

(No Model.)

W. & W. T. EADES.
Apparatus for Raising Weights.

No. 235,625.

Patented Dec. 21, 1880.

Fig. 1.

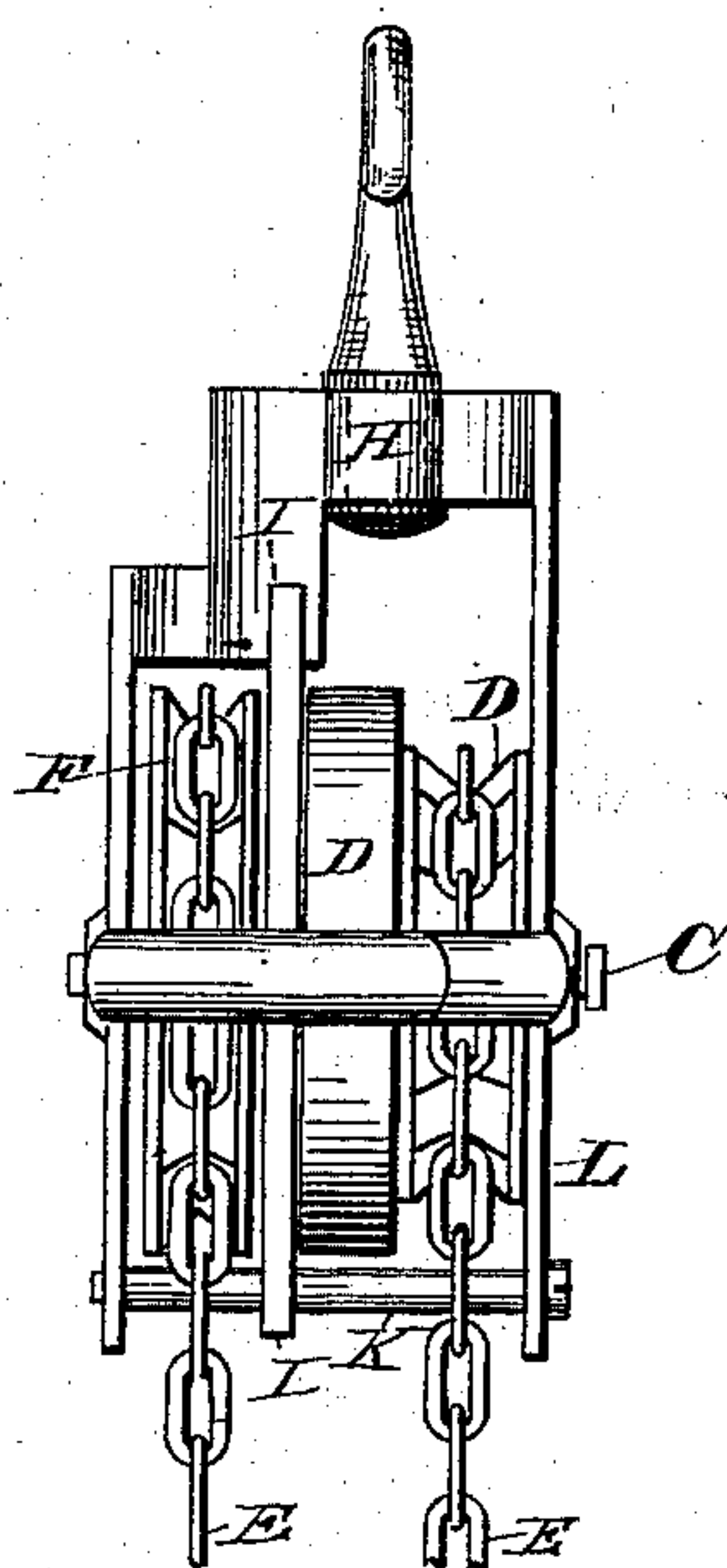


Fig. 2.

