

No. 840,109.

PATENTED JAN. 1, 1907.

G. CERETTI.
CLUTCH FOR AERIAL ROPEWAYS.
APPLICATION FILED DEC. 13, 1905.

Fig. 1.

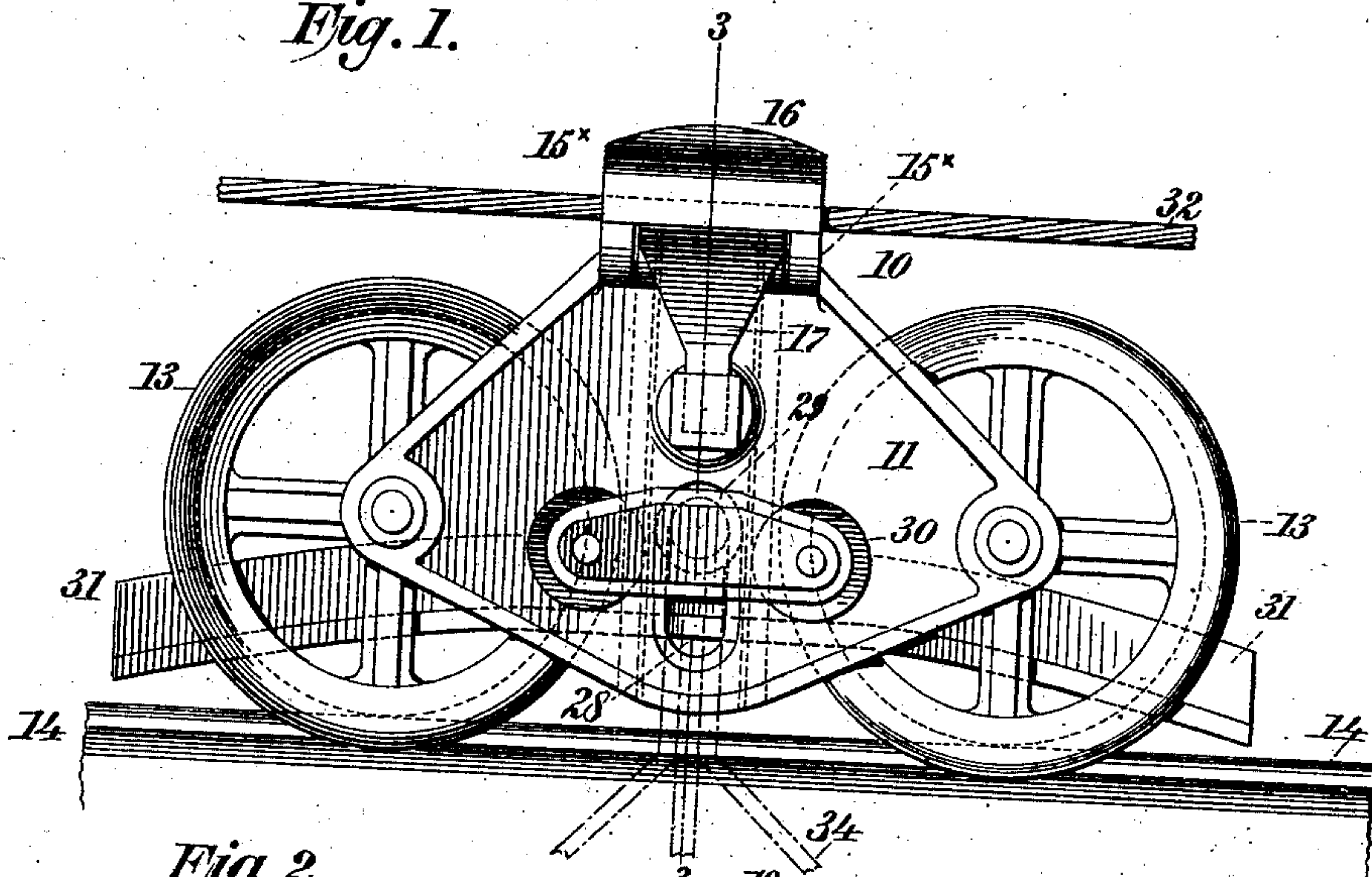


Fig. 2.

