

No. 819,759.

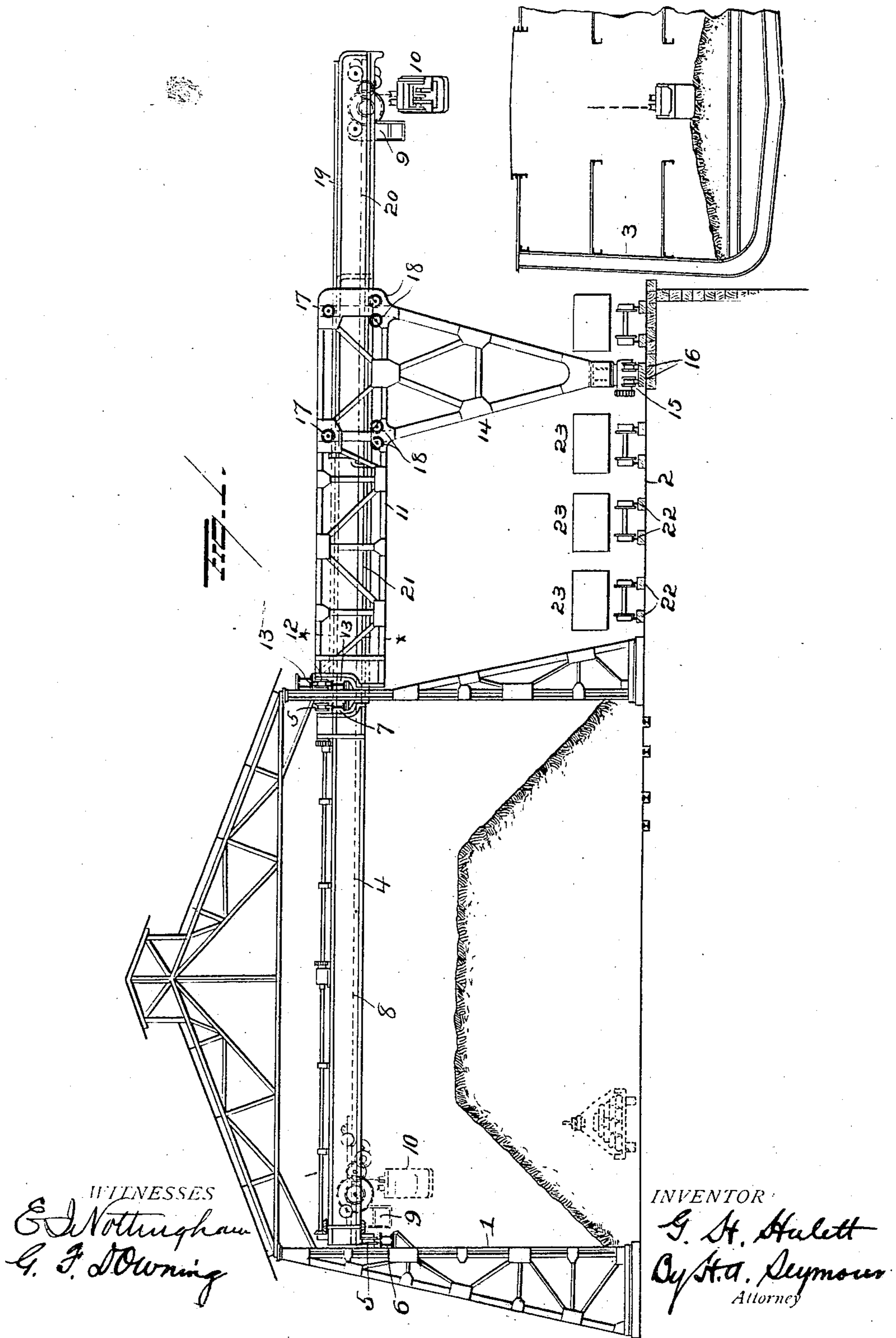
PATENTED MAY 8, 1906.

G. H. HULETT.

WAREHOUSE MACHINERY FOR UNLOADING SHIPS.

APPLICATION FILED JAN. 13, 1905.

