

(No Model.)

3 Sheets—Sheet 1.

C. N. NEWCOMB.
CONVEYER.

No. 403,603.

Patented May 21, 1889.

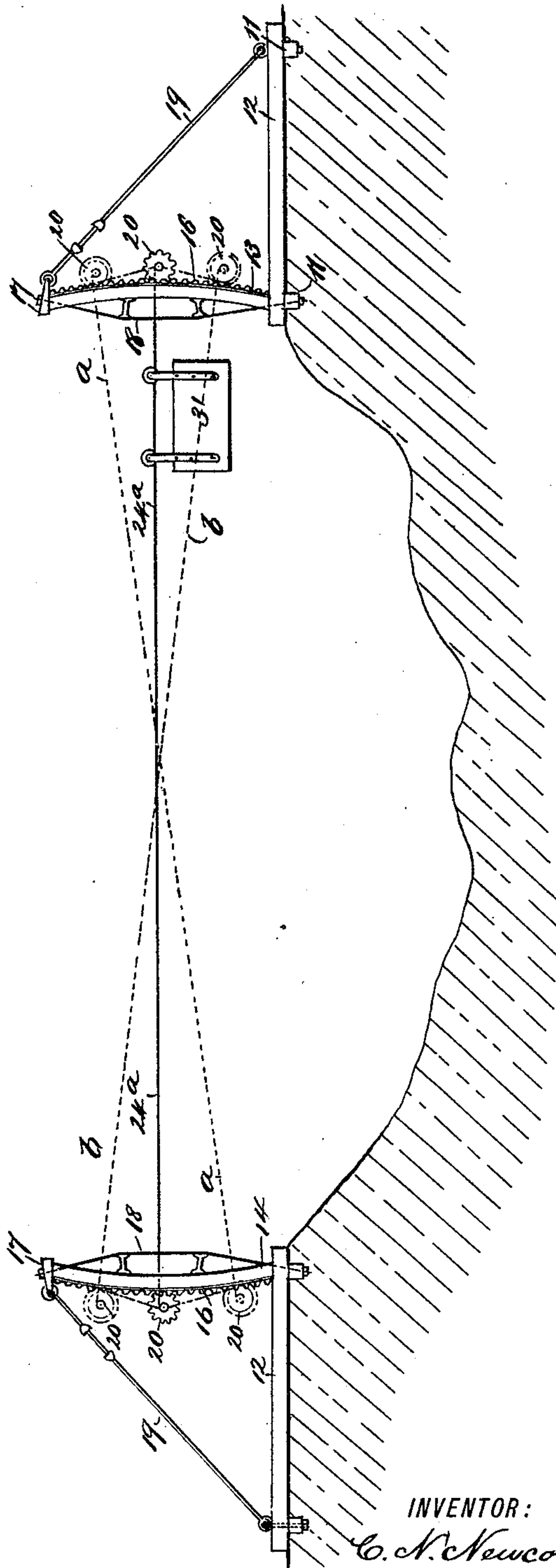


Fig.

WITNESSES:

F. Mc Ardle.
C. Sedgwick

INVENTOR:

C. N. Newcomb

BY

Mann & Co

ATTORNEYS.

(No Model.)