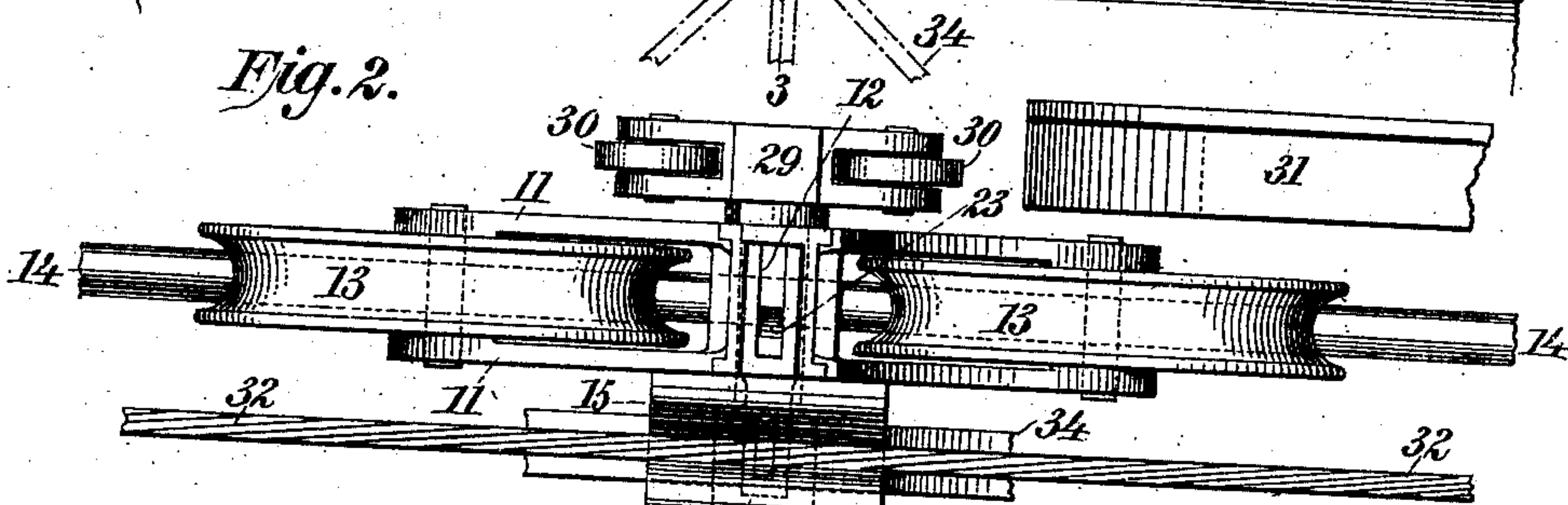


Fig. 3.

