(No Model.) 2 Sheets—Sheet 1.

M. PORTER.

COMBINED CAPSTAN AND LIFTING POWER.

No. 302,936. Patented Aug. 5, 1884.

FIG. 1.

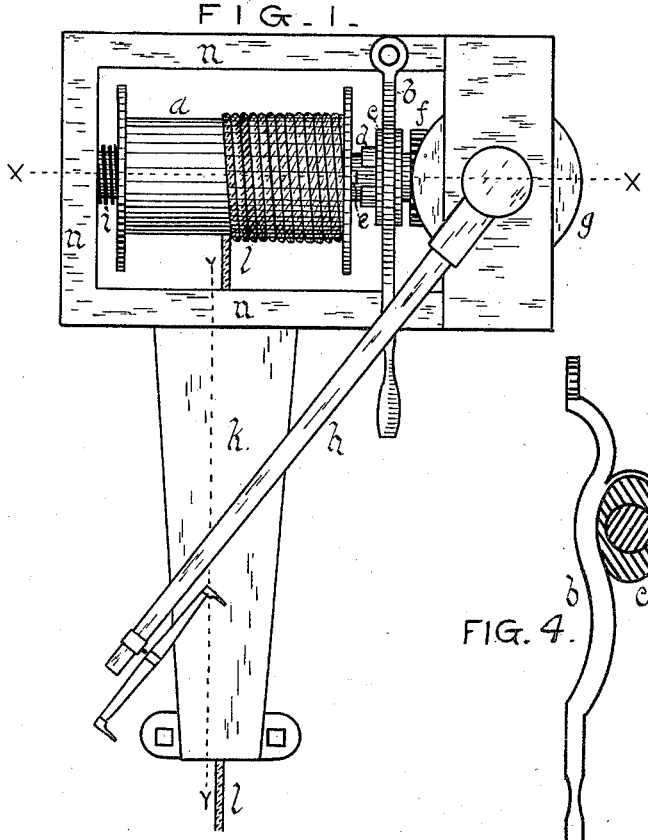


FIG. 2.

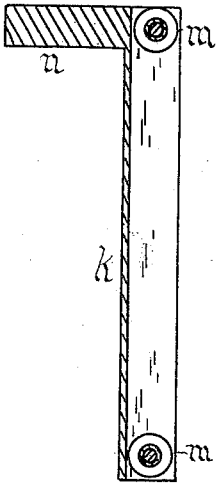
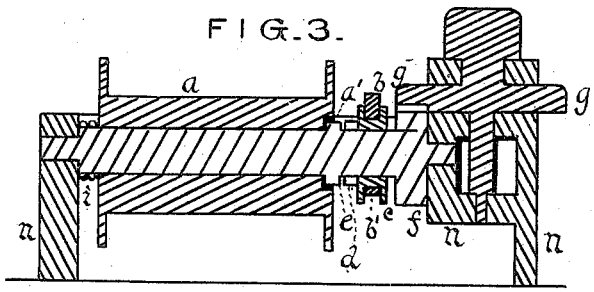


FIG. 4.

FIG. 3.



Witnesses
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(No Model.) 2 Sheets--Sheet 2.

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FIG. 5.

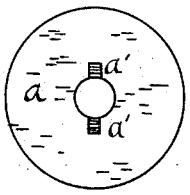

FIG. 6.

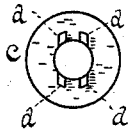

FIG. 7.

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UNITED STATES PATENT OFFICE.

MOSES PORTER, OF LOVINGTON, ILLINOIS.

COMBINED CAPSTAN AND LIFTING POWER.

SPECIFICATION forming part of Letters Patent No. 302,936, dated August 5, 1884.

Application filed November 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, MOSES PORTER, a resident of Lovington, in the county of Moultrie and State of Illinois, have invented certain new and useful Improvements in Capstan and Lifting Powers, of which the following is a specification sufficiently full, clear, and exact to enable any one skilled in the art to which it relates to construct and use the same.