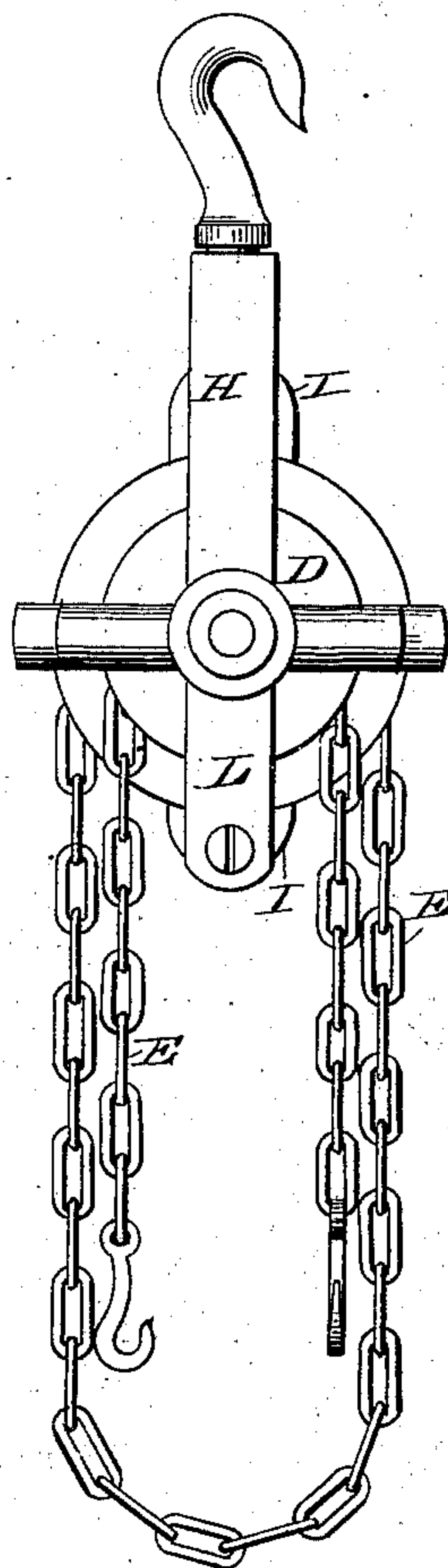


Fig. 5.

