(No Model.)

J. SCHMIDLAPP.

HOOK AND LADDER TRUCK.

No. 409,759. Patented Aug. 27, 1889.

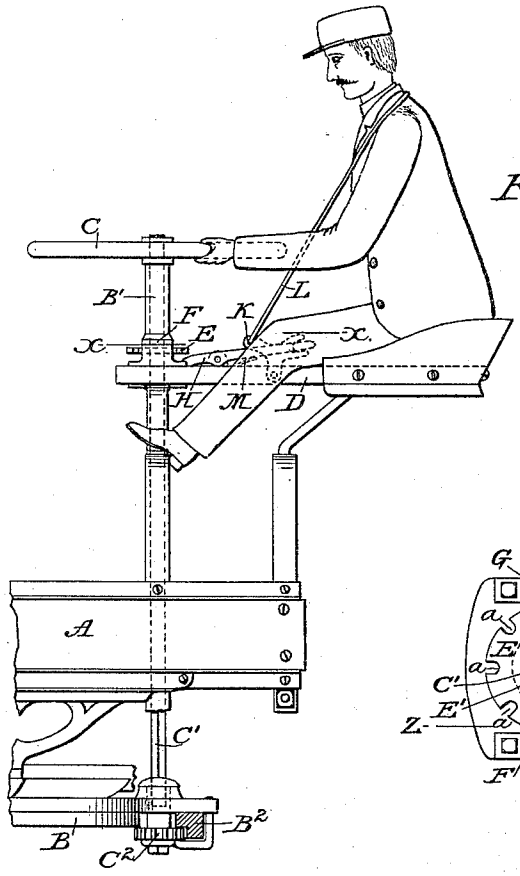


Fig. 1.

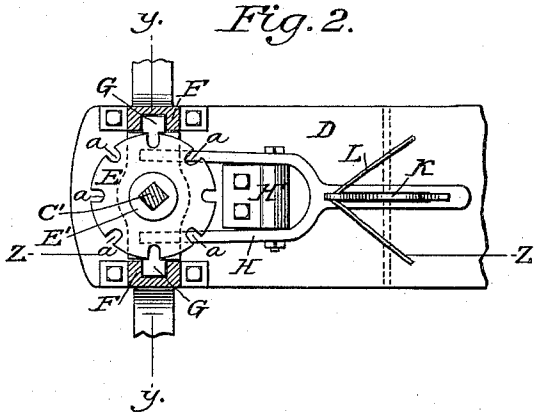


Fig. 2.

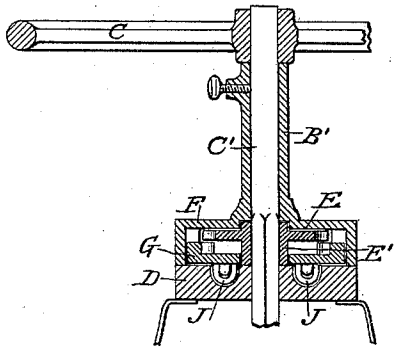


Fig. 3.

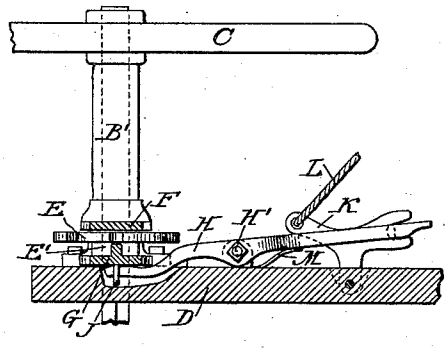


Fig. 4.

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UNITED STATES PATENT OFFICE.

JACOB SCHMIDLAPP, OF NEW YORK, N. Y.

HOOK-AND-LADDER TRUCK.

SPECIFICATION forming part of Letters Patent No. 409,759, dated August 27, 1889.

Application filed June 8, 1889. Serial No. 313,572. (No model.)

To all whom it may concern:

Be it known that I, JACOB SCHMIDLAPP, of the city, county, and State of New York, have invented a new and useful Improvement in the Steering-Gear for Hook-and-Ladder Trucks; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to the steering-gear for hook-and-ladder trucks, and has for its object to provide for locking the steering-wheel so that it may not be wrenched from the pilot's hand in case of a sudden jerk or twist of the truck-wheels governed thereby.

It consists in the combination, with the spindle of the steering-wheel, of a device constructed and arranged substantially as hereinafter described and claimed, in which the wheel may be locked in any position to which it is turned by means of a cord or band passing around the pilot's neck, the necessary tension for closing the lock being obtained by the pilot in straightening himself up or leaning back in his seat without the need of using either of his hands or his feet for the purpose.

In the accompanying drawings, Figure 1 is a side elevation of the rear end of a hook-and-ladder truck; Fig. 2, a horizontal section, upon an enlarged scale, in line $x\,x$ of Fig. 1; Fig. 3, a vertical cross-section in line $y\,y$ of Fig. 2, and Fig. 4 a vertical longitudinal section in line $z\,z$ of the same figure.