3 SHEETS--SHEET 1.



WITNESSES

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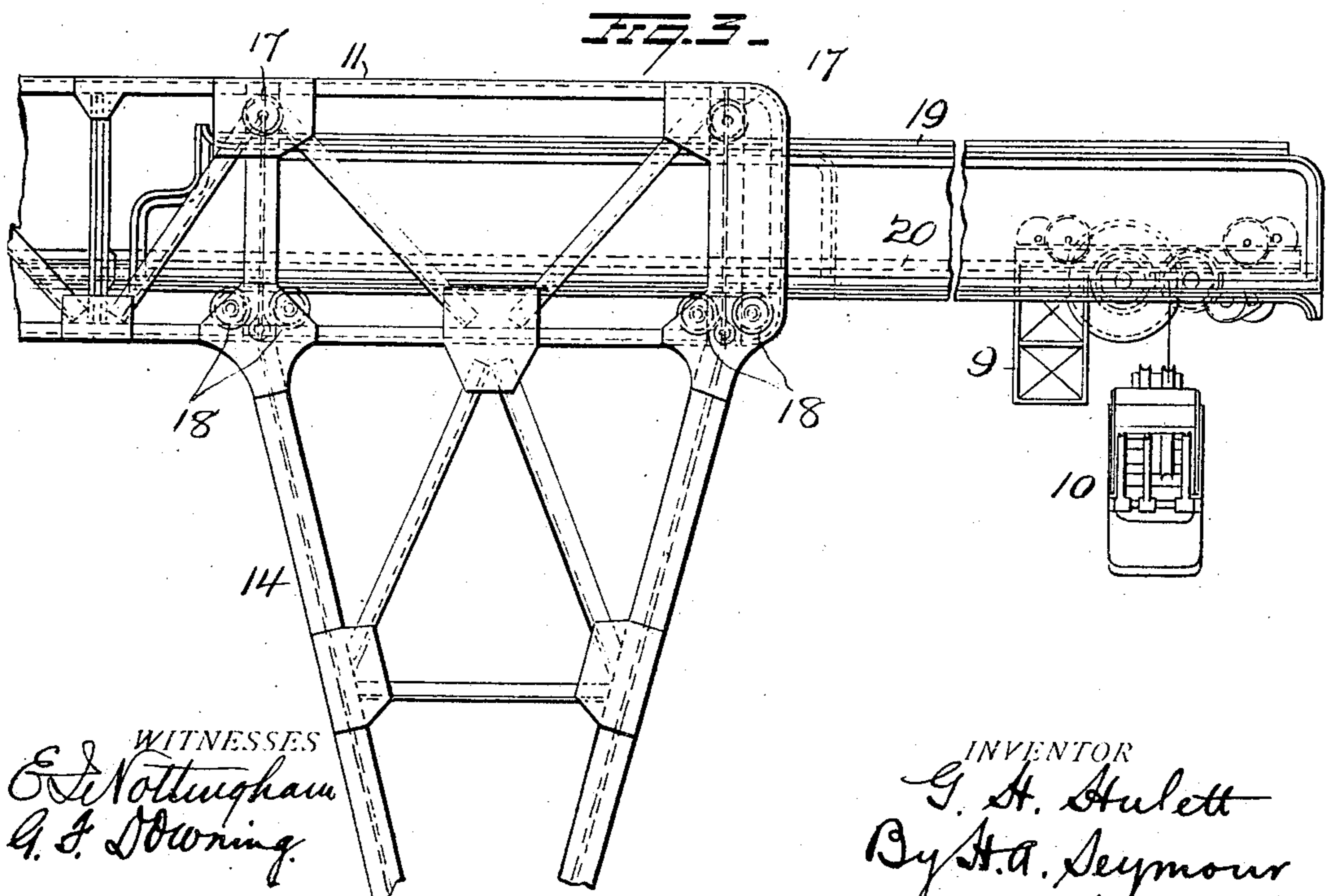
