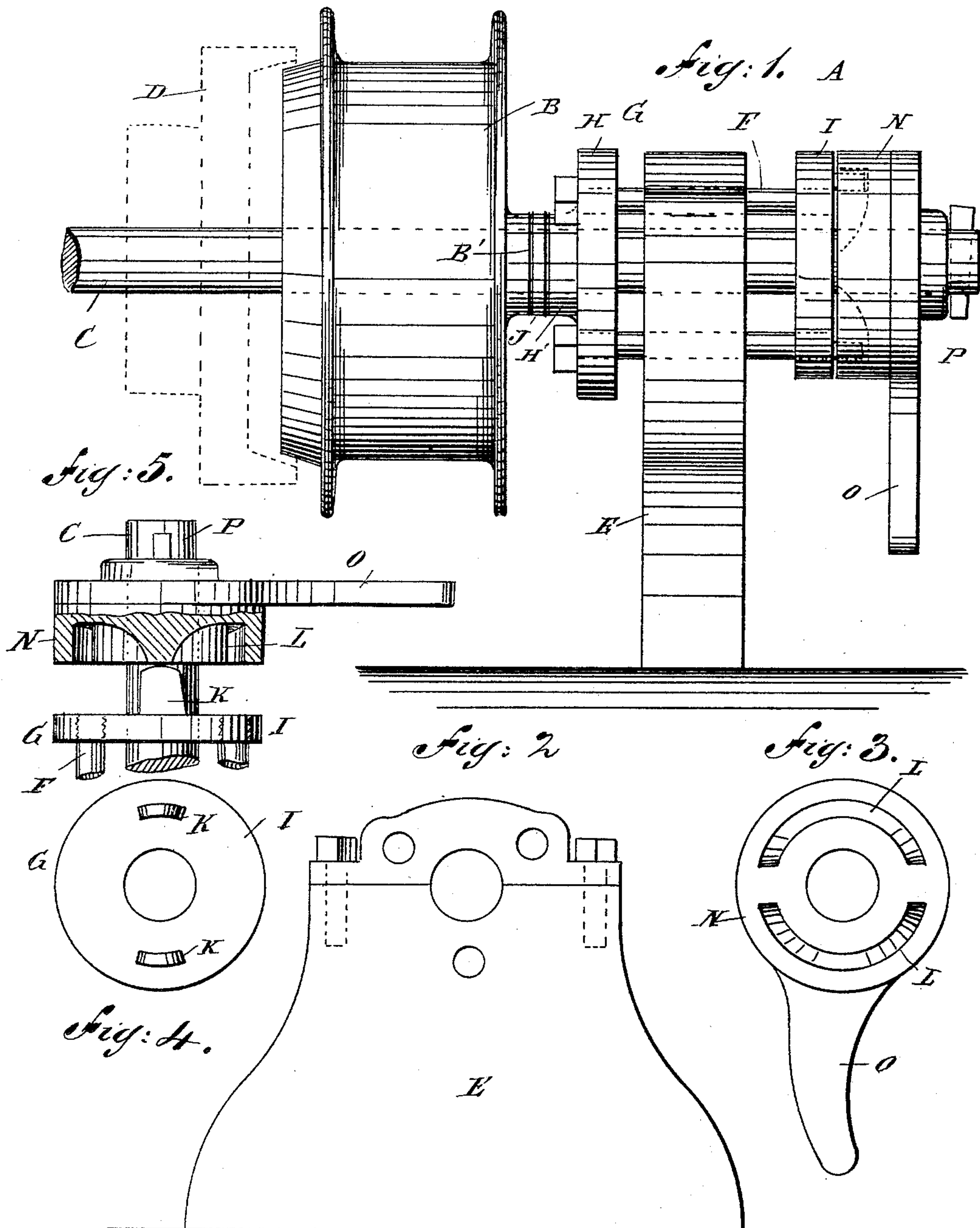


(No Model.)

J. U. ELWOOD.  
DRUM SHIFTER FOR HOISTING MACHINES.

No. 460,853.

Patented Oct. 6, 1891.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

JEFFERSON U. ELWOOD, OF MCKEESPORT, PENNSYLVANIA.

## DRUM-SHIFTER FOR HOISTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 460,853, dated October 6, 1891.

Application filed March 14, 1891. Serial No. 385,096. (No model.)

