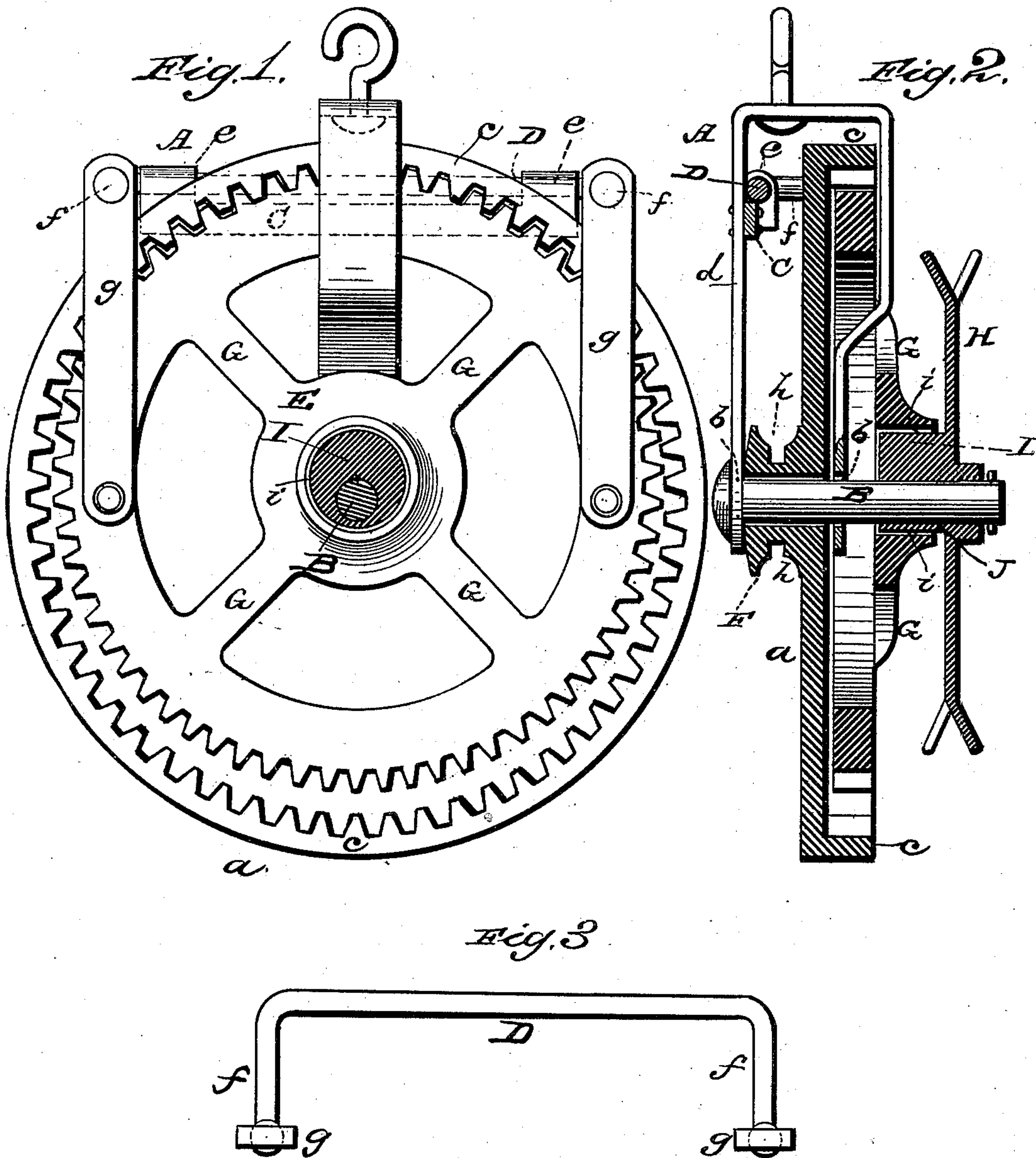


(No Model.)

W. H. STEWART.  
HOISTING MACHINE.

No. 309,499.

