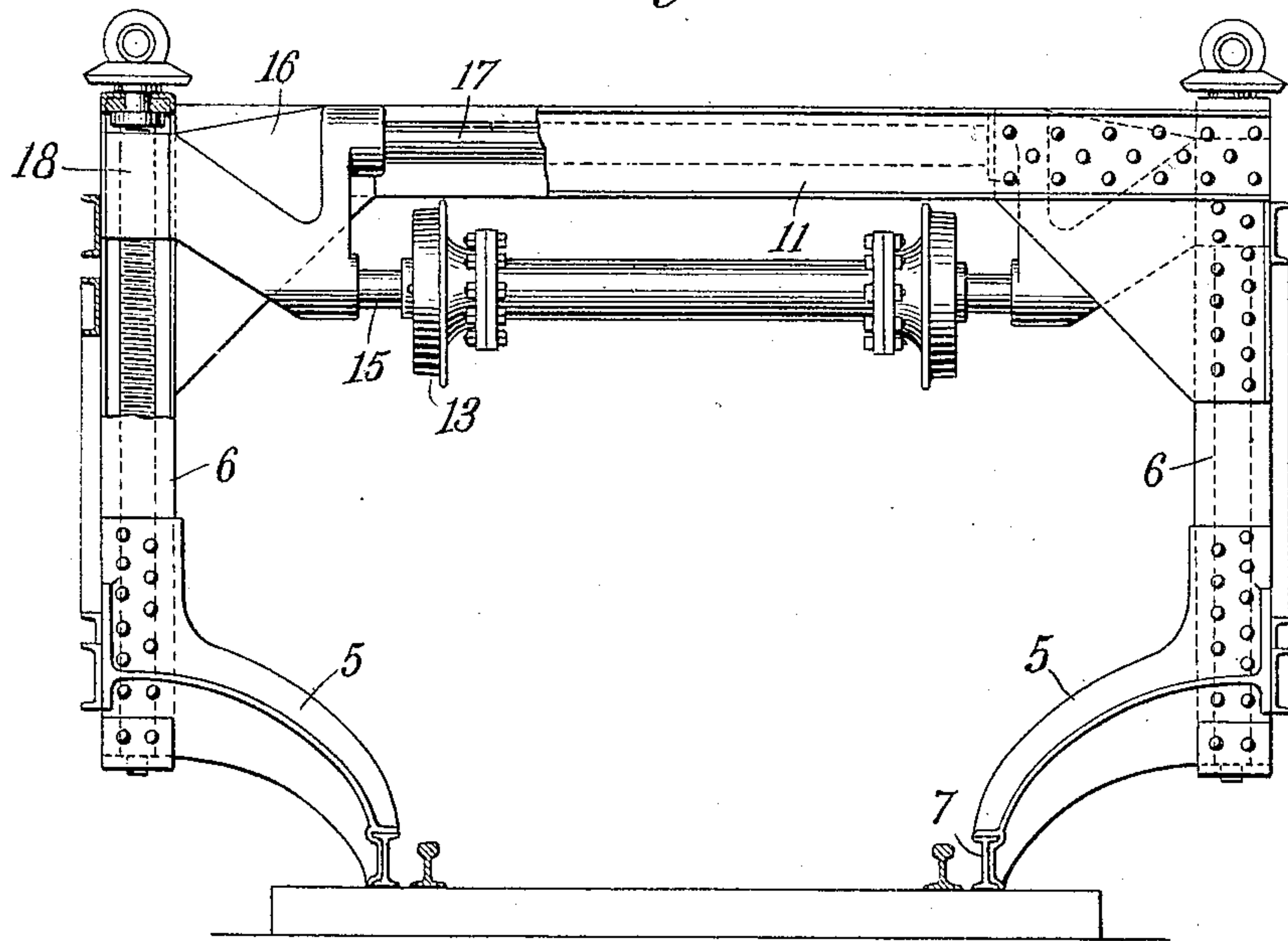
