

(No Model.)

M. CURRAN, Jr.  
HOISTING MACHINE.

No. 473,655

Patented Apr. 26, 1892.

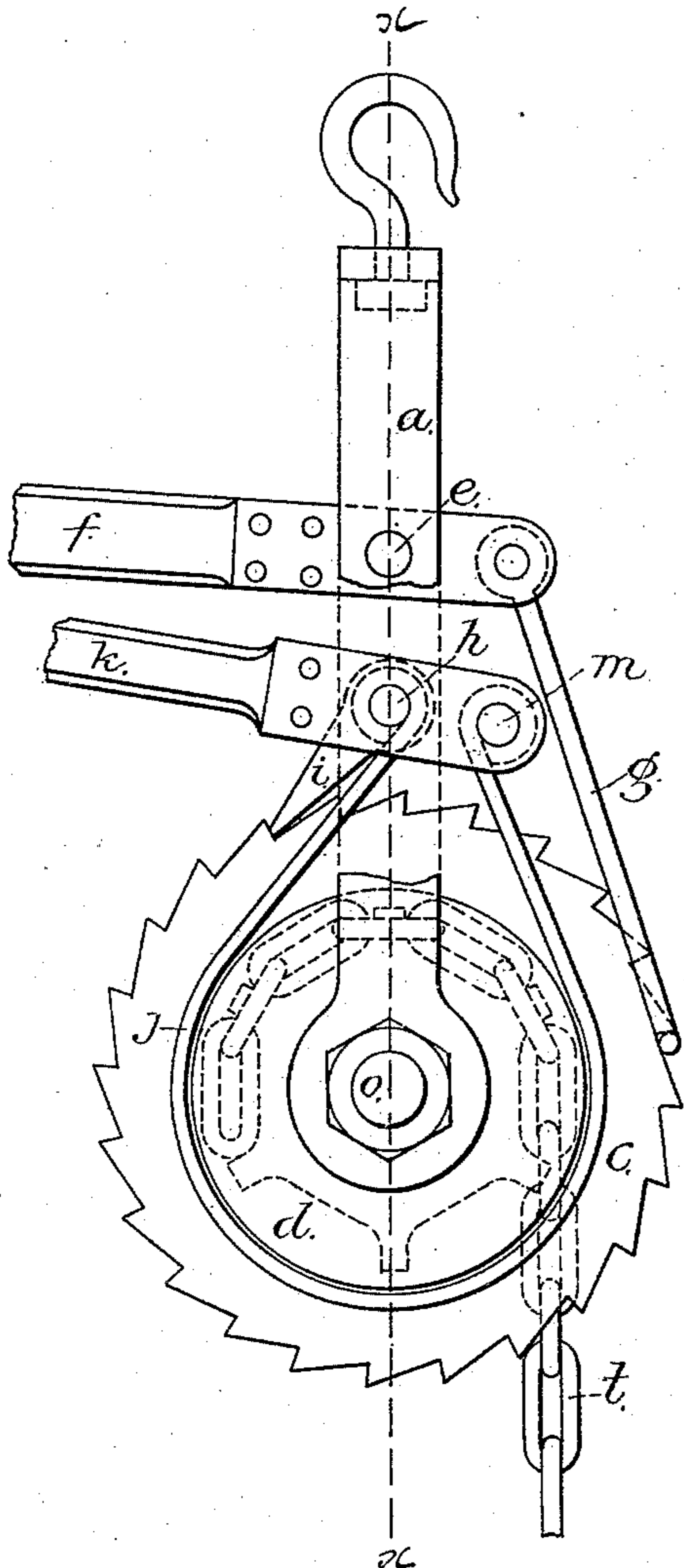


Fig. 1.