The object of my invention is to produce an improved capstan and lifting power in which the rope is entirely protected from the horse's feet, and in which the drum may be readily disconnected from the power, and the rope permitted to unreel entirely independent of the motion of the horse.

In the drawings accompanying and forming a part of this specification, Figure 1 is a plan of my device. Fig. 2 is a sectional view on dotted line *y y* in Fig. 1. Fig. 3 is a sectional view on dotted line *x x*, Fig. 1; and Fig. 4 is a side view of the lever used to throw the drum out of connection with the power. Fig. 5 is an end view of the drum; Fig. 6, an end view of the sliding collar, and Fig. 7 a sectional view of the shaft of the drum.

a is the drum, loosely mounted on its shaft.

b is the lever used to disconnect the drum from the power.

c is a sliding collar that co-operates with lever *b* to effect the above-mentioned result.

e is a projection rigid on the reel-shaft.

f is a pinion, also rigid on the reel-shaft.

g is a drive-wheel that gears with pinion *f*, and which is rotated by lever *h*.

a' in Fig. 3 shows recesses in drum *a*, that are formed to receive projections *e*.

i is a spring that continually tends to press the drum in connection with the projections on the shaft.

n represents the frame of my device, and *k* is an extension therefrom.

m m, as shown in Fig. 2, are guide-pulleys for rope *l*.

d shows extensions from collar *c*, that project on each side of projection *e*, and, when operated by lever *b*, overcome the pressure of spring *i* and disconnect the drum from the power.

As shown in Fig. 4, the peripheral outline of collar *c* is oval, and lever *b* is provided with a spring-clamp, *b'*, that conforms to the outline of *c*, and tends to hold the same in one position. The outer pulley in extension *k* has no lateral motion; but the inner pulley moves from side to side of the frame, and permits the rope to wind the entire length of the reel.

As shown in Fig. 1, the drum is held rigid with the shaft. When it becomes necessary to unreel the rope, extensions *d* are pressed against the drum with sufficient force to disconnect recesses *a'* from projections *e*, which disconnection will permit said drum to rotate freely on its shaft.

The function of spring *b'* in Fig. 4 is to hold extensions *d* in a certain position relative to projections *e*, and while the outline of said spring tends to an elliptical form in the drawings, it will be obvious that any irregular form will produce the desired result, provided the spring and collar correspond in outline. A rigid connection between the lever and collar would not suffice, as it is necessary to provide against possible motion in the shaft while the extensions *d* are in contact with projections *e*.

When desirable, I propose to attach an operating device to lever *b*, that will extend outside of the circle described by the lever *h*, and permit the drum to be disconnected from the power without a near approach to the operator.

Extension *k* may be variously constructed in regard to form, provided only that the inner pulley has sufficient lateral motion to permit the rope to wind the entire length of the drum, and that the extension itself is long enough to entirely protect the rope from the horse's feet.

The proportion of wheel *g* to pinion *f* will be varied accordingly as speed is more or less desired.

When my device is used for hoisting purposes, it will be necessary to anchor the extremity of extension *k*.

I claim as new and desire to secure by Letters Patent—

1. In a capstan and lifting power, the combination of a horizontal axle provided with rigid projections, and adapted to be operated by a revolving lever and a co-operating gear-

wheel, a drum or reel mounted loosely on said axle, and provided with recesses in correct form to engage the projections on the axle, a spring adapted to press the drum in contact with the projections on the axle, and a sliding collar adapted to overcome the pressure of said spring and detach the drum from said projections, as set forth.

2. The combination, with drum *a*, projections *e*, and extensions *d*, of lever *b*, irregularly-formed collar *c*, and correspondingly-constructed spring-clamp *b'*, as and for the purpose set forth.

MOSES PORTER.

Attest:
OSCAR DERRY,
AARON E. HOLLONBECK.