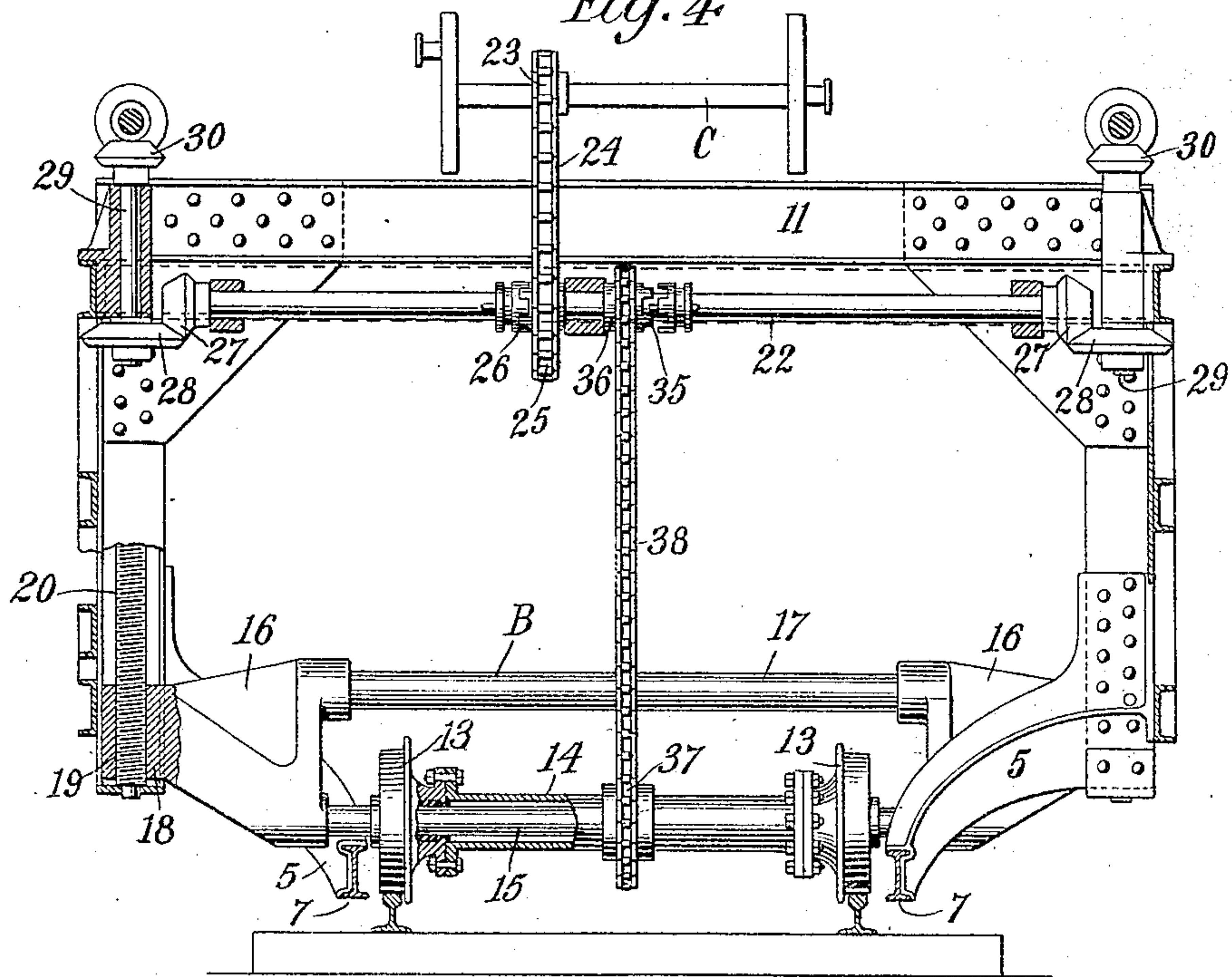