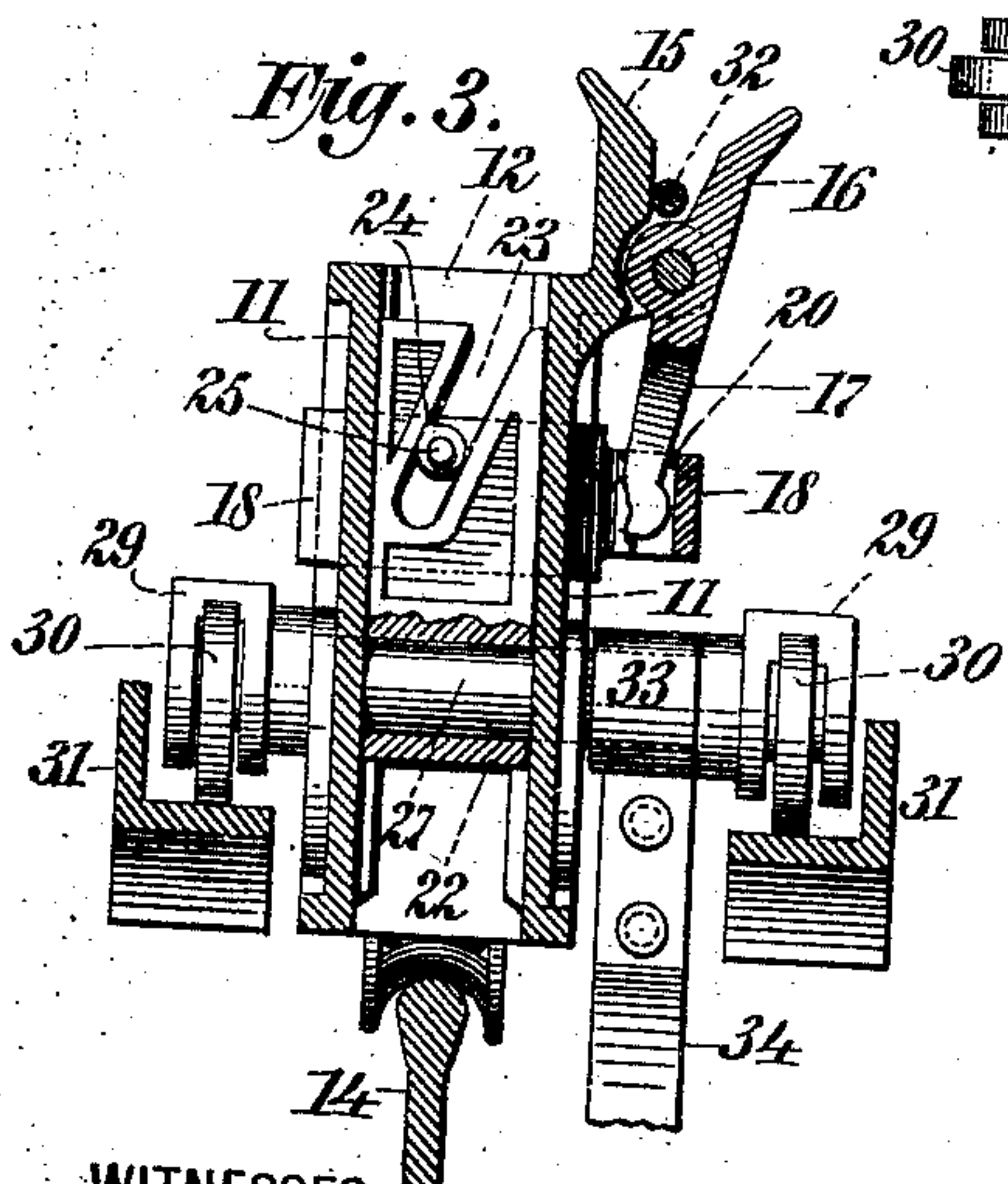
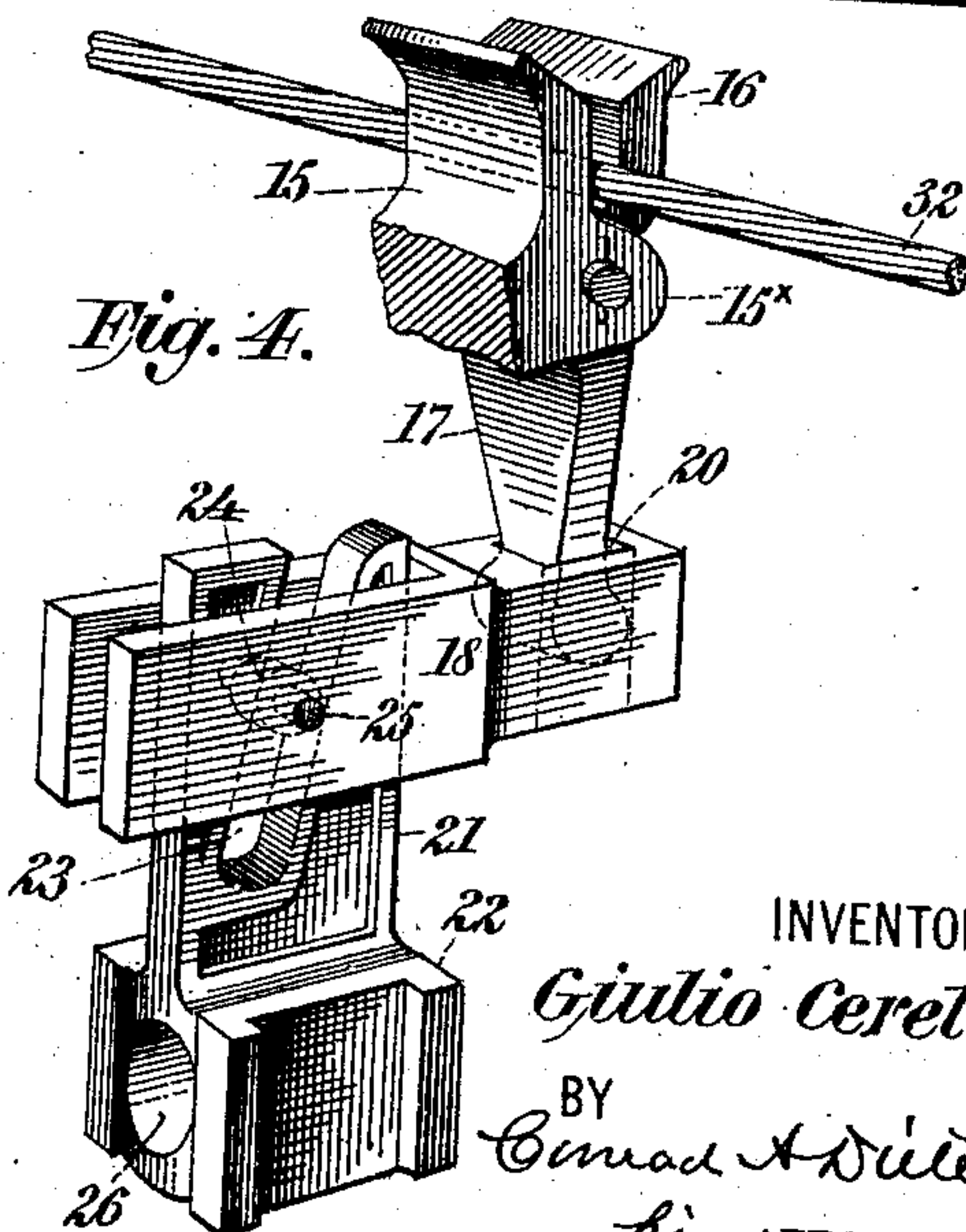


