D. D. Winant,

Derrick.

No. 52,777. Patented Feb. 20, 1866.

Fig. 1

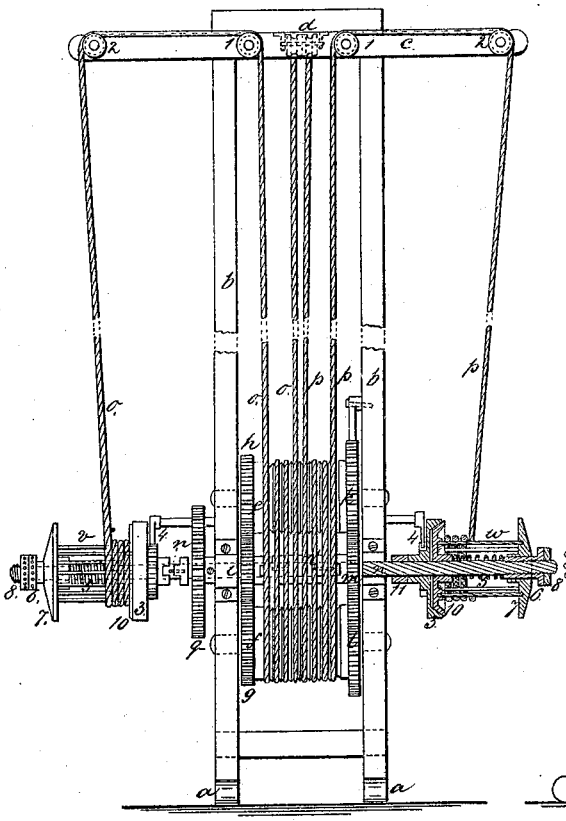


Fig. 2

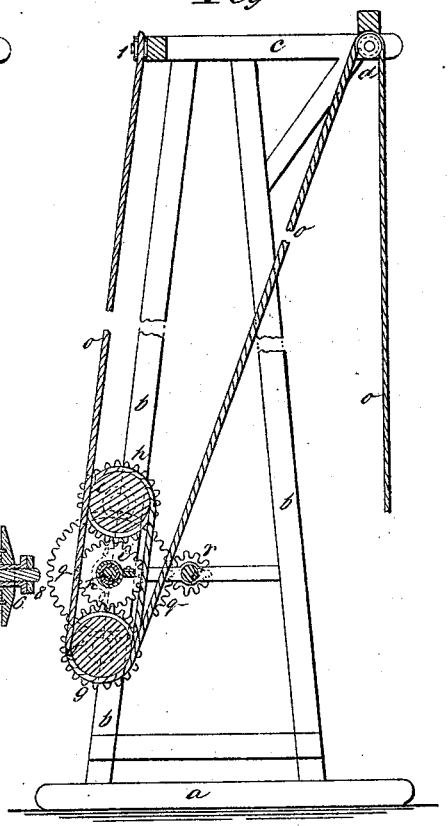


Fig. 3

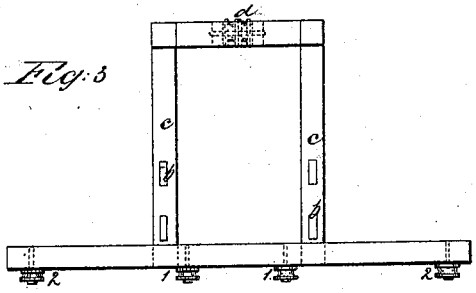
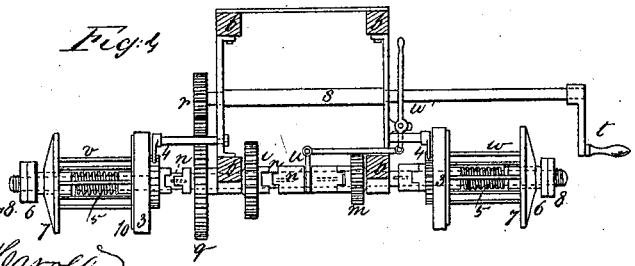


Fig. 4



Witnesses:
Thos. Geo. Harvey
Chas. H. Smith

Inventor.
D. D. Winant

UNITED STATES PATENT OFFICE.

D. D. WINANT, OF BROOKLYN, NEW YORK.

IMPROVED DERRICK.

Specification forming part of Letters Patent No. **52,777**, dated February 20, 1866.

