G. W. La Barr,

Derrick,

No. 14,666, Patented Apr. 15, 1856.

Fig. 1.

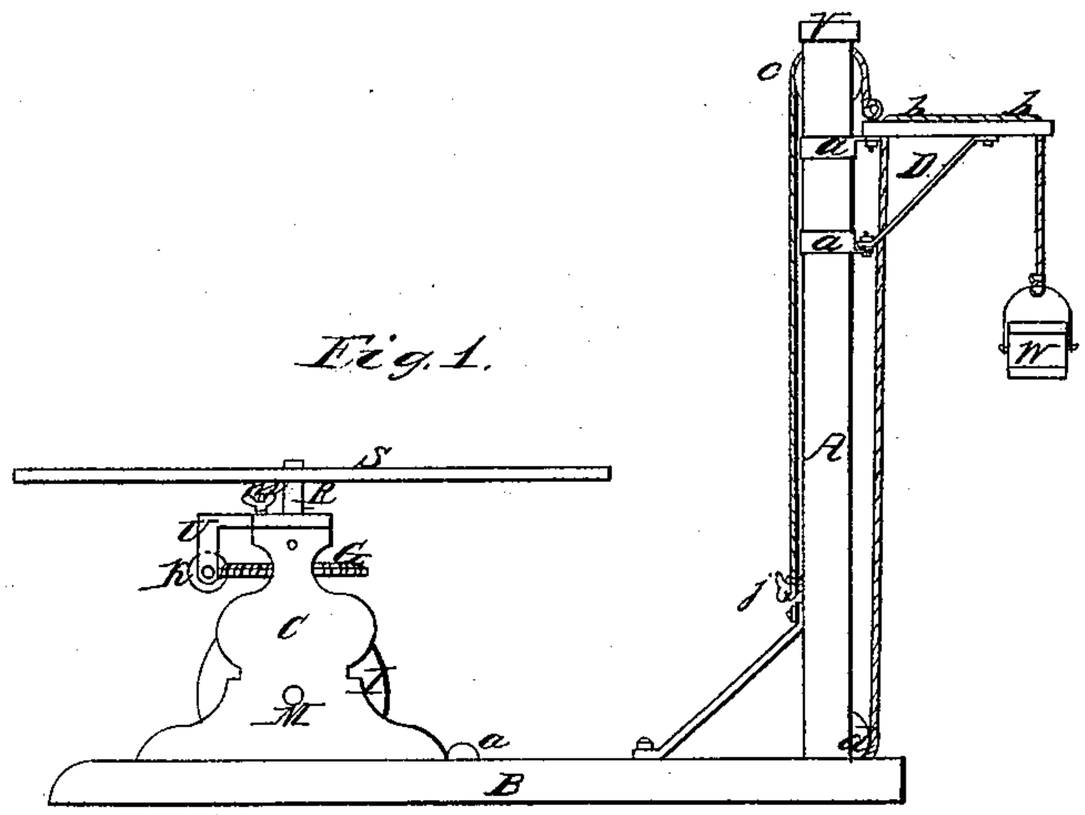


Fig. 2.

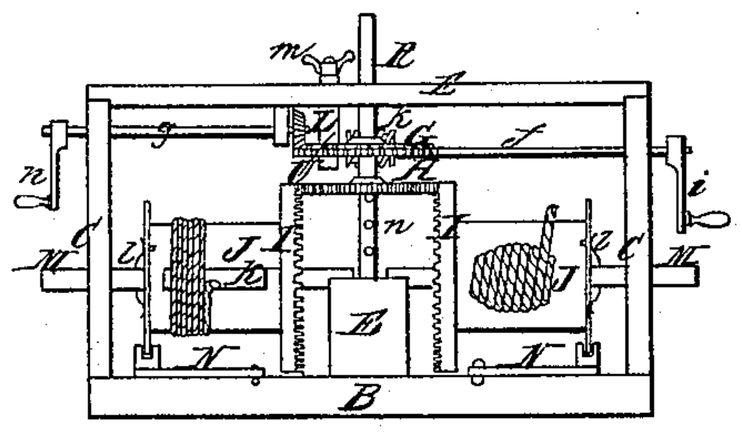


Fig. 3.

