

No. 757,234.

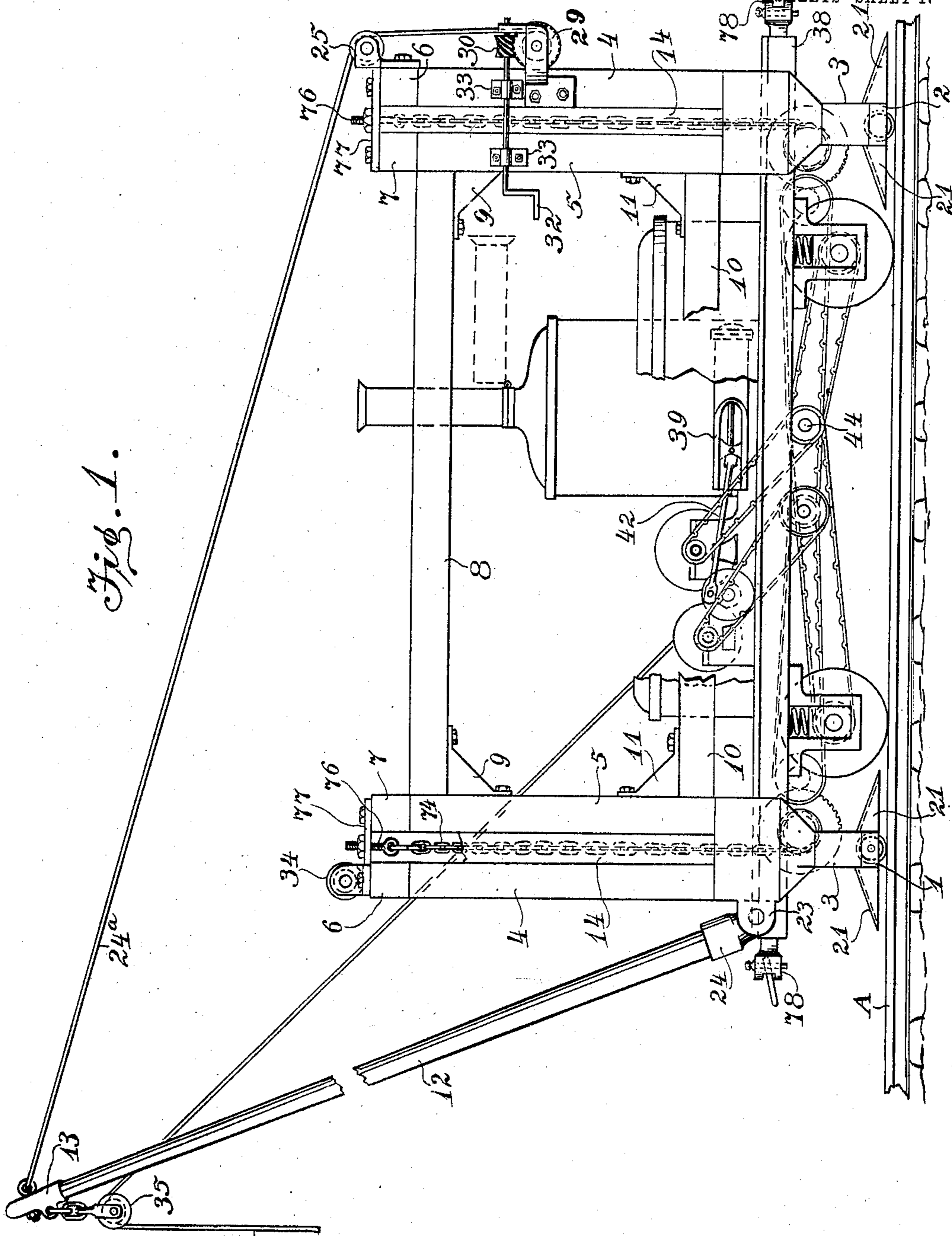
PATENTED APR. 12, 1904.

M. SCHMALTZ.
LOG LOADING AND SKIDDING MACHINE.

APPLICATION FILED OCT. 23, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses:
Wellington M. Brewster
Pearl Martin

Inventor
Michael Schmaltz
By James T. Watson
his Attorney.

