W. F. JOHNSTONE.

CANE LOADING MACHINE.

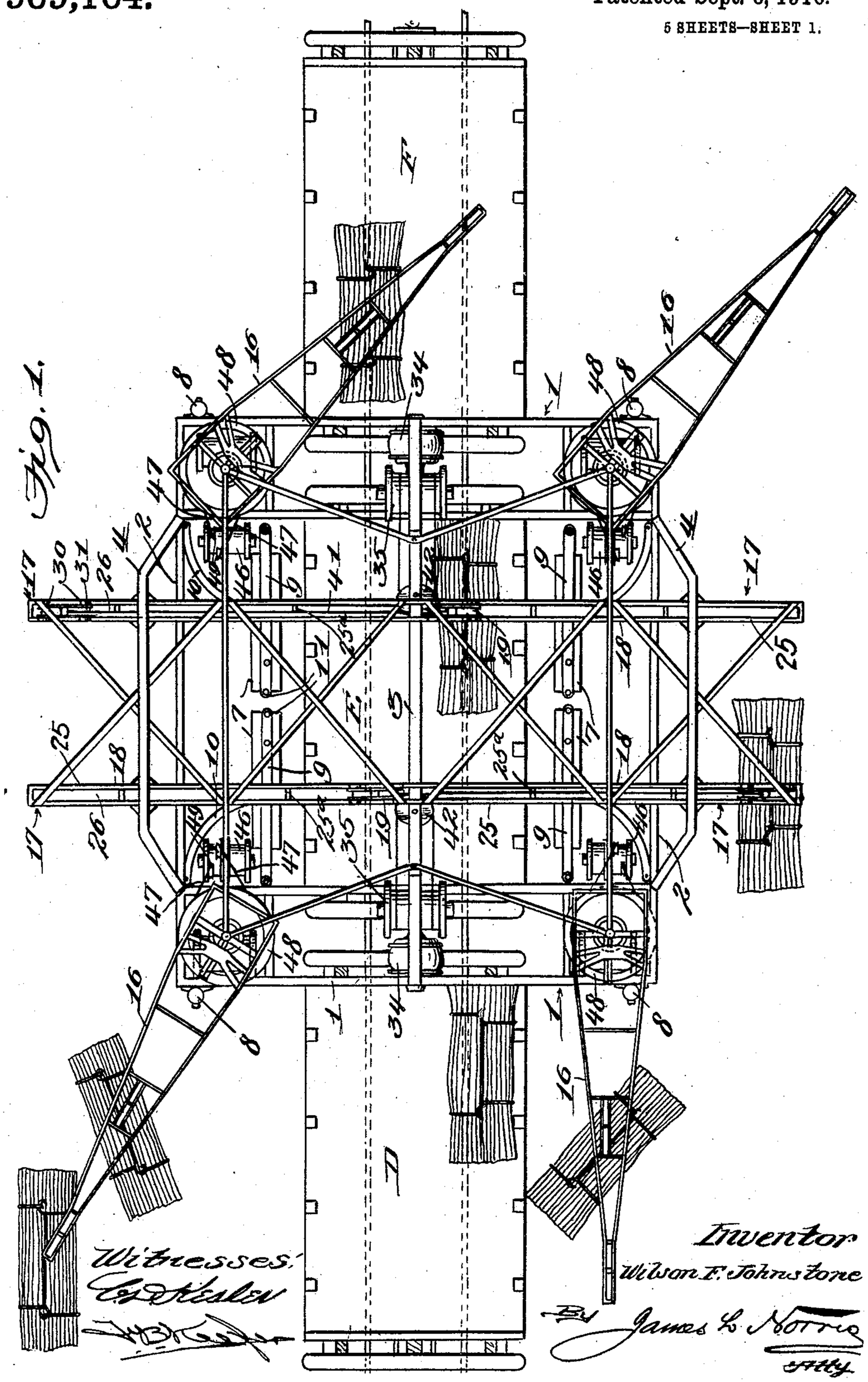
APPLICATION FILED JUNE 9, 1909.

969,164.

Patented Sept. 6, 1910.

5 SHEETS—SHEET 1.

Fig. 1.



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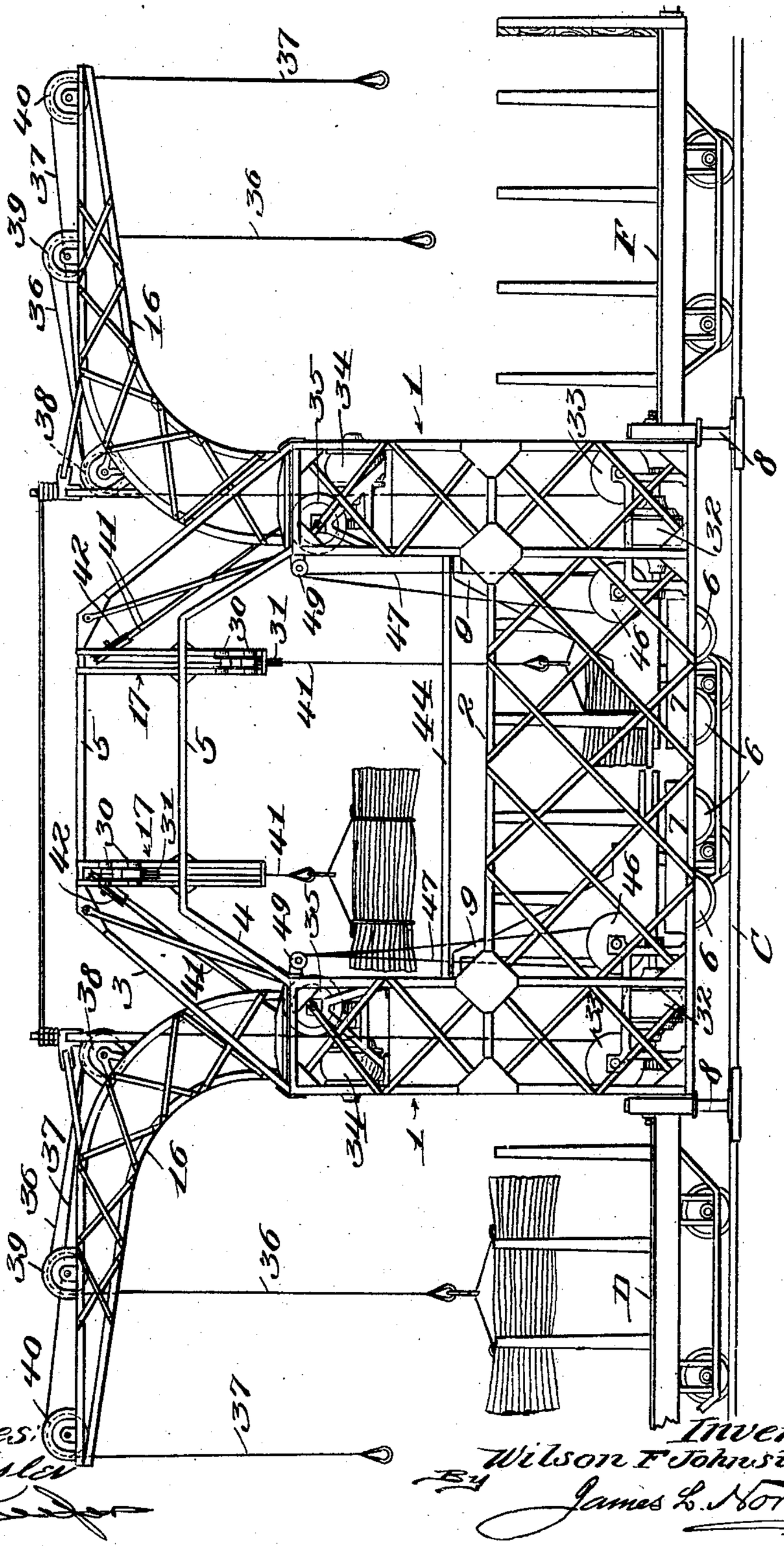
5 SHEETS—SHEET 2.