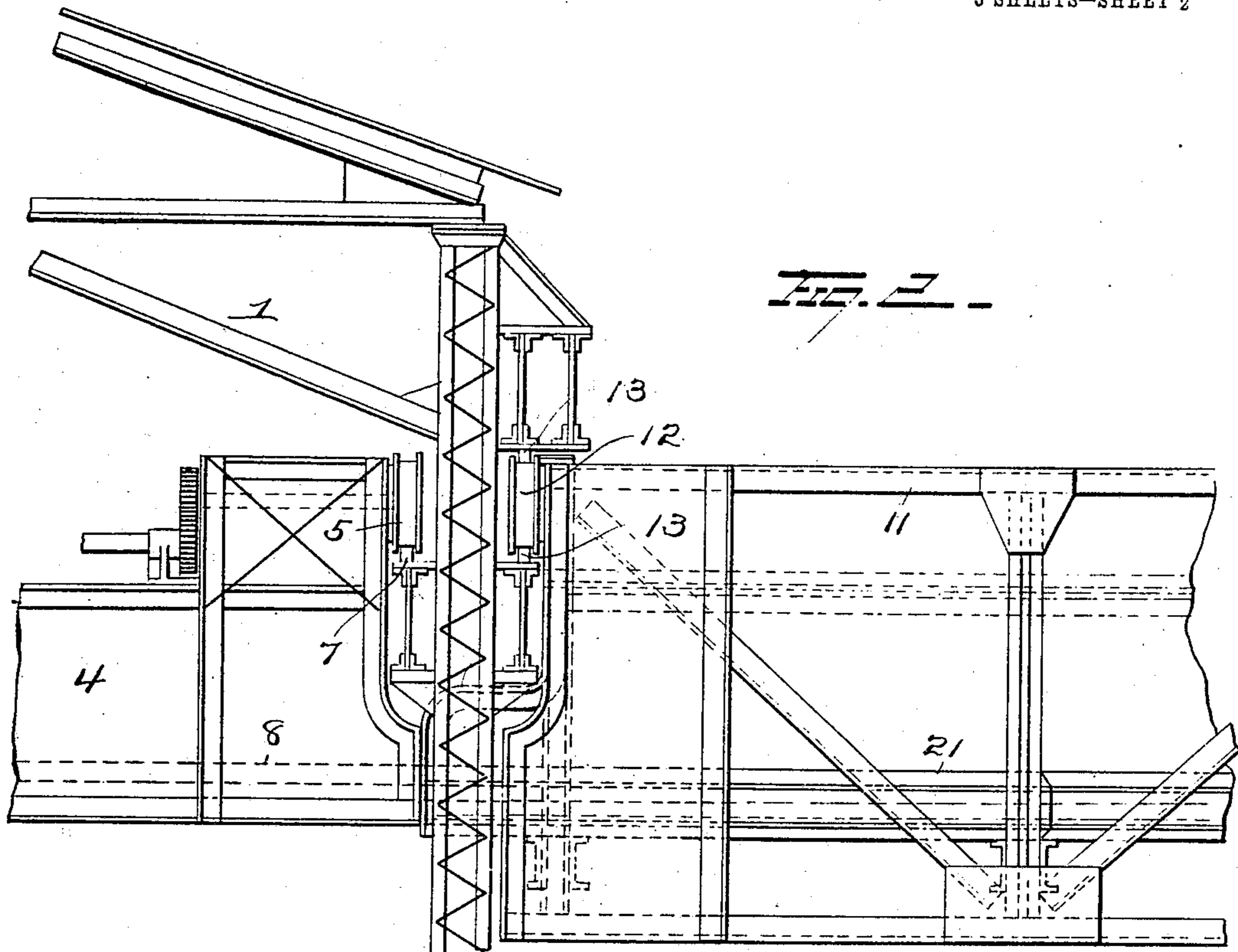
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3 SHEETS—SHEET 2