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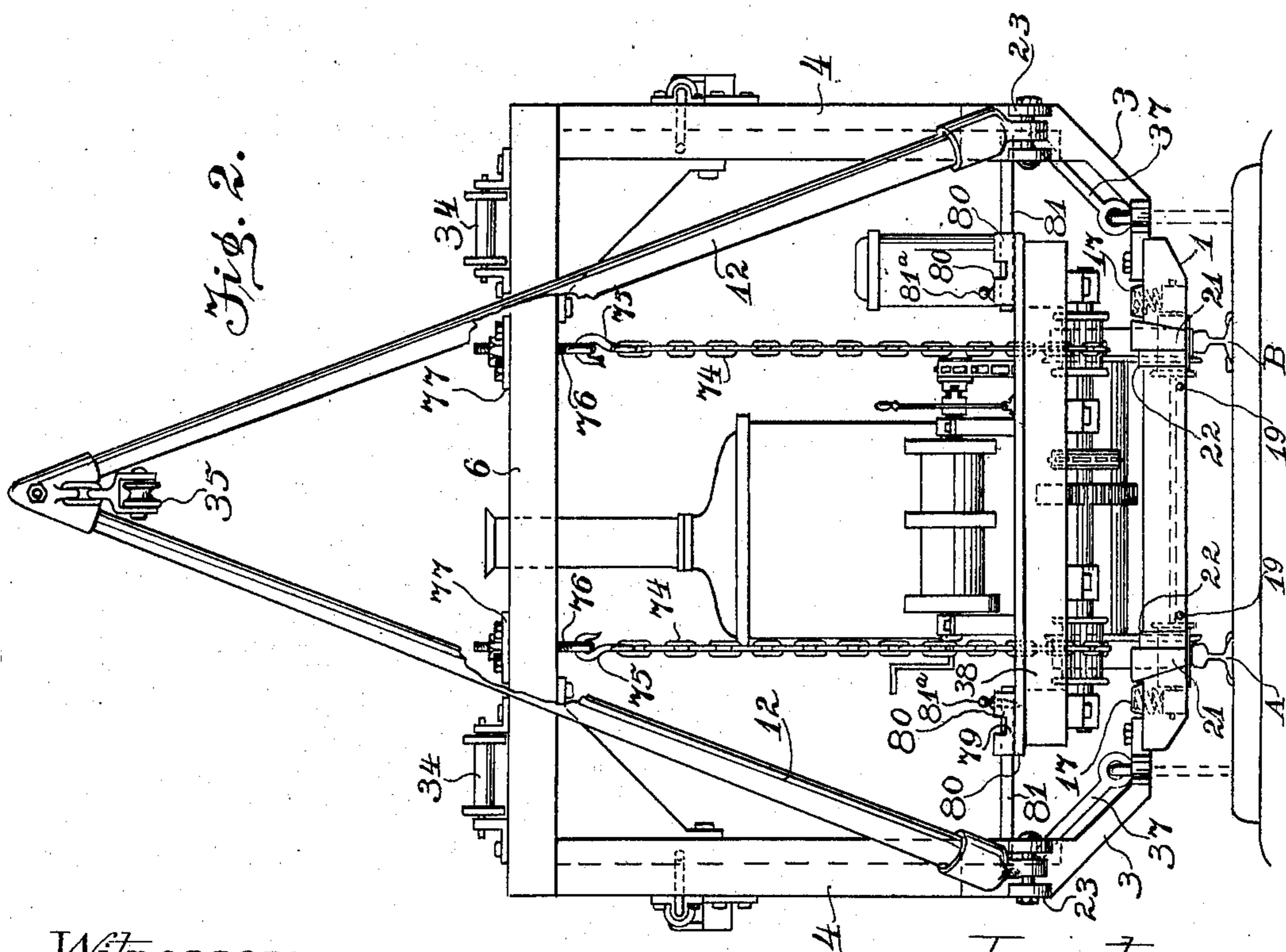
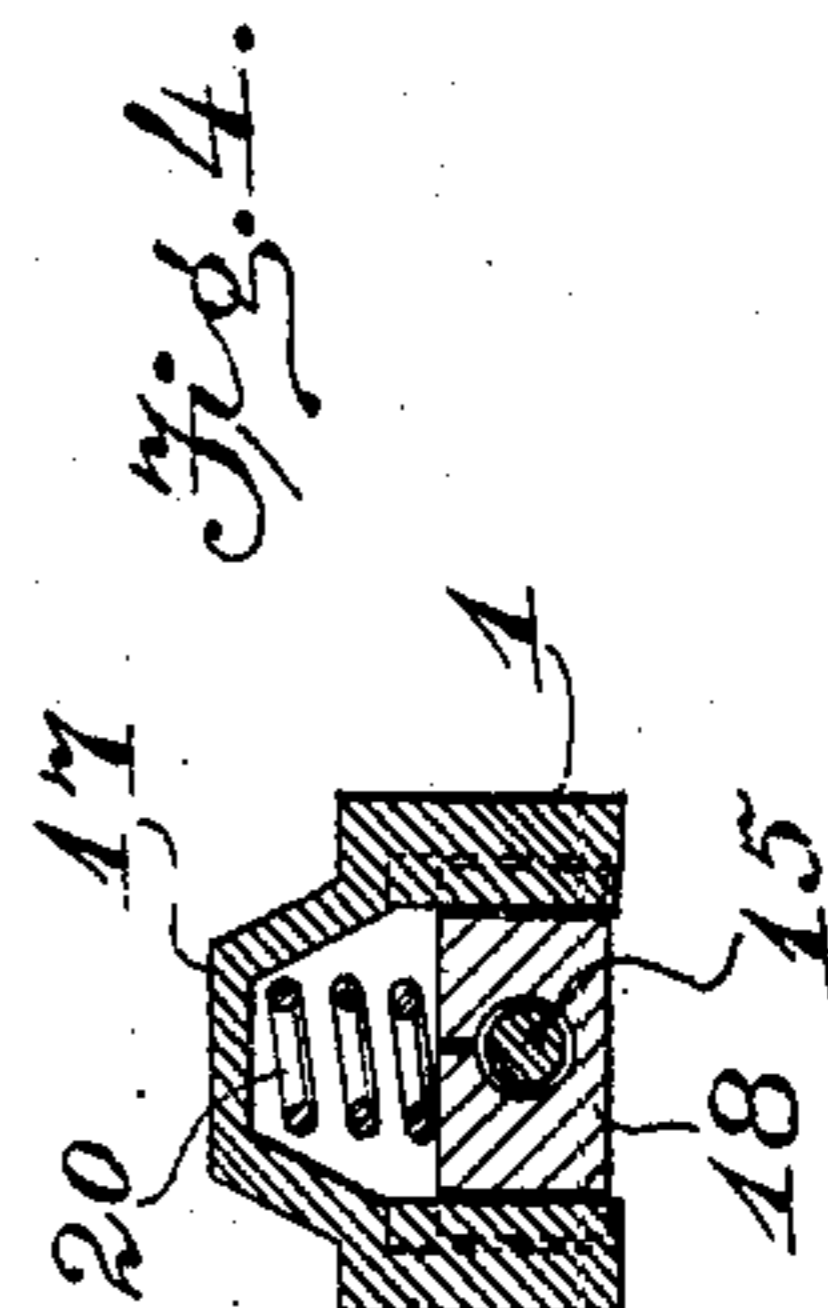
