

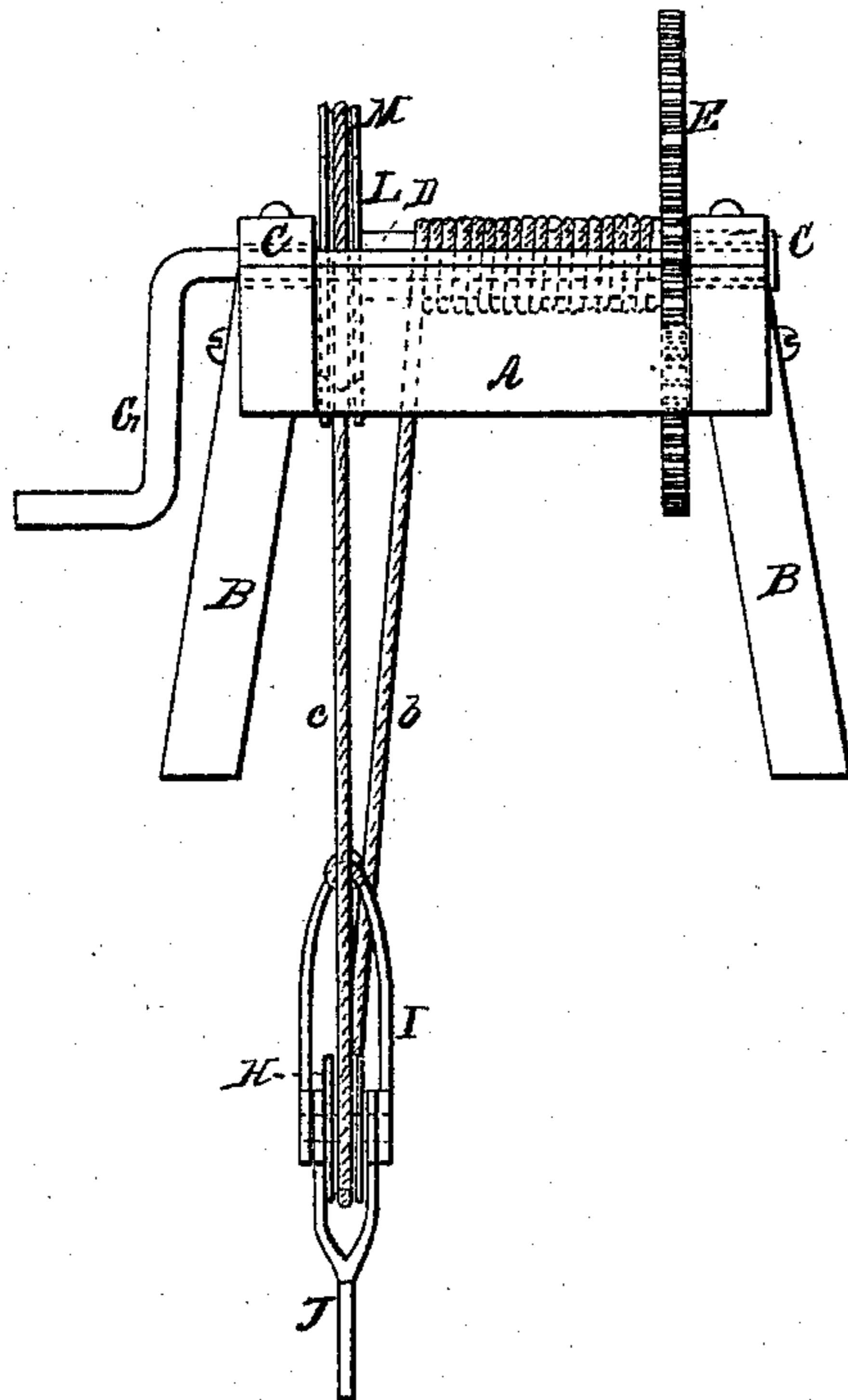
*C. B. Sawyer,*

*Windlass.*

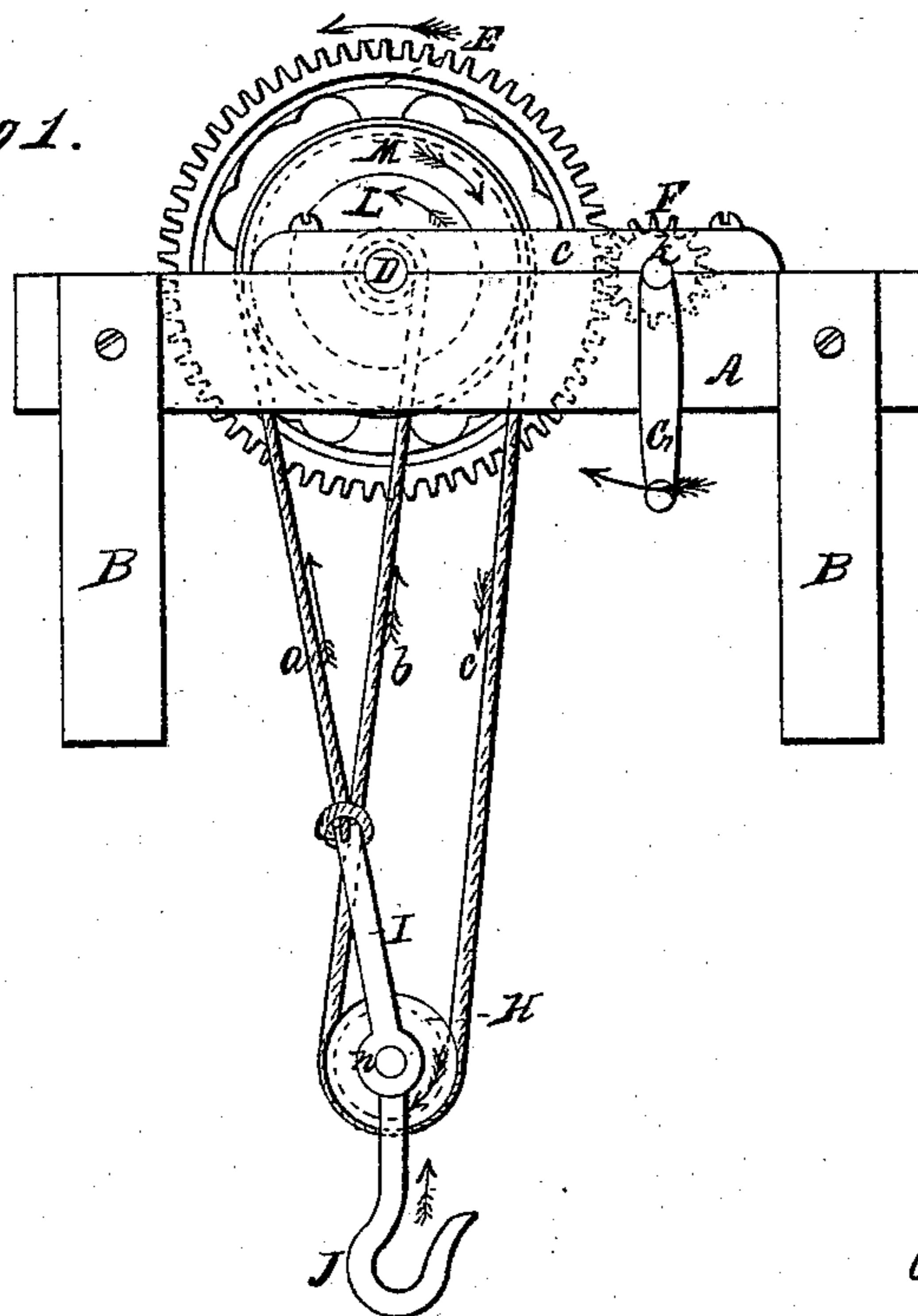
*N<sup>o</sup> 43,136.*

*Patented June 14, 1864.*

*Fig 2.*



*Fig 1.*



*Witnesses.*  
*N. Ames.*  
*George Briggs.*

*Inventor.*  
*Charles B. Sawyer*

# UNITED STATES PATENT OFFICE.

CHARLES B. SAWYER, OF FITCHBURG, MASSACHUSETTS.

## IMPROVEMENT IN BALANCED ELEVATORS.

Specification forming part of Letters Patent No. **43,136**, dated June 14, 1864.

*To all whom it may concern:*

Be it known that I, C. B. SAWYER, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful Balanced Elevator; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation, and Fig. 2 an end elevation.

Like parts are indicated by the same letters in both drawings.

The nature of my invention consists in a certain novel combination and arrangement of a windlass and pulleys, whereby I produce a very simple, compact, and convenient elevator, which always balances or supports the lifted weight, without a pawl and ratchet or brake.

To enable others skilled in the art to make and use my improvement, I will now describe its construction and operation.

A A A A are the four sides of any suitable frame, supported by the legs B.

D is a cylindrical axle, of any required diameter, turning in boxes in the frame, C C being caps to said boxes.

E is a large pinion fast to the axle D, by means of which the latter is turned.

