

(No Model.)

J. P. & C. T. HARRIS.

WINDLASS FOR ELEVATORS.

No. 347,239.

Patented Aug. 10, 1886.

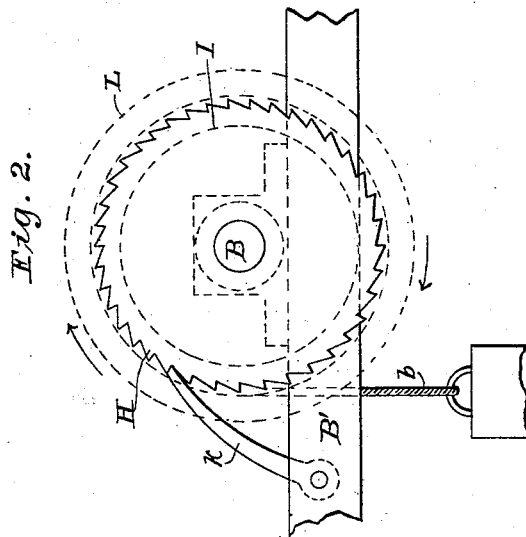


Fig. 2.

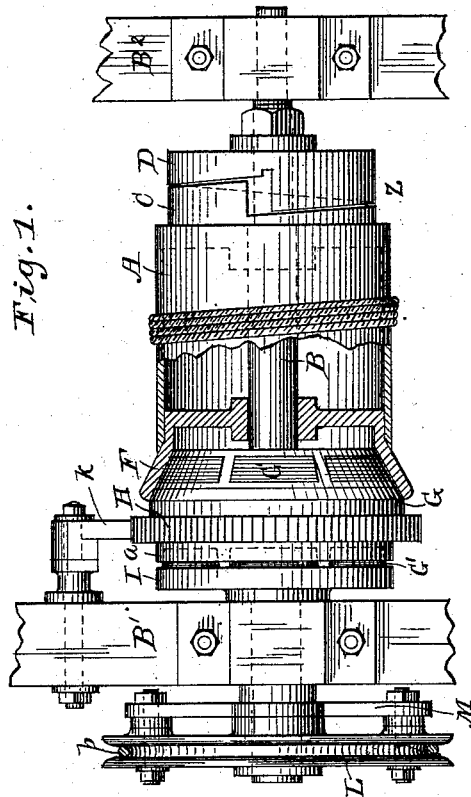
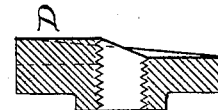
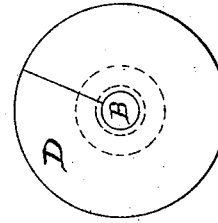


Fig. 1.

Fig. 4.



Fig. 5.

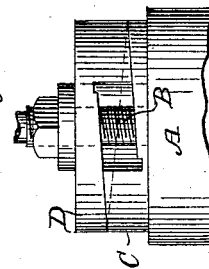
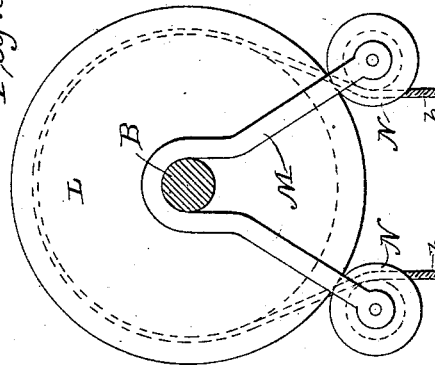


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN P. HARRIS AND CHARLES T. HARRIS, OF NEWBURG, NEW YORK.

WINDLASS FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 347,239, dated August 10, 1886.

Application filed March 23, 1886. Serial No. 196,265. (No model.)

To all whom it may concern:

Be it known that we, JOHN P. HARRIS and CHARLES T. HARRIS, citizens of the United States, residing at Newburg, in the county of Orange and State of New York, have invented certain new and useful Improvements in Windlasses for Elevators; and we 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 the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a top view of our improved elevating device. Fig. 2 is an end view showing the endless-rope wheel in dotted lines. Fig. 3 is an end view of the rope-wheel, its sheave-hanger, and sheaves. Fig. 4 is a top view of the hanger and its sheaves. Fig. 5 is a detail showing the manner of applying the adjustable cam on the drum-shaft. Fig. 6 shows views of the adjustable side cam.