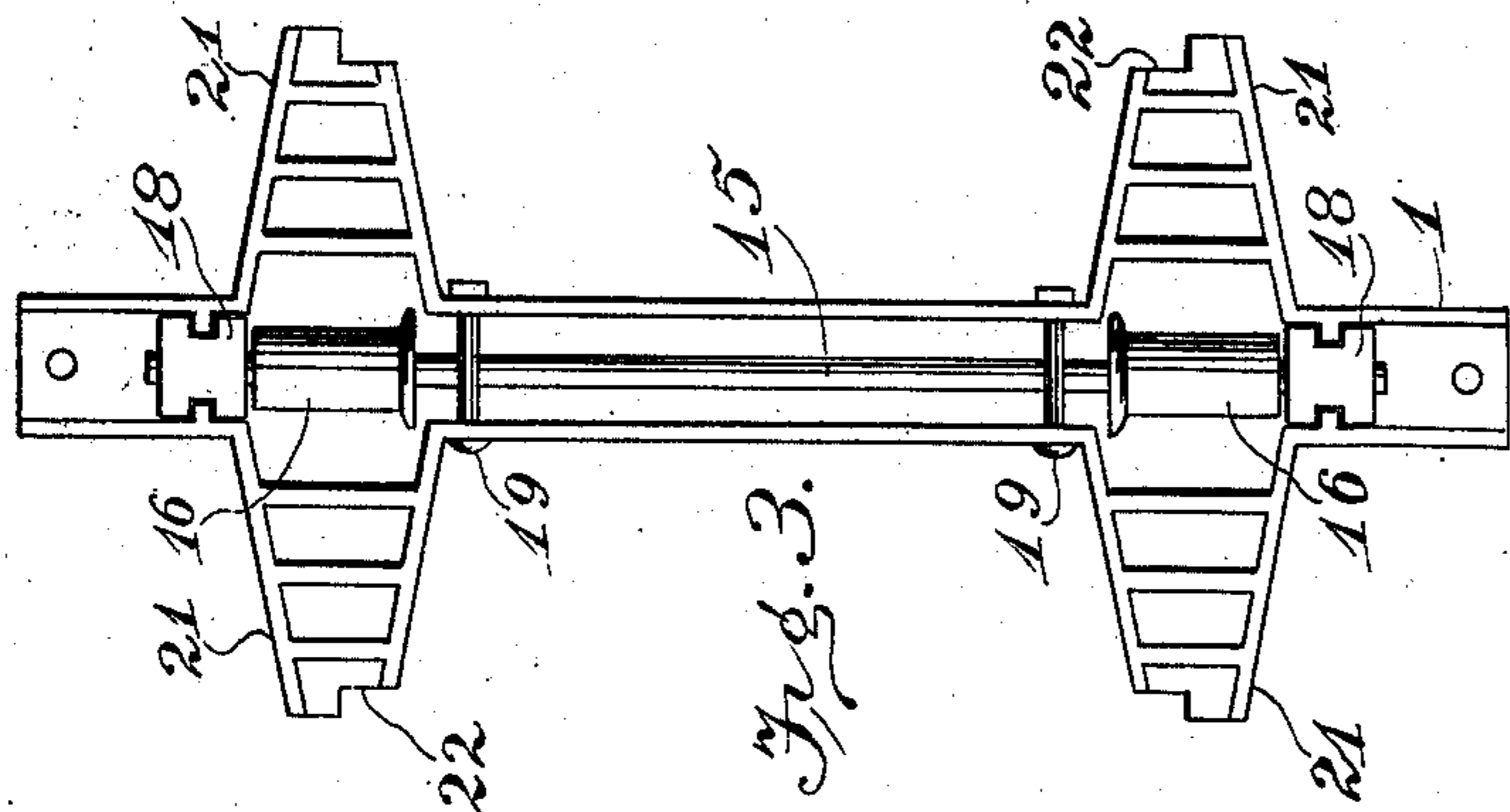
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4 SHEETS—SHEET 2.



