(No Model.)

B. H. BURLING.

SELF RAISING LADDER.

No. 449,999. Patented Apr. 7, 1891.

Fig: 1.

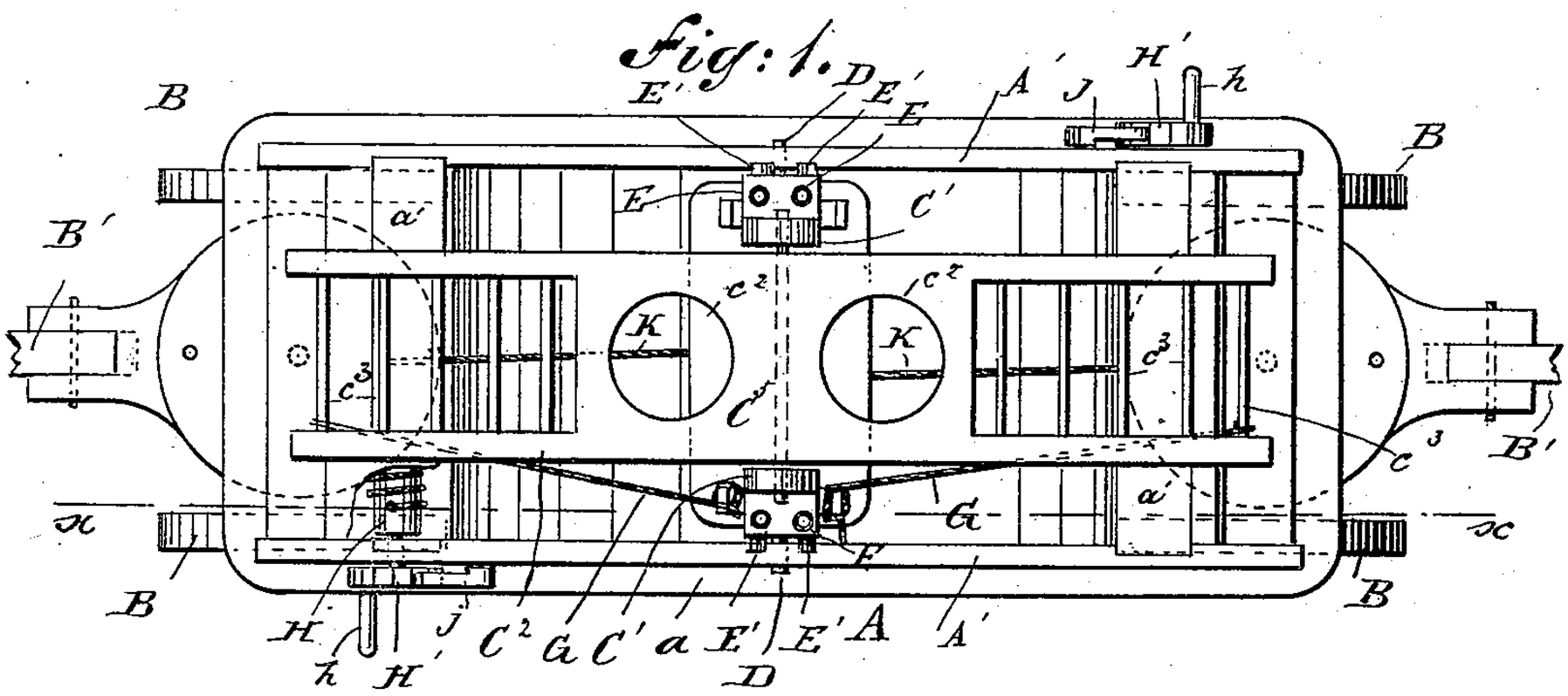
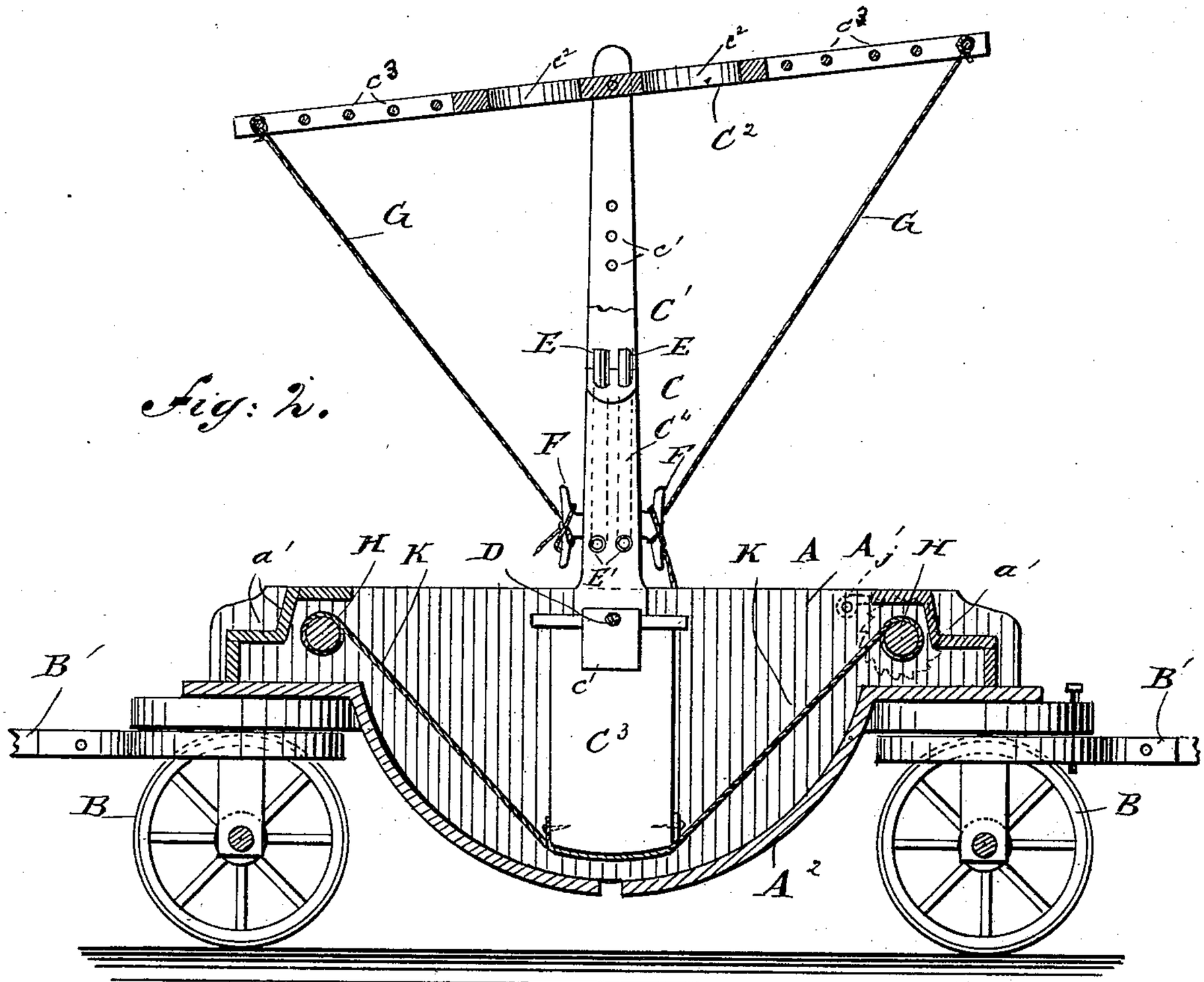