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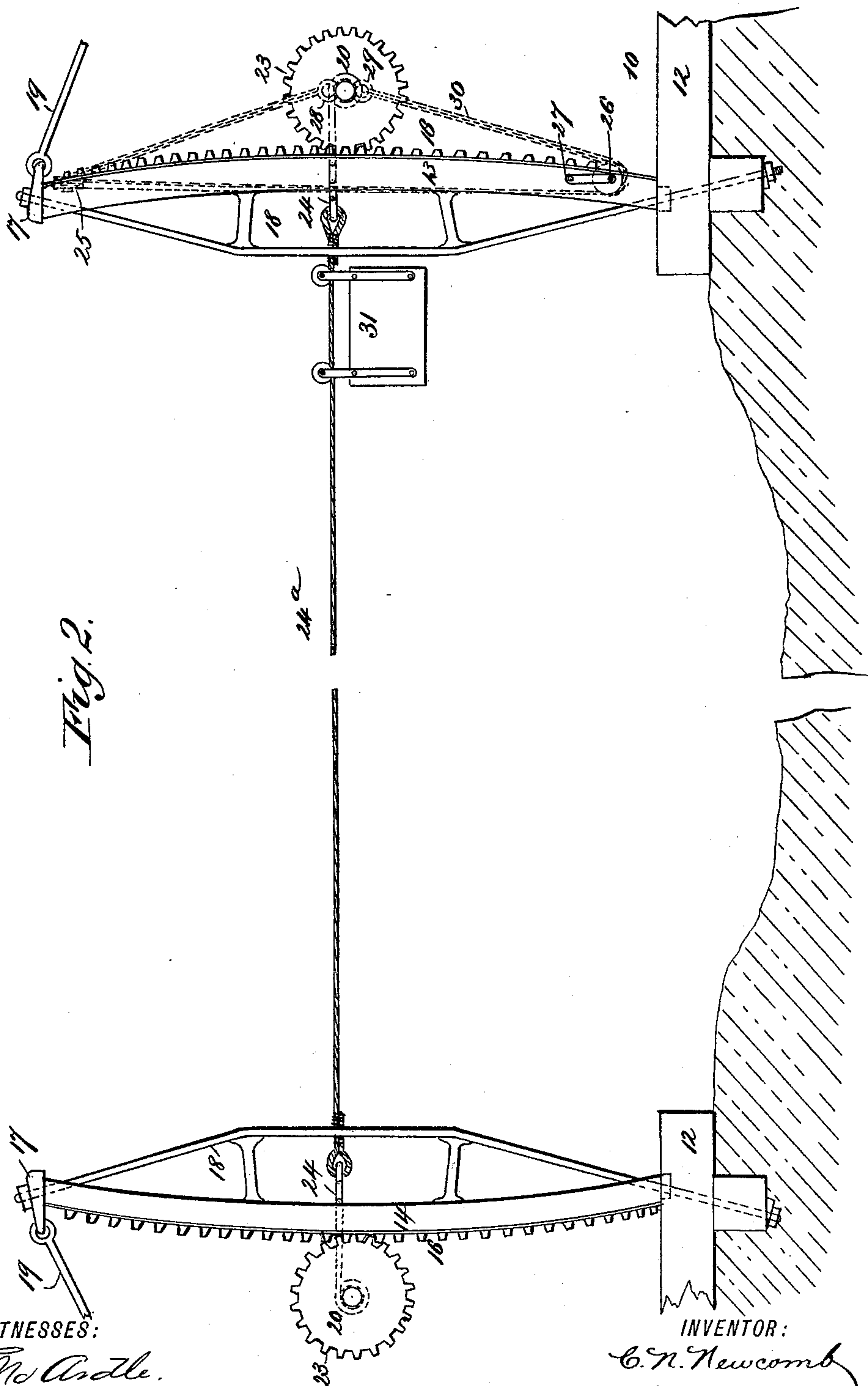


Fig. 2.

WITNESSES:

F. M. Andle.
C. Sedgwick

INVENTOR:

C. N. Newcomb
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ATTORNEYS.

(No Model.)