A represents the rear end of the hook-and-ladder truck-frame, under which are mounted, in the customary manner, by means of an interposed fifth-wheel or circle-plate B, the hind wheels of the truck.

C′ is the vertical spindle of the steering-wheel C. This spindle is mounted in a suitable bearing B′ in the truck-frame and fits at its lower end into an angular socket in a pinion C^2, mounted to gear with a segmental toothed plate B^2 secured to the fifth-wheel B, so that by the rotation of the spindle C the hind axle may be turned and the direction of its wheels changed as required in steering the truck.

D is the elevated pilot-seat permanently fixed to the rear end of the truck-frame entirely above the ladder-supports and in position to enable the pilot to readily handle the steering-wheel to turn it or lift it.

The structure in its several parts, as described, differs in no particular from the hook-and-ladder trucks now in use, and may be of any approved style.

My invention consists in combining with the spindle of the steering-wheel C, however it may be mounted, a locking plate or wheel E, having a hub E′, which embraces the spindle and is mounted to revolve within a suitable frame F. The portion of the spindle passing through the hub is made angular in cross-section, so that the locking plate or wheel shall turn with the spindle without preventing its free longitudinal movement therein. The periphery of the locking-plate E is notched at equal intervals, as at $a\ a$, (see Fig. 2), and a diametric locking-bar G is mounted to play upon its hub to and from its lower face, so that pins or lugs upon each end thereof may be brought thereby up into engagement with said notched periphery and thereby lock the plate and prevent its movement. The locking-bar G is carried upward to engage the locking-plate E by means of a forked lever H, pivoted at H′ to the truck-frame, and which has its inner forked end hinged to lugs J upon the under side of the locking-bar, its outer arm being extended beyond the pivot H′ toward the pilot-seat. This outer arm is longitudinally slotted to receive a T-shaped lever K, whose vertical arm is made to bear upon the bar of the frame under the lever H as its fulcrum. The rear end of its cross-arm is made to engage the rear end of the lever H within its slot, and a cord or flexible band L is attached to its front end to facilitate lifting the same. By lifting this front end of the cross-arm the lever K will be made to oscillate upon its vertical member, and thereby operate to depress the rear end of the cross-arm and with it the rear end of the lever H, and this depression of the rear end of the lever H will operate to lift the locking-bar G into engagement with the locking-plate E upon the spindle C, and thereby lock the steering-wheel in the position in which it may at the moment be found. The release of the locking-bar from the locking-plate is produced automatically by the weight

of said bar, and may be enforced by means of a spring M under the lever H. (See Fig. 4.) The steering-wheel is so fixed upon its spindle, and the seat for the lower end of the spindle in the pinion C^2 so adjusted with reference to the circle wheel and axle, as that two of the spokes in the steering-wheel shall correspond with the position of the axle and thereby serve as an index thereto. The peripheral notches *a a* on the locking-plate E are also so placed relatively to the position of the steering-wheel and to that of the axle controlled by said spindle as that when the axle is normally at right angles to the length of the truck the locking-bar will engage the locking-plate, and it will likewise engage it at each degree of the deviation of the hind truck from its said normal position.

It is evident that a series of concentric apertures in the locking-plate or a circular or segmental rack upon its under side may be substituted for the peripheral notches as a means of engaging the lugs on the locking-bar. Various equivalent methods of arranging said lugs upon a movable piece to be operated by a lever H, so as to produce a lock with the spindle C, will readily suggest themselves to a skilled mechanic.

The locking-plate E need not necessarily be circular, but may be segmental or of other suitable form.

While it is preferable that the movement of the lever H to produce an engagement of the locking-bar with the locking-plate be effected by the use of an auxiliary lever K, actuated by a cord passing over the shoulders of the pilot, so that he may actuate the lock without the use of his hands or feet, the lock may nevertheless be closed by a direct pressure of the foot upon the outer end of the lever H, if desired.

The action of the locking device serves to hold the steering-wheel against accidental movements and to assure thereby steadiness in the movement of the truck over rough roads and bad crossings prevent the accidents which are apt to occur by a sudden, violent, uncontrolled turn of the hind axle, and relieve the pilot from the great strain in keeping the wheel in a given line.

I claim as my invention—

1. The combination, with the steering-wheel in a hook-and-ladder truck and with a pivoted lever actuated by a cord adapted to pass around the neck of the pilot, of an intermediate locking device actuated by the movement of said lever, substantially in the manner and for the purpose herein set forth.

2. The combination, in a hook-and-ladder truck, with the steering-wheel and its spindle, of a locking-plate fitted upon said spindle, a movable locking-bar engaging said plate, and a lever actuating said bar to produce its release from the locking-plate, substantially in the manner and for the purpose herein set forth.

3. The combination of the steering-wheel spindle, the locking-plate thereon, the bar mounted to move into and out of engagement with said locking-plate, the pivoted lever actuating the locking-bar to cause its engagement with the locking-plate, the auxiliary lever actuating the locking-lever, and the cord for operating said auxiliary lever, all substantially in the manner and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JACOB SCHMIDLAPP.

Witnesses:
A. N. JESBERA,
E. M. WATSON.