*To all whom it may concern:*

Be it known that I, JEFFERSON U. ELWOOD, of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Drum-Shifter for Hoisting-Machines, of which the following is a full, clear, and exact description.

The invention relates to hoisting-machines, and is specially intended for use on friction hoisting-drums.

The object of the invention is to provide a new and improved drum-shifter, which is simple and durable in construction and serves to conveniently slide the drum on the shaft to hold the same in engagement with the friction-pulley or other means for rotating the drum.

The invention consists of a frame fitted to slide and provided with end plates, of which one is adapted to engage the drum and the other is provided with pins extending from its face and engaged by cam-grooves formed in the face of a collar mounted to turn.

The invention also consists in certain parts and details and combinations of the same, as will be hereinafter fully described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement as applied. Fig. 2 is an end view of the bearing. Fig. 3 is a face view of the collar. Fig. 4 is a face view of the frame; and Fig. 5 is a view of part of the frame and the collar, the latter being partly shown in section.

The improved drum-shifter A is adapted to slide the hoisting-drum B on the main driving-shaft C of a hoisting-machine, so as to engage the said hoisting-drum with a friction-pulley D or other device for rotating the said hoisting-drum B, whenever desired. The shaft C, on which the drum B is mounted to turn loosely, has one of its bearings in a standard E, in which are fitted to slide longitudinally a number of rods F, forming part of a frame G for moving the said drum on the shaft C. The rods F are connected with each other at their ends by end plates H and I, hav-

ing central apertures for the passage of the shaft C. The end plate H is provided with a hub H', adapted to engage a collar J, fitted loosely on the shaft C next to the hub B' of the hoisting-drum B. The other end of the plate I is provided on its outer face with one, two, or more pins K, adapted to engage cam-grooves L, formed on the inner face of a collar N, mounted to turn loosely on the shaft C. In order to conveniently turn the collar N on the said shaft it is provided with a handle O, and its hub abuts against the key P, secured on the outer end of the shaft C. Each cam-groove L is deepest in its middle and then gradually slants outward until it reaches the inner face of the collar, as is plainly indicated in Figs. 3 and 5.

When the drum B is disengaged from its friction-pulley D, the drum-shifter stands in the position shown in Fig. 1, the end plate I being close to the inner face of the collar N and the lugs K, standing in the deepest parts of the cam-grooves L. When the operator now desires to shift the drum B on the shaft C so as to engage the drum with the friction-pulley, he moves the handle O, so as to turn the collar N either to the right or left on the shaft C, whereby the frame G slides inward as the lugs K on the end plate I of the said frame are forced outward by the cam-grooves L. This sliding movement of the frame G to the left causes the hub H' of the end plate H to press against the collar J, which latter presses against the hub B' of the drum B, so that the latter slides to the left on the shaft C, and is thus thrown in frictional contact with the friction-pulley D. The latter has a continuous rotary motion, thus rotating the drum B as soon as the latter is shifted by the shifter A in the manner previously described.

It will be seen that this drum-shifter is very simple and durable in construction, does not weaken the shaft in any way whatever, or put any strain on frame-bracket, and permits the operator to shift the collar N either to the right or left in order to engage the drum with the friction-pulley.

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

1. A drum-shifter comprising a frame fitted

to slide and held against rotary movement and a collar mounted to turn and provided with cam-grooves engaging lugs on the said frame, substantially as shown and described.

5 2. A drum-shifter comprising a collar mounted to turn and provided with cam-grooves and a frame provided with rods fitted to slide and provided with end plates, of which one carries lugs engaging the said cam-grooves in the collar, substantially as shown and described.

10 3. In a drum-shifter, the combination, with a shaft and a drum fitted to slide thereon, of a frame fitted to slide and adapted to shift  
15 the said drum on the said shaft, and a collar mounted to turn loosely on the said shaft and

provided with cam-grooves engaging lugs on the said frame, substantially as shown and described.

4. In a drum-shifter, the combination, with 20 a shaft and a drum fitted to slide thereon, of a frame fitted to slide and adapted to shift the said drum on the said shaft, a collar mounted to turn loosely on the said shaft and provided with cam-grooves engaging lugs on 25 the said frame, and a handle formed on the said collar for conveniently turning the same, substantially as shown and described.

JEFFERSON U. ELWOOD.

Witnesses:

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