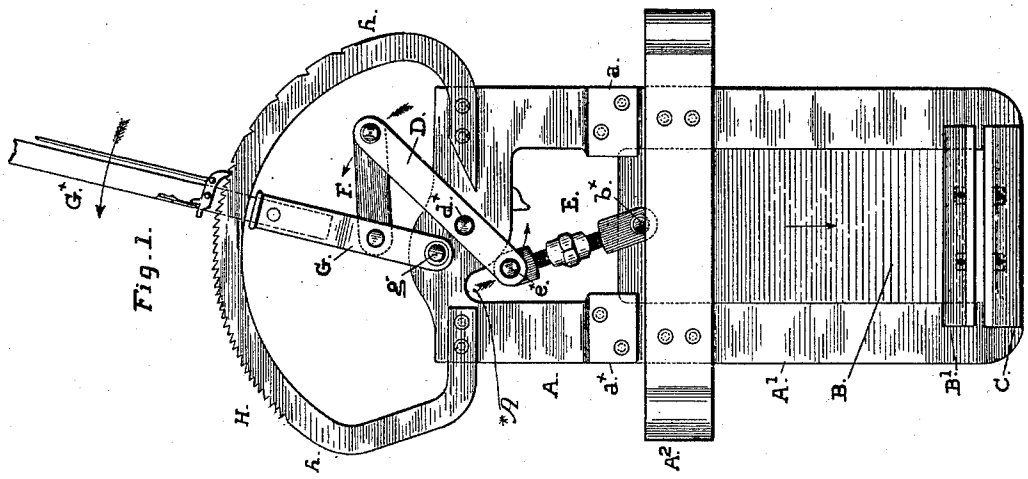
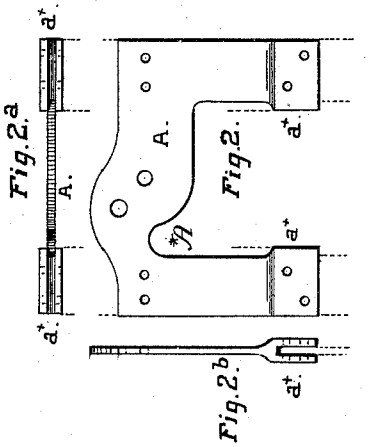
(No Model.)

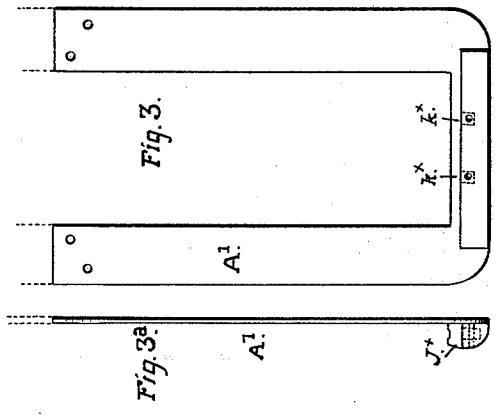
P. T. TAYLOR.

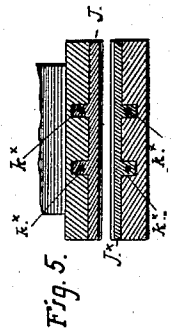
CABLE RAILWAY GRIP.

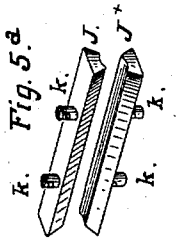
No. 485,237. Patented Nov. 1, 1892.

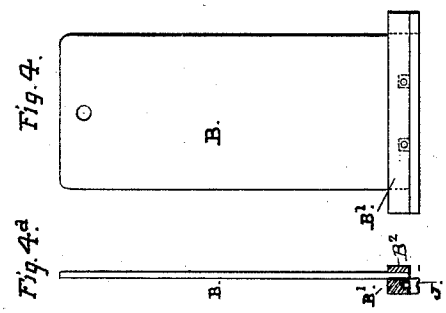












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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PHILLIPS T. TAYLOR, OF SAN FRANCISCO, CALIFORNIA.

CABLE-RAILWAY GRIP.

SPECIFICATION forming part of Letters Patent No. 485,237, dated November 1, 1892.

Application filed December 9, 1891. Serial No. 414,477. (No model.)

To all whom it may concern:

Be it known that I, PHILLIPS T. TAYLOR, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Cable-Railway Grips, of which the following is a specification.

My invention relates to improvements in cable-railway grips of that class or description commonly known as "lever-grips," in which one jaw is carried by a stationary frame and the other by a slide plate or bar in the frame moved by a hand-lever, through the medium of which power is applied to the movable jaw.

The improvements embraced in and constituting my invention consist of a stationary frame of novel construction, of an improved mode of forming and securing in place the dies or faces of the gripping-jaws, and of a novel construction and combination of levers and links, producing an operating mechanism of considerable power and of great simplicity.

The following description explains the nature of my said improvements and the manner in which I proceed to construct a cable-grip in accordance with my invention, reference being had to the accompanying drawings, that form part of this specification.

