

W. H. NEWTON.
CAR STARTER.

No. 110.780.

Patented Jan. 3, 1871.

FIG. 1.

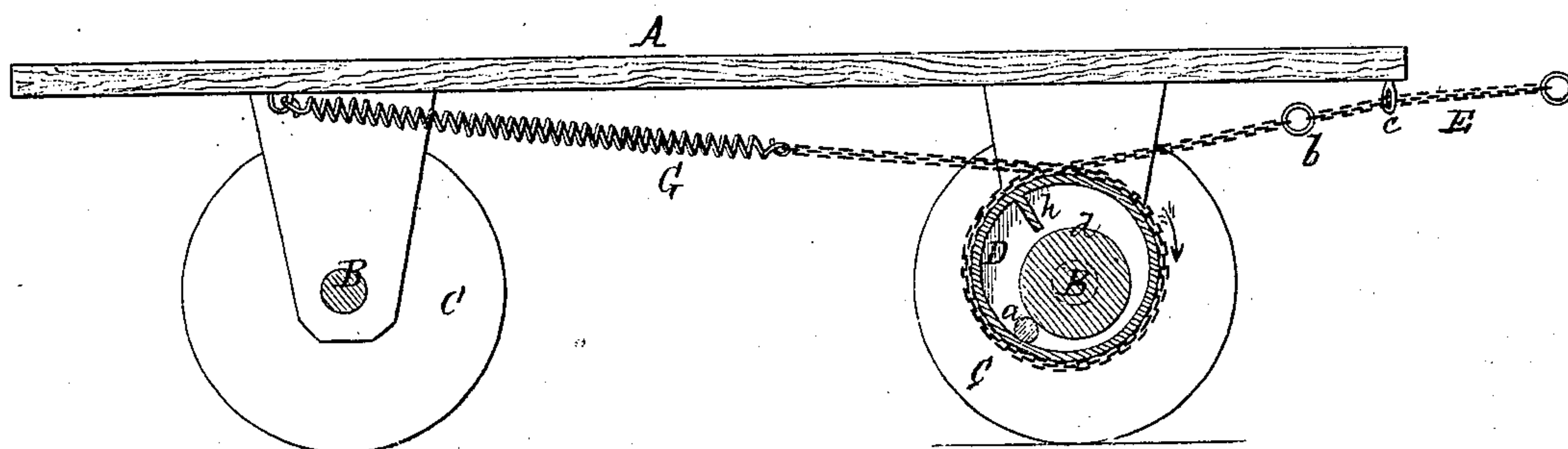


FIG. 2.