Witnesses:
Wellington M. Blewett
Pearl Martin

Inventor
Michael Schmaltz
By James Watson
his Attorney.

No. 757,234.

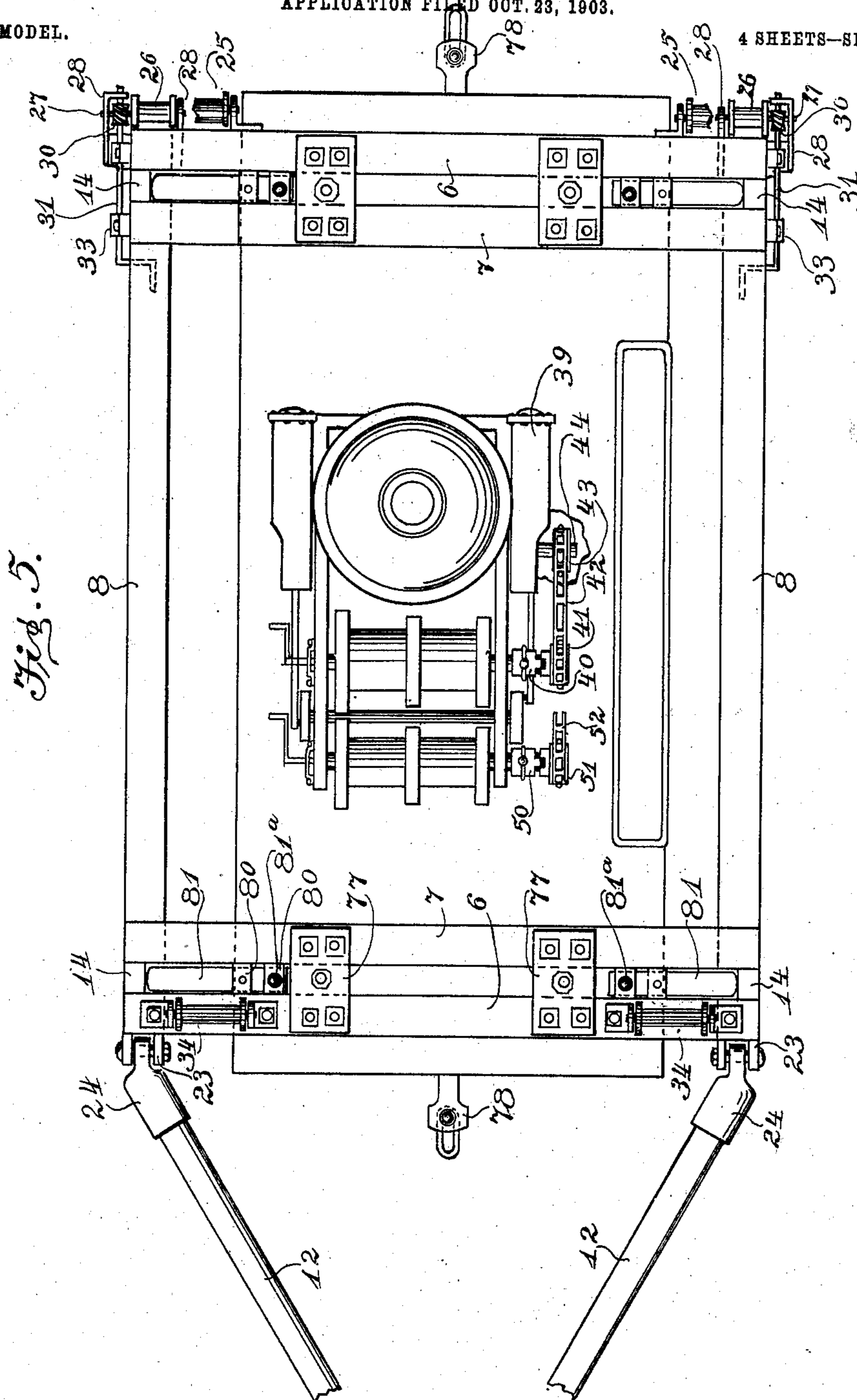
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Michael Schmaltz
By James T. Watson
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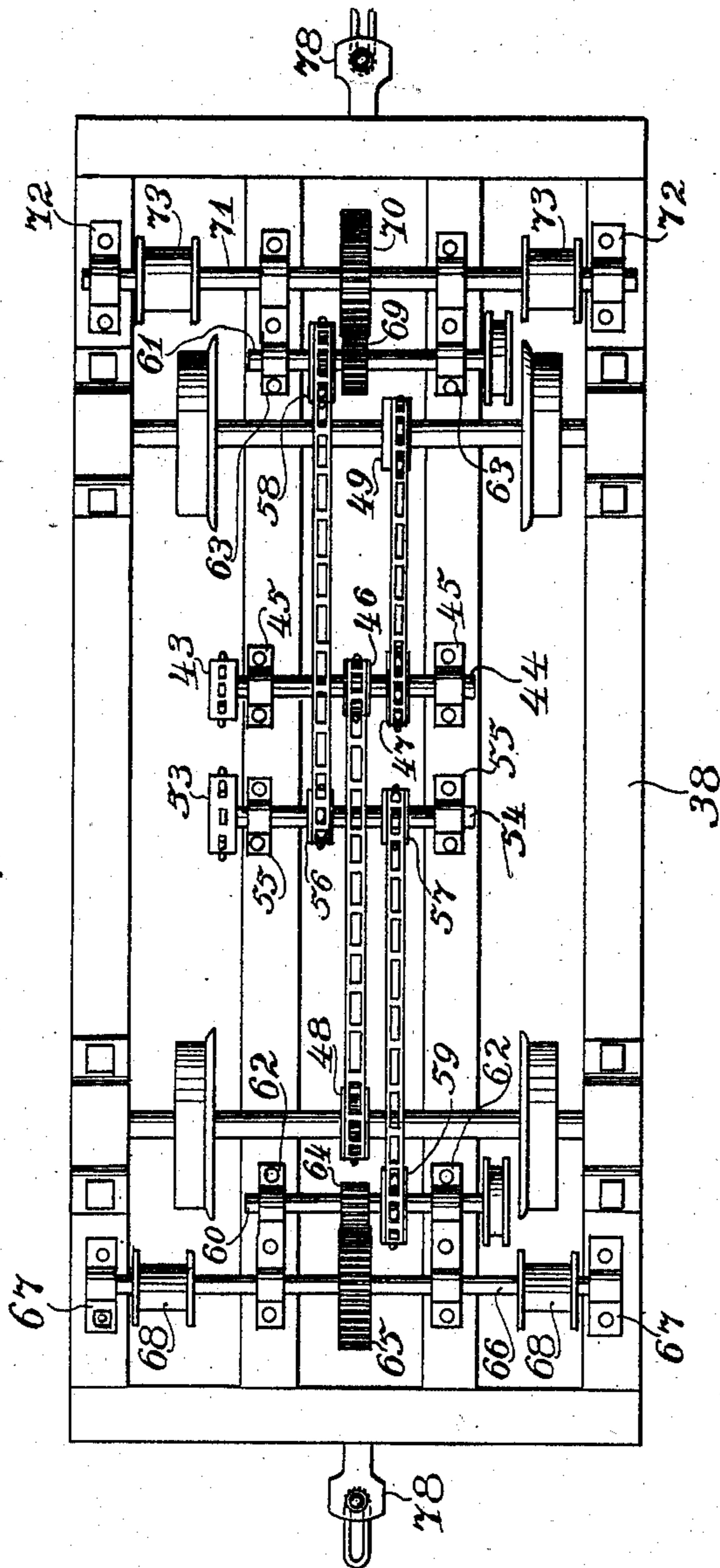
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4 SHEETS—SHEET 4.

Fig. 6.



Witnesses:
Wellington M. Blumett
Pearl Martin.

Inventor
Michael Schmaltz
By James Watson
his Attorney

UNITED STATES PATENT OFFICE.

MICHAEL SCHMALTZ, OF DULUTH, MINNESOTA.

LOG LOADING AND SKIDDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 757,234, dated April 12, 1904.