Fig. 2.



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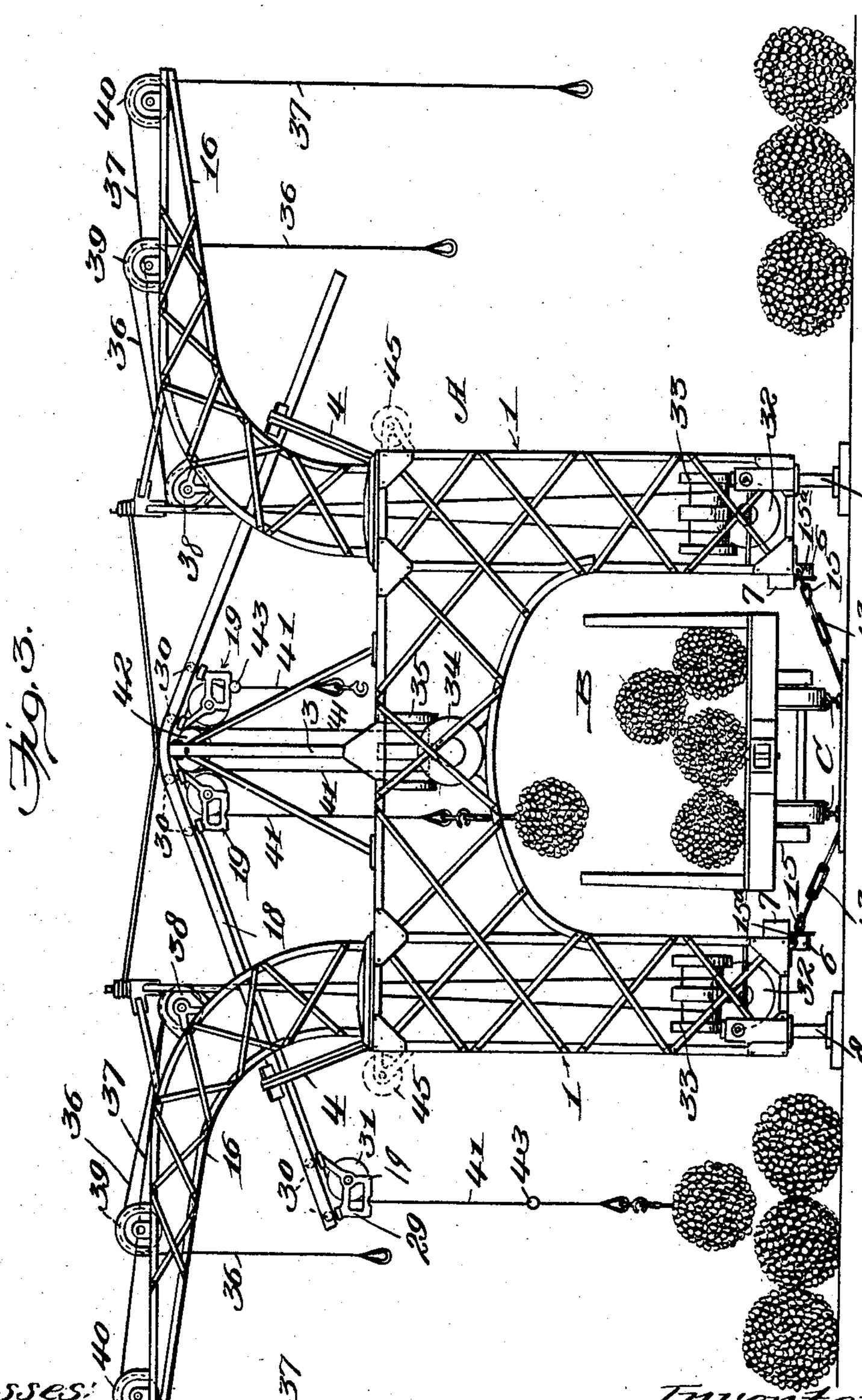

Fig. 3.

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5 SHEETS—SHEET 4.

Fig 4.

