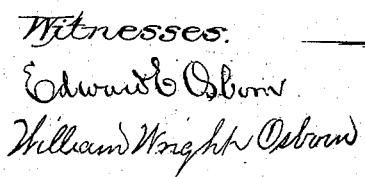


Gripping Device for Wire-Rope Railways.
No. 217,096. Patented July 1, 1879.



Inventor
Johan Hansen
By C. W. M. Smith
his Atty

UNITED STATES PATENT OFFICE

JOHAN HANSEN, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN GRIPING DEVICES FOR WIRE-ROPE RAILWAYS.

Specification forming part of Letters Patent No. **217,096**, dated July 1, 1879; application filed November 7, 1878.

To all whom it may concern:

Be it known that I, JOHAN HANSEN, of San Francisco, in the county of San Francisco and State of California, have invented a certain new and useful Improvement in Gripping Devices for Wire-Rope Railways, which invention is fully set forth in the following specification and accompanying drawings.

My invention has for its object to construct an improved gripping device for endless-rope traction railways, in which the cable can be dropped and picked up again at any point, whereby the car or dummy is allowed to cross an intersecting cable-road having its cable laid under the first one, and is intended as an improvement of my device or invention for which Letters Patent were granted to me August 20, 1878.

To this end my present invention consists in the construction and combination, with the two hinged plates or wings, of a pivoted and hinged frame carrying the movable die or jaw, and operated by an eccentric independent of the two hinged wings; also, in improved means for opening and closing the two hinged wings or plates.

Referring to the accompanying drawings for a better understanding of my invention, Figure 1 is an elevation. Fig. 2 is a detailed view with one wing removed. Figs. 3 and 4 are end elevations, one with the wings closed, the other with them opened and the rope released. Fig. 5 is a sectional view, showing the screws for adjusting the cam-frame.

Upon the cross-bars of the frame A are fixed ways B B, in which the movable frame C works. The lower ends of the frame C and the upper ends of the arms connecting with the movable die or jaw D are connected by rule-joints *b*, a pin or rod passing through eyes, upon which they move. Between these two joints is placed a collar, E, moving on the rod when the hinged wings or plates F are opened or closed by means of the fingers *d e* on the top of the wings, whereby considerable friction will be avoided and the wings easily operated.

The frame C is operated by means of a cam or eccentric, G, the case of which is pivoted to the upper end of the frame C, while the cam itself is pivoted to the lever-bar of the frame A, between it and a cross-bar, H, which pivot

carries the operating-lever. Set-screws *c c'* are placed at the top and one side of the frame C, by which the cam-case is raised or lowered, and by which a greater or less leverage is imparted to the cam, the latter or screw *c'* being operated in a slot.

The opening and closing of the wings or plates F F are entirely independent of, and disconnected from, the operation of the movable frame and die D, and is effected by means of the lever J, the end of one arm or foot, *f*, of which is pivoted to the frame, and the other end to a rod, *f'*. The lower end of the rod is split to receive a link, *g*, which connects with one of the wings or plates. From the lower end of this rod *f'* also extends a split foot, *h*, to which is pivoted a slotted arm or link, *i*, loosely connected to the opposite wing or plate, so that when the lever J is forced downward the pin in the end of the foot *h* will move in the slot of the link to the lower end of said slot, and force the connecting wing down simultaneously with the front or opposite wing through the medium of the arm *f'*, which connects with the lever J.

In the operation of my invention, by pressing down the lever J the two hinged wings that embrace the cable are closed over it, and the cable will pass along the upper die and friction-rollers L, when, by forcing down the operating-lever J', the frame C is raised and the movable die D is raised up against the wire rope, in which position it is firmly held between the upper and lower dies, and the dummy and cars caused to be moved along with the same rapidity as the wire rope or cable is being moved by the engine which operates the rope. The griper is held in position by means of the spring-pawl attached to the lever J', which engages the teeth on the top of the frame A.

It should here be observed that the frame C, carrying the movable die D, can only be operated when the lever J and the wings are both down, and that the wings can only be opened when the lever spring-pawl is disengaged from the teeth and the lever J', which carries it, is thrown back from the rack.

It should also be observed that by means of the eccentric or cam and the operating mechanism a strong and elastic gripe is had upon

the cable; and a quick and rapid means is attained for engaging and disengaging it, which is so essential in crossing an intersecting cable-road having its cable laid under the first one.

When it becomes necessary to stop the car for passengers, the lever *J'* is operated so as to let down the frame and die *D*, the wings being closed, when the cable will then be free to move on the friction-rollers.

In passing from one track to another the lever *J* is forced up to open the wings, so that the cable is dropped free from the gripping part; and in crossing an intersecting cable the wings must always be open, so as to permit them to pass over said intersecting wire.

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

1. The combination, with the frame *A*, of the swinging plate *F*, pivoted to such frame and carrying the stationary die or griper, the

movable die or griper *D*, pivoted to the sliding frame *C*, and the adjustable cam *G*, for operating such frame and griper, substantially as described and shown.

2. Means for opening and closing the wings or plates *F*, consisting of the operating-lever *J*, foot *f*, rod *f'*, slotted arm or link *i*, foot *h*, and arm *g*, arranged and operating substantially as described and shown.

3. The combination, with the cam and its case or frame *C*, of the set-screws *c c'*, for adjusting the frame with reference to the cam and the rope, substantially as described and shown.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 4th day of October, 1878.

JOHAN HANSEN. [L. S.]

Witnesses:

C. W. M. SMITH,
PHILIP MAHLER.