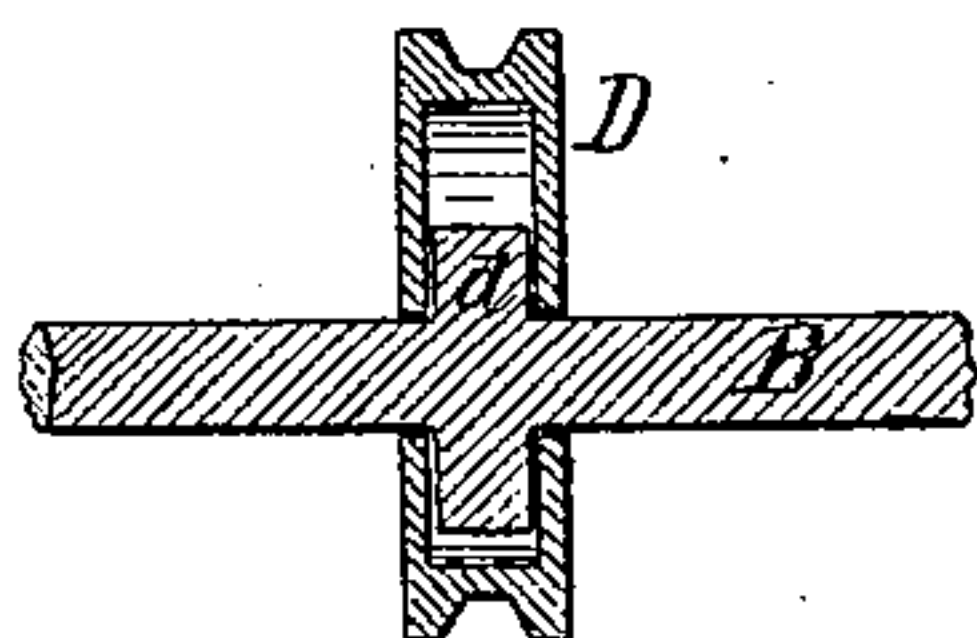
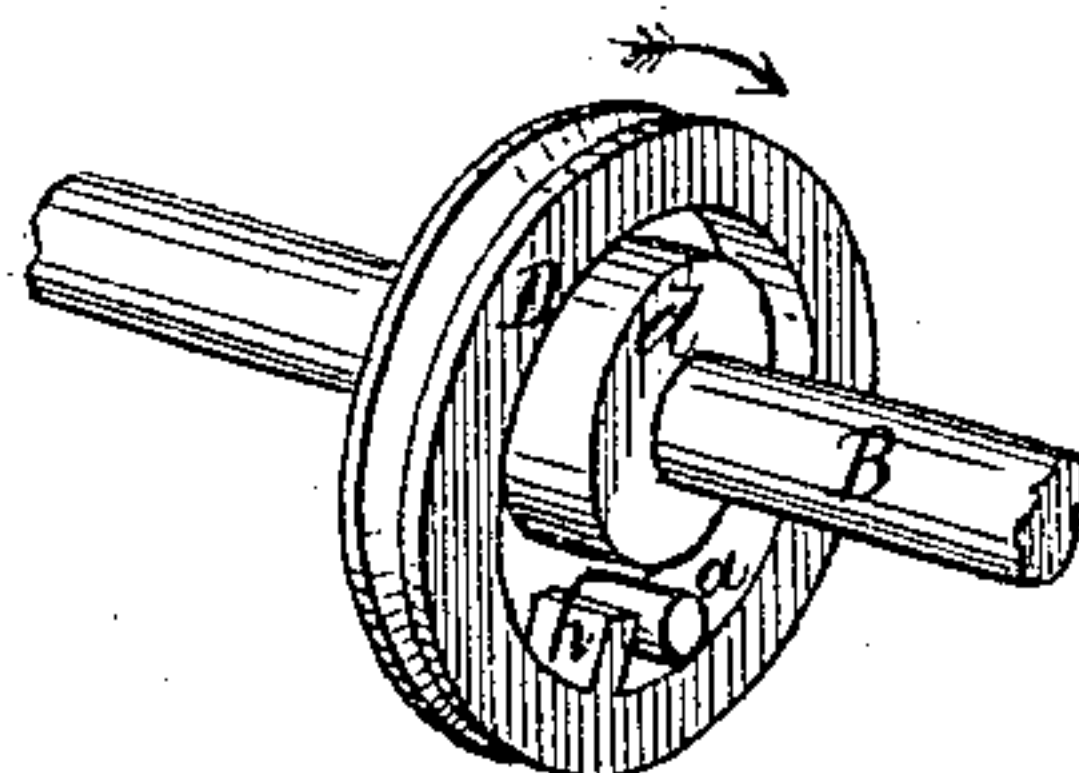


FIG. 3.



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by atty R. Pollok.

WITNESSES.

M. Bailey.
J. Buckley

United States Patent Office.

WILLIAM HARRISON NEWTON, OF NEWPORT, RHODE ISLAND.

Letters Patent No. 110,780, dated January 3, 1871.

IMPROVEMENT IN CAR-STARTERS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, WILLIAM HARRISON NEWTON, of the city and county of Newport and State of Rhode Island, have invented certain new and useful Improvements in Car-Starters, of which the following is a specification.

My invention consists in the employment of a drum, or the equivalent of the same, mounted loosely and eccentrically upon the axle of a car or carriage or other wheeled vehicle, and combined with a roller or equivalent friction device interposed between said axle and the periphery of the eccentric drum in such manner that, when the drum is revolved in the direction in which the axle and its wheels are to move, the roller will be pinched between it and the axle, the latter being thus compelled to follow the rotary movement of the eccentric. This forward rotary movement of the drum is produced through the medium of a chain or other draft device, and the recoil or contrary rotary movement of the eccentric, which should take place when the car stops and the draft on the chain ceases, is effected by means of a spring or other suitable device for the purpose.

The manner in which my invention is or may be carried into effect will be readily understood by reference to the accompanying drawing, in which—

Figure 1 is a longitudinal vertical section through a car-truck to which my improvement is applied.

