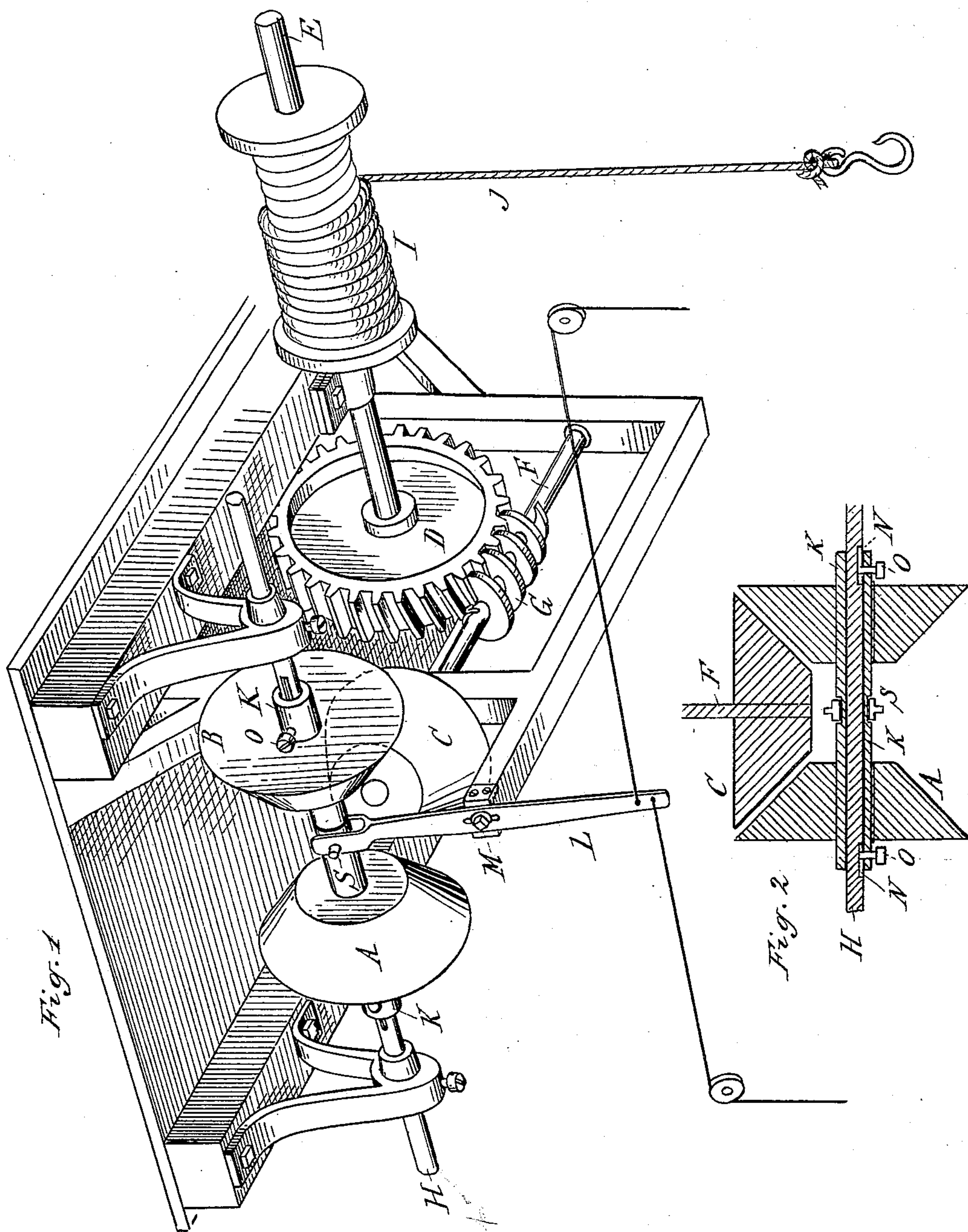


(No Model.)

A. C. FOSTER.
HOISTING APPARATUS.

No. 246,741.

Patented Sept. 6, 1881.



Witnesses:
Charles B. Lothrop.
Geo. H. Merr.

Inventor:
Albert C. Foster
by Geo. H. Lothrop
his Atty.

UNITED STATES PATENT OFFICE.