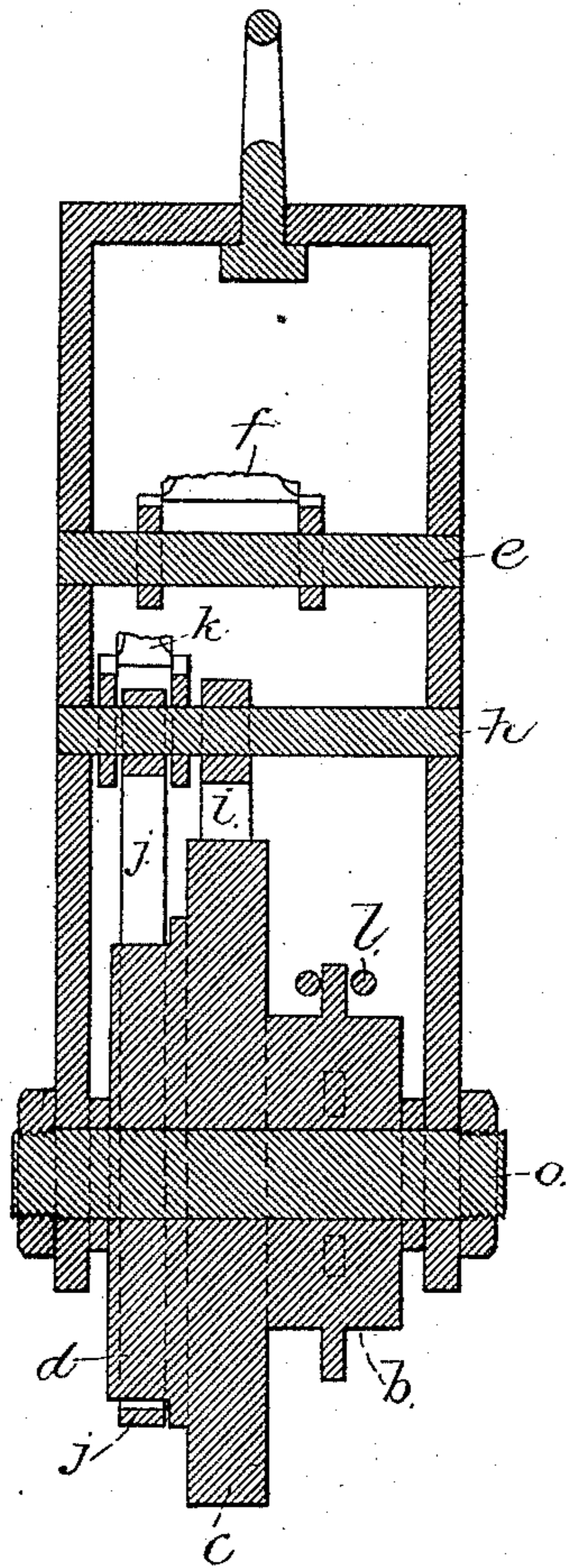
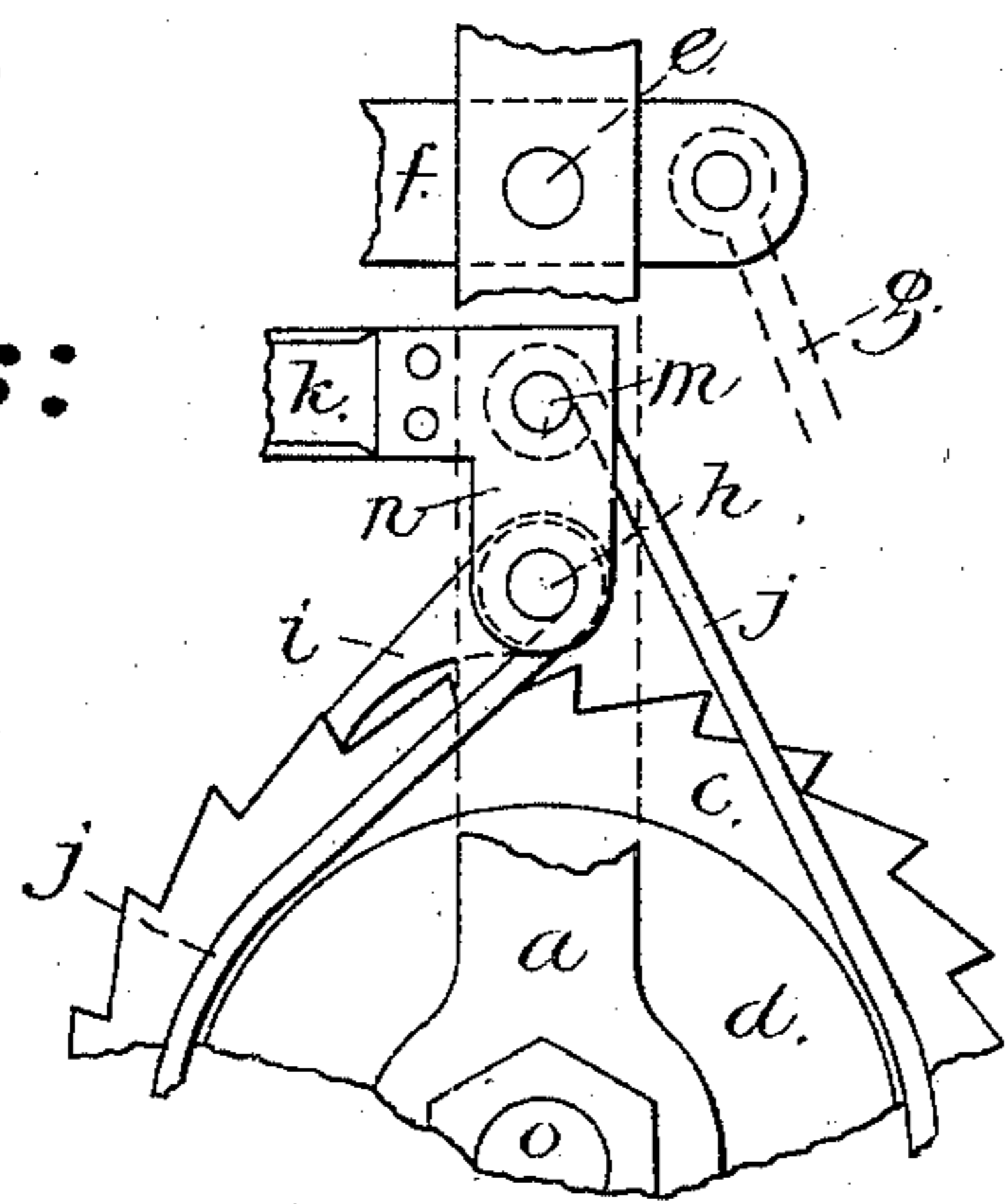