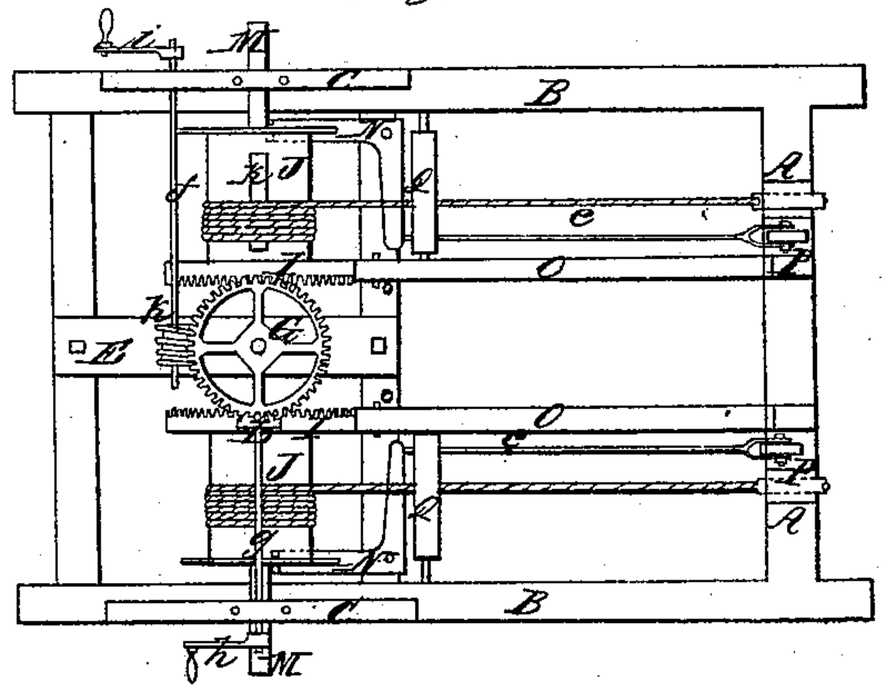


Fig. 4.

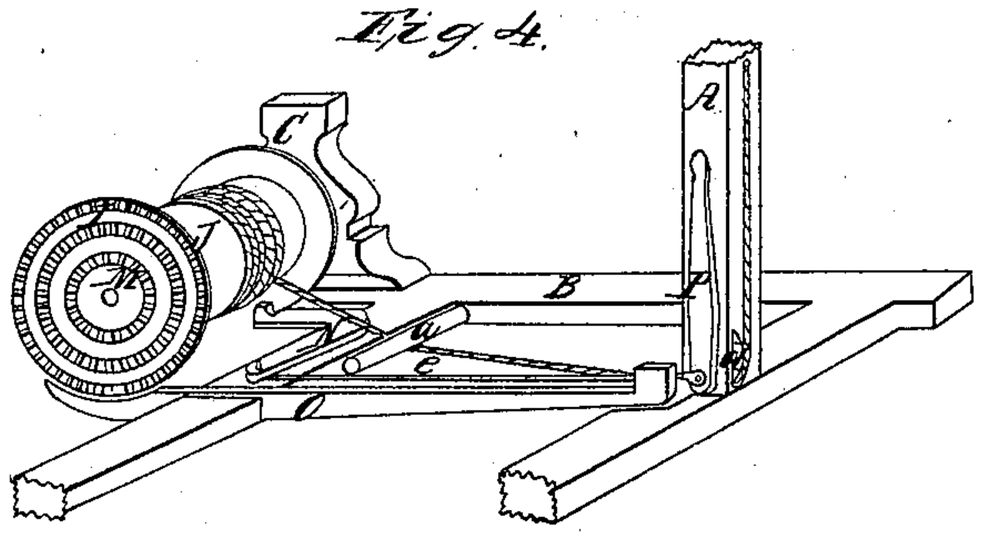
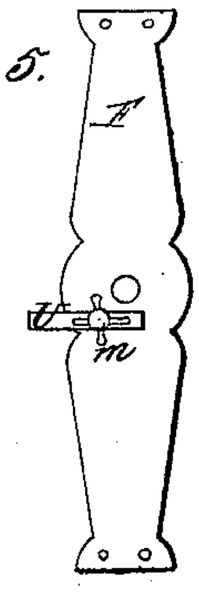


Fig. 5.



UNITED STATES PATENT OFFICE.

GEORGE W. LA BAW, OF JERSEY CITY, NEW JERSEY.

HOISTING-DRUM.

Specification of Letters Patent No. 14,666, dated April 15, 1856.

To all whom it may concern:

Be it known that I, GEORGE W. LA BAW, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Machine for Hoisting and Lowering Weights of All Descriptions; and I do hereby declare the following to be a full and clear description thereof, reference being had to the accompanying drawings, and letters of reference thereon, in which—

Figure 1, is a side elevation of my improved hoisting machine. Fig. 2, is an end view of it. Fig. 3, is a top elevation of it, having the cranes (D) left off. Fig. 4, is a vertical transverse section of it with the upright post broken off. Fig. 5, is a cross bar detached from the machine in order that the work may be more plainly seen.