Figure 1 of the drawings represents a front view of a grip constructed according to my invention. Fig. 2 is a front view of the upper part or section of the stationary frame. Fig. 2^a is a bottom view of the same part, taken from the bottom or lower end; and Fig. 2^b is an edge view of the same part. Fig. 3 is a view of the bottom part or section of the frame, and Fig. 3^a is an edge view of the same part. Fig. 4 is a front view of the slide on which is fixed the movable jaw; and Fig. 4^a is an edge view of the same part, the jaw-holder being in section. Fig. 5 is a longitudinal section taken in a vertical plane through the two jaws. Fig. 5^a is a perspective view of the dies or wearing-faces of the two jaws.

The frame of this grip is formed of a top part or section A, on which is fixed the hand-lever and connected parts of the operating mechanism, and a bottom part or section A′, which carries the stationary jaw. The two parts are united by a tongue-and-groove joint, for which rabbeted or grooved ends a^* are formed on the upper section to take the ends of the lower section, the parts being held by through nuts and bolts. The top part or section A is provided with a recess A^* in one upper corner to accommodate the lever and link in their action. The hanger A^2 is bolted to the lower section just below the joints, and the die holder or block of the lower jaw is fixed to or formed on the front of the cross-piece at the bottom.

The plate B carries the movable jaw B′ and is fitted to slide between the upright bars of the frame, the edges of the plate and the frame being finished smoothly. The jaw B′ is fixed on the bottom of the slide and its ends extend beyond the sides of the plate B to overlap the side bars of the frame at the front. A plate B^2 of corresponding length is fixed on the back of the slide directly behind the jaw to set over the frame in the same manner.

Projections on the top frame A set over the slide at the front and back to form guides for the slide B at the top, similar to the bars that extend over the frame A′ at the bottom of the slide. These keep the slide in line with the slide-bars of the frame at the top and bottom and prevent it from springing outward.

The top and bottom jaws in grips of this class are furnished with removable dies or face-plates held in place by fastenings of some kind to be renewed as often as they become worn. My present improvement in this part of such grips relates to the means of securing the die on the face of the holder, and it consists of forming round projections, like a tenon, on the back of the die and holes or sockets of corresponding form to receive them in the face of the block or holder. Holes are bored transversely through the holder from front to back, passing through the tenons, and pins are driven into these holes to keep the die from dropping out. This construction is shown in Figs. 5 and 5^a, J J^* being the dies, *k* the cylindrical projections or tenons in the back, and $k^\times$ $k^\times$ the sockets in the holders B′ C. This construction affords several advantages in addition to its simplicity. It enables the die to be used until it is almost entirely worn down, and it allows the die to extend the

whole length of the jaw or holder, in which respect it is an improvement upon the mode of securing these dies by a dovetail joint heretofore employed in this class of grip.

The slide B is worked by a hand-lever and mechanism consisting of the lever D, pivoted at $d^{\times}$ on the frame, a link or bar E, connecting the slide to one end of the lever, and a link F, connecting the end of the lever at the opposite side of the pivot with the hand-lever G.

The link E is extensible in length and is composed of two end portions screw-threaded and a threaded sleeve or coupling, like a turnbuckle, one part being attached to the lever D by a loose joint $e^{\times}$ and the other part being slotted to set over the top of the slide and attached by a bolt $b^{\times}$, on which it can swing freely. The hand-lever G is pivoted at g' on the top of the frame and extends upward between the two bars of the quadrant or segment H, by which the lever in this class of grips is locked at different parts in its arc of movement. The quadrant is usually formed of two curved bars with a space between them for the lever to play in for the purpose of overcoming lateral vibration and holding the lever stiff and in line over its center of movement. It is better in most cases to make the lever D double to play on both sides of the frame and to take the links E F between their ends, in order to equalize the strain upon the pin or bolt of the joint, and for the same reason the end of the lever G is forked to set over the frame and take the bolt g. As thus constructed and arranged, these parts form a strong and quickly-operating mechanism of great power for grips of this class.

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

1. In a cable-railway grip, the frame composed of the part A, having perpendicular side bars with grooved or rabbeted ends and provided with a recess A* in one upper corner, and the part A′, formed of perpendicular side bars united by a bottom cross-bar, the ends of the side bars being fitted to the grooved ends of the top part A, and bolts or fastenings securing said parts together at the joints, in combination with the grip-jaws, the hand-lever, the pivoted lever D, and links, as described.

2. In a cable-railway grip, the combination, with the stationary frame carrying a fixed jaw and a slide or part carrying a movable jaw, of the hand-lever G, the lever D, and the links or connections E F, applied for operation substantially as described.

3. In a cable-railway grip, a hand-lever having its fulcrum on the grip-frame and a secondary lever also fulcrumed on the grip-frame and connected at the upper end to the hand-lever and at its lower end to the slide or part carrying the movable jaw by an adjustable link.

4. In a cable-railway grip, the combination, with the grip-frame carrying a stationary jaw and the slide or part carrying the movable jaw, of the levers G D, link F, and the adjustable link or part E, constructed and applied for operation substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

PHILLIPS T. TAYLOR. [L. S.]

Witnesses:

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EDWARD E. OSBORN.