Application filed October 23, 1903. Serial No. 178,184. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL SCHMALTZ, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Log Loading and Skidding Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to log loading and skidding machines.

It consists of an engine-bearing car, which I will call the "locomotive" or "engine" car, and of an exterior or envelop derrick-car adapted to move on the same track as the engine-car and when desired to suspend said engine-car above said track.

It also consists of certain other constructions, combinations, and arrangements of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a machine embodying my said invention. Fig. 2 is a front end elevation of the same. Fig. 3 is an enlarged bottom plan view of one of the sills forming part of said invention. Fig. 4 is a still further enlarged cross-sectional view of the same. Fig. 5 is a top plan view of said machine omitting the hoisting-cables and showing the derrick-poles partly broken away, and Fig. 6 is a bottom plan view of said engine-car.

Referring to the drawings, the derrick-car consists, substantially, of a frame comprising transverse sills 1 and 2, brackets 3, mounted, respectively, upon the ends of each of said sills, posts 4 and 5, erected upon each of said brackets, transverse overhead beams 6 and 7 at each end of said frame and secured in any suitable manner at their ends to the contiguous said posts, longitudinal upper beams 8 at each side of said frame, extending from the post 5 at one end of said frame to the similar post at the opposite end thereof and secured thereto by any suitable means, as by brackets 9, longitudinal lower beams 10 at each side of said frame, extending from the post 5 at one end of said frame to the similar post at the opposite end

thereof and secured thereto by any suitable means, as by brackets 11, derrick-poles 12, pivotally connected at their lower ends to the opposite sides of said frame, at one end thereof, and converging and secured together in any suitable manner at their upper ends, as by a cap 13, and a spacing-post 14, erected between each of said posts 4 and 5 and of lesser thickness than said posts 4 and 5, whereby vertical guideways are formed between said posts 4 and 5. Said sills are preferably adapted to extend across the rails A and B of a railway-track and are channeled underneath to receive the shaft 15 and wheels 16 of single supporting-trucks. Said sills also have formed thereon near each end hoods 17 to receive the journal-boxes 18 of said trucks. Said trucks are preferably secured in said sills by bolts 19, extending through said sills below the axles, but may be secured in any other suitable manner. Springs 20 are preferably interposed between said boxes and the overhead portions of said hoods, whereby said sills are normally raised clear of said track and supported upon said trucks. When, however, the weight of the engine-car is suspended from the frame of said derrick-car, said boxes recede in said hoods and said wheels recede in said sills and the sills bear directly upon the track-rails. The sills 1 and 2 are also each provided near each of their ends with oppositely-directed angular extensions 21, the upper surfaces of which are inclined from the top of said sill downwardly to said rails, and such inclined surfaces are preferably formed with an offset portion 22 to accommodate the flanges of any wheels passing from said rails over said inclines. Between said clevises 23 are preferably pivotally secured sockets 24, adapted to receive the lower ends of said derrick-poles. Backstays 24^a are secured in any suitable manner to the apex of said derrick and extend divergently backward over rollers 25, mounted upon the upper part of the rear end of said frame and downwardly to windlasses 26, keyed to similar transverse shafts 27, journaled in brackets 28, secured to the rear end of said frame. Worm-wheels 29 are also keyed to each of said shafts 27 and are adapted to engage worms 30, keyed to

shafts 31, which are provided with a crank-handle 32 and journaled in brackets 33, secured to the posts 4 and 5, respectively, at the rear corners of said frame, by means of which
 5 windlasses and backstays said derrick is adapted to be adjusted and held at any suitable angle. Mounted in any suitable manner on the transverse overhead beams or either one of them, at the front end of said machines, are antifriction-rollers 34, adapted to
 10 support said backstays when the outer end of the derrick is lowered below the horizontal plane of said overhead beams. Suspended from the apex of said derrick in any suitable or well-known manner is a hoisting-sheave 35,
 15 adapted to support a hoisting-cable 36. Pivotal-ly secured in any suitable manner to each of said sills or, preferably, as shown, to each of said brackets are dogs or spuds 37, the free
 20 ends of which are adapted to drop down at an angle forwardly or rearwardly, as desired, to engage the ties to prevent the forward or rearward movement of said derrick-car along
 25 said track. When not in use, said spuds may be swung upward and their free ends lodged in vertical guideways between said corner-posts. It will be observed that said sills, with
 30 their inclined extensions, form bridges over the trucks of the derrick-car, which bridge-sills have tracks formed upon them over which the engine-car or other cars may pass from
 35 the rails A and B. I therefore call said sills "bridge-sills." Said frame or derrick-car in most particulars corresponds in construction to the derrick-frame described in Letters Patent
 40 of the United States, dated May 12, 1903, No. 727,849, issued to me for log-loading machine, and I do not now, therefore, claim the same broadly.

