

No. 841,066.

PATENTED JAN. 8, 1907.

J. W. STOLKRANTZ.

DERRICK.

APPLICATION FILED SEPT. 12, 1906.

5 SHEETS—SHEET 1.

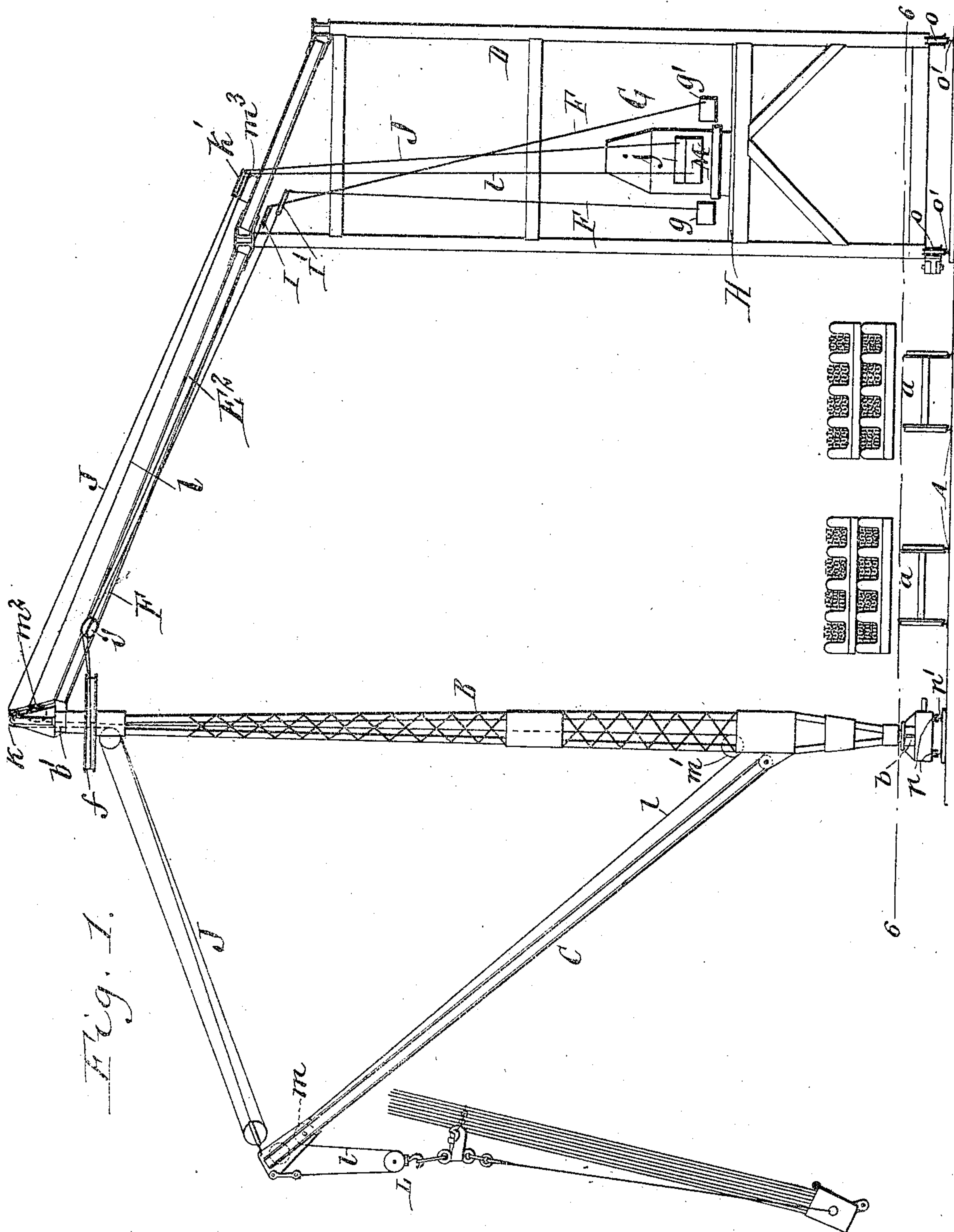


Fig. 1.