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3 SHEETS—SHEET 3.

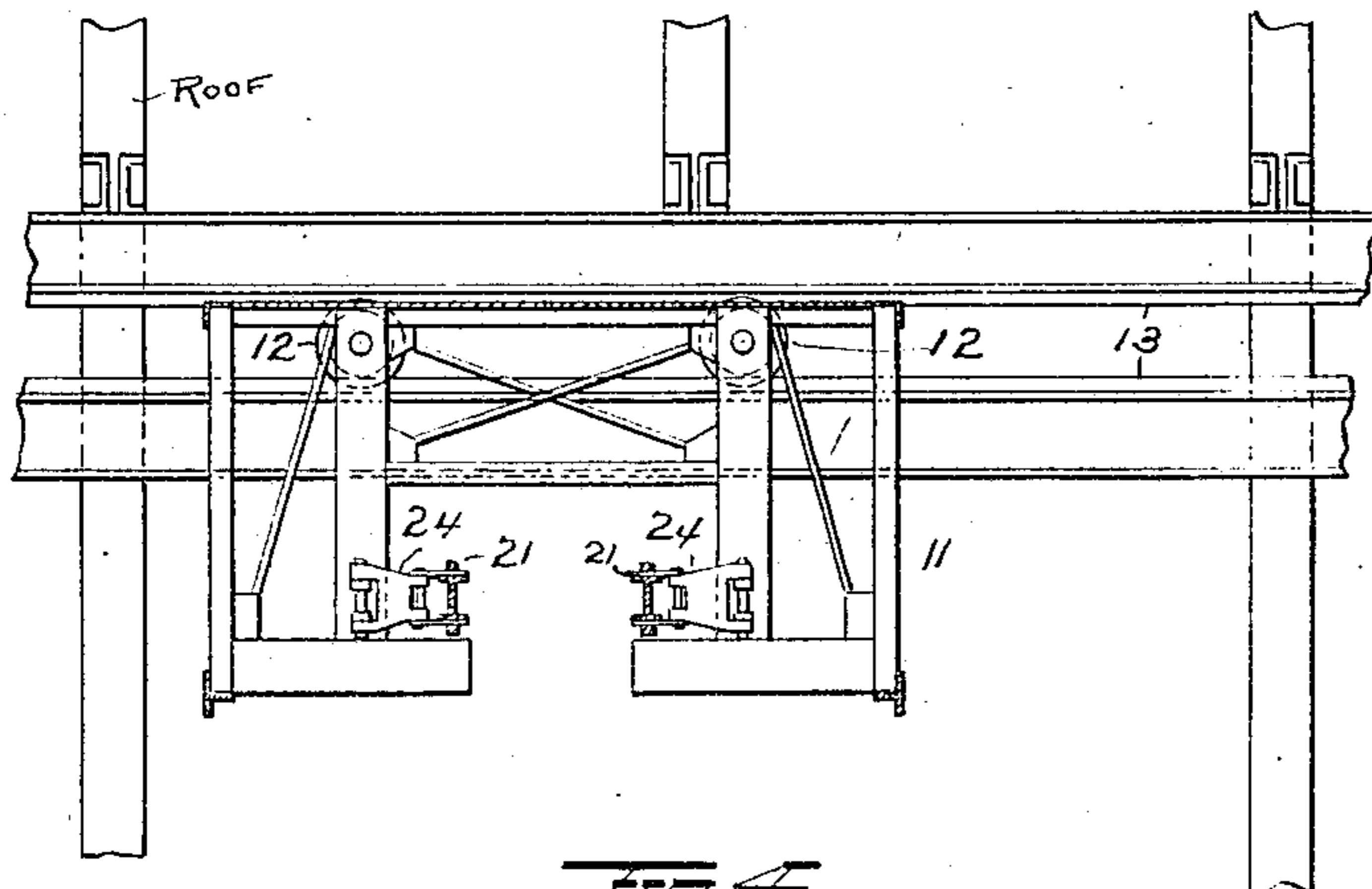


Fig. 4.