Fig: 2.



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BENJAMIN H. BURLING, OF FORT ANN, NEW YORK, ASSIGNOR OF TWO-THIRDS TO FRANK M. LAMB AND HUGH McDONALD, OF SAME PLACE.

SELF-RAISING LADDER.

SPECIFICATION forming part of Letters Patent No. 449,999, dated April 7, 1891.

Application filed August 13, 1890. Serial No. 361,893. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN H. BURLING, of Fort Ann, in the county of Washington and State of New York, have invented a new and Improved Self-Raising Ladder, of which the following is a full, clear, and exact description.

My invention relates to improvements in self-raising ladders; and the object of my invention is to produce a ladder of simple construction that may be easily moved about, that will maintain itself in a vertical position, that may be adjusted so as so extend into any desired position in line with the swing of the ladder on its support, and that may be arranged so that the main portion of it will extend vertically and the upper end will extend at an angle to the main portion of the ladder.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter fully described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a broken plan view of the ladder embodying my invention, and Fig. 2 is a broken vertical section of the same on the line *x x* of Fig. 1.

The ladder proper is mounted in a body A, which has vertical sides A′ and a concave semicircular bottom A^2, the arc of the circle being large enough to accommodate the swinging motion of the ladder, as hereinafter described. The body is provided centrally with a longitudinal strengthening-rib *a* on each side, and at each end with a suitable seat *a′*. It is mounted on wheels B, and is provided at each end with a tongue B′, so that it may be easily wheeled either backward or forward.

The ladder C is composed of two members C′ and C^2, the lower member C′ being pivoted in the body A and the upper member C^2 being centrally pivoted between the upper ends of the side rails of the lower member. The lower member C′ is pivoted on the shaft D, which extends centrally through the upper portion of the body A, and the member C′ is provided with a weighted base C^3, which extends below the pivot-shaft D, and the weight is sufficiently heavy to counterbalance the upper portion of the ladder, and thus maintain it in a vertical position.