Witnesses:-
Louis W. Gratz
Richard Sommer.

John W. Stolkrantz Inventor
by Keyer & Popp Attorneys.

No. 841,066.

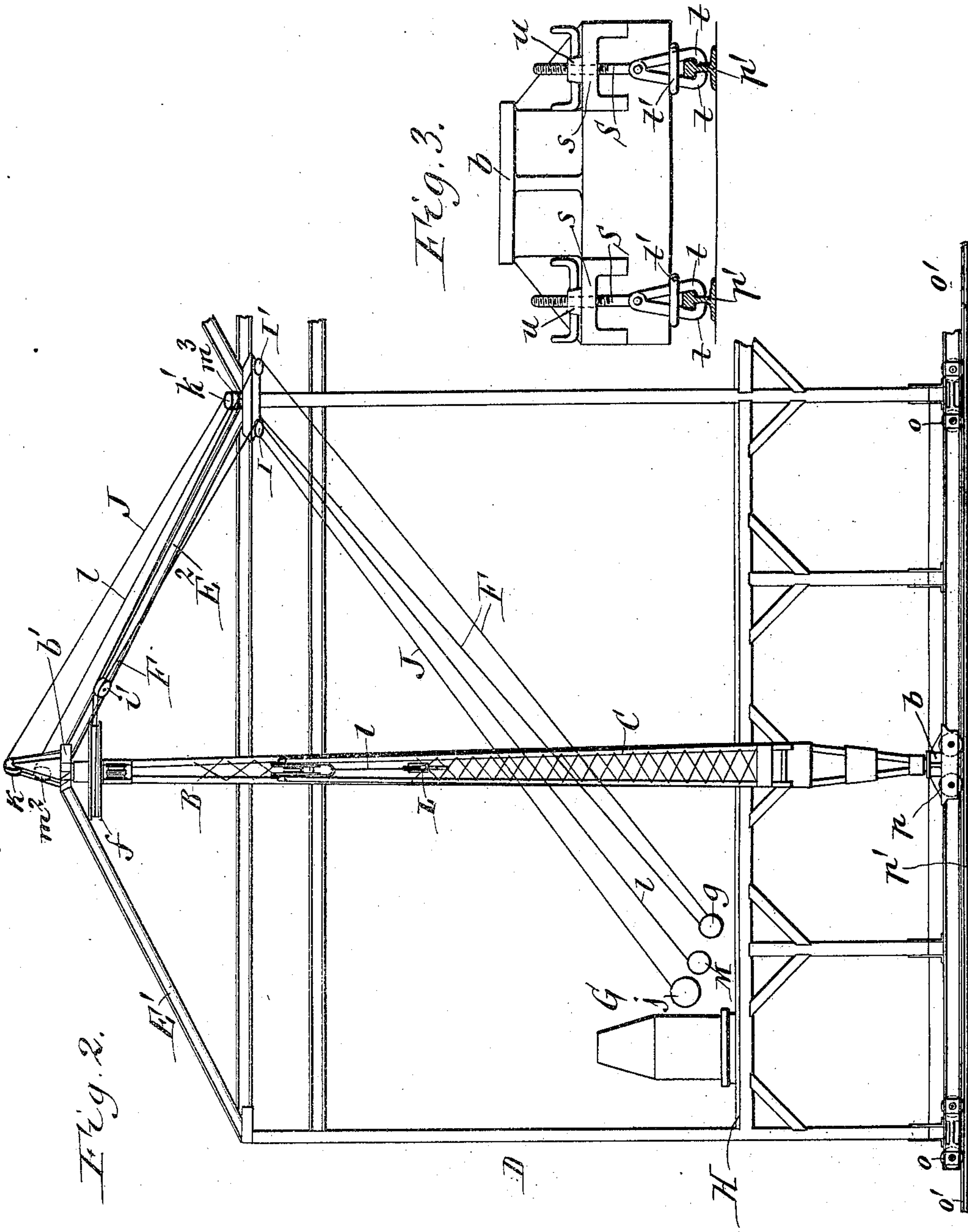
PATENTED JAN. 8, 1907.