40 The engine-car forming part of my said invention comprises a platform-car 38 of any suitable construction, having a hoisting, skidding, and driving engine 39 of any suitable
 45 construction mounted thereon, the elements of said engine used for hoisting and those used for skidding being well known to the art and not necessary to be particularly described herein. The shaft of one of the hoisting-
 50 drums of said engine is provided with a clutch 40, slidably keyed thereto and adapted in operation to engage a sprocket-wheel 41, loosely journaled on said shaft. Said sprocket-
 55 wheel is belted by a chain 42 to a sprocket-wheel 43, keyed to a shaft 44, journaled in bearings 45, depending from the frame of said car, beneath the platform thereof, which
 60 shaft 44 carries two other sprocket-wheels 46 and 47, keyed thereto and belted, respectively, to sprocket-wheels 48 and 49, keyed to the axles of the forward and rearward trucks of
 65 said car, whereby said engine is adapted to drive said car along the track. Said driving means is substantially the same as shown in my said Patent No. 727,849. The shaft of
 another of said drums is provided with a

clutch 50, slidably keyed thereto and adapted in operation to engage a sprocket-wheel 51, loosely journaled on said shaft and belted by
 a chain 52 to a sprocket-wheel 53, keyed to a shaft 54, journaled in bearings 55, depending
 70 from the frame of said car, beneath the platform thereof. Said shaft 54 also carries two other sprocket-wheels 56 and 57, keyed thereto and respectively belted to sprocket-wheels
 75 58 and 59, keyed to shafts 60 and 61, respectively, journaled, respectively, in bearings 62 and 63, depending from the frame of said car, beneath the platform thereof. Said shaft 60
 also carries a gear-wheel 64, keyed thereto and adapted to engage a gear-wheel 65, keyed
 80 to a shaft 66, journaled in bearings 67, depending from the frame of said car, beneath the platform thereof. The shaft 66 also carries two spools 68, keyed thereto. The shaft
 85 61 carries a gear-wheel 69, keyed thereto and adapted to engage a gear-wheel 70, keyed to a shaft 71, which is journaled in bearings 72, depending from the frame of said car, beneath
 the platform thereof. Said shaft 71 also carries two spools 73, keyed thereto. Secured
 90 at one end in any suitable manner to each of said spools are cables or chains 74, extending therefrom upwardly through the platform of said car and in operative position secured at
 95 their upper ends in any suitable manner to the overhead portion of said derrick-frame. I preferably provide hooks 75 upon the upper ends of said cables or chains adapted to en-
 100 gage the eyes of depending eyebolts 76, secured to plates 77, seated upon and bolted to said transverse beams 6 and 7. The chains are thus detachable at their upper ends. It will
 now be readily understood that said engine-car may be easily run from the track over the
 105 inclined extensions of either of the sills of said derrick-car and stopped between said sills and that the chains 74 may then be attached to said eyebolts 76 and the engine-car raised into
 suspension within and from said derrick-car, at which time empty logging-cars may be run
 110 through said derrick-car beneath said engine-car. The engine-car may then be lowered and said hoisting-cable 36 secured to one of the drums of said engine and operated to lift logs
 115 onto the logging-car in front of said derrick. Said hoisting-cable may remain attached to said drum while said engine-car is within the derrick-car whether the engine-car is raised
 or lowered. The engine-car may of course be easily disconnected from said derrick-car and
 120 run out of the same. Skidding-lines may then be secured to one or more of said drums and operated to draw logs from a distance to the track side, said skidding-lines being led in the
 125 usual and well-known manner through guide-pulleys or purchase-pulleys secured to stumps of trees or any suitable anchorage. When disconnected from said derrick-car, said engine-car
 may also be used to push or pull
 130 other cars or perform various other railway

services, to aid in which car-couplers 78 of any suitable construction are preferably secured to said engine-car, at each end thereof. In order to keep said engine-car from swaying while in suspension in said derrick-car and to prevent longitudinal movement of said engine-car with respect to said derrick-car, I provide castings 79, secured in any suitable manner to said engine-car, at each corner thereof, upon each of which castings are formed upwardly-directed apertured lugs 80, adapted to receive horizontally-arranged sliding bolts 81, projected therethrough and adapted in operation to loosely engage the guideways formed between the contiguous corner-posts of said derrick-car. Said bolts are further secured in operative position by pins 81^a, projected downwardly through said bolts and into or through any suitable portion of said lugs or castings. When it is desired to disengage said engine-car from said derrick-car, said pins 81^a are withdrawn and said bolts drawn out of engagement with said guides.

While I have described certain particulars of construction, it is evident that many of them may be substituted by such mechanical equivalent as may be convenient, while still preserving the principles of my invention.