Fig. 4



Witnesses  
Raphael Ketley  
P. D. Caranagh.

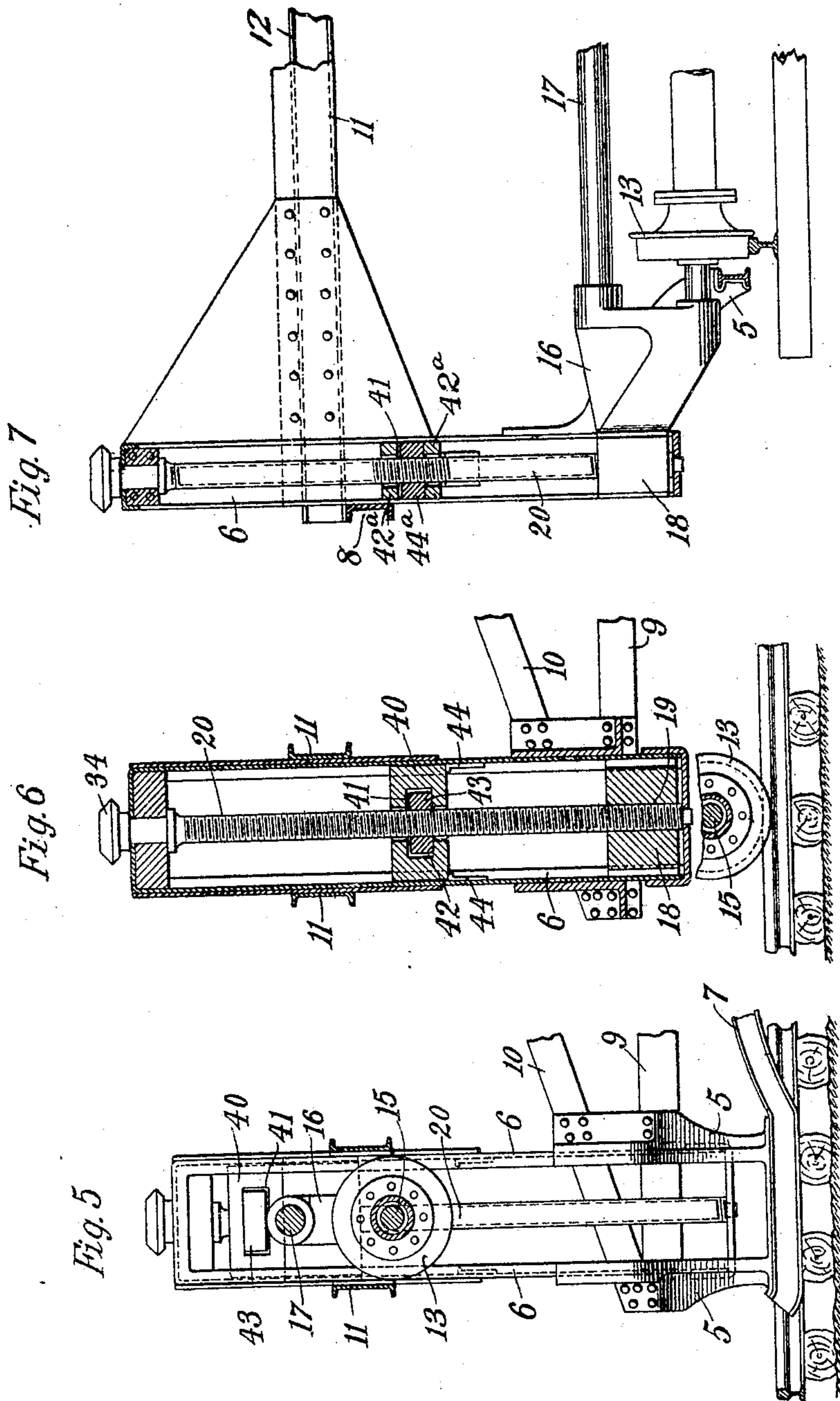
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Witnesses  
Raphael Ketter  
R. B. Cavanagh

Inventor  
August W. Kurz.  
By his Attorneys  
Lippard & Bull



# UNITED STATES PATENT OFFICE.

AUGUST W. KURZ, OF CLEVELAND, OHIO.