Similar letters of reference refer to like parts in all the drawings.

To enable others skilled in the art to make and use my invention I will proceed to describe it.

A, A, are upright posts, to which are attached the cranes (D) which may be elevated or depressed.

B, is the frame or bed of the machine.

C, C, are upright posts to sustain one end of the coiler shafts.

D, is the crane.

E, is a cross bar to support one end of the coiler shafts and also forms a bearing seat for the upright shaft R.

F is a cross bar to support the upright posts C, C, and also furnish a suitable bearing for the upright shaft R at its upper end.

G is the main or driving gear seen in Figs. 1, 2 and 3.

H is a gear connecting the coiler gears I, I, as shown in Fig. 2.

I, I, are gears having three sets of teeth on their face side as seen in Fig. 4.

J, J, are the coilers around which the rope coils.

K is a worm gear which works in the main gear G.

L is a pinion which also works into the main gear, plainly shown in Figs. 2 and 3.

M, M are horizontal shafts on which are made fast the coilers.

N, N are elbow pieces which serve as shippers to connect and disconnect the drums or coilers with the driving gear G.

O, O are brake levers with proper fulcrums (*o*,) as shown in Fig. 4 to stop or regulate the descent of the weight.

P is a lever connected (*e*) with the elbow pieces, to ship the coilers in and out of the main gears.

Q, Q are friction rollers suitably attached to the frame to protect the rope from chafing and reduce friction.

R is the upright shaft, for the gears G and H.

S is a lever which may be used when a slow movement is desired.

U is a sliding hanger to detach the worm gear K, at will.

V is a cross piece connecting the upright posts on top.

W is the bucket or weight.

Operation: The cranes D, are attached to the upright posts A, A to allow them a sliding movement, by the bands, *a*, *a*, or other suitable device, and may be set at any position upon the upright posts by means of the rope on the back side which is connected with the crane by a suitable mechanism and passed over a friction pulley, *c*, as shown in Fig. 1 and made fast at *j*. The rope to which is attached the weight or bucket W passes over small friction pulleys *b*, *b*, thence under the pulley, *d*, at the base of the post, thence under the friction roller Q to the coiler or drum, and then through the aperture, *k*, and fastened to the shaft M, as seen in Fig. 2. The coilers are made hollow in order that the surplus rope may be wound around the shaft inside and thus protected from injury. The outside ends of the coilers are arranged with a spring, *l*, which at one end has a pin inserted in it. In the shaft there is a slot or hole through which the spring, *l*, passes, and is so made that its pressure forces it against the head of the coiler which has a hole for the pin. If the pin is withdrawn from the head of the coiler, the shaft will turn independent of the coiler; and by thus detaching the spring from the coiler head, any amount of rope may be wound around the shaft inside the coilers as shown in Fig. 2.

The gears I, I, have three sets of teeth and consequently are of three sizes as shown in Fig. 4; the gear H has a key seat which works upon a key or spline in the shaft R. This gear is held in place upon the shaft,

by adjustable collars or other suitable devices. By placing the gear H in the larger of the gears, I, the speed would be retarded, while the second and third would accelerate the speed in a like proportion. The driving gear is made fast upon the shaft R, and may be worked by the shaft, *f* which has a winch *i* on one end, while the other is furnished with a worm gear K, working into the teeth of the gear G. On top the cross bar (Fig. 5) there is a small sliding hanger, U as seen in Figs. 1–2 and 5 which may be thrown in and out of gear and held at will by the small nut, *m*. On the opposite side of the machine there is another shaft, *g*, furnished with a winch, *h*, and pinion L which also works into the main gear G. These devices are calculated to vary the speed, and working power of the machine, and are clearly shown in Figs. 2 and 3. I wounld here remark that the series of gears I, must be so arranged as to receive the same driving gear H to enable it to work freely in all.

The operator takes his position in front of the apparatus to enable him to operate the brake and levers, which throw the coilers in and out of gear; and also enables him to keep the machine constantly at work, for while one weight is descending the other may be ascending and vice versa.

Having thus described my improved hoisting machine, what I claim as new therein and desire to secure by Letters Patent is—

I claim constructing the coilers hollow and with a slot in them for the passage of the rope, together with the spring *l*, or equivalent as specified for the purpose of holding and protecting the surplus rope.

GEORGE W. LA BAW.

In the presence of—

WILLIAM H. ICLIFF,

NATHANIEL C. SLAGHT.