Figure 2 is a transverse vertical section through the eccentric.

Figure 3 is a perspective view of the eccentric and that portion of the axle upon which it is mounted, one side of the eccentric being removed in order to exhibit its internal construction and arrangement.

A represents the body of a truck or carriage of any ordinary or suitable construction.

B B are the axles, and

C C the wheels.

My improvement in this instance is applied to the front axle, although it may be applied, if desired, to either or all of the axles.

Upon the forward axle is loosely and eccentrically mounted a drum, D, and within the drum, between it and the axle, is placed a loose friction-roller, *a*, or ball, or any equivalent device for the purpose.

The normal position of the eccentric drum—that is to say, the position which it occupies when the car is at rest—is shown in fig. 3, the width of the recess or space between the periphery of the drum and the axle, at the point where the roller *a* is brought by its own gravity, being such that the roller is free from contact with the axle. If, however, the drum be revolved in the direction of the arrow, the width of the eccentric recess or groove, as it may be termed, becomes gradually less, so that, although the drum will at the outset revolve upon the axle, the roller will

soon become pinched between the gradually-approaching surfaces of the drum and axle, and consequently it will become so tightly wedged between the drum and axle as to compel the latter to follow the movement of the former, and to revolve in the same direction with it.

The action of the devices will be more fully understood by reference to fig. 1, in which the parts are represented in the position they assume when the roller has been pinched between the eccentric and the axle and a partial revolution of said drum and axle has been made.

By continuing to pull upon the draft-chain E, which is made fast at one end to the periphery of the drum, the revolution of the drum and axle, and consequently of the wheels C, will be continued until the ring or stop *b* on the chain brings up against the eye-bolt *c*, through which the chain passes. This arrests further draft upon the drum, which ceases to revolve, while the car still moves forward, the axle revolving within the now stationary drum. The axle can thus revolve easily, as the direction of its rotation tends to throw the roller upward, avoiding all cramping or confining action of the latter.

It is desirable to combine with the starting devices a mechanism for returning the drum to the position shown in fig. 3, when the car stops, so that, when the car again is required to move forward, the drum and roller may be in condition to take a fresh hold upon the axle for the purpose of starting its movement.

To this end I employ a spring, G, which is connected with the drum so as to pull it in a direction contrary to the draft of the chain E. When the chain E is pulled so as to cause what may be called the forward rotation of the drum, the spring will yield, but when the draft upon the chain is slackened the recoil of the spring will cause the return of the drum to its first position. The spring may be arranged in any desired manner, and in its place other devices of an ordinary or suitable nature for the purpose may be employed.

The exterior shape of the part D, which I have called the drum, may be varied to a great extent, as it is only necessary that it should have in its interior, or between it and the axle, the eccentric or gradually-narrowing space, of such capacity that, by the rotation of the drum, as above explained, the roller will be cramped and confined between the axle and the drum, so as to compel the former to follow the movement of the latter.

In order to enable the roller to take a better hold upon the axle, and to increase the leverage, I form a hub or pulley-like projection, *d*, upon that part of the axle with which the roller is to be brought in contact.

It is not necessary that the eccentric groove should

extend all the way around the axle, but in case it does, as represented in the drawing, I provide a flange, *h*, arranged in the widest part of the groove, for the purpose of preventing the roller from accidentally getting on the wrong side of the axle.

In lieu of placing the starting device upon the axle, it may be placed upon the hub of the wheel of the vehicle, but this would be substantially the same use and productive of the same results.

Having now described my invention and the manner in which the same is or may be carried into effect,

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with the axle of a car or other wheeled vehicle, of an eccentric drum mounted loosely thereon, and a roller or equivalent device located within the drum, or between it and the axle, substantially as and for the purposes shown and described.

2. In combination with the eccentric drum and its roller, operating in connection with the car-axle, as set forth, the means, substantially as herein shown and described, for causing the drum to return to its normal position when the draft-chain is slackened.

3. The arrangement, herein shown and described, of the eccentric drum, the roller, and the axle, provided upon that part inclosed by the drum with a hub or pulley-like projection, for the purposes set forth.

4. The partition flange placed in the eccentric groove or recess within the drum and around the axle, as and for the purposes set forth.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

W. HARRISON NEWTON.

Witnesses:

JOHN A. UBSDELL,
SIMON NEWTON.