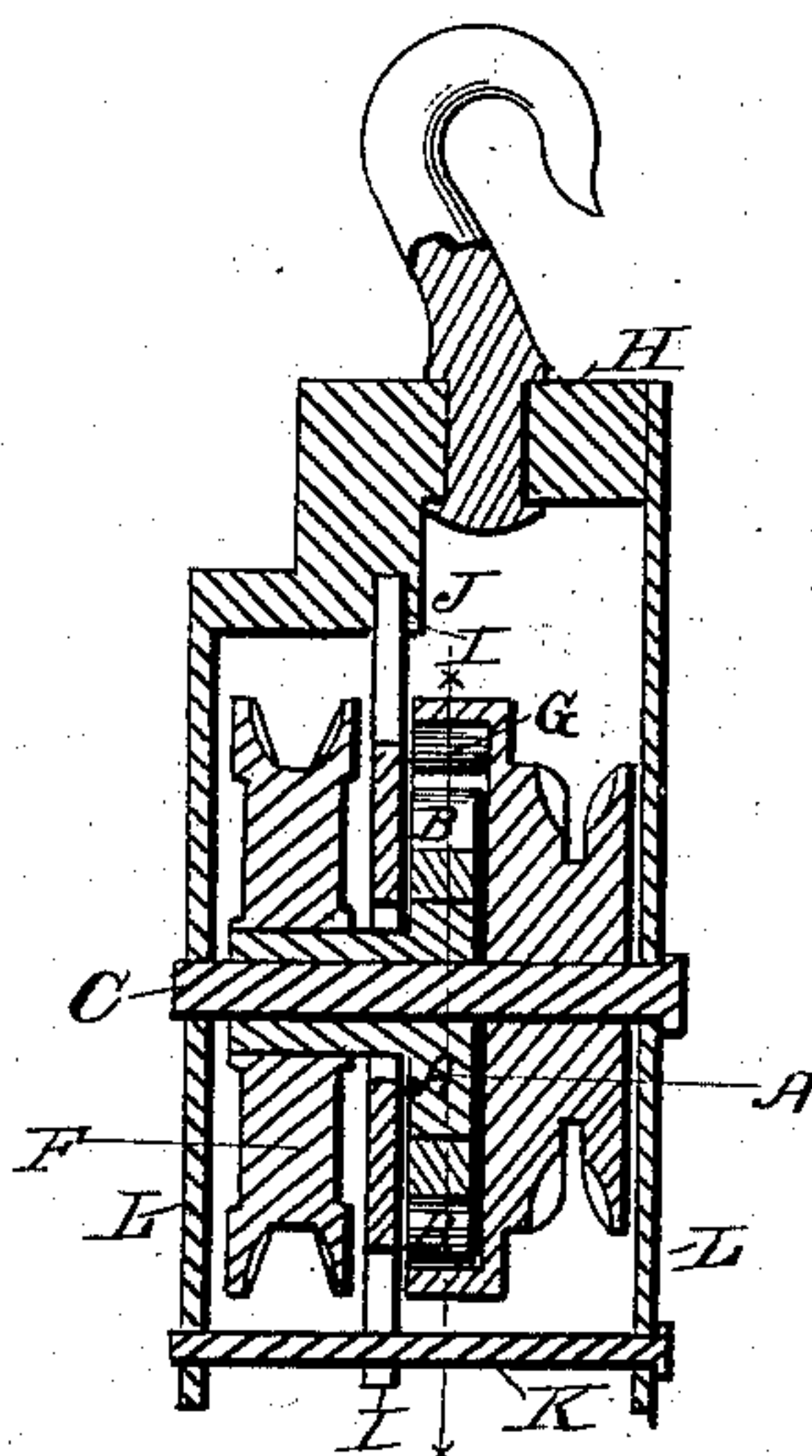


Fig. 3.