J. W. STOLKRANTZ.

DERRICK.

APPLICATION FILED SEPT. 12, 1906.

5 SHEETS—SHEET 2.



Witnesses:
Louis W. Gratz.
Richard Sommer

Inventor
John W. Stolkrantz
by Geyer & Papp
Attorneys.

No. 841,066.

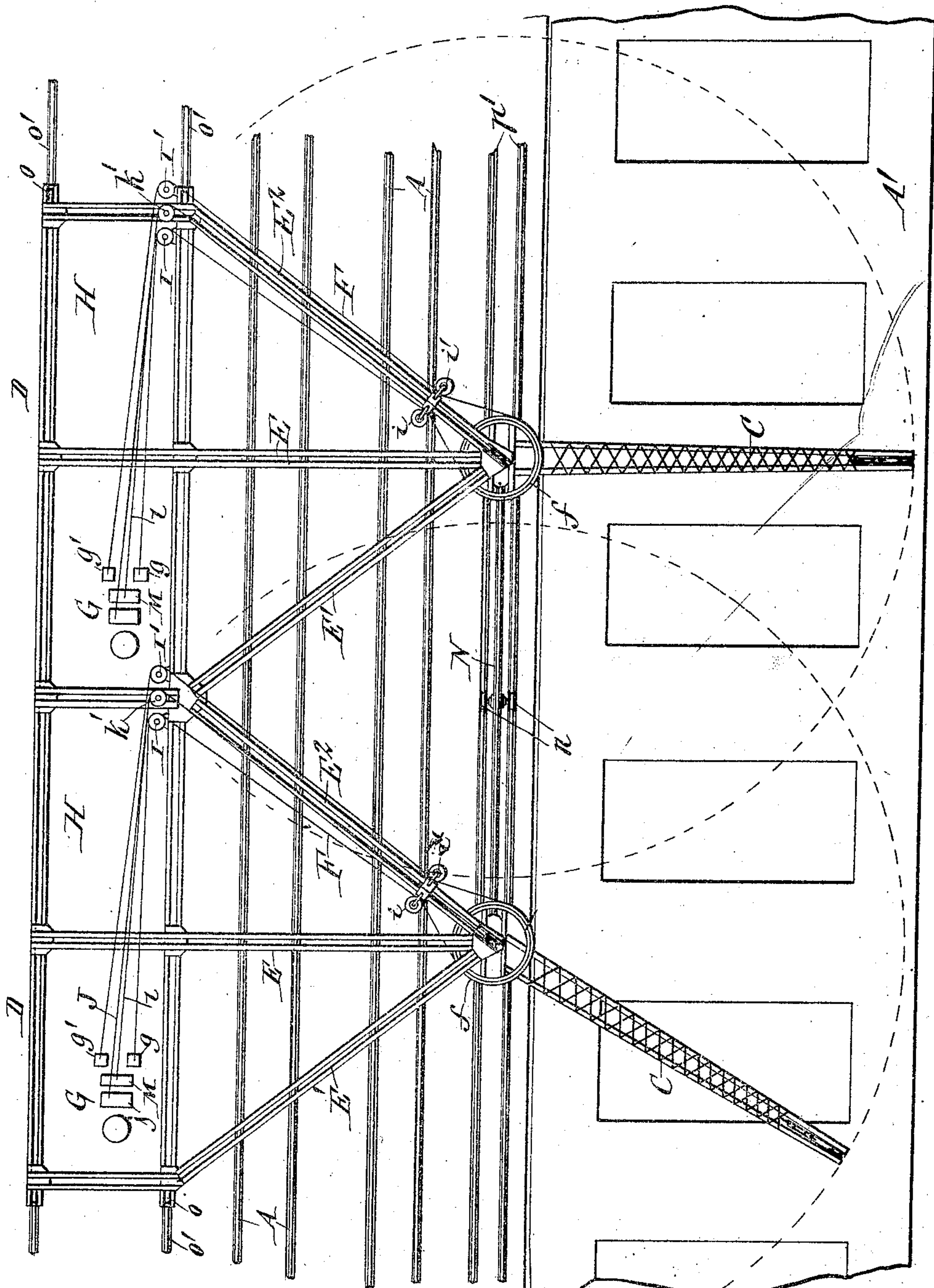
PATENTED JAN. 8, 1907.