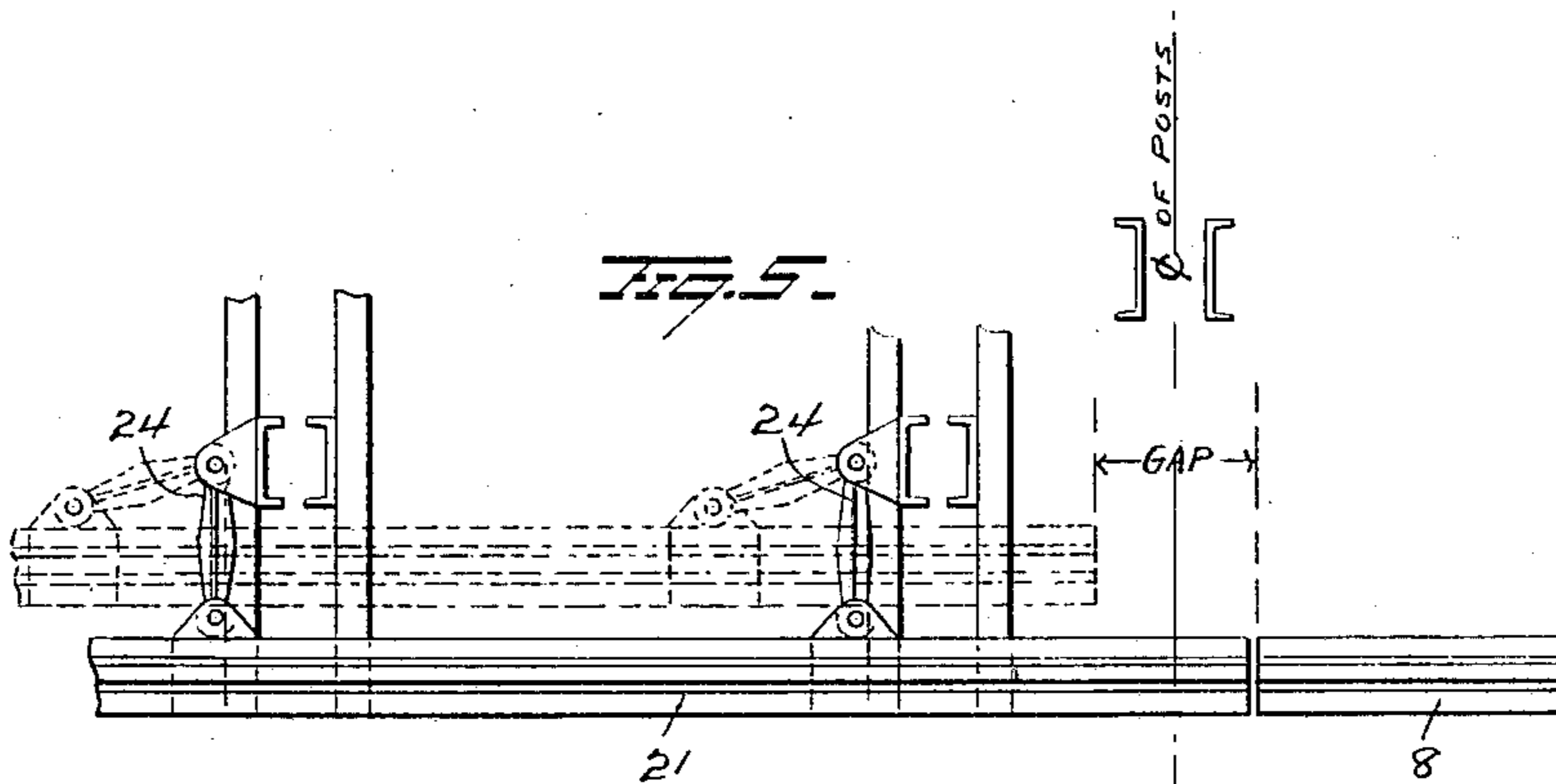


Fig. 5.