## LOG-LOADING APPARATUS.

940,331.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed June 28, 1905. Serial No. 267,336.

*To all whom it may concern:*

Be it known that I, AUGUST W. KURZ, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Log-Loading Apparatus, of which the following is a specification.

The present invention relates to certain novel and useful improvements in an apparatus for loading and unloading cars and has a special reference to a machine for handling timber and logs.

In carrying out the present invention I have especially in view so constructing a machine which will embody the essential and desired features of simplicity and durability and one which may be operated with economy.

My invention consists in the construction, combination and arrangement of parts set forth in, and falling within scope of, appended claims.

While I have herein shown and described one particular embodiment of my invention, I wish it to be understood that I do not confine myself to all the precise details of construction herein set forth, as there may be modifications and variations in some respects without departing from the spirit or scope of the invention.

In the accompanying drawings wherein for the purpose of illustration I have delineated the preferred embodiment of my invention, like characters of reference indicate like parts in all of the views and Figure 1 is a view in side elevation of my improved apparatus, certain parts thereof being removed. Fig. 2 is a top plan view of the same. Fig. 3 is a view partly in end elevation and partly in section with certain of the parts and attachments of the machine removed, such view showing the traction wheels in an elevated position. Fig. 4 is a vertical sectional view taken through the machine such view showing the traction wheels in their lowered operative position, such view also showing the driving connections from the engine. Figs. 5 and 6 are detail views, in vertical longitudinal section, of a slightly modified form of posts which may be used in connection with the apparatus; Fig. 7 is a transverse longitudinal section of another modified form of post.

Referring now to the accompanying drawings in detail, the letter A indicates the

frame of the machine as an entirety, such frame comprising the inwardly projecting base members 5, there being one of such members for each of the vertically disposed posts or standards, 6. In the present machine I have shown four of such standards, and each is preferably tubular in construction for the purpose hereinafter set forth and each standard has a slotted face to permit of the vertical movement of the wheel supporting frame. Connecting the inwardly disposed base members and extending parallel with the track are the brace bars 7. The frame is further formed by the horizontally arranged upper and lower I beams or bars 8 and 9, respectively, which are connected by the diagonal braces 10, it being understood that the bars and braces are provided for each side of the machine and extend parallel with the track. Transverse or end bars of the frame are shown at 11. If desired, any number of braces or strengthening struts may be employed and I have found it desirable to employ a number of transverse bars extending vertically across the top of the machine, as shown at 12. These may assist, with the end bars, in supporting a suitable flooring or platform upon which may be placed the engine employed for the logging operation and the engine may also be used to operate the device for raising and lowering the traction wheels.

In apparatus of this class it is desirable to transport the same from place to place along a railway track and when the point of use has been reached, to establish the machine while in operation. To accomplish this end it is necessary to move the traction wheels into and away from contact with the rails accordingly as the machine is being transported or is stationary. To accomplish this result I have devised the following arrangement: The traction wheels, which are designated by the numeral 13, are secured to the sleeve 14 surrounding the axle 15, which axle is mounted in the movable frame B. There are two of these frames, one for each pair of traction wheels and for the sake of convenience I have designated these "the wheel supporting frames." Each frame comprises the two oppositely disposed head blocks 16 connected by the horizontal tie bar 17, the axle 15 of the traction wheels being mounted in the frame below the bar. Each head block is also formed with an extension 18 at the end thereof designed to