Suitable blocks *c* are arranged upon the shaft D on each side of the weight C^3, so as to prevent friction between the weight and the sides of the body A, although these blocks are not absolutely necessary.

The lower member C′ of the ladder is provided with suitable rungs *c′*, extending nearly to the top, and the lower portions of the side rails of the member C′ are thickened, as at C^4, and pipes E extend vertically through the thickened portions, the lower extremities E′ of the pipes being bent outwardly, so as to project from the sides of the ladder, as shown in Fig. 1. These pipes are adapted to connect with supply pipes or hose at the lower end, and a suitable hose may be coupled to each pipe at the top, and may be carried to the upper portion of the ladder when desired. It will be observed that these pipes are arranged on each side of the ladder, and may thus be connected with two engines. One of the pipes E may, if desired, be connected with the exhaust steam-pipe of an engine and the other pipe with a water-supply pipe, so that steam and water may both be thrown, or hot water may be passed through one pipe and cold water through the other. This will be found advantageous for use in cold weather, as there will be no danger of freezing, and water and steam may be delivered with good effect.

On the lower portion of the lower member C′ are cleats F, to which the ropes G are attached to regulate the position of the upper member C^2. The upper member C^2 is centrally pivoted between the upper ends of the rails of the lower member C′, and has a central body portion C^5 without rungs, but having openings c^2 therein, which lighten the weight of the member, and through which a person may descend, if desirable, to the lower member C′. The side rails of the upper member extend from each end of the central portion C^5, and are connected by suitable rungs c^3, the ropes G being attached to the outer rungs of the member C^2 and to the

cleats F on the lower member. It is obvious that the rope may be attached to the other rungs, if desired. It will thus be seen that the member C^2 may be swung so as to nearly align with the member C′, so that the device may be used as an ordinary ladder, or the upper member may be swung at an angle to the lower member, as shown in Fig. 2, and held by the ropes G, and it may thus be made to extend across a street or into a window, if desired.

A drum H extends through each end of the body A, near the upper portion thereof, and fixed to each drum is a cord or rope K, said rope being also connected to the lower end of the weight C^3. One end of each drum H projects through the side of the body A, and is provided with a ratchet-wheel H′, having a suitable handle *h*, by which it and the drum may be turned, and a pawl *j* is pivoted on the body A near each ratchet-wheel, so as to engage the same and prevent the drum H from turning back. If desired, a ratchet-wheel may be fixed to each end of the drum H. It will thus be seen that by turning one of the drums H the position of the ladder may be easily changed, as it will be thereby caused to swing on the pivot-shaft D.

The ladder is chiefly intended for use as a fireman's ladder; but it may also be used as a fire-escape and for many other purposes. When a fireman or other person is to be elevated to a desired position, the ladder is swung downward, so that the person may get onto the upper member C^2, and the ladder is then swung upward and the position of the upper member fixed by means of the ropes G, as described.

The apparatus is preferably mode of iron, although it may be made of any material suitable for the purpose.

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

1. A self-raising ladder comprising a support, a ladder having a weighted base, said ladder being pivoted in the support, and manually-operated drums pivoted in the support and connected by suitable ropes with the base of the ladder, substantially as described.

2. A self-raising ladder comprising two members, the lower member being pivoted in a support and provided with a weighted base, and the upper member being centrally pivoted upon the upper end of the lower member, substantially as described.

3. A self-raising ladder comprising two members, the lower member being pivoted in a suitable support and provided with a weighted base and having cleats on the sides thereof, and the upper member being centrally pivoted upon the upper end of the lower member and provided at opposite ends with ropes, substantially as described, and for the purpose specified.

4. A self-raising ladder comprising a semicircular support mounted on suitable wheels and a ladder consisting of two members mounted in the support, the lower member being pivoted in the support and provided with a weighted base and the upper member being centrally pivoted to the upper end of the lower member, substantially as described.

5. The combination, with a vertically-swinging ladder having cleats, as shown, of a supplementary ladder pivoted to the upper end of the swinging ladder and provided with ropes adapted to be attached to the cleats, the supplementary ladder having a central body portion with openings therein, substantially as described.

6. A self-raising ladder consisting, essentially, of a semicircular body mounted upon suitable wheels, manually-operated drums pivoted in opposite ends of the body and provided with a ratchet mechanism, as shown, a ladder pivoted in said body and provided with a weighted base having connection with the drums, and a supplementary ladder pivoted in the upper end of the lower ladder, said supplementary ladder having a central body with openings therein and being provided with suitable ropes at each end, substantially as described.

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