J. W. STOLKRANTZ.

DERRICK.

APPLICATION FILED SEPT. 12, 1906.

5 SHEETS—SHEET 4.



Witnesses:
Louis W. Gatz.
Richard Sommer.

Fig. 5.

Inventor
John W. Stolkrantz
by Keiper & Papp
Attorneys.

No. 841,066.

PATENTED JAN. 8, 1907.

J. W. STOLKRANTZ.

DERRICK.

APPLICATION FILED SEPT. 12, 1906.

5 SHEETS—SHEET 5.

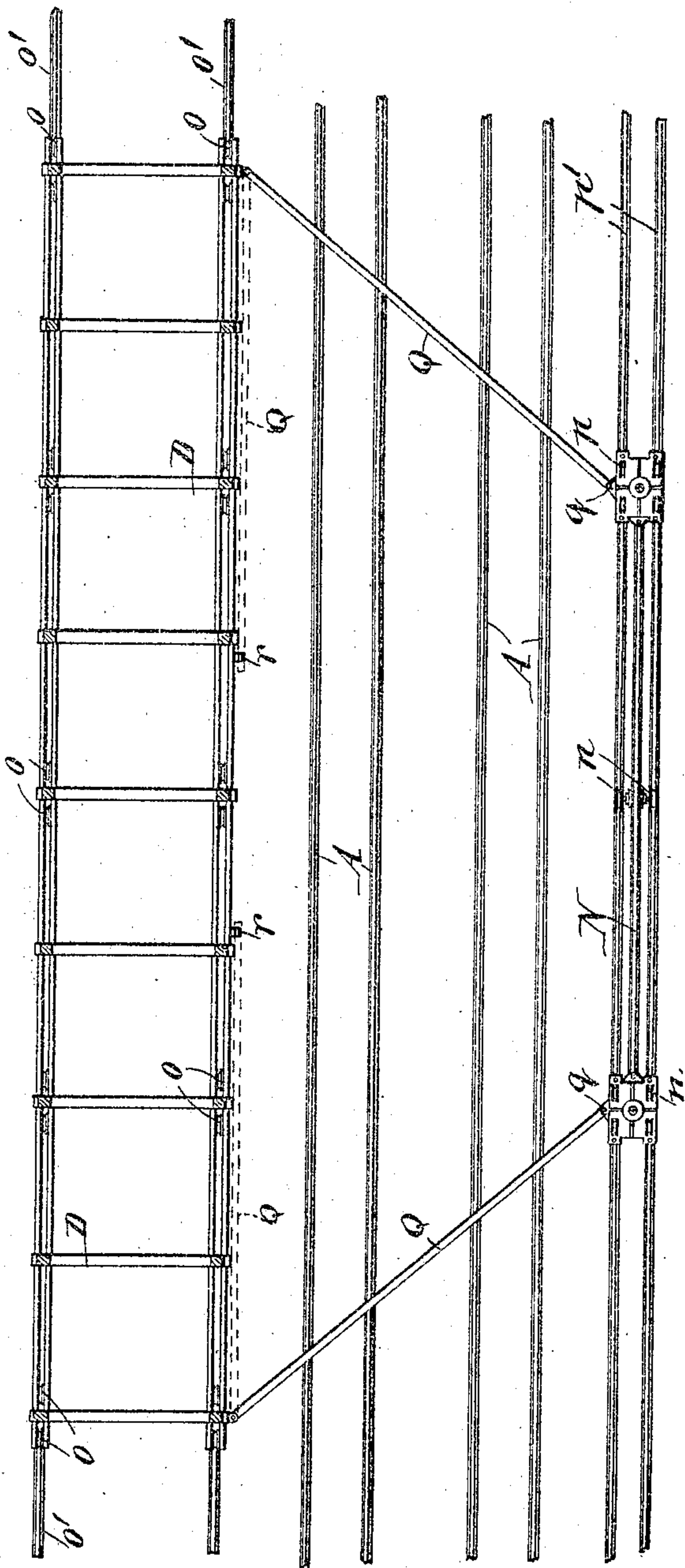


Fig. 6.

Witnesses:
Louis W. Gratz,
Richard Sommer.

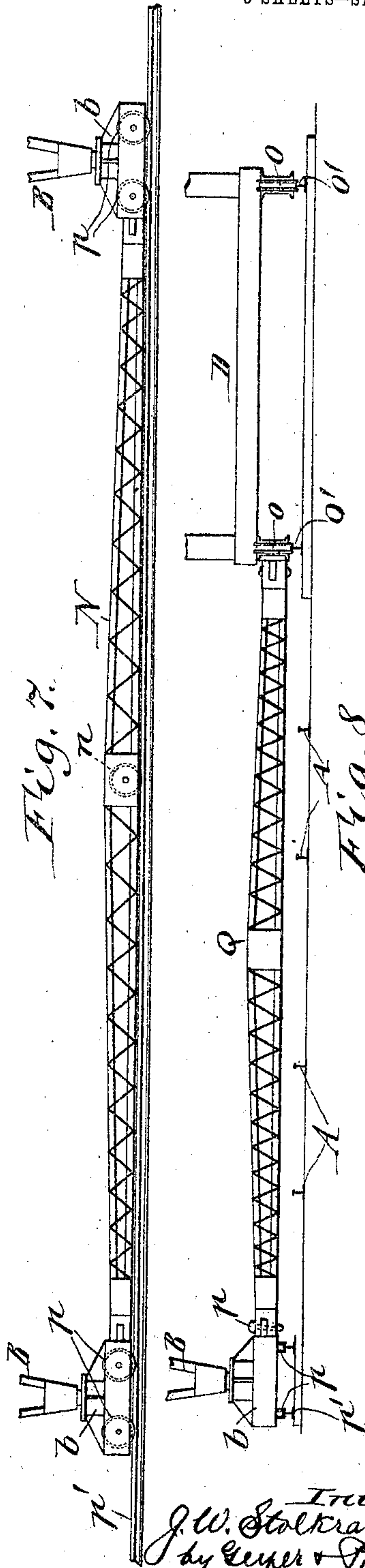


Fig. 7.

Fig. 8.

Inventor
J. W. Stolkrantz
by C. E. & P. P.
Attorneys

UNITED STATES PATENT OFFICE.

JOHN W. STOLKRANTZ, OF BUFFALO, NEW YORK.

DERRICK

No. 841,066.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed September 12, 1906. Serial No. 334,255.

To all whom it may concern:

Be it known that I, JOHN W. STOLKRANTZ, a citizen of the United States, and a resident of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Derricks, of which the following is a specification.

This invention relates more particularly to a derrick for transferring rails or freight from cars running on a dock to a boat arranged along the side of the dock, although the same may also be used for other purposes.

The object of this invention is to provide a derrick of this character which permits of readily and expeditiously transferring freight from cars on the dock to a boat, or vice versa, with a minimum number of attendants and with the least wear on the working parts of the derrick.