project through the vertical slotted portion of the adjacent post or standard of the main frame and this extension 18 is also provided with a vertical threaded bore 19 designed to permit the passage and engagement of the revolving screw shaft 20. It is through the actuation of these screw shafts, that the traction wheels of the machine are raised and lowered. To impart motion to these shafts and thus accomplish the elevation or lowering of the wheel supporting frames, any suitable arrangement of mechanism may be employed and in the present instance I accomplish this by the following means: C indicates conventionally the power shaft of an engine mounted upon the platform, or top, of the frame, and from this shaft power is transmitted to the counter shaft 22, by means of sprocket 23 and the drive chain 24, said latter chain passing around the sprocket 25 forming part of the sprocket clutch 26, through the medium of which the drive chain may be placed in, or thrown out of, driving connection with the shaft 22 in a manner well understood. Each end of the counter shaft 22 is provided with a bevel gear 27 adapted to mesh with a similar bevel gear 28 secured at the end of the small stub shaft 29. These stub shafts 29 are also provided at their upper ends with small gear wheels 30, meshing with the gear wheels 31, arranged approximately centrally of the horizontally disposed shafts 32, which latter extend longitudinally of the frame. Each of the shafts 32 has at its ends bevel gears 33 adapted to mesh with and impart motion to the gears 34 rigidly secured to the top of the screw shafts 20. By this arrangement of shafts and gears it will be observed that when the counter shaft is driven to operate the screw shaft and thus raise or lower the gear frames, motion will be imparted from such counter shaft through the gearing to the horizontally disposed shafts at the sides of the frame and thence to the vertically arranged screw shafts.

The mechanism for driving the propelling, or traction wheels, when in position upon the track, to transport the apparatus from place to place, is as follows: 35 is an ordinary two part clutch member mounted upon the counter shaft 22, one portion of which clutch carries a sprocket 36. This sprocket is operatively connected with a sprocket 37 carried by the axle sleeve 14, through the medium of the drive chain 38. When the wheels have been lowered to the track and it is desired to move the apparatus, the clutch 26 is shifted to disconnect the engine from driving engagement with the vertically disposed screw shafts and the clutch 35 is operated to place the engine in driving engagement with the chain 38 and thus impart power to the wheels. Owing to the heavy loads which the frame

must bear and the strain which is placed upon the screw shafts, it is desirable to support these shafts in a manner to prevent the buckling or bending of the same and to accomplish this I arrange within each of the posts or standards, a sliding block 40 having an opening 41 and each of such blocks is formed with a central cavity or chamber 42 for the reception of the threaded nut 43 through which the shaft is passed.

44 indicates rests or stops to limit the downward movement of the traveling block, the upward movement of such block being limited by the top portion of the standard, as is shown in Fig. 5. Presuming the supporting brace or staying block to be in the position indicated in Fig. 6 and the operation of raising the wheel frames and the wheels to be in progress, it will be noted that when the extended portion 18 of the head block 16 reaches the stay block 44 it will push the latter upward and carry it until its travel is limited by the top of the frame. Likewise, when the wheels are being lowered, the block will be fed downward by the operation of the screw upon the nut 43 until such block reaches its position upon the rests or stops 44, whereupon the nut 43 is relieved of the weight of the block 40 and is adapted to rotate in the central cavity or chamber 42 without further vertical movement during the continued lowering of block 18 to its lowered position. By this simple arrangement the screw shaft is reinforced and the tendency to give under side-wise strain is obviated. As shown in Fig. 6, the extended portion 18 of the head block 16 is provided with vertical channels in its sides to permit of such portion 18 passing the rest or stops 44 in its upward travel.

In Fig. 7, I have shown a slightly modified construction of means for reinforcing the shaft, in this case the nut 44<sup>a</sup> being interposed between the separated blocks 42<sup>a</sup>, the operation of which is the same as heretofore described, for the device shown in Figs. 5 and 6.