3 Sheets—Sheet 3.

C. N. NEWCOMB.
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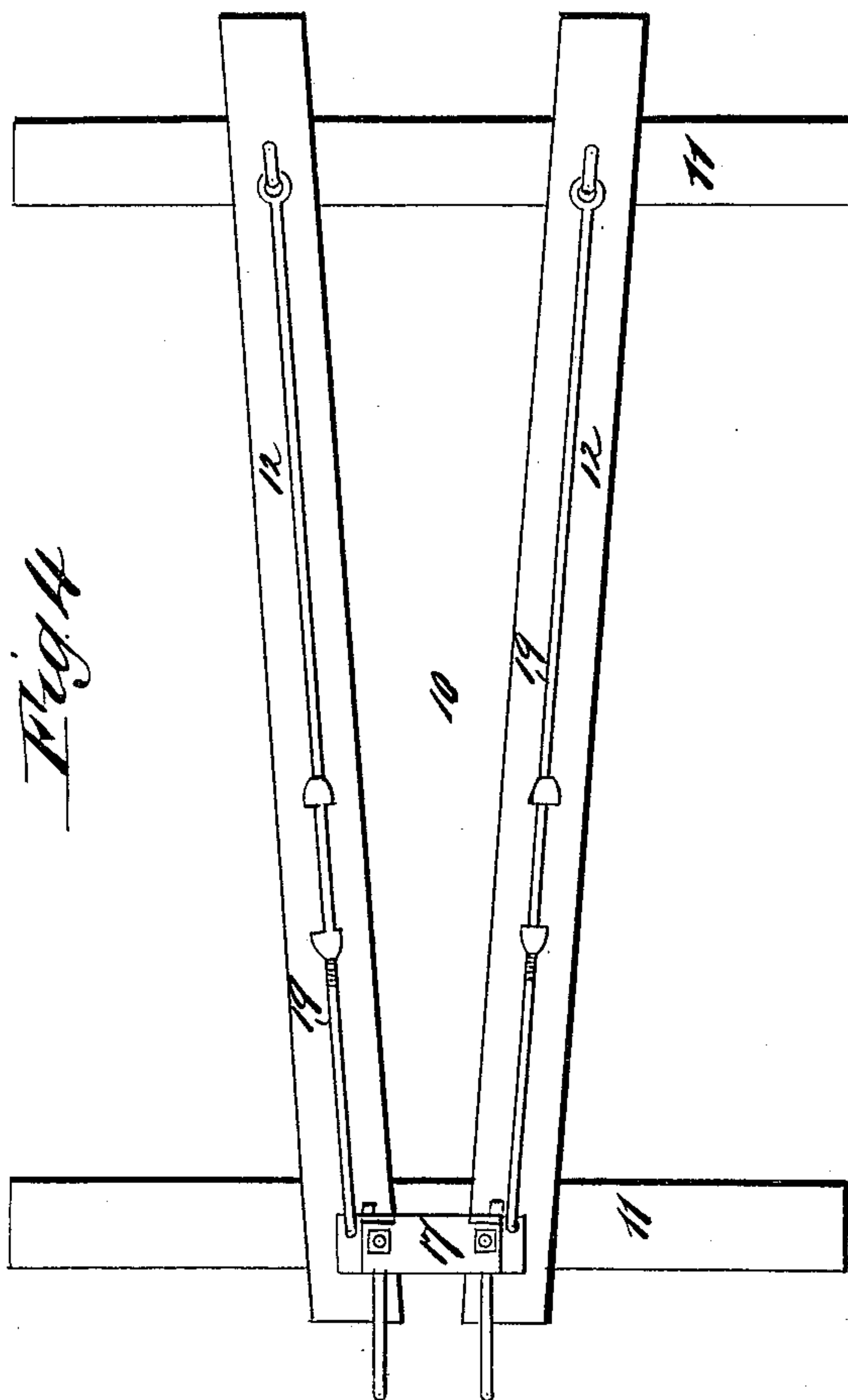


Fig. 4

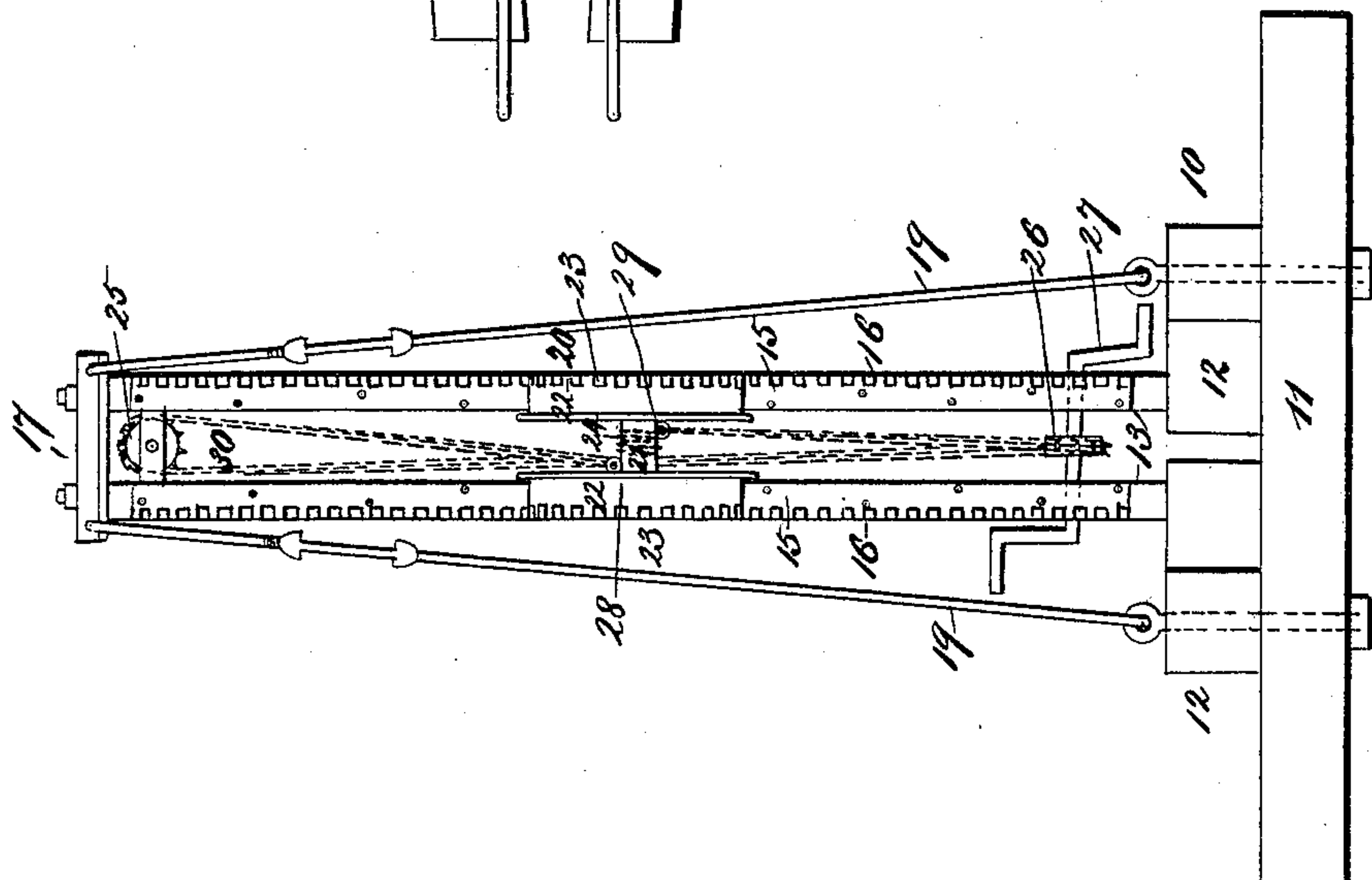


Fig. 3

WITNESSES:

F. Mc Ardle.
C. Sedgwick

INVENTOR:

C. N. Newcomb

BY

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES N. NEWCOMB, OF OMAHA, NEBRASKA.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 403,603, dated May 21, 1889.

Application filed August 14, 1888. Serial No. 282,724. (No model.)

To all whom it may concern:

Be it known that I, CHARLES N. NEWCOMB, of Omaha, in the county of Douglas and State of Nebraska, have invented a new and Improved Conveyer, of which the following is a full, clear, and exact description.

My invention relates to an improvement in conveyers adapted to carry parcels or loads from one point to another that are upon the same level, and has for its object to provide a device of simple and durable construction, which may be readily manipulated, and wherein a load suspended from a cable may be transported by gravity from end to end of said cable, and the empty carrier or another load returned.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the complete device, illustrating in dotted lines the several positions of the cable. Fig. 2 is a similar view enlarged, the cable being broken away. Fig. 3 is an end view of the device, and Fig. 4 is a plan view of the frame.

In carrying out the invention a foundation, 10, is constructed at each side of the point over which the load is to be conveyed, which foundations are laid in the same horizontal plane, consisting, preferably, of two spaced cross-beams, 11, and longitudinal beams 12, secured to the same, which latter beams are preferably carried in opposite directions rearward, as best shown in Fig. 4.

