(No Model.) 2 Sheets—Sheet 1.

W. H. PAINE.

CABLE SUPPORTING SHEAVE FOR CABLE RAILWAYS.

No. 331,237. Patented Nov. 24, 1885.

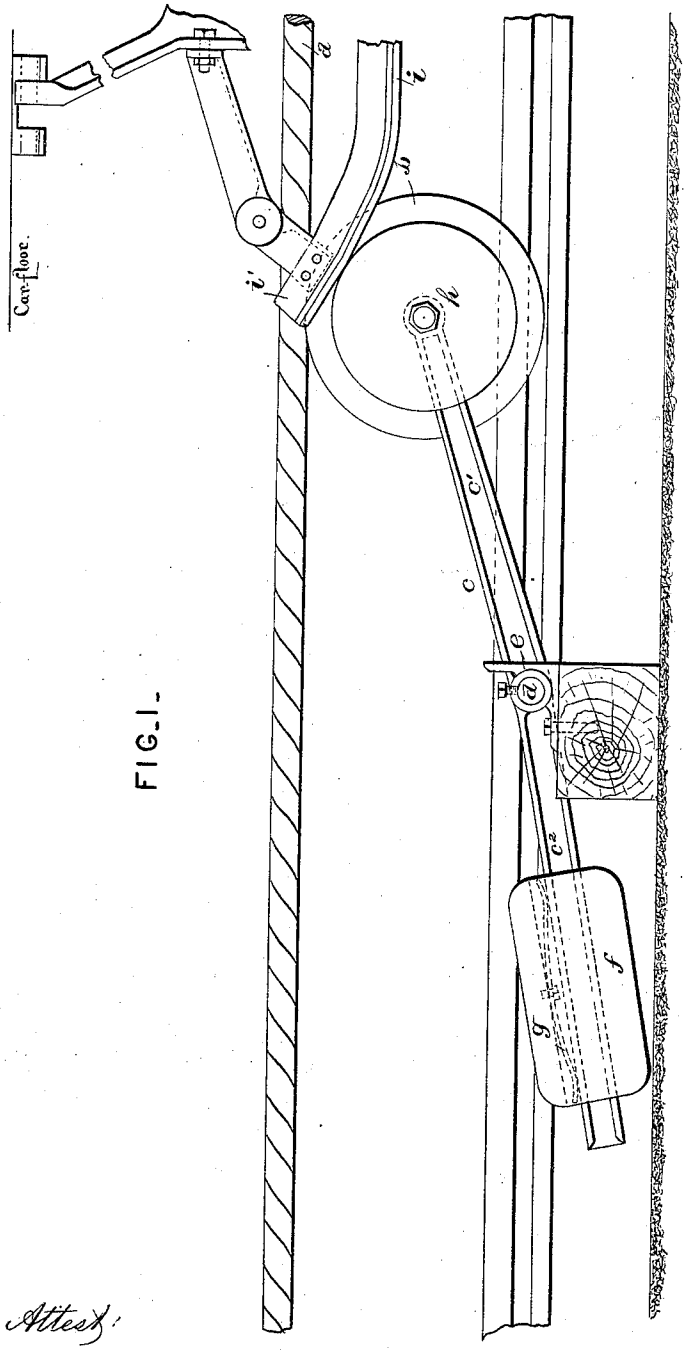

FIG. 1.

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Geo. T. Smallwood.
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(No Model.)