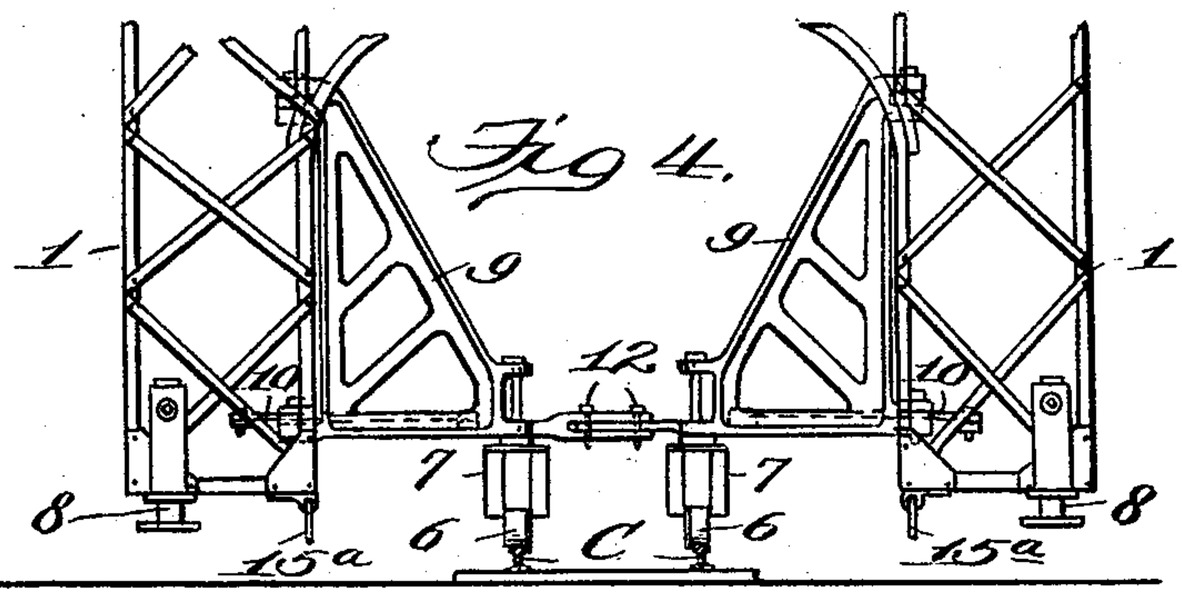


Fig. 5.

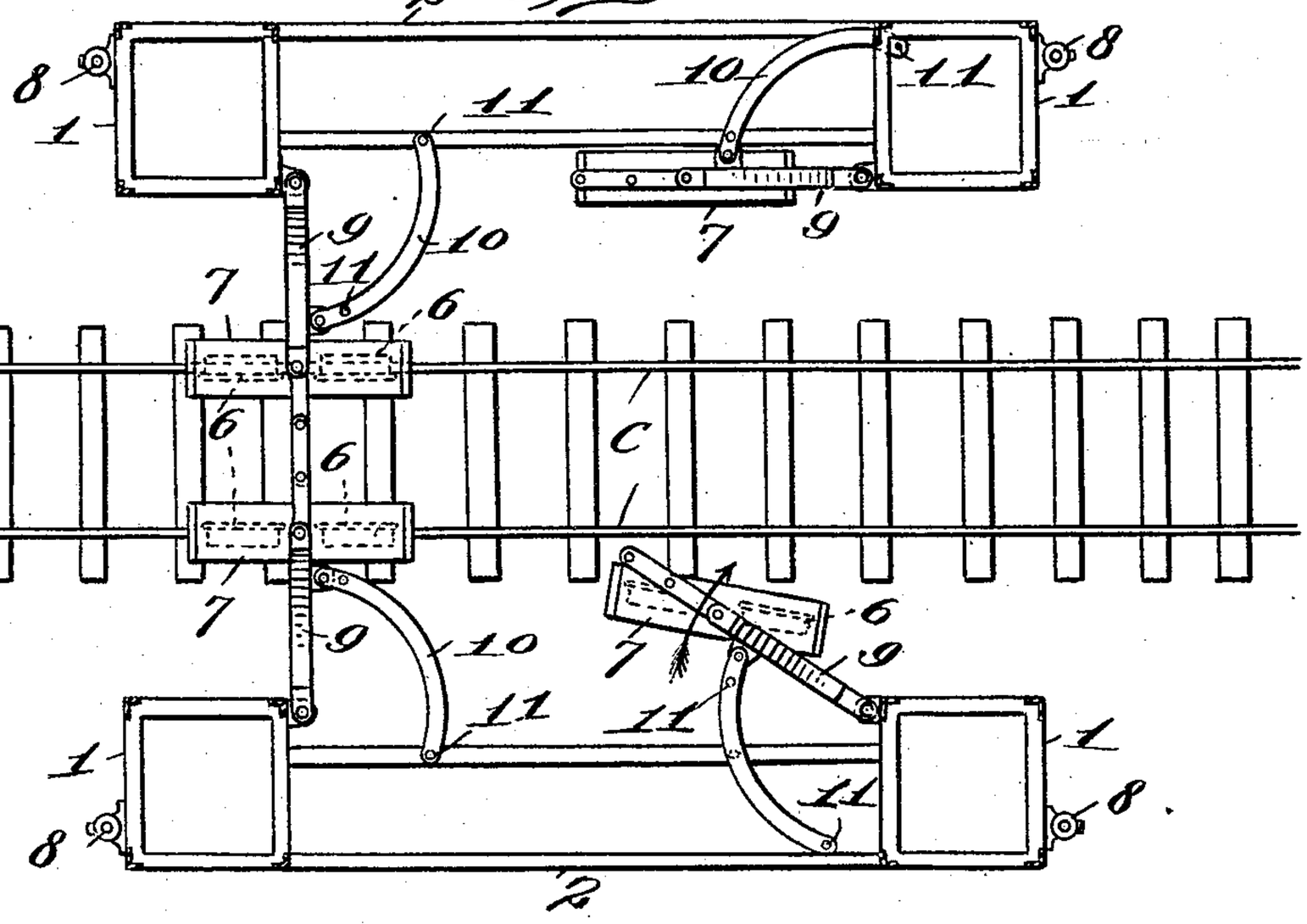
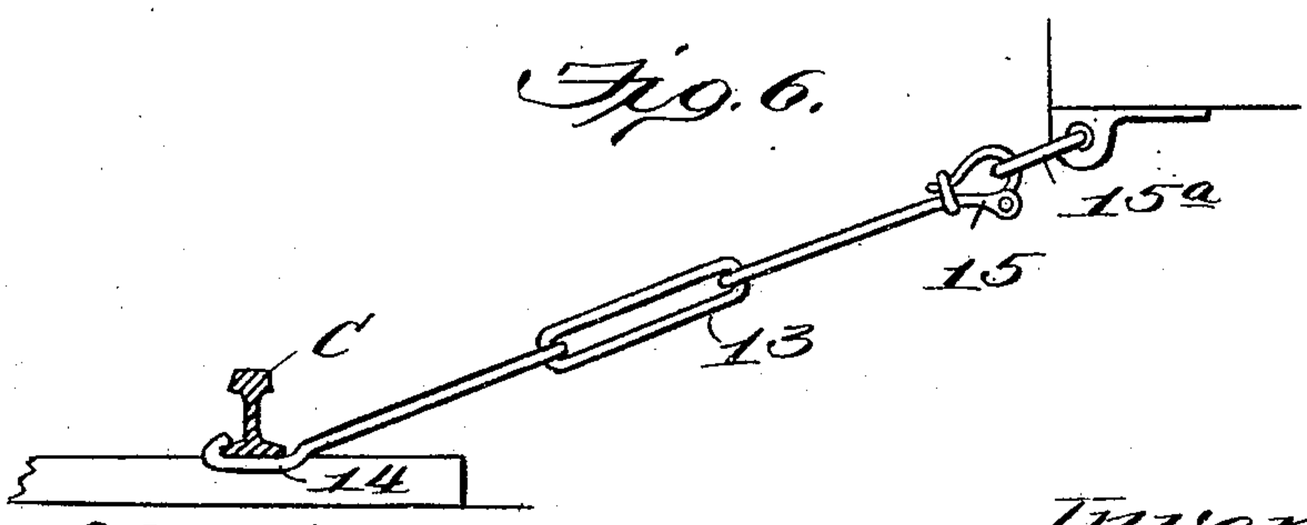