Upon each set of the beams 12, at or near their forward ends, vertical standards 13 and 14 are respectively secured. The said standards describe an arc of a circle the center whereof is established at a point midway between and centrally of their opposing faces. A strap of iron, 15, is attached in any approved manner to the convex faces of the standards to constitute tracks, and parallel with the outer edges of the tracks a rack, 16, is bolted or otherwise secured to the standards. If desirable in practice, however, the rack may be formed integral with the track.

The upper ends of the standards 14 and 13 are united by a cross-head, 17, and the standards are braced at the inner or concave sides with trusses 18, fastened, respectively, to the said cross-head and the cross-beams 11, as best shown in Fig. 2. The outer surfaces of the standards are likewise braced, through the medium of two rods, 19, provided with a turn-buckle fastened to the cross-head and to the outer ends of the longitudinal base beams of the frame. (Best shown in Figs. 3 and 4.)

A carriage, 20, consisting of two flanged wheels united by a spindle, 21, is adapted to traverse each set of curved standards, the said wheels being provided with a tread, 22, traveling upon the track 15, and cogs 23, meshing with the rack 16. A flat chain, 24, is attached, preferably, at the center of each carriage-spindle and wound thereon. The chain passes from the rear of the spindle over the upper surface, and the two chains are connected by a cable, 24^a, as best shown in Fig. 2.