In the accompanying drawings, consisting of five sheets, Figure 1 is a side elevation of my improved derrick. Fig. 2 is a front elevation of one section thereof. Fig. 3 is a sectional elevation, on an enlarged scale, showing one of the clamps on a mast-carriage for holding the derrick against horizontal movement when the same is made portable. Fig. 4 is a top plan view of one section of the derrick. Fig. 5 is a top plan view, on a reduced scale, showing two sections of the derrick arranged for delivering rails or freight from a dock to a boat alongside of the dock. Fig. 6 is a horizontal section taken in line 6-6, Fig. 1, but on the same scale as Fig. 5 and showing the derrick in condition for transportation. Fig. 7 is a fragmentary front elevation, on an enlarged scale, showing the means for connecting the carriages which support the lower ends of the two adjacent masts of the derrick. Fig. 8 is a fragmentary side elevation of the lower part of the derrick, showing the means for temporarily connecting a mast-supporting carriage and the traveling stage for transporting the derrick.

Similar letters of reference indicate corresponding parts throughout the several views.

A represents a plurality of railway tracks or rails which are arranged lengthwise of the dock, near the edge thereof, and upon which run the cars *a*, adapted to carry rails or other freight to be transferred by my improved derrick to a boat *A'*, arranged alongside of the dock.

In the drawings the derrick is represented in its most complete form in which the same is capable of being transported lengthwise from one part of the dock to another to meet different conditions; but, if desired, the same may be erected so as to remain permanently in one position.

In its general organization the derrick comprises one or more sections each of which consists, essentially, of a horizontally-rotating mast *B*, arranged on the dock between the edge thereof and the front side of the trackway or loading-space; a boom *C*, pivotally connected at its inner end to the lower part of the mast and capable of being raised and lowered; an upright stage *D*, arranged on the dock in rear of the trackway or loading-space; a bearing *b*, in which the lower end of the mast is journaled; a bearing *b'*, in which the upper end of the mast is journaled; a central tie bar or brace *E*, extending transversely from the top bearing *b'* to the central upper part of the stage, and two side tie bars or braces *E'* *E''*, extending transversely and obliquely from the top bearing *b'* to the upper part of the stage on opposite sides of the central tie bar or brace.

The turning of the mast is effected by means of a swinging line or cable *F*, which passes with its central part around a bull or swinging wheel *f*, arranged at the upper end of the mast, while its opposite ends are wound around the swinging drums *g g'* of a hoisting-machine *G*, which is mounted on an elevated platform *H* on the stage. This hoisting-machine is arranged at one end of the platform adjacent to the rear end of one of the oblique tie-bars, and the two parts of the swinging cable pass obliquely upward from the swinging drums around guide-wheels *I I'*, which are mounted on the stage adjacent to the junction of its top with the rear end of the other oblique tie bar or brace, and then pass along this last-mentioned tie-bar around intermediate guide-wheels *i i'* on the latter to the bull-wheel, as shown in Figs. 1, 2, 4, and 5.

The boom is raised and lowered by means of a boom line or cable *J*, operatively connected at one end with the outer end of the boom, while its opposite end is wound around the boom-drum *j* of the hoisting-machine. The intermediate part of the boom-cable passes over a guide-wheel *k* on the upper bearing of the mast, thence obliquely along

the tie-bar E^2 and around a guide-wheel k' , arranged at the junction of the tie-bar E^2 and the stage adjacent to the guide-wheels $I I'$, and thence obliquely downward to the boom-drum of the hoisting-machine.

The load to be transferred from the dock or cars to the boat, and vice versa, is raised and lowered by means of a tackle or tackle-hook L , adapted to be connected with the load, and a hoisting-cable or main line l , operatively connected at one end with the tackle and passing with its opposite end around the hoisting or main drum M of the hoisting-machine, while its intermediate part passes around a guide-wheel m at the outer end of the boom, a guide-wheel m' at the lower end of the mast, a guide-wheel m^2 on the upper bearing of the mast, and a guide-wheel m^3 on the stage adjacent to the junction between the same and the oblique tie-bar E^2 , that part of the cable l between the guide-wheels $m^2 m^3$ being arranged obliquely and along the tie-bar E^2 and that part of the same between the guide-wheel m^3 and the main drum M being arranged substantially parallel with the adjacent oblique parts of the boom and mast cables. By thus arranging the guide-wheels $I I' k' m^3$ of the several cables at the junction of the stage and the oblique tie-bar E^2 these cables pass in a direct line from these guide-wheels along the said tie-bar to a point adjacent to the upper end of the mast and also in a direct line to the several drums of the hoisting-machine, thereby reducing the number of guide-wheels for these cables between the mast and the hoisting-machine to a minimum and reducing the wear upon these cables accordingly.