Fig. 6.



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5 SHEETS—SHEET 5.

Fig. 7.

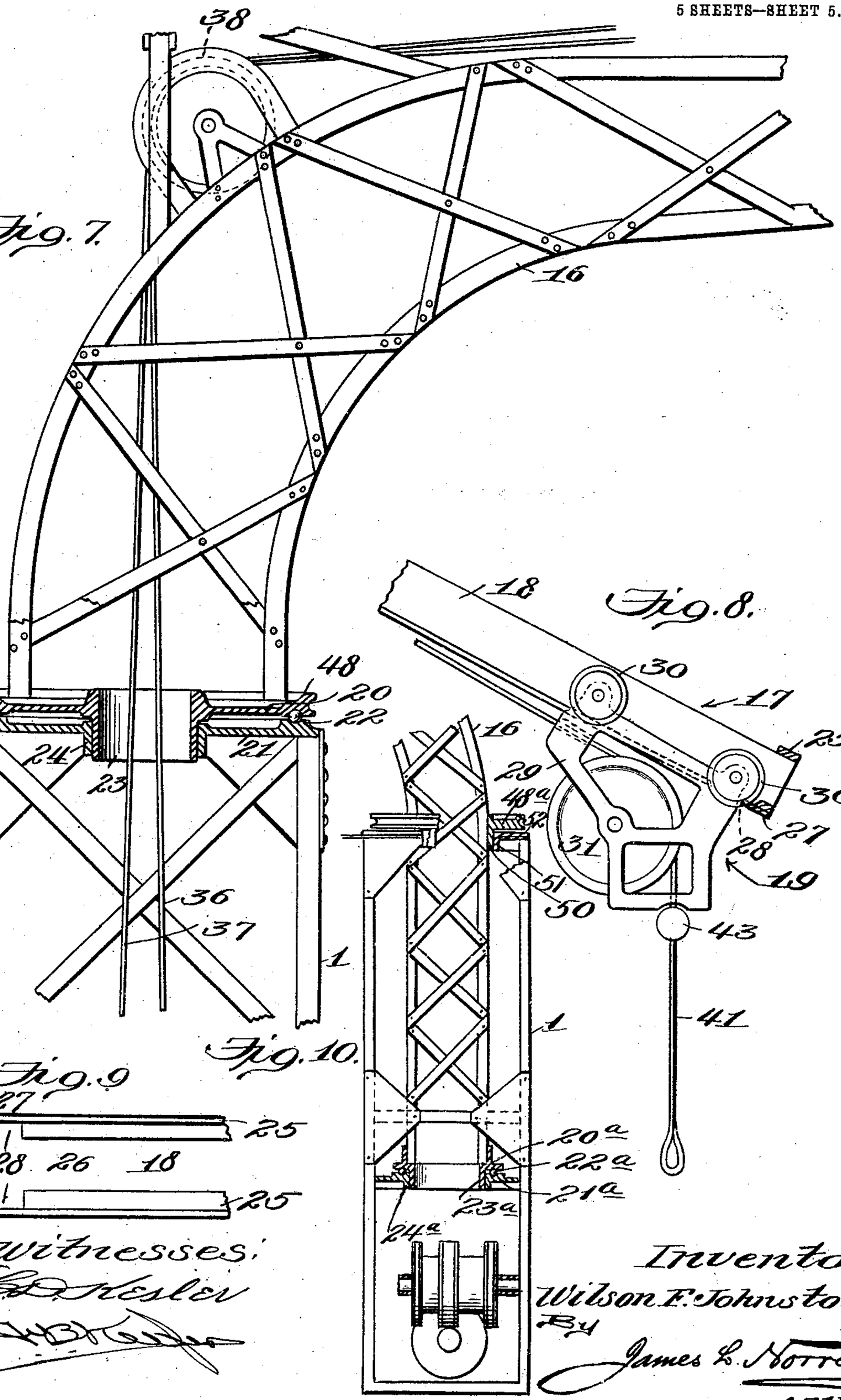

Fig. 8.

Fig. 10.

Fig. 9.

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UNITED STATES PATENT OFFICE.

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CANE-LOADING MACHINE.

969,164. Specification of Letters Patent. **Patented Sept. 6, 1910.**

Application filed June 9, 1909. Serial No. 501,024.

To all whom it may concern:

Be it known that I, WILSON F. JOHNSTONE, a citizen of the United States, residing at Honolulu, in the Territory of Hawaii, have invented new and useful Improvements in Cane-Loading Machines, of which the following is a specification.

