E. HARRINGTON.

Hoisting-Pulley Apparatus.

No. 220,144. Patented Sept. 30, 1879.

Fig 1

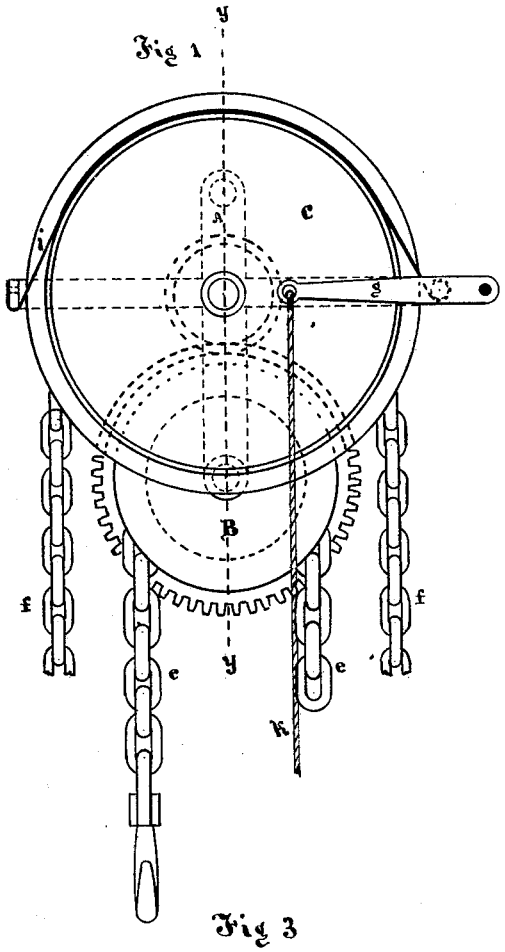


Fig 2

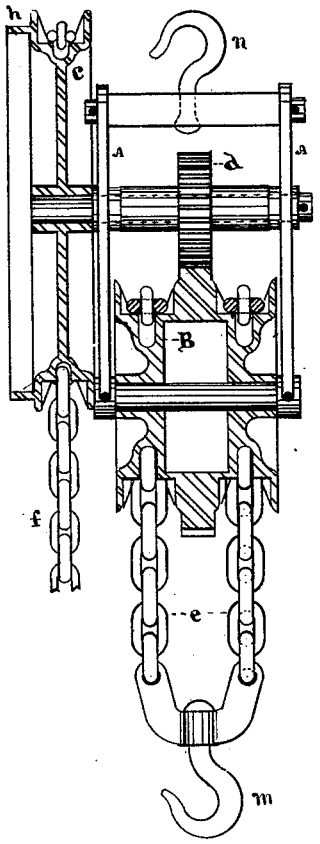
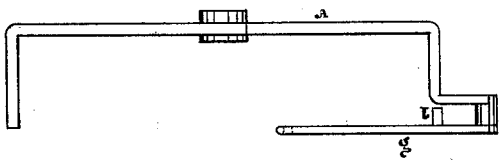


Fig 3



Witnesses.

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EDWIN HARRINGTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO EDWIN HARRINGTON & SON, OF SAME PLACE.

IMPROVEMENT IN HOISTING-PULLEY APPARATUS.

Specification forming part of Letters Patent No. **220,144**, dated September 30, 1879; application filed May 2, 1879.

To all whom it may concern:

Be it known that I, EDWIN HARRINGTON, of Philadelphia, county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Hoisting-Pulley Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My object in the present improvement is to provide a lifting apparatus for the more convenient handling of light loads, such as bales and packages in stores, warehouses, and other places; and the invention consists in the particular features hereinafter described, and specifically embraced in the claim.

In the drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a section of the same, taken on *y y* of Fig. 1. Fig. 3 is one side of the frame, showing the connection of the brake-lever.

A A in the drawings are side frames of wrought-iron or other suitable material, by which all parts of the machine are properly supported.

B is a steel or other suitable casting, combining three members in one, its center part being a gear or cog wheel, and on either side of said gear-wheel, and cast solid with the same, are two lift-chain wheels.

c is a hand chain-wheel, having a smooth flange or projection on one side, to be acted upon by a suitable brake, as hereinafter described.

d is a pinion wheel or gear, made fast to the shaft of the hand chain-wheel, and rotated by the same.

e is a lift chain or chains, having a hook at one or both ends, and passing over the lift-wheels B, and engaging with the same by means of interlocking teeth in the usual way.

f is an endless hand-chain, passing over the wheel *c* in a groove, having projections therein to engage the links of the chain.

g is a brake-lever, pivoted to the extended arm of side frame A, as shown in Fig. 3, and having a pin, *t*, for attaching the brake-strap *i*.

h is a friction-flange, cast on the side of the hand chain-wheel *c*, to be acted upon by the brake, as hereinafter described.

i is a metallic brake, being attached to one end of the arm of side frame A, and carried over the friction-flange of the chain-wheel *c*, and having its opposite end attached to the pin in the lever *g*, the spring of the strap *i* being sufficient to raise itself from the wheel when not in use.

k is a rope or line attached to the end of brake-lever *g'*, for the purpose of bringing down the brake to act on the wheel *c*, thereby holding the load at rest or controlling the same when being lowered down. Or one of the lift-wheels may be left off and a single chain used, and thus narrow up the machine, though, as a matter of greater safety, I prefer the double lift-chain.

The gear and lift wheels B rotate on a fixed axis, and may be provided with a self-oiling arrangement.

By the foregoing references and drawings the operation of this machine can be easily understood, being suspended by the upper hook, *n*, to any suitable support, and the weight or load to be raised attached to the lower hook *m*. The wheel *c* being rotated by means of the endless hand-chain *f* through the gearing *d* and B, the lift-wheels will be rotated with a power corresponding to the proportion of the leverage of the gearing and diameter of chain-wheels combined.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination of rope *k*, lever *g*, and brake-strap *i* with the friction-flange *h*, hand chain-wheel *c*, pinion *d*, and gear-wheel B, the whole being arranged as and for the purpose specified.

EDWIN HARRINGTON.

Witnesses:

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