F is a smaller pinion, the cogs of which engage with those of pinion E. This pinion F is fast to an axle, *k*, which turns in suitable bearings in the frame, as shown in Fig. 1, G being a crank by which said axle is turned by hand. In place of the handle G, however, it is obvious that a drum or pulley may be substituted and driven by steam or other power;

or the driving power may be applied directly to the axle D.

H is a grooved pulley, like those in general use, which turns freely on the pin *n* in the block or frame I.

J is a hook to which weights to be raised are attached.

*a b c* is a rope or chain, one end of which is fast to the block I and the other to the axle D, as shown in the drawings.

M is a grooved wheel, which turns on its center L, the latter being fast to the axle D.

The rope or chain *a b c*, fast to the block I, passes up over the pulley M, thence down under the pulley H, and up to the axle D, to which it is attached.

Thus (the arrows indicating the direction of the motion of the different parts) it is obvious that a weight attached to the hook J can be raised or lowered by turning the crank G, and also that said weight will remain balanced or supported in any position without the aid of a pawl and ratchet or brake of any description, being not only a safe, but also a simple, compact, and powerful elevator, superior in many respects, I think, to any known or used before.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination and arrangement of the rope *a b c*, windlass D, pulley H, and wheel M, as and for the purpose described.

CHARLES B. SAWYER.

Witnesses:

N. AMES,

GEORGE GRIGGS.