This invention relates to new and useful improvements in loading machines and it proposes a machine especially applicable for the loading of cane in the field upon cars which travel upon portable tracks. The canes are gathered into bundles and secured in specially prepared slings by laborers and such bundles, having an average weight of 400 pounds, are scattered promiscuously about the field. The bundles are then brought to positions alongside of the portable tracks and subsequently loaded upon the cars which are then switched upon a permanent track and carry the bundles to the factory. The first operation known as "yarding" has been carried out heretofore by the laborers or by machines, in the nature of combined yarders and loaders, such, for example, as are disclosed in the two patents to F. L. Webster, No. 740,066, granted September 29, 1903, and No. 830,630, granted September 11, 1906.

The present machine may also be employed as a combined yarder and loader though in practical use it is preferred to employ the machine only as a loader and to employ separate yarding machines which work a day ahead of the loaders.

In the cane loading art, the machines heretofore employed are provided with a superelevated trackway, over which the cars to be loaded pass one at a time, and such machines can only load one car at a time. The conditions render the use of such machines open to a number of objections. In the first place, it is required that each car shall be uncoupled and then run upon the superelevated trackway. The car is thus elevated above the loader axles for a distance at the least of twenty-one inches with a sixteen-inch wheel, this being the standard size of the wheels that have been adopted for cane cars. Aside from the necessity of uncoupling the cars, the elevation thereof above the loader axles to travel on the superelevated trackway presents the objection that great difficulty is encountered in handling the cars and the loader on up grades or on down grades of any material degree, for not only has the natural grade of the field track to be overcome but also the additional grade of the superelevated track. In addition to the difficulty in handling the cars, the use of considerable power for up or down grade work is encountered. The prior loaders are so constructed that they can load only one car at a time on account of the superelevated trackway. With such a trackway, a loader proportioned to load more than one car at a time would be of such dimensions that its practical use would be impossible for provision would have to be made for supporting at least a double-length of elevated track and such a loader, by virtue of its unwieldy size, would obstruct the cane road to such a degree as to render its use prohibitive on account of defeating the very objects sought to be accomplished.

The present invention has for its object to provide a machine which will overcome the above objections and it proposes a loader constructed to travel on the field tracks, as in passing from one pile of cane to another and in which the superelevated trackway is dispensed with. Provision is made for moving the train intact, that is, without uncoupling, through the loader and on the field tracks. This dispenses with the necessity for uncoupling the cars and it eliminates the inconvenience of the superelevated trackway.

The invention also proposes a loader in which provision is made for loading three cars at a time. The machine so constructed is narrower than those heretofore employed and requires no extra head room (which is necessitated in the prior loaders by the superelevated trackways) and consequently the cane road is not obstructed. In view of these considerations, three cars can be loaded at the same time with the present machine with less inconvenience than is incident to the use of the machines now known to the art, in the loading of a single car.

Aside from the elimination of inconveniences, the saving of time is a great factor in the use of the present machine. Heretofore a great deal of time has been lost for two reasons, the first being the expenditure of time necessary to the coupling, uncoupling and recoupling of the cars, and the second being the fact that only one car can be loaded at a time. In the present machine, the train, as was stated, is loaded intact and the various coupling and uncoupling oper-

ations are unnecessary. Again, three cars are loaded by the present machine in less time than was formerly necessary to load one. Aside from these considerations, time is saved in that the loading operation is more quickly performed and the train is more quickly shifted to bring a new series of cars under the loader, since the train travels on the field tracks and not on a superelevated trackway.

The present machine is organized in a novel manner to attain the considerations above stated and incidentally to provide for the use of electric motors. In the cane loading art, the machines commonly employed have been of such organization that only gas or similar motors could be employed. Aside from the current objections to gas motors in a machine of this character, there is ever present a danger of setting fire to the cane. With electric motors, this danger and the current inconveniences of gas motors are eliminated. Of course, no claim is made to the use of electric motors in this connection but rather to a machine of such organization that provision is made for the use of electric motors.

The present machine is also of advantage in that the greater portion of the weight is in the lower part of the machine. The perfect balance of the machine is thus assured and "topheaviness" eliminated.

In the prior machines, long countershafts have been employed for driving the operating parts. This requires that the frame be very rigidly and carefully set and such shafts also give trouble by heating. It is usual to employ one motor for all the parts to be operated. In the present machine, countershafts are dispensed with and their attendant inconveniences eliminated and provision is made for the use of a separate motor for each separate operating mechanism. Thus, where in former machines, if the motor became deranged, the operation of the entire machine was stopped, in the present case, wherein each motor and the mechanism operated thereby is a self-contained unit, the derangement of one motor affects only the particular mechanism driven by it and the operation of the other motors and their mechanisms is not interrupted. Consequently if the operation of any one of the units is stopped, the operation of the machine as an entirety is not interrupted and the loading operation may still be efficiently carried on.

The machine comprises essentially a frame having means for hoisting the cane bundles and provided with wheels to run on the field tracks, which wheels are so mounted that they may be moved from the tracks, leaving a clear space for the passage of the cars on the field tracks through the frame.

The machine also comprises a novel arrangement of cane hoisting devices, which, together with the provision for the passage of the train as an entirety on the field tracks through the frame, provides for the loading of more than one car at a time.

A preferred and advantageous embodiment of the invention is shown, by way of example, in the accompanying drawings, in which:

Figure 1 is a plan view of a cane loading machine in accordance with the present invention, showing the operation of loading three cars which are positioned on the field tracks. Fig. 2 is a side elevation thereof. Fig. 3 is an end elevation thereof, the wheels of the loader being shown as off of the field tracks. Fig. 4 is a detail end elevation showing the wheels of the loader upon the main track. For convenience of illustration, the frame has been shown fragmentarily in this figure. Fig. 5 is a detail top plan view with portions of the machine omitted for the sake of clearness and showing the wheels at one end of the loader upon the field track and at the other end of the loader off of the track. Fig. 6 is a detail view showing the means for clamping the loader during operation to the rails forming the field track. Fig. 7 is a detail view of one of the corner derricks. Fig. 8 is a detail view of one of the central cranes, and Fig. 9 is a detail fragmentary plan view of an arm of the crane shown in Fig. 8. Fig. 10 is a fragmentary elevation, partly in section, of an alternative form of corner derrick.