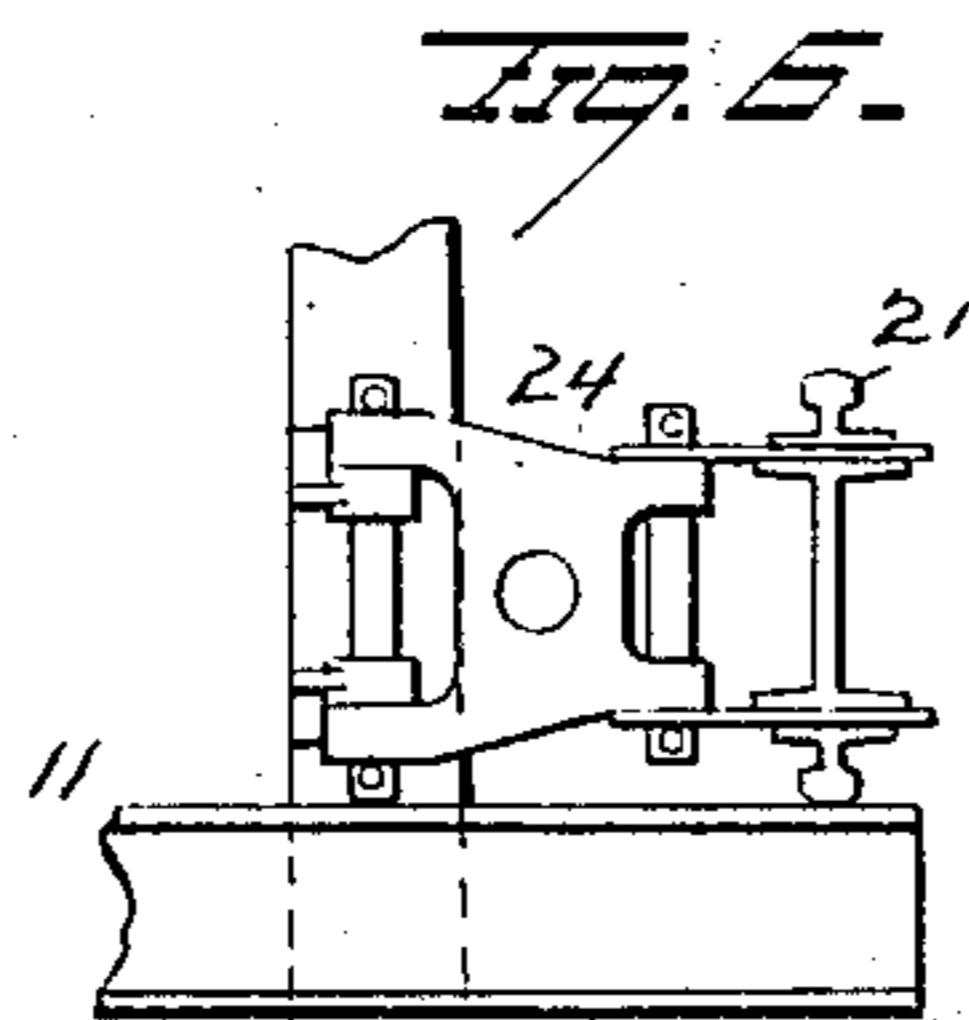


Fig. 6.

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UNITED STATES PATENT OFFICE.

GEORGE H. HULETT, OF CLEVELAND, OHIO, ASSIGNOR TO WELLMAN-
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WAREHOUSE MACHINERY FOR UNLOADING SHIPS.

No. 819,759.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed January 18, 1905. Serial No. 241,692.

To all whom it may concern:

Be it known that I, GEORGE H. HULETT, a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Warehouse Machinery for Unloading Ships; 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 improvements in warehouse machinery for unloading ships, the object of the invention being to provide improved machinery which will permit the cargo of a ship to be conveyed through any of the openings in the side of a warehouse and deposited therein; and the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation, illustrating my improvements. Figs. 2 and 3 are enlarged broken side views. Fig. 4 is a sectional view on the line $x-x$ of Fig. 1. Fig. 5 is a view showing the manner of supporting and shifting the tracks 21. Fig. 6 is a detail view showing one of the shifting-supports for the tracks 21.

1 represents a warehouse having openings in one side throughout the warehouse and adjacent to a dock 2, and 3 represents a ship beside the dock.

In the warehouse a traveling crane 4 is located and provided at one end with wheels 5 on the lower side of the crane, supported on a rail 6, and the wheels 5 at the other end of the crane adjacent to the dock are on the top of the crane and mounted on a rail 7, and the crane between its longitudinal girders has a track 8 and is open between the rails of the track, permitting a trolley 9 to travel along the same and support a suspended clam-shell bucket 10 or other apparatus for conveying material from the ship or to the same.