Fig. 4.



WITNESSES:

Gustave Dürerich
Edwin H. Dürerich

INVENTOR

Giulio Ceretti

BY

Conrad A. Dürerich
ATTORNEY

UNITED STATES PATENT OFFICE.

GIULIO CERETTI, OF MILAN, ITALY.

CLUTCH FOR AERIAL ROPEWAYS.

No. 840,109.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed December 13, 1905. Serial No. 291,569.

To all whom it may concern:

Be it known that I, GIULIO CERETTI, a subject of the King of Italy, residing at Milan, Italy, have invented certain new and useful Improvements in Clutches for Aerial Ropeways, of which the following is a full, clear, and exact specification.

My invention relates to improvements in aerial ropeways; and the same has for its object more particularly to provide a simple, efficient, and reliable device whereby the carriers or load to be conveyed may be automatically coupled to or uncoupled from a traveling hauling rope or cable.

Further, said invention has for its object to provide a coupling for carriers traveling upon a fixed rail or rope and conveyed by means of a traveling rope or cable, which may be arranged to operate in a plane either above or below said rail or rope.

To the attainment of the aforesaid objects and ends my invention consists in the novel details of construction and in the combination, connection, and arrangement of parts hereinafter more fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, wherein like numerals of reference indicate like parts, Figure 1 is a side view of an apparatus constructed according to and embodying my said invention, the same being shown in combination with a fixed rail and disengaged from a superposed hauling-cable. Fig. 2 is a top or plan view of the same, showing the same in engagement with said cable. Fig. 3 is a section taken on the line 3 3 of Fig. 1, and Fig. 4 is an enlarged detail perspective view showing the construction of the movable jaw member of the clutch and the means for actuating the same.

In said drawings, 10 designates the carrier-truck, comprising the side members 11, united by transverse webs 12 12, forming guides. At the opposite ends of the truck 10, intermediate the side members 11 11, are mounted grooved wheels 13 13, adapted to ride upon the rail 14 in the ordinary manner.