From the foregoing description and the drawings illustrative thereof, it will be noted that I have provided an exceedingly simple yet powerful machine, the construction of the frame giving great rigidity and strength, and resulting in a mechanism capable of withstanding the rough usage to which machines of this character are subjected. The construction and operation of my machine will also be readily apparent from the description heretofore given. When it is desired to raise the wheels it is only necessary to disconnect the propelling power devices and connect the engine with the vertically disposed screw shafts in the manner heretofore described. The wheel frames, carrying the wheels may then be elevated by the rotation of the screws, which latter are ac-



tuated through the power device and the connections with the engine, which have also been fully set forth. When it is desired to lower the wheels, the direction of the rotating screw shafts is reversed and the wheels may be lowered into an engagement with the track. The propelling power devices are then connected with the wheels and the machine may be transported to the next point of use.

It will, of course, be understood that the frame of the machine may be provided with any suitable or desired braces and any engine or power mechanism may be employed for actuating the parts.

Having thus described my invention, what I claim is—

1. A log loading apparatus comprising a stationary frame, a plurality of movable wheel-supporting frames mounted therein and screw shafts for raising and lowering said wheel-supporting frames.

2. The combination of a frame, having inwardly inclined base members adapted to form a fixed support for the frame, a plurality of vertically movable wheel-supporting frames, traction wheels carried by the movable frames, and means for raising and lowering such movable frames.

3. The combination of a frame, inwardly inclined base members forming a fixed support for the frame, movable wheel-supporting frames, traction wheels carried by the movable frames, vertically disposed shafts connected with the movable frames, and means for actuating said shafts to raise and lower the movable frames.

4. The combination of a frame having a plurality of vertically disposed posts or supports, a shaft passing through each of said posts, wheel-supporting frames in engagement with said shafts, wheels carried by said supporting frames, and means for actuating the shafts to raise and lower the wheel-supporting frames with their wheels.

5. The combination of a stationary frame, a plurality of wheel-supporting frames mounted therein, vertically disposed members engaging with the wheel-supporting frames, means for actuating said members to raise and lower the frames and means adjacent to the vertically disposed members for stiffening and strengthening the same.

6. The combination of a frame, movable wheel-supporting frames carried thereby, a plurality of shaft members adapted to be

operated to raise and lower the wheel-supporting frames, and movable devices arranged adjacent to the shafts for stiffening and supporting such shafts.

7. The combination of the main frame comprising a plurality of inwardly inclined base members, stay rods connecting said base members, a structure mounted upon the base members comprising the framework formed of beams, such structure including a plurality of vertically disposed posts, traction wheels carried by the frame, and means extending through such posts and into engagement with the traction wheel-carrying frames adapted to be operated to move such wheels into and out of contact with a track.

8. In a loading apparatus, the combination of a frame for supporting hoisting mechanism, means for forming a fixed support for said frame, traction wheels carried by the frame, and means for drawing said wheels upward between the ends of the frame to permit cars to pass upon the track beneath the frame, such means comprising a plurality of screw shafts, and power mechanism for rotating said shafts.

9. The combination of a frame, means for forming a fixed support for said frame, traction wheels carried by the frame, means, including screw shafts, for raising and lowering the traction wheels, and means for imparting motion to the traction wheels to propel the apparatus.

10. The combination of a frame, fixed supporting members secured to said frame and adapted to project inward beneath the same, wheels for rendering the apparatus movable upon the track, a supporting frame for each pair of wheels, and means for elevating and lowering the wheel-supporting frames vertically within the main frame.

11. In hoist apparatus, the combination of a frame adapted to span a track and provided with fixed supporting members, wheels for rendering the apparatus movable upon the track, a movable frame for each pair of traction wheels, means for moving each frame bodily within the apparatus to move such wheels into and out of engagement with the track, and means for imparting power to the wheels to propel the same when in engagement with the track.

AUGUST W. KURZ.

Witnesses:

R. B. CAVANAGH,  
JOS. J. PURANDO.