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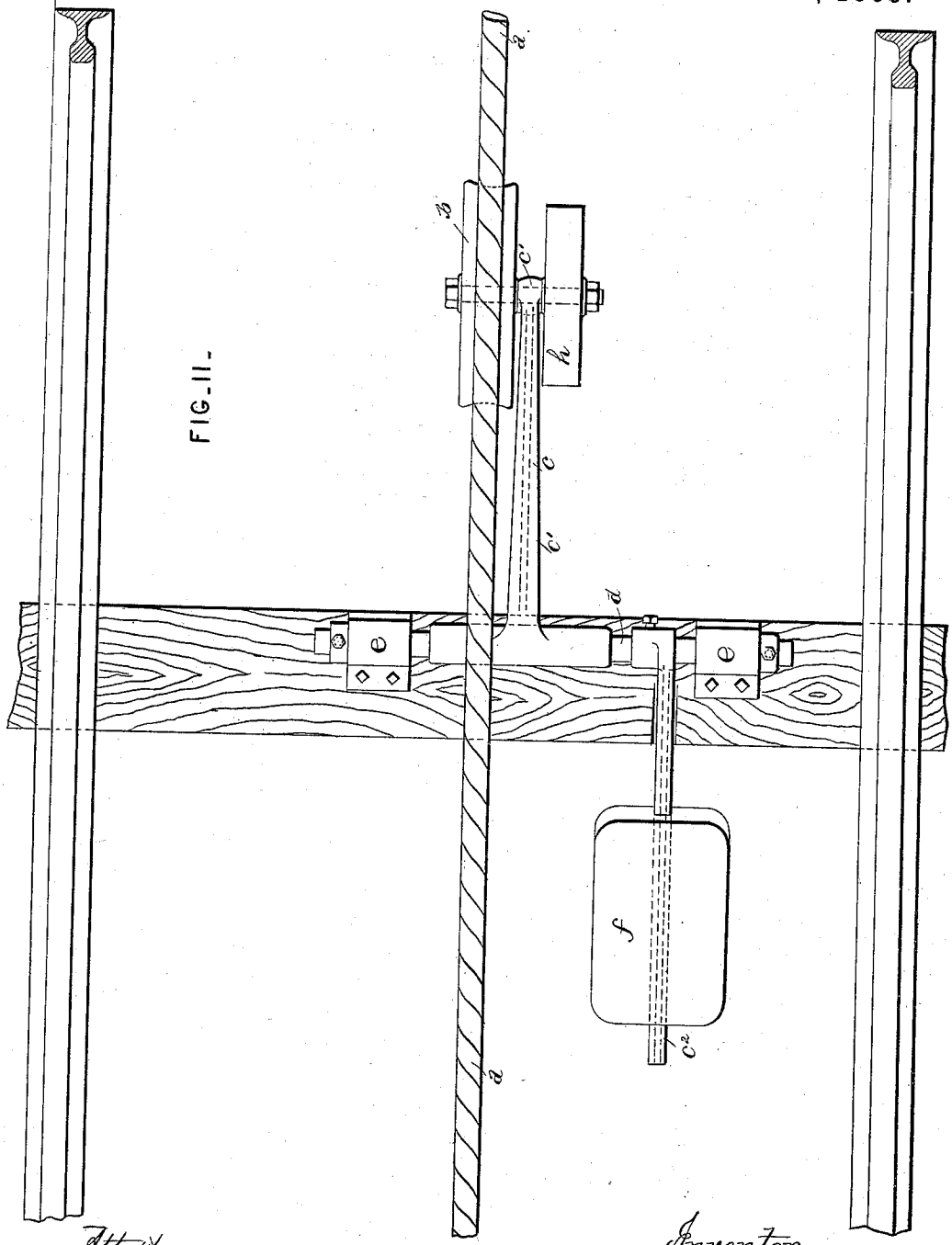
FIG. II.



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UNITED STATES PATENT OFFICE.

WILLIAM H. PAINE, OF BROOKLYN, NEW YORK.

CABLE-SUPPORTING SHEAVE FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 331,237, dated November 24, 1885.

Application filed April 18, 1885. Serial No. 162,701. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PAINE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Cable-Supporting Sheaves for Cable Railways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure I is a side elevation, and Fig. II is a plan view, of a section of a railway and its traction-cable, the latter being shown supported by a sheave mounted in accordance with my invention.

The object of my invention is to provide a device for supporting the cable normally within reach of the grip, while at the same time being capable of depression by a projection from the car, in order that the said grip may pass uninjured.

To this end my invention consists in mounting the cable carrying and guiding sheave so as to be depressible, and providing the car with a projection, of the nature hereinafter more fully described, for depressing said sheave upon the approach of the grip and holding it so depressed until said grip has passed, whereupon it is allowed to resume its normal position.