At the upper edge of one of the side members 11 are provided an integral upwardly-projecting jaw 15 and forwardly-projecting lugs 15* 15*, in which is pivotally secured a movable jaw 16, having a depending arm 17.

18 denotes a sliding link which is mounted to reciprocate transversely in the carrier-truck 10 and has its opposite ends extend-

ing through the side members 11 11. The forward-projecting end of said link 18 is provided with a recess 20, adapted to receive the lower end of the depending arm 17 of the movable jaw 16, and the rear end of said link is bifurcated and adapted to embrace the upwardly-projecting portion 21 of a block 22, which is adapted for vertical movement in the guides or webs 12 12, intermediate the side members 11 11 of the carrier-truck.

The upper portion 21 of the block 22, located between the bifurcated end of the link 18, is provided with an inclined cam groove or slot 23, which coöperates with a roller 24, mounted upon a pin 25, secured transversely in the bifurcated portion of the link 18 and extending through the inclined slot 23 of the block 21.

The block 22 is further provided with a longitudinal aperture 26, in which is disposed a shaft 27, the ends of which extend through vertical slots 28 in the side members 11 11, and 29 29 denote bearings or frames secured to the projecting ends of said shaft 27, which bearings or frames have their opposite ends bifurcated and provided with rollers 30 30 adapted to ride upon inclined or curved rail-sections 31 31, arranged and conveniently secured in position at opposite sides of the rail 14 at the point or points where the jaws 15 16 are designed to be released of their engagement with the operating-cable 32 in order to stop the travel of the carriers or the load conveyed.

Upon one end of the shaft 27, intermediate the side member 11 and the frame 29, is mounted a bearing 33, which is adapted for attachment to the upper end of a yoke or arm 34, carrying a bucket or other device at its lower end to receive the load to be conveyed.

The operation of the apparatus is as follows: When the parts are in the position illustrated at Fig. 1, the movable jaw 16 will be released and permit the cable 32 to pass freely intermediate the same and the fixed jaw 15. As soon as the bucket (not shown) attached to the lower end of the arm 34 has been filled or discharged, as the case may be, the same is shifted so as to cause the rollers 30 30 to leave the inclined or curved rail-sections 31 31, and thus permit the weight of the bucket (whether filled or empty) to draw downward the block 22 in the carrier-truck 10, and in so doing the forward end of the link 18 and the lower end of the arm 17 of the movable jaw 16 will be

forced outward and the upper end of said movable jaw forced toward the fixed jaw 16 and firmly grip the traveling cable 32 and cause the carrier-truck 10 and its attached parts to move therewith.

When the apparatus arrives at the receiving or discharging station, the rollers 30 will ride up upon a similar set of inclined or curved rail-sections, as above described, and in so doing reverse the operation just described and release the movable jaw 16 of its engagement with the cable 32 and cause the carrier-truck 10 and its parts to stop until the same are again placed into operation.

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

1. The combination with a rail or other support, of a coupling comprising a carrier-truck, adapted to ride thereon, clutch mechanism on said carrier-truck comprising a fixed jaw, and a movable jaw adapted to engage a traveling cable, a reciprocating link connected to said movable jaw, and a vertically-movable member, adapted to sustain the load conveyed, cooperating with said reciprocating link to actuate said movable jaw, substantially as specified.

2. The combination with a rail or other support, of a coupling comprising a carrier-truck, adapted to ride thereon, a fixed jaw, a movable jaw on said carrier-truck adapted to engage a traveling cable, a reciprocating link connected to said movable jaw, and a block, adapted to sustain the load conveyed, having cam means thereon for reciprocating said link, substantially as specified.

3. The combination with a rail or other support, of a coupling comprising a carrier-truck, adapted to ride thereon, a fixed jaw, and a movable jaw on said carrier-truck adapted to engage a traveling cable, a reciprocating link pivotally connected to said movable jaw and a vertically-movable block, adapted to sustain the load conveyed, having a cam-groove thereon adapted to engage said reciprocating link, substantially as specified.