To all whom it may concern:

Be it known that I, DANIEL D. WINANT, of Brooklyn, in the county of Kings and State of New York, have invented, made, and applied to use a certain new and useful Improvement in Derricks; and I do hereby declare the following to be a full, clear, and exact description of my said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a front elevation of the said derrick, one of the reels being in section. Fig. 2 is a vertical section of the same transversely of the windlass-barrels. Fig. 3 is a plan of the head-block or frame; and Fig. 4 is a plan of the barrels, the frame being removed above them.

Similar marks of reference denote the same parts.

Windlasses, capstans, and derricks have heretofore been made with grooved barrels, around which the rope has passed, so as to be continuously operative without either sliding on the barrel lengthwise of the same in fleeting or winding directly coil upon coil upon a barrel, as has generally been the case in derricks.

Mechanism containing the grooved barrels and reels to wind the rope upon may be seen in Letters Patent granted February 21, 1854, to John B. Holmes.

The nature of my said invention consists in an arrangement of grooved barrels and gearing, in combination with a clutch, by means of which the speed of the barrels relatively to the power can be varied for raising weights with greater or less speed, according to their weight, and I combine with said barrels and gearing friction-reels for taking up the slack of the rope as given off the grooved drums as they are rotated.

In the drawings, *a* is the base of the derrick, with the uprights or frame *b b* of any desired height or character; and *c* is the head-block or top frame of the derrick, with the hoisting-pulleys *d d* fitted in any convenient manner.

e and *f* are grooved barrels sustained by shafts in bearings in *b*. Around these barrels the rope or ropes *o p* are wound, each rope passing in the corresponding groove of each barrel and then up to the adjacent groove on either side of the first groove. Thereby the rope can be continuously drawn in or let out without the rope moving or working toward either end.

n is a shaft in *b*, with a gear-wheel, *q*, firmly affixed thereto, said wheel *q* gearing to a wheel, *r*, on a shaft, *s*, rotated by competent power by the crank *t* or otherwise.

On the central part of the shaft *n* is a clutch, *n'*, fitted to be moved by the fork *u* and lever *u'*, and connected to either clutch on the gear-wheels *i* or *m*, or stand in a middle position detached from both.

The wheels *i* and *m* are of different sizes and gear into wheels on the ends of the barrels *e f*, the larger gear *i* taking the gears *h g*, which are smaller than the gears *k l* at the other ends of the barrels *e f*, so that when the wheel *m* is connected to the shaft *n* by the clutch *n'* the barrels will be rotated slower relatively to the shaft *s* than they will be when the clutch *n'* is slidden endwise on its key to disconnect *m* and connect *i*. By this arrangement of wheels and clutches the speed and consequent effective power operating through the barrels *e* and *f* on the rope *o* or *p*, or both, can be varied as desired.

In order to take up the rope as it is drawn in by the barrels *e* and *f*, and thereby keep the same tightly upon the grooves in the barrels to produce the required friction, I make use of reels *v w* upon the outer ends of the shaft *n*, driven by friction. The ropes pass over the sheaves or pulleys 1 2, so as to lead fair to the reels; and both reels being made in the same manner, I will only describe one of them.

3 is a wheel having ratchet-teeth around its hub, and 11 is a clutch sliding on a key on *n*, that may be connected or disconnected in any convenient manner with a clutch on the hub of the wheel or disk 3, and 4 is a pawl to retain the reel at any point while winding up the rope. 10 is a friction-plate at the end of the reel, pressed to the conical interior surface of the flange around the edge of the disk 3 by means of the spring 5 around the shaft *n*, and the power of this spring and the consequent friction applied to the reel is regulated by the pipe-shaped bearing 6, screwed upon the end of the shaft *n*, and, passing within the outer head, 7, of the reel, takes said spring 5; and 8 is a set-nut to prevent the bearing 6 being revolved by the reel, as it may revolve slower than the shaft *n*.

It will be understood that this arrangement of mechanism allows for raising a weight with more or less purchase, and also for lowering the same, to effect which the pawls 4 may be thrown back and the weight lowered by a reverse movement of the crank *t*; or the clutch *n'* may be disconnected from both wheels *i* and *m*, and the weight be allowed to run down controlled only by the friction of the reels.

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

1. The arrangement of the grooved barrels *e f* and gear-wheels *g*, *h*, *i*, *k*, *l*, and *m*, in combination with the shaft *n* and clutch *n'*, for the purposes and substantially as specified.

2. In combination with barrels *e f* and gear-wheels *g*, *h*, *i*, *k*, *l*, and *m*, shaft *n*, and clutch *n'*, the friction reel or reels fitted in the manner and for the purposes specified.

Dated this 20th day of November, A. D. 1865.

D. D. WINANT.

Witnesses:

THOS. GEO. HAROLD,

CHAS. H. SMITH.