Similar characters of reference designate corresponding parts throughout the several views.

Referring to the drawings, the letter A designates generally the loading machine, the letters D, E and F, three cars to be loaded and the letter C the field track.

The frame of the machine comprises two arch-shaped end sections, suitably reinforced, which are indicated by the numeral 1, each end section having vertical post portions and connecting arch portions, the post portions being connected by suitably reinforced side sections, as 2. The arch portions of the sections 1 are connected by longitudinal beams, three of which are shown. The central beam is designated by the numeral 3 and the side beams by the numeral 4. The beams 3 and 4 may be of any suitable construction and reinforced in any suitable manner. They are preferably formed with straight central portions, as 5, which are disposed at some distance above the tops of the sections 1 and which are utilized to support transverse cranes, the construction of which will be hereinafter set forth in detail.

The frame in the use of the machine straddles the track C and when moving

from one position to another, travels on said track. To permit this the wheels, as 6, are mounted upon movable trucks, as 7, which may be positioned with the wheels off of the track and out of the path of the cars, at which time the machine is supported from the ground by jacks, as 8. These jacks may be of any suitable construction and are located one at each corner of the frame, being secured at opposite sides of the sections 1.

The construction and arrangement of the movable wheel trucks 7 herein disclosed, is, as far as I am aware at the present time, preferred, but it is not obligatory and is to be considered merely in the light of example. The trucks 7 each carry two wheels 6 and are pivoted at their centers to horizontal bracket arms 9, inwardly of the ends of the latter. The arms 9 are pivoted for horizontal movement at the inner corners of the post portions near the lower ends of the latter, and are arranged to swing through an arc of ninety degrees, the side bars of the sections 2 being set at some distance inwardly, as best shown in Fig. 5, to allow of this movement. Each arm 9 is provided with a quadrant bar, as 10, which is pivoted thereto, and which is provided at its ends with apertures, as 11. The bars of the sections 2 are also provided with apertures which register with corresponding apertures in the bars 10 in the folded or extended positions thereof. The extended position of the bars 10 is shown at the left hand side of Fig. 5 and the folded position thereof is shown at the upper right hand corner of said figure. In the extended position of the bars 10, pins are passed through the apertures at the outer ends thereof and through apertures in the inner side bars of the sections 2, to lock the bars and therewith the arms 9 against movement, and in the folded positions of the bars, the locking pins are passed through the apertures at the inner ends thereof and through the apertures in the inner side bars of the sections 2. When the arms 9 are extended, the relation of wheels upon the rails will maintain the longitudinal disposition of the trucks 7. When the arms are folded, the trucks will lie against the inner side bars of the sections 2, parallel thereto and will be maintained longitudinally disposed thereby.

In addition to the fastening pins above referred to, it is preferred to provide supplemental means for locking the arms 9 against movement from their extended positions. Accordingly the arms 9 at one side of the frame have bifurcated inner end portions which receive the end portions of the arms 9, at the opposite side of the frame, locking pins, as 12, being passed through said end portions in their overlapping relation, as is shown more particularly in Fig. 4. The use of this supplemental locking means is of advantage in that it assures of rigidity and prevents vibration, the ultimate result being that any liability of the trucks to "jump" the rails is eliminated.

In the use of the loader, the trucks 7 are folded to their innermost positions, in which they are well out of the way of the cane cars. This is accomplished by "jacking up" the frame sufficiently to allow of the wheels 6 to swing free of the rails. The cars may be then run through the frame on the track C. The frame, at this time, is supported by the jacks 8. It is preferred to employ additional means for holding the frame against tilting and such means is of especial advantage on uneven ground. For this purpose I preferably employ the device shown in detail in Fig. 6 and which consists of a stay bar, as 13, embodying several connected links. The inner link has a hook-shaped bill, as 14, for engagement under the rail flange (between the ties) and the outer link has a locking hook, as 15, for engagement with a loop or ring 15ª. The stay bars 13 are preferably arranged at the four corners of the frame and, together with the jacks 8, serve to hold the same steady and rigid. The arrangement of the stay bars is best shown in Fig. 3.

The foregoing description relates to the frame construction and sets forth in detail, the manner in which provision is made for moving the frame upon wheels traveling on the field track and for holding the frame in position straddling the tracks with the wheels out of the way, to permit of the passage through the frame of the train of cane cars, which, when passing through the frame, also travels on the field track.

I will now describe the novel arrangement of hoisting mechanisms in their relation to the frame, to provide for the loading of three cars at a time.

The preferred arrangement of hoisting mechanisms comprises four derricks, located one at each corner of the frame, and cranes intermediate the derricks. The derricks, indicated by the numeral 16, are in the nature of curved arms, suitably constructed and reinforced and mounted upon the post portions of the sections 1, for rotation about the axes of the post portions as centers. The cranes, indicated generally by the numeral 17, each comprises an inclined transverse bar, as 18, which is secured to and supported by the beam 3 and one of the beams 4, and a carriage, as 19, which has movement upon the bar 18, axially thereof, and transversely of the frame. Two of the bars 18 are employed at each side of the frame and a bar 18 at one side is preferably jointed to a bar 18 at the other side in such manner that a continuous transverse crane bar of substantial inverted V shape, is afforded, it being

understood that the bars 18 extend outwardly and downwardly from the beam 4, the central portion 5 of which, is higher than the central portions of the beams 3 on each side thereof. The continuous crane bar of inverted V shape is thus common to two cranes, one at each side of the frame. I preferably employ four cranes of the general construction stated, two at each side of the frame, as best shown in Figs. 1, 2 and 3.

Taking up now the detailed construction of the derricks 16, it will be seen by reference to Figs. 3 and 7, that each derrick comprises a substantially horizontal arm-like portion which projects as a curved continuation of a vertical axis portion. The latter carries at its lower end a bearing plate, as 20, which is imposed upon a bearing plate, as 21, provided upon the upper end of the corresponding post portion of the frame. The plates 20 and 21 are provided with annular raceways for ball bearings, as 22. The plate 20 is constructed with a central tubular portion, as 23, of cylindrical cross section which fits in a similar tubular portion, as 24, of the plate 21. The tubular portion 23 is provided to serve the dual function of maintaining the proper relation of the plates 20 and 21 and of affording a guide for the hoisting cables which work therethrough.