It is obvious that if the carriages are placed at the center of the standards and the cable drawn tight they will remain in such position until intentionally removed, as illustrated in positive lines in Figs. 1 and 2. Between the standards of one set a sprocket-wheel, 25, is journaled in suitable bearings, and a second sprocket-wheel, 26, is held to revolve between said set of standards at or near the lower end or base, being secured to a windlass-shaft, 27, as best shown in Fig. 3. At opposite ends of the carriage-spindles, intermediate of the wheels and upon opposing sides, eyes 28 and 29 are respectively provided. A chain, 30, is secured to the eye 29 and passed around the lower sprocket-wheel, and from thence upward over the upper sprocket-wheel and downward to an engagement with the eye 28, as best illustrated in Figs. 2 and 3.

By means of the windlass-shaft, which need be provided for but one set of standards, and the chain belt the carriages are manipulated and an inclination in the direction of either set of standards imparted to the cable. The cable is purposed to carry a bucket or equivalent receptacle, 31, suspended therefrom and held to travel thereon in any approved manner.

In operation when the carriages are placed

as aforesaid, and as illustrated in Fig. 2, and the cable is tightened, if the carriage upon the standard 13 is forced upward by manipulating the windlass-shaft it will unwind the chain or cable sufficient to allow the opposite carriage to fall a like distance, as illustrated by the dotted line *a*, Fig. 1. In the event the carriage on the standards 13 is forced downward a portion of the chain or cable is unwound from the axle of the opposite carriage, 20, and wound upon the axle of the carriage on said standards 13, thereby causing the axle of the carriage 20, when the chain or cable is unwound therefrom, to revolve in the direction of the moving chain, and in its movement cause the gear-wheels 23 to engage the rack and travel upward thereon. If a load is suspended on the line near the carriage of the standards 13, and the carriage is forced upward, the load will be taken with it less the slack of the cable unwound while the carriage ascends, and as the carriage on the opposite standards will descend to the same degree that the carriage on the standards 13 ascends, the cable will be held at an inclination. When the cable is held in this position, the load is compelled, by the law of gravity, to seek a lower level upon the cable, which would be about half-way between the opposing sets of standards, and as the load approaches the lower carriage the leverage becomes less, permitting gravity to overcome the tension of the cable and lower carriage, whereupon the said lower carriage will gradually be sent to its lowest level and allow the load to run the full length of the cable. Now, if the elevated carriage should be forced to descend to its lowest level, the opposite carriage, by reason of the unwinding of the cable revolving its axle, will be forced to ascend the standards 14 again, whereupon the bucket or conveyer will return to its starting-point.

I do not confine myself to the mechanism illustrated and described for manipulating the carriage, as other equivalent construction may be substituted.

I do not confine myself to the use of standards in pairs, as when light loads only are to be carried single standards may be employed, in which event a single carriage is substituted, the axle whereof will extend out at each side, and the cable is attached to the carriage by a chain secured to the extremities of the axle.

The conveyer may be used to span ravines,

canals, rivers, roads, or in warehouses, factories, or stores.

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

1. The combination, with opposing segmental standards and a rack secured to the outer convex surface of each of the same, of a carriage meshing with the rack of said standards, a chain secured to and wound upon the axle of each of said carriages, a cable connecting the chains, and means, substantially as shown and described, for simultaneously moving the carriages in opposite directions, as set forth.

2. The combination, with opposing segmental standards arranged in pairs, having their bases in the same horizontal plane, and said standards being arcs of a circle whose center is midway between the opposing pairs, and a rack secured to the outer convex face of each of the standards, of a carriage meshing with the rack of each pair of standards, a chain secured to, coiled upon the axles, and connecting the carriages, and means, substantially as shown and described, for simultaneously moving the two carriages in opposite directions, as set forth.

3. The combination, with opposing segmental standards arranged in pairs, a rack secured to the outer convex surface of each of the same, a carriage meshing with the rack of each pair of standards, and a cable connecting the carriages, of a crank-shaft journaled in one pair of standards, a sprocket-wheel upon said shaft, and a chain belt passing around said sprocket-wheel secured to opposite sides of one carriage at opposite ends, substantially as shown and described.

4. The combination, with opposing segmental vertical standards, each having a racked outer convex face, the center of the segments being midway between the pairs, of a carriage meshing with the rack of each of said standards, consisting of toothed wheels united by an axle, a chain secured to the carriage-axle, coiled around the same, a cable connecting said chain, and means, substantially as described, for raising and lowering one carriage, as set forth.

CHARLES N. NEWCOMB.

Witnesses:

ROBERT F. WILLIAMS,
S. G. SPARKS.