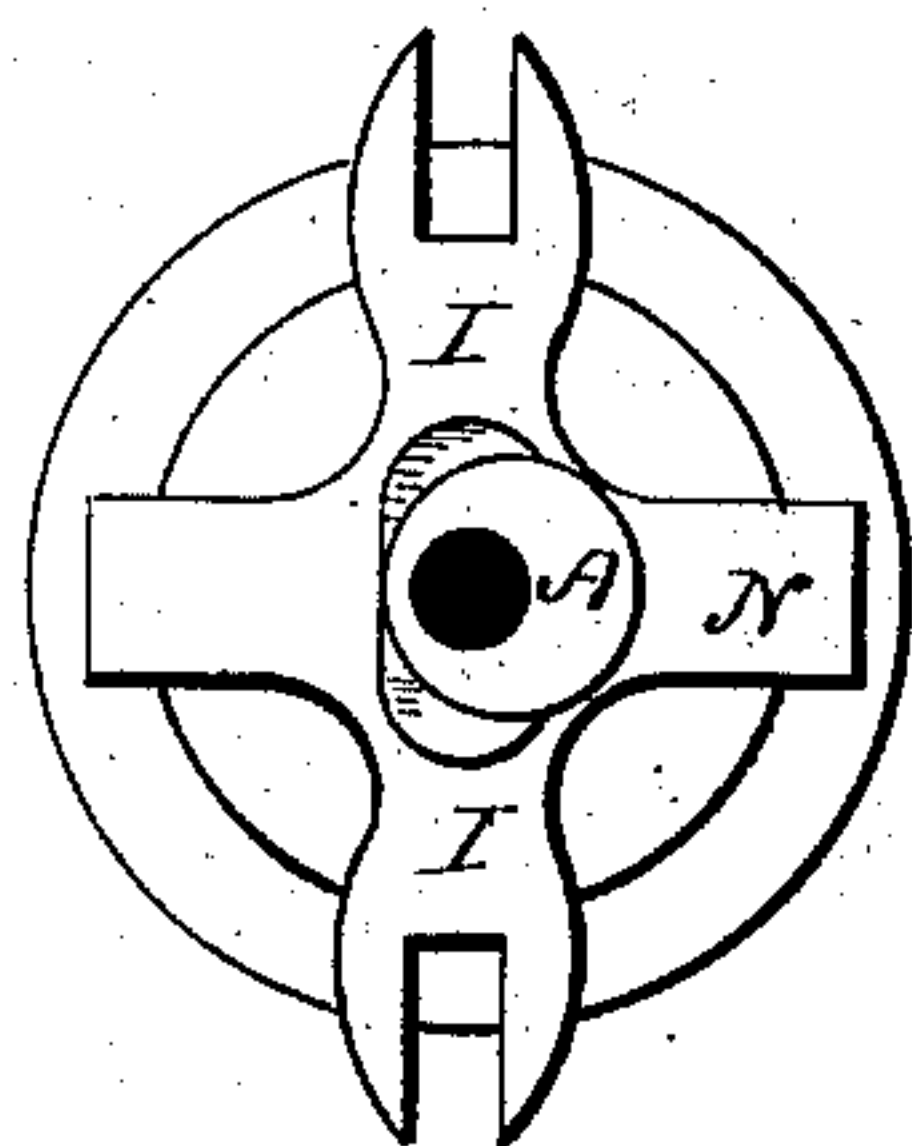
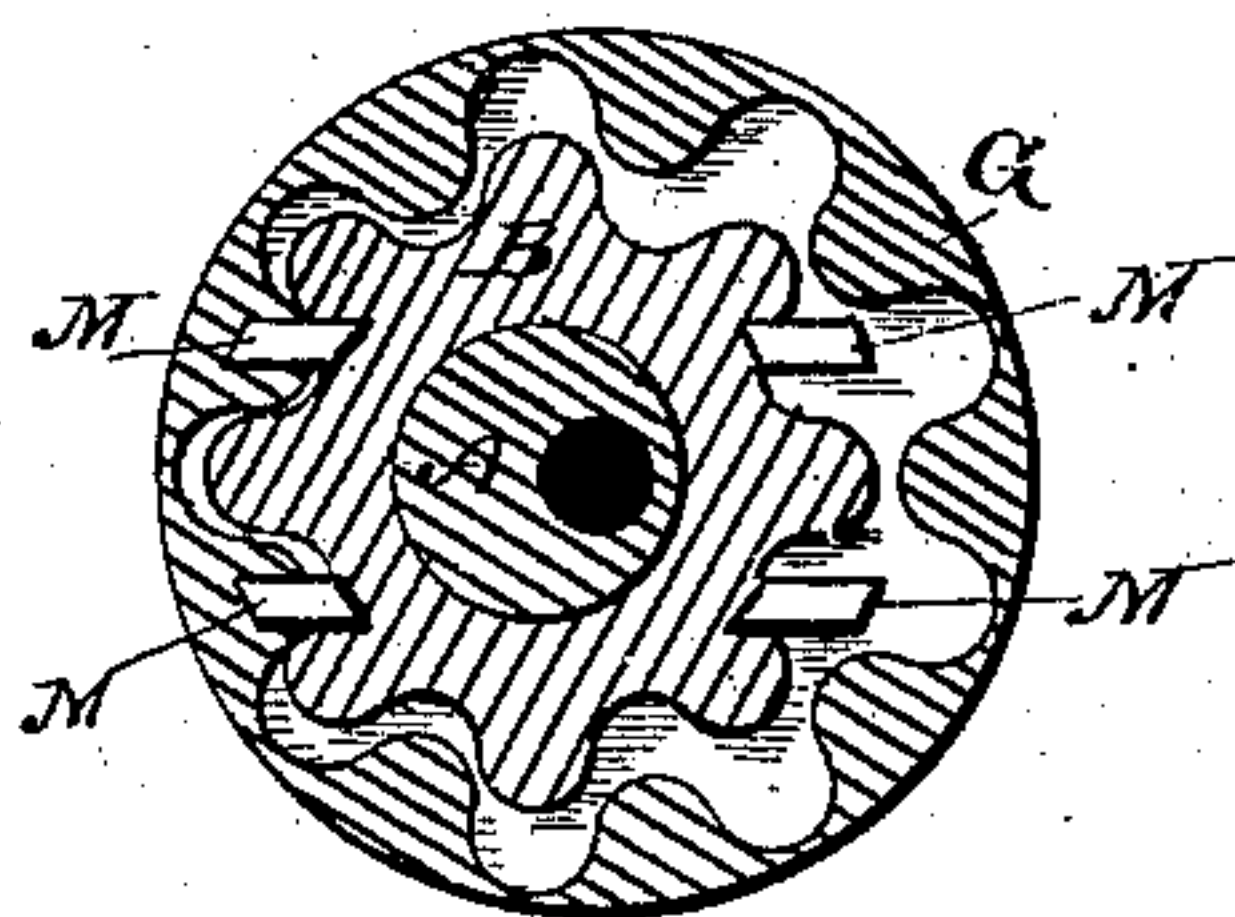


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM EADES AND WILLIAM THOMAS EADES, OF BIRMINGHAM,
COUNTY OF WARWICK, ENGLAND.