I am aware that it has been proposed to mount the cable-carrying sheave at the extremity of a depression-lever having an incline formed thereon, which is intended to be engaged by a roller at the extremity of an arm projecting downward from the car or grip; but this is not the equivalent of my invention, for the reason that it has been found impracticable to hold the carrying-sheave depressed by the use of a single roller carried by a projection from the car while a grip of any considerable length is passing. Nor is it practicable when the grips are liable to be of varying heights, as the inclined plane will vary in its relation to the grip, holding the cable either too high or too low; also, on account of the varying leverage caused by the roller on the grip, either advancing toward or receding from the fulcrum.

In the accompanying drawings, *a* represents the cable, which is shown resting upon and supported within reach of the grip by a guiding-sheave, *b*, journaled at the extremity of a depressible lever, *c*. This lever is here shown in its preferred form—*i. e.*, composed of two sections or arms, c' c^2, secured by jam-screws or otherwise to a rock-shaft, *d*, journaled in boxes *e*, supported by the bed of the road. It may, however, be an ordinary lever of the first order, formed of one continuous piece. The end of the arm c' of this lever may be held normally elevated by a spring; but I prefer to employ a weight, *f*, which is mounted adjustably on the arm c^2. This weight is made adjustable for the purpose of varying its effect upon the sheave *b*, and is held in any position in which it is set by a spring-clamp, as shown at *g* in dotted lines, Fig. I, or other suitable device. It is of course desirable that the weight *f* should exert only enough upward pressure on the sheave *b* to support the cable, and as the downward pressure or weight of the cable varies at different points along the line, according to the direction which it sustains, in order to accomplish this result, it is necessary to provide some means for regulating the effectiveness of the counter-balance.

h is an idle-pulley, which is also carried at or near the extremity of the arm c' of the lever *c*, and may be journaled on the same shaft as the sheave *b*. This pulley is engaged by a guard-bar, which is represented at *i* in Fig. I, and which is fully described and claimed in another application filed on the 30th day of April, 1885, Serial No. 164,001. This guard-bar is preferably slightly longer than the grip, and is provided at each end with an upturned or inclined portion, i', the foremost one of which inclines, according to the direction in which the car is traveling, abuts against the pulley *h*, thereby depressing it, and consequently the carrying-sheave, which are held so depressed while the grip is passing by the horizontal portion of the said guard-bar *i*, and are, after said grip has passed, allowed to resume their normal position gradually and without any sudden shock by the rear inclined portion, i'. By this arrangement it will be observed that no matter what the length of the grip the cable supporting and guiding sheave will be held positively depressed until it has passed; and, furthermore, that the varying heights of grips, which is due to the unequal loads which the cars sustain, will not in any way interfere with its effectiveness.

Having thus described my invention, the

following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination, with the cable of a cable railway and a depressible sheave for supporting the same, of a car having a gripper, and a guard-bar having upturned or inclined ends for depressing said supporting-sheave, substantially as set forth.

2. In a cable railway, a depressible sheave for supporting said cable, and an idle-pulley journaled at one side of said sheave and movable therewith, in combination with a car having a grip, and a guard-bar having upturned ends for engaging and depressing said idle-pulley, and consequently the supporting-sheave, during the passage of said grip, substantially as set forth.

3. The combination, with the cable of a cable railway, of a sheave for guiding the same, a depressible lever carrying said sheave, and a car having a gripper, and a guard-bar having upturned ends, substantially as and for the purpose set forth.

4. The combination of the cable, a sheave for guiding the same, a depressible lever supporting said sheave, a pulley journaled to said lever, the car, the grip, and a guard-bar having upturned ends, all constructed and arranged substantially as set forth.

5. The combination, with the cable, of a guiding-sheave therefor, an adjustable counter-balance for holding said sheave normally elevated, a car, and a projection from said car for depressing said sheave while the grip is passing, substantially as set forth.

6. The combination, with the cable, of a lever fulcrumed at an intermediate point, a supporting and guiding sheave for said cable, journaled to one arm of said lever, a counterbalancing-weight mounted on the other arm, a car, and a projection from said car for depressing said sheave, substantially as and for the purpose set forth.

WILLIAM H. PAINE.

Witnesses:
HERBERT KNIGHT,
LEONARD K. PRINCE.