Patented Dec. 16, 1884.



WITNESSES  
*E. H. Bates*  
*P. C. Masi.*

INVENTOR  
*W. H. Stewart,*  
*by Anderson & Smith*  
*his* ATTORNEYS



# UNITED STATES PATENT OFFICE.

WILSON H. STEWART, OF HAMDEN, NEW YORK.

## HOISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 309,499, dated December 16, 1884.

Application filed October 23, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILSON H. STEWART, a citizen of the United States, residing at Hamden, in the county of Delaware and State of New York, have invented certain new and useful Improvements in Hoisting-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a face view of my device. Fig. 2 is a vertical cross-sectional view of the same, and Fig. 3 is a detail view.

This invention has relation to improvements in pulleys by which great weights may be elevated; and it consists in the construction and novel arrangement of devices, as will be hereinafter more fully set forth, and particularly pointed out in the claims appended.

Referring to the accompanying drawings by letter, *a* indicates a wheel which is suspended from a central axis by a frame, *A*, which is of loop form, and provided at its lower opposite ends with horizontal perforations *b*, for the reception of the journal-bolt *B*. The wheel *a* is provided on one side with a marginal flange, *c*, having on its inner side an annular series of teeth, as shown.

To the outer vertical arm, *d*, of the frame *A* is secured a transverse bar, *C*, having at opposite ends journal-bearings *e e*, for supporting a horizontal rock-shaft, *D*, which is provided at opposite ends with rectangular arms *f f*. This rock-shaft is loosely connected from the outer ends of the arms *f* with a wheel by means of vertical arms *g g*.

*E* indicates the wheel, which is arranged within the flange of the wheel *a*, having its periphery provided with teeth adapted to engage those of the wheel *a*, and which, by its connection with the rock-shaft, above mentioned, is allowed to play within the flange of the said wheel when operated by mechanism, as will be presently explained.

*F* indicates a pinion fixed concentrically to the outer side of the wheel *a*, and has chambers *h* on its periphery to receive the lifting-chain.

*G G* indicate radial arms, which are rigidly secured at their outer ends to the toothed wheel, and at their inner or central portion

are provided with an annular aperture, *i*, fitting over the inner end of the journal-bolt of the wheel *a*, and in its normal position is eccentric with relation to the said bolt.

*H* indicates a chain-wheel for turning the lifting-wheel. This chain-wheel is provided on the inner side with a central annular projection, *I*, adapted to enter the central aperture, *i*, in the radial arms *G*, passing over the journal-bolt of the wheel *a*.

*J* indicates a transverse aperture in the annular projection *I* of the chain-wheel, and, while being concentric to the said wheel, is eccentric with relation to the said annular projection. Therefore when the chain-wheel is placed upon the journal-bolt *B*, the outer surface of the cam projection will engage the central annular aperture of the radial arms *G*, and when motion is imparted to the said wheel through the medium of a chain, as shown, the toothed wheel will be given a vibrating movement, causing its peripheral teeth to engage the teeth of the annular marginal flange on the inner side of the wheel *a*, thereby imparting motion to the said wheel *a* and its fixed lifting wheel or pinion.

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

1. The combination, with the wheel *a*, having the lateral annular marginal flange provided with internal teeth, the interior toothed wheel, the lifting-wheel fixed to the said wheel *a*, and the chain-wheel having the cam projection, of the frame *A*, transverse bar fixed thereto and provided at opposite ends with journal-bearings, the rock-shaft supported in said bearings, and the arms connecting the rock-shaft to the inner wheel, substantially as specified.

2. The combination, with the frame *A*, of the transverse bar fixed thereto and provided at opposite ends with journal-bearings, the rock-shaft supported in the said bearings, and the arms connecting the said rock-shaft to the toothed wheel, and means, substantially as described, for operating the same.

In testimony whereof I affix my signature in presence of two witnesses.

WILSON H. STEWART.

Witnesses:

WM. LEWIS,  
M. E. COMBS.