APPARATUS FOR RAISING WEIGHTS.

SPECIFICATION forming part of Letters Patent No. 235,625, dated December 21, 1880.

Application filed May 26, 1880. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM EADES and WILLIAM THOMAS EADES, both of Birmingham, in the county of Warwick and Kingdom of England, have invented new and useful Improvements in Apparatus for Raising Weights, of which the following is a specification.

The invention relates to improvements upon the Patent No. 62,401, granted to us and dated February 26, 1867, which consists, as herein described, in an improved pulley-block constructed after the following manner:

We employ a pulley having sinkings or chambers upon its periphery to receive the links of a single chain, which chain hangs with both ends loose, and terminating with hooks, so that while one end of the chain is on the ascent the other is on the descent. This pulley is attached to or formed upon a toothed wheel having cogs or teeth inside the periphery or rim of the wheel, in which cogs or teeth another toothed wheel works. This second or inside wheel has one or more teeth less than the outside wheel. The inside wheel works loose upon an eccentric, by the action of which it is caused to play within the outside toothed wheel, and, being fixed to an oscillating plate attached to the arm or slide of the block, it has no circular motion. The revolution of the eccentric causes the outside toothed wheel to advance one or more teeth, and as that wheel is part of or is attached to the pulley on which the chain is worked, it causes the chain-pulley to rotate with itself. The eccentric is caused to revolve by means of a pulley worked by an endless chain, a rope and sprocket-wheel, or any other convenient means.

One of our improvements consists in running the eccentric loose upon the outside of the shaft and having the shaft fixed to the lifting-pulley, instead of forming the eccentric upon the shaft.

Another improvement consists in constructing the oscillating plate so that it takes its bearing upon the top of the frame which contains the pulley, and at the other end against the pin or bar, which is carried across the frame

from two arms carried down from the bottom thereof, so that the oscillating plate shall not rub against the eccentric.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a front view, and Fig. 2 a side view, of the complete apparatus; Figs. 3 and 4, details of the eccentric oscillating plate and toothed wheels; and Fig. 5, a sectional view of the several parts.

The eccentric A, which carries the inside toothed wheel, B, works upon the shaft C, which is keyed or otherwise fixed to the pulley D. By pulling the endless chain E the pulley F, which carries the eccentric A, upon which is the cog-wheel B, causes the cog-wheel B to work within the internal teeth, G, formed upon the outside toothed wheel, D. Between the pulley F and the cog-wheel B is placed the oscillating plate I, having its bearing upon the top piece at J and the bottom bar at K, the frame H being lengthened out at L L to carry the bar. Upon the cog-wheel B are the projecting pieces M, fitting over the cross-arms N of the oscillating plate I, so as to allow it to work in any lateral direction with the eccentric, but preventing it from revolving.

The object of these improvements is to greatly reduce the friction and add to the durability of the apparatus.

In applying this pulley-block for use it is only necessary to mount the device on a beam of the crane or hoist of any kind and work it by means of the chain E, by crank or otherwise.

What we claim is—

1. In a pulley-block for raising weights having the combination of the pulley D, carrying the internal gear, G, the toothed wheel B, the eccentric A, and a locking device for said toothed wheel, the said pulley D, fixed upon the shaft C, and the said eccentric A, mounted loosely thereon and carried by the operating-pulley F upon a sleeve-extension of said eccentric, all constructed and adapted for use substantially as and for the purpose specified.

2. The combination of the frame H, having the downward extensions L, united by the bar K, with the pulley D, fixed upon the shaft C, and carrying the internal gear, G, the toothed wheel B, the eccentric A, carried
5 by the operating-pulley F, and the oscillating plate I, the said toothed wheel B being locked with said plate I, and the latter locked by its

slotted arms with the frame at points above and below said shaft, substantially as and for the purpose specified.

WILLIAM EADES.

WILLIAM THOMAS EADES.

Witnesses:

HENRY F. TALBOT,

EDWARD BURTON PAYNE.