It will be observed that my construction, by reason of its simplicity, durability, cheapness, and remarkable adaptability and efficiency for various purposes, possesses great advantages over other loading-machines and is especially practical for use on temporary railways and in localities where extensive repairing facilities are not conveniently at hand and where wholly independent equipment for all the classes of service performable by said construction would be prohibitive. It will also be observed that while loading the center of gravity of said machine is low and the tendency to tip over reduced to a minimum.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a log loading and skidding machine the combination of a derrick-car, an engine-car positioned within said derrick-car and attached thereto by flexible means adapted to be operated to raise said engine-car into suspension from said derrick-car, and means carried by said engine-car adapted to operate said flexible means, substantially as described.

2. In a log loading and skidding machine, the combination of a derrick-car, an engine-car positioned within said derrick-car, and horizontally-arranged sliding bolts positioned at the corners of said engine-car and adapted in operative position to engage vertically-arranged guideways formed in said derrick-car, substantially as described.

3. In means for the purposes described, the combination of a derrick-car provided with a derrick, an engine-car positioned within said derrick-car and provided with a hoisting-en-

gine, hoisting means supported by said derrick and connected with said engine and adjustable means carried by said engine-car and adapted to engage vertically-arranged guideways formed on said derrick-car, substantially as described.

4. In means for the purposes described, an engine-car comprising a body portion and supporting-trucks an engine carried by said car, spools positioned near each corner of said car, hoisting-cables secured to each of said spools and extending upwardly above the surface of said car, and means connecting said spools with said engine, substantially as described.

5. In means for the purposes described, the combination with a supporting-frame having sides and an overhead portion, of a car positioned within said frame and provided with windlass-spools, vertically-arranged flexible means secured at their upper ends to the overhead portion of said supporting-frame and secured at their lower ends to said spools respectively, and means carried by said car for rotating said spools to wind portions of said flexible means on said spools, substantially as described.

6. In means for the purposes described, a locomotive comprising a vehicle, a driving and hoisting engine carried thereby, means adapted in operative position to connect said engine to the axles of the supporting-trucks of said vehicle, flexible means adapted in operative position to detachably secure said vehicle to a relatively independent overhead support, and means adapted in operative position to connect said flexible means to said engine, substantially as described.

7. In means for the purposes described, the combination with a derrick-car of a locomotive engine-car detachably and removably secured to said derrick-car beneath the upper surface and between the sides thereof and means adapted in operation to suspend said engine-car from said derrick-car, substantially as described.

8. In means for the purposes described an engine-car comprising a vehicle, an engine carried by said vehicle, winding-spools carried by said vehicle near each corner of the same, means adapted in operation to transmit motive power from said engine to said spools to rotate the same, flexible means attached to each of said spools and adapted to be attached at their opposite ends to overhead supports, substantially as described.

9. In means for the purposes described the combination with a car adapted to stand or move upon a railway-track and provided with a derrick, of an engine-car adapted to stand or move upon said track between the sides of said derrick-car and attached to said car by suspending-cables, means carried by said engine-car for operating said cables to raise said engine-car above said track into suspension from said derrick-car, a hoisting-cable sup-

ported by said derrick, means carried by said engine-car for operating said hoisting-cable to lift relatively independent articles, and adjustable means adapted, in operative position, 5 to prevent longitudinal or transverse movement of said engine-car with relation to said derrick-car, substantially as described.

10 10. In a log loading and skidding machine, the combination with a railway-track of a car adapted to move thereon, a track extending from the first said track over each of the supporting-wheels of said car, a second car adapted to stand upon the first said track between the second said tracks, detachable means for 15 securing the second said car to the first said car and adapted in operation to raise the second said car above the first said track, and means for operating said detachable means, substantially as described.

20 11. In means for the purposes described, the combination with a railway-track, of a car adapted to stand or move thereon, a track extending from the first said track over each of the supporting-wheels of said car, a second 25 car adapted to stand or move on the first said track between the second said tracks, and adjustable means adapted in operative position to secure the second said car against trans-

verse or longitudinal movement with respect to the first said car, and in retracted position to permit longitudinal movement of the second said car with respect to the first said car, substantially as described.

12. In a log loading and skidding machine, the combination of a frame adapted to stand 3 upon a railway-track and comprising side walls, an overhead portion, transverse frame-supporting sills extending over said track, and bridge portions carried by said sills and extending from said track over said sills, a 4 car adapted to stand on said track and removably positioned between the side walls of said frame, detachable means securing said car to said frame and adapted in operation to raise said car into suspension on said frame, means 4 carried by said car for operating said securing means, a derrick, hoisting means supported thereon, and means carried by said car for operating said hoisting means, substantially as described. 5

In testimony whereof I hereunto affix my signature in presence of two witnesses.

MICHAEL SCHMALTZ.

Witnesses:

H. G. GEARHART,
JAMES T. WATSON.