4. The combination with a rail or other support, of a coupling comprising a wheeled carrier-truck, adapted to ride thereon, a fixed jaw and a pivoted jaw on said carrier-truck adapted to engage a traveling cable, a reciprocating link pivotally connected at one end to said link, a vertically-movable block, having a cam-groove thereon adapted to engage said link, a shaft carried by said block, bearings carried upon the outer ends of said shaft provided with rollers, and means secured to said shaft for supporting the load, substantially as specified.

5. The combination with a rail or other support, of a coupling comprising a frame, wheels mounted in the ends thereof, a fixed jaw and a movable jaw having a depending

arm, a link supported transversely of said frame, and having one end pivotally connected to the depending arm of said movable jaw, guides arranged in said frame, a vertically-movable block arranged in said guides having a cam-groove thereon engaging said link, a shaft mounted in said block having its ends extending through said frame, bearings carried by the ends of said shaft having rollers mounted therein, and means carried by said shaft for supporting the load, substantially as specified.

6. The combination with a rail or other support, of a coupling comprising a frame, wheels mounted in the ends thereof, a fixed jaw and a pivoted jaw on said frame; said pivoted jaw having a depending arm, guides arranged transversely of said frame, a link disposed in said guide having a recess in its forward end adapted to receive the end of the depending arm of said pivoted jaw, and a pin arranged transversely in the rear end of said link, vertical guides arranged in said frame, a block arranged to work therein having an upwardly-extending portion provided with a cam-groove engaging the pin on said link, a shaft mounted in said block, having its ends extending through said frame, bearings secured to the projecting ends of said shaft, rollers mounted in said bearings, and means secured to said shaft for supporting the load, substantially as specified.

7. The combination with a rail or other support, and releasing means arranged adjacent thereto, of a coupling comprising a frame, wheels mounted in the ends thereof, a fixed jaw and a pivoted jaw on said frame; said pivoted jaw having a depending arm, guides arranged transversely of said frame, a link disposed in said guide having a recess in its forward end adapted to receive the end of the depending arm of said pivoted jaw, and a pin arranged transversely in the rear end of said link, vertical guides arranged in said frame, a block arranged to work therein having an upwardly-extending portion provided with a cam-groove engaging the pin on said link, a shaft mounted in said block, having its ends extending through said frame, bearings secured to the projecting ends of said shaft, rollers mounted in said bearings, adapted for engagement with the releasing means aforesaid, and means secured to said shaft for supporting the load, substantially as specified.

8. The combination with a rail or other support, of a coupling comprising a frame, wheels mounted in the ends thereof, a fixed jaw and a pivoted jaw on said frame; said pivoted jaw having a depending arm, guides arranged transversely of said frame, a link disposed in said guides having its rear end bifurcated, and a roller mounted transversely of said link intermediate its bifurcated portions, and its forward end recessed to receive the end of the depending arm of said pivoted

jaw, vertical guides arranged in said frame, a block arranged to work therein having an upwardly-projecting portion extending between the bifurcated portions of said link, a cam-groove in said projecting portion in engagement with the roller intermediate the bifurcated portions of said link, a shaft mounted in said block having its ends extending through said frame, bearings secured upon the ends of said shaft, rollers mounted in the ends of said bearings, and means carried by said shaft for supporting the load, substantially as specified.

9. The combination with a rail or other support, and inclined rail-sections supported adjacent to said rail or support, of a coupling comprising a frame, wheels mounted in the ends thereof, a fixed jaw and a pivoted jaw on said frame; said pivoted jaw having a depending arm, guides arranged transversely of said frame, a link disposed in said guides having its rear end bifurcated and a roller mounted transversely of said link interme-

mediate its bifurcated portions, and its forward end recessed to receive the end of the depending arm of said pivoted jaw, vertical guides arranged in said frame, a block arranged to work therein, having an upwardly-projecting portion extending between the bifurcated portions of said link, a cam-groove in said projecting portion in engagement with the roller intermediate the bifurcated portions of said link, a shaft mounted in said block having its ends extending through said frame, bearings secured upon the ends of said shaft, rollers mounted in the ends of said bearings, adapted to ride upon the inclined rail-sections aforesaid, and means carried by said shaft for supporting the load, substantially as specified.

Signed at Milan, Italy, this 27th day of November, 1905.

GIULIO CERETTI.

Witnesses:

H. P. SMITH,
M. DE DRAGO.