On the dock 2 beside the warehouse 1 a crane 11 is located and comprises a horizontal frame in the same horizontal plane as crane 4 and provided at its inner end with wheels 12, mounted to run between rails 13 on the outside of the warehouse, and the other end of the crane 11 is supported by a

standard 14, having wheels 15 at its lower end, running on tracks 16 on the dock, and it will be seen that this crane 11 can be moved along the dock to any opening in the side of the warehouse to aline with crane 4.

The crane 11 is provided with open tracks 21, which can be made to aline with the tracks 8 of crane 4 and with tracks 20 in a boom 19. The boom 19 is made to telescope within the frame of the crane 11 and is properly supported and guided by means of rollers 17 and 18, journaled in the crane 11. When all of said tracks are in alinement, the trolley 9 can move from the outer end of boom 19 to the inner end of crane 4 and convey material from the ship to the warehouse, or vice versa.

For the purpose of causing the tracks 21 to project through the openings in the warehouse and aline with the tracks 8 in the latter or to move said tracks out of alinement with the tracks 8 in the warehouse and the tracks 20 in the boom, said tracks are so mounted that they can be shifted both laterally and longitudinally. To accomplish this, the tracks 21 are connected with the frame of crane 11 by means of swinging brackets 24, one end of each bracket being pivotally connected with the framework of the crane and the other end having a pivotal connection with a track-rail 21. It will be seen that with this construction each track-rail 21 can be moved in the arc of a circle, causing said rail to be shifted longitudinally through an opening in the warehouse and also shifted laterally into or out of alinement with the rails 8 in the warehouse and the rails 20 in the boom. The different positions to which the track-rails 21 can be shifted is clearly illustrated by the full lines and dotted lines in Fig. 5.

On dock 2 I have illustrated a number of tracks 22 for cars 23, and it will be understood that crane 11, with its boom 19, and the trolley 9 can be employed to convey material from the ship to the cars or from the cars to the ship.

The movement of cranes 4 and 11 is controlled either by an operator on the trolley or on the dock-level, and I do not restrict myself to any particular means for operating them.

In operation the bucket 10 or other conveyor enters the hold of the ship, receives its load, and is elevated to a height above the

upper deck. Trolley 9 is then operated to travel along tracks 20, 21, and 8 to carry the material to and deposit it in the warehouse, and as the latter becomes filled the cranes 4 and 11 can be moved along from opening to opening in the side of the warehouse and the material distributed throughout or removed therefrom.

A great many slight changes might be made in the general form and arrangement of the parts described without departing from my invention, and hence I would have it understood that I do not restrict myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. The combination with a warehouse, or like structure, and a traveling crane therein, of a traveling crane outside the structure, and trolley-tracks on both of said cranes adapted to aline at openings in the structure.

2. The combination with a warehouse or like structure, and a traveling crane therein, of a traveling crane outside the structure adapted to aline with the first-mentioned crane at openings in the structure, a boom on the outside crane, and a continuous trolley-track on both cranes and the boom.

3. The combination with a warehouse or like structure, and a traveling crane therein, of a traveling crane outside the structure adapted to aline with the first-mentioned crane at openings in the structure, a boom telescoping in the outside crane, and trolley-

tracks on both of the cranes and on the boom for forming a continuous track for the trolley-conveyer.

4. The combination with a warehouse or like structure, and a traveling crane therein, of a traveling crane outside the structure, wheels at one end of the outside crane supported to run on the structure, a standard supporting the outer end of the outside crane, tracks, wheels on the standard mounted on the tracks, and trolley-tracks on both cranes adapted to form a continuous track when the cranes are alined at an opening in the structure.

5. In an apparatus of the character described, the combination with a dock, a warehouse or like structure located adjacent to the dock, and a traveling crane in the structure, of a traveling crane outside the structure, supported at one end on the dock and at its other end on the structure, a telescoping boom on the outside crane adapted to be projected over a ship at the dock, trolley-tracks on the boom and cranes forming a continuous track when the cranes are in alinement, a trolley on said track and a hoisting and conveying bucket or conveyer, carried by the trolley and constructed to receive and deposit material at any points throughout the continuous track.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE H. HULETT

Witnesses:

C. W. COMSTOCK,
HOWARD C. TOBEY.