The platform H is preferably higher than the top of the load on the cars, and the hoisting-machine is arranged on one side of the mast, which enables the attendant of the hoisting-machine to observe the movement of the load during its entire passage or transfer from the cars to the boat, or vice versa, thus facilitating the operation of loading and unloading and reducing the number of attendants which is usually required for this purpose.

When a derrick of small capacity is required, a single section of my improved derrick, as shown in Fig. 4, will answer the purpose. For loading boats of considerable length it is preferable to employ two derricks side by side, as shown in Fig. 5, and swing their booms over different parts of the boat, whereby loading and unloading of the same are facilitated. When these derricks are thus employed, the stages of the same are connected so as to form practically one structure.

In order to permit of transporting the derrick from one part of the dock to another for adapting the same to the position of the hatchways or other conditions, the stages

are provided on their under sides with supporting-wheels o , which run on longitudinal tracks or rails o' . The lower mast-bearings b are provided with supporting-wheels p , which run on longitudinal tracks or rails p' , and the lower bearings b of the two masts are connected by a horizontal beam or bar N , which is provided with the wheels or rollers n , running on the tracks p' . The lower parts of the lower mast-bearings and the stages thus form carriages, which support the masts and hoisting-machines and the parts connected with the same.

In order to hold the lower mast-bearings and the masts in position relatively to the stages while transporting the same, movable oblique braces or coupling-bars Q are employed, each of which is preferably pivoted at its rear end to the lower part of one of the stages and detachably connected with one of the mast-carriages by means of a pin q , passing through corresponding openings in these parts. In Fig. 6 these braces are shown in full lines in the position which they occupy for coupling the mast-carriages with the stages preparatory to shifting the derrick bodily on the dock. After the derrick has been thus shifted the coupling-bars are detached at their front ends from the mast-carriages and folded rearwardly against the stages, as shown by dotted lines in Fig. 6, in which position these bars are supported by hooks or brackets r on the stages and leave the main loading-tracks clear for moving the loaded and unloaded cars into and out of the loading-space between the masts and the stages.

Any suitable means may be employed for holding the stages and mast-carriages against movement on their tracks when the derrick is in use. The preferred means for this purpose (shown in Fig. 3) as applied to a mast-carriage consist of clamping-screws S , mounted in brackets s on the mast-carriages; a pair of inclined claws t , pivoted at the lower end of the clamping-screw; a link t' , embracing these claws and operating to hold the same with their hooks underneath opposite sides of the adjacent rail-head, and a clamping-nut u , applied to the upper end of the clamping screw and bearing against the upper side of the supporting-bracket s . For the purpose of freeing this clamping device from the track and permitting the derrick to be moved horizontally the nut u is first unscrewed and then the link t' is moved upwardly, thereby releasing the claws from the rail and permitting shifting of the derrick along its tracks.

I claim as my invention—

1. A derrick comprising a mast, a boom pivoted on the mast, a tackle arranged at the outer end of the boom, a bearing in which the upper end of the mast is journaled, means for

turning said mast comprising a bull-wheel secured to the upper end of the mast and a swinging cable passing around the bull-wheel, means for raising and lowering said boom comprising a boom-cable operatively connected with the boom and a guide-wheel arranged on said bearing and receiving the boom-cable, and means for raising and lowering said tackle comprising a tackle-cable operatively connected with said tackle and a guide-wheel arranged on said bearing and receiving said tackle-cable, substantially as set forth.

2. A derrick comprising a mast, boom and tackle arranged on one side of the loading-space, a stage arranged on the opposite side of the loading-space, a bearing for the upper end of the mast, a connection between said bearing and stage, a hoisting-machine arranged on said stage, and cables operatively connecting said mast, boom and tackle with said hoisting-machine, substantially as set forth.