Fig. 2.

Witnesses:

J. J. Soley  
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Inventor.

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Fig. 3.

# UNITED STATES PATENT OFFICE.

MARTIN CURRAN, JR., OF DEERING, MAINE.

## HOISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 473,655, dated April 26, 1892.

Application filed October 29, 1891. Serial No. 410,170. (No model.)

*To all whom it may concern:*

Be it known that I, MARTIN CURRAN, Jr., of Deering, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Hoisting-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 is a side elevation of my improved hoisting-machine. Fig. 2 is a vertical section of same on line *xx*. Fig. 3 is a detail showing a different arrangement of the lever for operating the friction-band.

Same letters refer to like parts.

My invention relates to improvements in hoisting-machines; and it consists in combining therewith a new and improved arrangement of devices for enabling the load to be lowered gradually but rapidly.

In the drawings herewith accompanying and making a part of this specification, *a* shows a yoke adapted to be suspended from a beam or tripod. Rigidly set on a shaft journaled in said yoke are the following wheels, viz: sprocket-wheel *b*, ratchet-wheel *c*, and friction-pulley *d*. These wheels may be cast separately or all in one piece. Fulcrumed upon a rod *e*, set in said yoke, is a lever *f*, having on its end a swinging link or hook *g*, adapted to engage in the teeth of the ratchet-wheel, as shown in Fig. 1. Upon a rod *h*, set in said yoke, is a swinging pawl *i*, adapted to engage the teeth of said ratchet-wheel and prevent the wheel from being turned while the link is loosened to engage the next tooth. Attached to one end of said rod *h* is a friction-band *j*, adapted to pass around the friction-pulley and having its other end attached to a lever *k*, said lever *k* being fulcrumed upon a rod in said yoke. Passing around the sprocket-wheel is a chain *l*, to one end of which is attached the weight to be hoisted.

Instead of the form of lever shown in Fig. 1, the form shown in Fig. 3 or any other suitable form may be used.

In Fig. 3 the friction-band is attached at one end to the rod *h* and at the other end to a small rod *m* in the top of the lever, said lever having a downwardly-extending set-off *n*, instead of being straight.

The operation of my improved hoisting apparatus is as follows: The weight attached to the end of the chain is raised by successive downward movements of the lever *f*, the link engaging the teeth of the ratchet-wheel and the pawl holding the wheel from turning while the lever is being raised to enable the link to engage the next tooth of said wheel. Before the present invention, after the weight had been thus raised, to lower it it was necessary to raise the end of the lever *f* until the link could be removed from the ratchet-wheel, then the link raised until it engaged the next tooth above, then the pawl disengaged and the weight allowed to descend a short distance by raising the end of the lever, and then the pawl set again and the operation repeated as long as desired. In this way it took as long to lower the weight as to raise it. To save time in lowering the weight, a friction-pulley is placed on the same journal with the ratchet and sprocket wheels, and a friction-band, adapted to pass around said friction-pulley, is employed. To operate this, depress the lever *k* until the friction-band is drawn sufficiently close around said pulley to enable the friction to prevent the turning of the journal and wheels, disengage both pawl and link, and raise the lever until the friction-band is loosened sufficiently to permit the friction-pulley to revolve slowly and the weight consequently to descend gradually.

Having thus described my invention and its use, what I claim, and desire to secure by Letters Patent of the United States, is—

In a hoisting-machine, the combination, with a suitable yoke, a sprocket-wheel, a ratchet-wheel, a friction-pulley set on a shaft journaled in said yoke, a lever having a swinging link adapted to engage the ratchet-wheel, and a swinging pawl adapted to engage said ratchet-wheel, of a friction-band adapted to pass around said pulley, and a lever fulcrumed in said yoke and adapted to operate said band, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

MARTIN CURRAN, JR.

Witnesses:

ELGIN C. VERRILL,  
B. ETHEL PATTEN.