ALBERT C. FOSTER, OF LAKE, ILLINOIS, ASSIGNOR OF ONE-HALF TO GUSTAVUS F. SWIFT, OF SAME PLACE.

HOISTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 246,741, dated September 6, 1881.

Application filed June 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. FOSTER, of Lake, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Hoisting Apparatus, of which the following is a specification.

In the drawings, Figure 1 is a perspective of my invention, and Fig. 2 is a sectional view of the friction-wheels by which motion is communicated to the hoisting drum.

My invention consists, first, in the use of friction-wheels working upon a third friction-wheel set upon a shaft which carries an endless screw or worm meshing into a cog-wheel secured to the shaft which carries the drum; second, in the use of two friction-wheels upon the same shaft, and capable of being forced against a third friction-wheel placed between them, so as to move the third wheel in either direction; and, third, in combining with the friction-gear above mentioned a worm-gear for operating the hoisting drum, which will hold the weight at any height without a pawl or dog.

A B C are friction-wheels, in the form of truncated cones, made of metal, paper, or any suitable substance. A and B are both secured to a sleeve, K, which fits over and slides on shaft H. The wheels A B are placed with their small ends together, and the distance between them is a little greater than the diameter of the small end of wheel C, as shown in Fig. 2.

O O are screw-bolts tapped into sleeve K, and sliding in slots or grooves N N in shaft H, so that sleeve K must turn with shaft H, but can slide a short distance along said shaft.

S is a collar fitting loosely in a groove in the center of sleeve K, and having projecting pins, as shown in Fig. 2.

L is a lever, pivoted at M, the upper end of which is forked and has holes, through which the projecting pins on collar S pass loosely. To the lower end of lever M cords are fastened, by means of which the lever L can be vibrated in either direction, and thus slide sleeve K and wheels A B along shaft H.

C is a bevel friction-wheel, exactly like wheels A B, secured to one end of a shaft, F, which is at right angles to shaft H, and shafts F and

H are in substantially the same horizontal plane. The small end of wheel C is distant from sleeve K practically as far as is the periphery of the small end of wheel A, so that wheel C is between wheels A B, and its face will come in contact with the face of one of the wheels A B when sleeve K is moved along shaft H.

G is an endless screw or worm secured to the shaft F, and meshes into the cog-wheel D, which, together with the hoisting-drum I, carrying the rope or chain J, is secured to the shaft E.

In the operation of the hoisting apparatus power is communicated to the shaft H, and the wheels A B are rotated in the same direction. By forcing the lower end of lever L to the left wheels A and C will be brought in contact, thus rotating shaft F, and by means of worm G and cog-wheel D the winding-drum I will be rotated and the load secured to rope J be raised. As soon as lever L is released wheel A will cease to operate wheel C, and worm G will act as a pawl to prevent the rotation of cog-wheel D, so that rope J cannot unwind, and the load will be held stationary, and can only be lowered by throwing wheel D into contact with wheel C.

My hoisting apparatus is particularly useful in slaughter-houses or in any place where any heavy body has to be operated upon while suspended at different heights.

In actual practice I cover worm G and cog-wheel D with a case to exclude dust.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A hoisting apparatus in which the winding-drum is actuated by an endless screw or worm meshing into a cog-wheel secured to the shaft which carries the drum, and serving the double purpose of rotating the winding-drum in either direction and locking it in any desired position, substantially as herein shown and described.

2. In a hoisting apparatus, the combination of the shaft H, having the sleeve K secured thereto by screw-bolts O, with the friction-wheels A and B, the lever L, the friction-wheel C on the shaft F, and a winding-drum, substantially as and for the purposes described.

3. In a hoisting apparatus, the combination of the friction-wheels A B, rotating in the same direction on the shaft H, friction-wheel C, placed between wheels A B, shaft F, having
5 worm G, cog-wheel D, and shaft E, carrying the winding-drum I, all constructed, arranged, and operating substantially as described.

4. In a hoisting apparatus, the combination of the friction-wheels A B, secured to the sleeve
10 K, so that they will rotate with the shaft H,

and at the same time can be moved longitudinally on said shaft, lever L, and friction-wheel C, mounted on and secured to a shaft carrying mechanism for actuating the winding-drum, as and for the purposes set forth.

ALBERT C. FOSTER.

Witnesses:

LOUIS F. SWIFT,
G. E. CONRAD.