3. A derrick comprising a mast, boom and tackle arranged on one side of the loading-space, a stage arranged on the opposite side of the loading-space, a bearing for the upper end of the mast, a connection between said bearing and stage, a hoisting-machine arranged on said stage, and cables operatively connecting said mast, boom and tackle with said hoisting-machine and having parts which pass from the top of the mast to the top of the stage, substantially as set forth.

4. A derrick comprising a mast, boom and tackle arranged on one side of the loading-space, a stage arranged on the opposite side of the loading-space and having an elevated platform, a hoisting-machine arranged on the platform, and cables operatively connecting said mast, boom and tackle with said hoisting-machine, substantially as set forth.

5. A derrick comprising a stage arranged on one side of the loading-space, a mast, boom and tackle arranged on the opposite side of the loading-space and opposite the central part of said stage, a connection between the upper ends of the mast and stage, a hoisting-machine mounted on the stage at one end thereof, guide-wheels mounted on the upper part of the stage at the upper end thereof, and cables operatively connecting said mast, boom and tackle with said hoisting-machine and passing from the top of the mast around said guide-wheels, substantially as set forth.

6. A derrick comprising a stage arranged on one side of the loading-space and having an elevated platform, a mast, boom and tackle arranged on the opposite side of the loading-space and opposite the central part of the stage, upper and lower bearings in which the upper and lower ends of the mast are journaled, a central tie-bar extending at

right angles from the upper bearing of the mast to the central part of the upper end of the stage, two side tie-bars extending obliquely from the upper bearing of the mast on opposite sides of the central tie-bar to opposite ends of the upper part of the stage, a hoisting-machine arranged on said platform at one end of the stage, guide-wheels mounted on the upper part of said stage at the opposite end thereof, and cables operatively connecting the mast, boom and tackle with said hoisting-machine and having parts which pass from the upper part of the mast along one of said side tie-bars and around said guide-wheels, substantially as set forth.

7. A derrick comprising a stage arranged on one side of the loading-space, a mast arranged on the opposite side of the loading-space, a tie between said mast and stage, and rails upon which said mast and stage are movably supported, substantially as set forth.

8. A derrick comprising a stage movable lengthwise of the loading-space on one side thereof, a mast movable lengthwise of the loading-space on the opposite side thereof, a permanent tie connecting the upper parts of the mast and the stage, and a detachable tie connecting the lower parts of the mast and stage, substantially as set forth.

9. A derrick comprising a stage arranged on one side of the loading-space, supporting-wheels mounted on said stage and running on tracks, a mast arranged on the opposite side of the loading-space, bearings in which the upper and lower ends of said mast are journaled, supporting-wheels mounted on the lower bearing of the mast and running on tracks, a tie-bar connecting the upper bearing of the mast with the upper part of the stage, and coupling-bar pivoted at one end on the stage and having means for detachably connecting its opposite end with the lower bearing of the mast, substantially as set forth.

10. A derrick comprising two connected stages movable lengthwise of the loading-space on one side thereof, two masts movable lengthwise of the loading-space on the opposite side thereof and each arranged opposite the central part of one of said stages, bearings in which the upper and lower ends of said masts are journaled, tie-bars connecting the upper bearing of each mast with the upper end of one of said stages, and a beam connecting the lower bearings of both masts, substantially as set forth.

11. A derrick comprising two connected stages movable lengthwise of the loading-space on one side thereof, two masts movable lengthwise of the loading-space on the opposite side thereof and each arranged opposite the central part of one of said stages, bearings in which the upper and lower ends of said masts are journaled, tie-bars connecting

the upper bearing of each mast with the upper end of one of said stages; a beam connecting the lower bearings of both masts, and two detachable coupling-bars extending
5 obliquely from the lower bearings of the masts to the outer ends of said stages, substantially as set forth.

Witness my hand this 10th day of September, 1906.

JOHN W. STOLKRANTZ.

Witnesses:

THEO. L. POPP,
RUTH TARBELL.