This invention relates to windlasses which are especially designed for use in raising and lowering dumb-waiters, light hand-elevators, and for other like purposes, and our objects are to so construct the device that it will hold its load safely at any point without allowing the same to casually run down. It is accessible from all floors of a house at all times, and it requires no weight to counterbalance the load, thus dispensing with the casing which usually incloses a counterbalancing weight, by which casing fire is often communicated from one floor to another. We attain these objects by mechanism which will be fully understood from the following description, when taken in connection with the annexed drawings.

Referring to the drawings by letters, A designates a hollow drum, around which passes the rope by which the weight to be raised or lowered is suspended. This drum is loosely applied upon a shaft, B, which is suitably sustained by journal-boxes upon horizontal beams B' B', as shown in Fig. 1. The drum is provided at one end with an annular outwardly-flaring friction-clutch, F, and at the other end with a combined clutch and side cam, Z, (shown in Figs. 1 and 5,) and is composed of the two parts C D. In close relation to the beveled

face of the part C is a part, D, which is rigidly secured on the shaft B by means of screw-threads and jam-nuts. By loosening the latter this part D can be adjusted endwise on its shaft, for a purpose hereinafter explained.

I designates a friction-disk, which is rigidly secured on the shaft B.

G is a male friction-clutch, which is tapered, as shown in Fig. 1, to correspond with the flaring cavity in the female clutch F, into which it is adapted to fit. This male portion of the clutching device and a ratchet-wheel, H, are cast entire, or they may be cast separate and rigidly secured together; and with the teeth of this ratchet-wheel engages a pawl, k, which is pivoted to the beam B'. The male clutch G and its wheel H are loose on the shaft B, and are allowed to turn only in one direction, (indicated by the arrow on Fig. 2,) they being prevented by the pawl k from turning in the opposite direction.

By the action of the inclined or beveled faces of the side cams, C and D, on each other, the drum A, with its female clutch F, and the male clutch, are moved endwise on the shaft B, thus producing friction to such a degree between the impinging surfaces of said clutch and its male portion G and the flat end a of this portion and the disk I that the drum A is prevented from slipping, thus allowing the suspension-rope to be wound upon it and a load to be raised or lowered safely.

The male portion G of the clutch is cast with pockets in its tapered face, and pockets are also formed in the flat face a of this portion G, opposite the disk I, the latter being in dotted lines, which pockets are filled with wood or other suitable substance which will produce considerable friction against their impinging metal surfaces, and at the same time be durable.

The part D of the side cam, Z, is adjustable endwise on the shaft B, for the purpose of compensating for the wear of the friction-surfaces above described.

M designates an inverted-V-shaped hanger or saddle, which straddles freely the shaft B, and is provided with two grooved sheaves, N N, on its lower ends, which sheaves lie directly beneath a rope-wheel, L, and revolve freely in their bearings, the rope passing between the

wheel L and the sheaves N N. The sheave-hanger is allowed free lateral vibration, and the sheaves always keep the same circle of rope on the rope-wheel L, which prevents this rope from slipping, and in whichever direction the rope *b* may be hauled one of the sheaves will always press it up against said wheel.

Having described our invention, what we claim is—

1. In a device for raising and lowering weights, the combination of the rope-winding drum, its side cam and female friction-clutch loosely applied on the drum-shaft, the male friction-clutch and its ratchet-wheel loose on the shaft, a pawl adapted to engage with this ratchet-wheel, and a rope-wheel keyed on the drum-shaft, all adapted to operate substantially in the manner and for the purposes described.

2. The combination, with the drum A, its clutches, ratchet-wheel and pawl, and side cams, as described, of the hanger M, loosely applied on the drum-shaft and provided with sheaves adapted to prevent the rope *b* from slipping on the rope-wheel, substantially as described.

3. The combination, with the drum A, pro-

vided with a flaring female friction-clutch at one end and a side cam at the other end and loosely applied on its shaft B, of the tapered male friction-clutch and its ratchet-wheel, also loosely applied on this shaft, the pawl engaging with the ratchet-wheel, a rope-wheel, L, and a side cam adjustably applied on said shaft, for the purpose described.

4. The combination of the drum A, provided with a side cam on one end and a female friction-clutch on the opposite end, and applied loosely on the drum-shaft, the side cam, Z, adjustable on this shaft, the male friction-clutch and its ratchet-wheel loose on the shaft, the pawl engaging with the ratchet-wheel, a disk, I, fast on the said shaft, a rope-wheel, and a hanger bearing sheaves for preventing the rope slipping on this wheel, substantially as and for the purposes described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN P. HARRIS.
CHARLES T. HARRIS.

Witnesses:

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LEWIS M. SMITH, Jr.