Fig. 10 illustrates a modified or alternative form of derrick construction in which the axis portion of the derrick projects downwardly for some distance into the corresponding post portion of the frame and carries at its lower end a plate 20^a, corresponding to the plate 20 and seating upon a plate 21^a secured in the post portion and corresponding to the plate 21, by means of ball bearings, as 22^a. The plates 20^a and 21^a have central tubular portions 23^a and 24^a respectively, which correspond to the portions 23 and 24 aforesaid.

Taking up now the detailed construction of the cranes 17, it will be understood that the bars 18, thereof, each comprise essentially two angle iron sections, as 25, connected by transverse stays, as 25^a, which are arranged at suitable intervals. The flanges of the sections 25 extend toward one another and said sections are suitably spaced so as to afford, in effect, a longitudinal slot, as 26, the outer end of which is closed by a transverse stop bar, as 27, which connects the sections 25. The latter, near their outer ends, are formed with oppositely located recesses, as 28, for a purpose which will be later explained. The carriage 19 comprises a suitable frame, as 29, which extends through the slot 26 and which is provided preferably with two pairs of rollers, as 30, traveling on the flanges of the bar sections 25. The rollers on the front pair sink into the space afforded by the recesses 28 and are thus held against accidental displacement, the outward movement of the carriage being limited by the stop bar 27 which thus prevents the carriage from "jumping" from the end of the bar 18 upon which it travels. The frame 29 carries a sheave, as 31, which is centrally located and over which the hoisting rope passes.

In the lower part of each post portion of the frame sections 1, provision is made for supporting a motor, as 32, and a winch, as 33, which is driven by the motor 32. In the central part of each arch portion of the frame 1, provision is made for supporting a motor, as 34, and a winch, as 35. I preferably employ six motors, four of which, with their attendant winches, are used to operate the hoisting ropes that are associated with the derricks 16, there being one motor for each derrick, and the remaining two, with their winches, for operating the hoisting ropes that are associated with the cranes 17, one motor being common to the two cranes at each end of the frame. No particular type or kind of motor is obligatory but in using the machine for cane loading purposes, it is preferred to employ electric motors, since these are compendious and do not occasion vibration nor engender the danger of fire. The motors are to be suitably connected with portable lines of heavy insulated wire which will be carried on the ties of the main track. The motor connections are not relevant to the present invention and their illustration is not deemed necessary.

In connection with each derrick 16, it is preferred to employ two hoisting cables, one of which places the bundles at one end of the car and the other of which loads the other end of the car. The winches 33 are accordingly of double drum construction and the derrick hoisting cables, as 36 and 37, pass from the winches 33, through the sleeve 23 and over a double sheave, as 38, which is provided near the inner end of each derrick. The cable 36 then passes over a sheave, as 39, which is located near the center of the derrick and the cable 37 passes over a sheave, as 40, which is located at the outer end of the derrick. The depending free end portions of the cables 36 and 37 are provided with snap hooks for connection with the slings in which the bundles are held. The winches 35 are also of double drum construction, each drum accommodating a hoisting cable 41 which is associated with one of the correspondingly located cranes 17. Double sheaves, as 42, are provided on the beam 3, and the cables 41 from one winch are passed in opposite directions over the sheave 42 at one end of the frame, the cables 41 from the other winch being similarly passed over the sheave 42 at the other end of the frame. The cables 41 are passed over corresponding sheaves 31

and their depending free end portions are provided with snap hooks for connection with the slings in which the bundles are held.

At some distance above the ends of the cables 41, knobs, as 43, are provided, the function of which is to engage the frames 29 of the carriages 19 and to thus cause the cables to draw the carriages and therewith the load up the inclined bars 18 to positions above the car, as well as to prevent the carriages from moving by gravity too rapidly down the bars, when returning to their outermost positions.

The operation of loading will be generally set forth in connection with Fig. 1 of the drawings. In this figure, there are shown three cars, indicated, reading from left to right, D, E and F. The car D is loaded by the derricks at the left hand end of the frame; the central car E is loaded by the cranes and the car F is loaded by the derricks at the right hand end of the frame. Each derrick places its load at one side and both ends of the car and each crane places its load at one of the corresponding corners of the car. The derricks are swung outwardly and the bundles secured to the ends of the cables 36 and 37. The latter are then drawn up, the derricks swung over the car and the cables lowered, the bundles being then removed by a laborer. The derricks then swing outwardly and the operations are repeated.

The carriages 19 are allowed to run to the outer ends of the bars 18, the hoisting cables 41 being lowered. The bundles of cane are then secured to said cables and the latter raised until the knobs 43 engage the frames 29. The hoisting cables then propel the carriages up the bars 18 to positions above the cars, at which time the cables are lowered and the bundles are removed therefrom. The hoisting cables are then paid out and the carriages are allowed to travel to the ends of the bars 18, the operations being repeated in the manner described.

If desired, any suitable latch means may be provided to hold the carriages 19 at the inner terminations of their movements but ordinarily the weight of the cane bundles will accomplish this.

As a convenient means for operating the derricks 16 in their turning movements in carrying out the operations aforesaid, I preferably employ winches, as 46, which are located inwardly of the winches 33, as shown in Figs. 1 and 2, and which are preferably of double drum construction. Each winch 46 is preferably driven from the adjacent motor 32 through the agency of suitable gear connections. Such connections, generally speaking, being well known and forming no part of the present invention, have accordingly, for the sake of clearness of illustration, been omitted from the drawings. To one of the drums of each winch 46, the ends of a cable 47 are secured. This cable is passed about a sheave 48, shown in Fig. 7 as a peripheral extension of the plate 20, and its laps are passed over guide sheaves 49 and wound oppositely upon the corresponding winch 46 as shown in Figs. 1 and 2, the sheaves 49 being secured to the post portions of the frame in any suitable manner.

In the construction shown in Fig. 10, a sheave, as 48ª, is substituted for the sheave 48 and is secured upon the axis portion of the derrick at a point above the corresponding post portion of the frame, the sheave 48ª having a central tubular portion 50 which is inclosed within a similar portion 51 of the cap plate 52 which is employed in this connection and is assembled upon the upper end of the post portion. The tubular portions 50 and 51 coöperate to form, in effect, an upper bearing for the derrick which assists in steadying and centering the same.

It is of advantage in the saving of time, that one derrick be loading while the other is gathering and a similar system may be followed in the use of the cranes.

After the three cars D, E and F have been loaded in the manner described, the train may be advanced for a distance of three cars to bring another series of cars within the reach of the machine. When the loader has finished its work at one cane pile it may be moved along the tracks to another pile and the loading operation continued. The power of the motors may be used to propel the machine, the hauling ropes for this purpose being preferably secured to the normally free drums of the winches 46 and fastened at some distance ahead to the track.

It is preferred to employ guide plates, as 44, which are arranged above the sections 2 and extend longitudinally of the machine at each side thereof, as shown in Fig. 3, the function of these plates being to direct the bundles into the central car, clear of the sides thereof, in case the bundles should, for any reason, have a tendency to swing outwardly.

In Fig. 3 I have shown in dotted lines, at 45, sheaves over which hauling ropes may be led in case it is desired to use the machine as a yarder or as a combined yarder and loader.

It will be noted that the axis portions of the derricks 16 form, in effect, continuations of the post portions of the sections 1. This arrangement permits of the cables 36 and 37 being conveniently led through said axis and post portions and the construction is thus materially simplified, the use of supplemental cable guides and other like fixtures being unnecessary.

The balance of the machine is perfect. This is due to the fact that the greater por-

tion of the weight is in the lower part of the machine and to the symmetrical design of the machine and arrangement of the parts.

Having fully described my invention, I claim:

1. A loading machine comprising a frame having connected arch-shaped end sections, trucks movably supported from the frame and having horizontal swinging movement, wheels carried by the trucks, and load conveying means associated with the frame.

2. A loading machine comprising a frame which consists of arch-shaped end sections and connecting side sections, bracket arms pivoted at opposite sides of the frame, a truck carried by each bracket arm and in turn carrying traction wheels, and load conveying means associated with the frame.

3. A loading machine comprising a frame which consists of arch-shaped end sections and connecting side sections, trucks supported for movement between the side sections and carrying traction wheels and load conveying means associated with the frame.

4. A loading machine comprising a frame which consists of arch-shaped end sections and connecting side sections, vertically pivoted bracket arms arranged for swinging movement between the side sections, a truck carried by each bracket arm and in turn carrying traction wheels and load conveying means associated with the frame.

5. A loading machine comprising a frame, traction wheels for supporting the frame, means carrying the traction wheels and movable to positions whereby the traction wheels may rest on the track or may be free of the track, connecting means for a pair of opposed traction wheel carrying means, and load conveying means associated with the frame.

6. A loading machine comprising a frame constructed to straddle ground tracks and to permit of the travel of cars therethrough on said tracks, load conveying means at the center of the frame for depositing a load upon the central one of a series of three cars, load conveying means at each end of the frame for depositing a load upon the end cars of said series, and means for operating the several load conveying means simultaneously.

7. A loading machine comprising a frame having arch-shaped sections, movably mounted traction wheel means riding on a ground track for supporting the frame, means for supporting the frame to allow the traction wheel means to be moved to a position clearing the track, and load conveying means associated with the frame for transferring a load to the cars which pass therethrough and which also travel on the ground track.

8. A loading machine comprising a frame having swinging end derricks and transverse cranes located between the end derricks.

9. A loading machine comprising a frame having arch-shaped end sections, longitudinal beams connecting the end sections, swinging derrick arms mounted at the ends of the end sections, transverse bars supported by the beams, carriages movable on the bars, hoisting cables associated with the derricks and with the carriages and winches for winding and letting out the hoisting cables.

10. A loading machine comprising a frame having swinging end derricks, hoisting cables associated with the derricks and independent cable winding and paying out units for the cables of each derrick, and a motor for each unit.

11. In a loading machine, in combination, a frame having a supporting skeleton post portion, a skeleton derrick arm mounted for swinging movement on the post portion and provided with sheaves, a hoisting cable passed over the sheaves and through the axis portion of the derrick arm and through the post portion and a winch for winding and paying out the hoisting cable.

12. In a loading machine, in combination, an arch-shaped frame arranged to straddle a ground track, means for supporting the frame from the ground, stay bars connected to the rails of the ground track and to the frame and load conveying means associated with the frame.

13. A loading machine comprising a frame constructed to straddle ground tracks and to permit of the travel of a train of cars therethrough on said tracks, load conveying means at each end of the frame for depositing a load on separate cars of the train and means for operating the load conveying means simultaneously.

14. A loading machine comprising an arch frame which includes four corner posts, a swinging derrick arm mounted on each corner post and a hoisting cable associated with each derrick arm.

15. A loading machine comprising an arch frame which includes corner posts, a load conveying means mounted on each corner post and a separate motor for each load conveying means.

16. A loading machine comprising an arch frame having four corner posts, transversely movable load carriers located between the end pairs of posts and motors for the load carriers supported between the posts of each pair.

17. A loading machine comprising an arch frame having four corner posts, a swinging derrick arm mounted on each corner post, and transversely movable load carriers located between the end pairs of posts.

18. A loading machine comprising a frame having connected arch-shaped end

sections, bracket arms pivoted at opposite sides of the frame for horizontal swinging movement, the frame being proportioned to straddle ground tracks and the bracket arms being movable to positions at the sides of the tracks, and to positions wherein they extend across the adjacent track rails, load conveying means associated with the frame and machine supporting means provided on the bracket arms.

19. A loading machine comprising a frame having connected arch-shaped end sections, a pair of bracket arms pivoted at opposite sides of the frame for horizontal swinging movement, the frame being proportioned to straddle ground tracks and the bracket arms being movable to positions at the sides of the tracks and to positions wherein they extend across the adjacent track rails, load conveying means associated with the frame, machine supporting means provided on the bracket arms, and means for coupling each bracket arm on one side of the machine to the correspondingly located arm on the other side of the machine, when the bracket arms are in the positions wherein they project across said rails.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILSON F. JOHNSTONE.

Witnesses:

ROBERT E. BOND,

ALLEN C. ROBINSON.