C. H. BAKER.
Horse-Power.

No. 208,948. Patented Oct. 15, 1878.

Fig. 1.

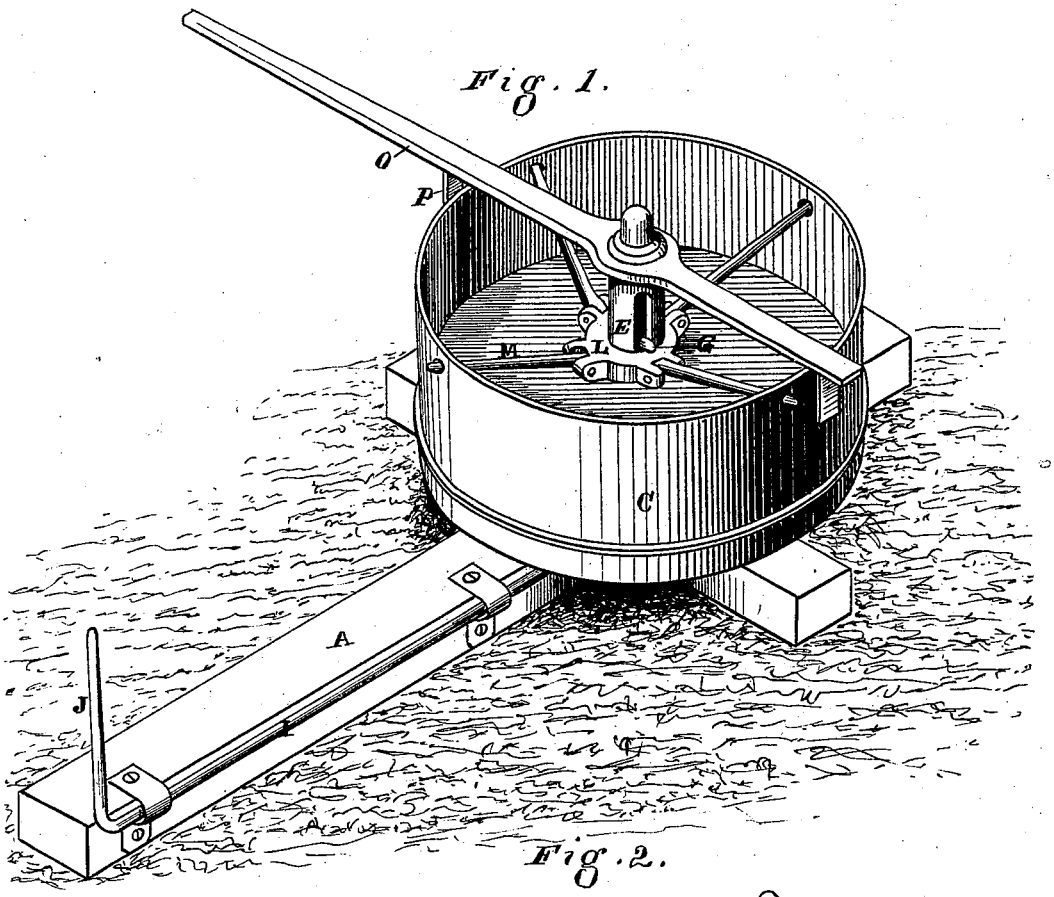
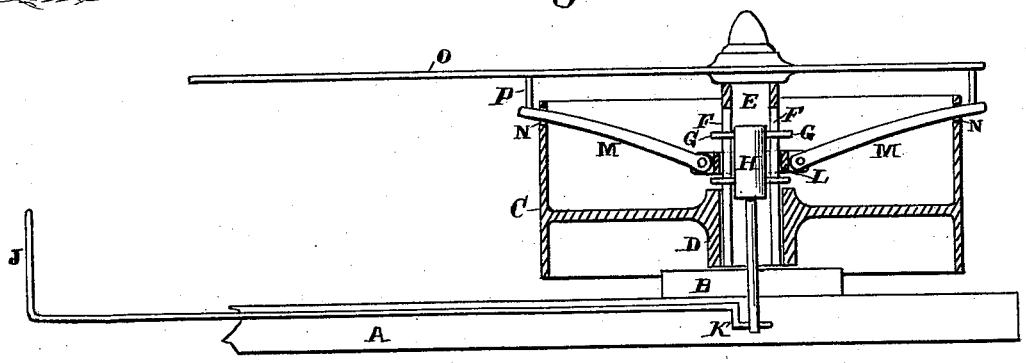


Fig. 2.



Witnesses
Geo. H. Strong.
Frank A. Brooks

Inventor
Charles H. Baker
by Dewey & Co
Attys

UNITED STATES PATENT OFFICE.

CHARLES H. BAKER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN B. REYNOLDS, OF SAME PLACE.

IMPROVEMENT IN HORSE-POWERS.

Specification forming part of Letters Patent No. **208,948**, dated October 15, 1878; application filed June 11, 1878.

To all whom it may concern:

Be it known that I, CHAS. H. BAKER, of the city and county of San Francisco, and State of California, have invented an Improved Horse-Power; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to an improved horse-power, more particularly of that class which is used for hoisting purposes.

It consists in mounting on a suitable bed-plate and frame a cylinder which revolves on a horizontal plane. A hollow standard projects up through this cylinder or drum, on top of which is mounted a windlass-arm. Around the standard, in the center, is a collar having radial arms, which project through holes in the periphery of the cylinder. Inside the hollow standard is a clutch having a vertical motion imparted to it by a hand-lever in any convenient place, so that by raising the clutch the collar is raised and the outer ends of the radial arms project through the sides of the cylinder, so as to engage with lugs on the windlass-arm, and thus admit of motion being imparted to the arm. By reversing the lever the projecting arms are drawn in and the windlass-arm revolves loosely without moving the drum.

Referring to the accompanying drawings, Figure 1 is a perspective view of my invention. Fig. 2 is a vertical section of the same.

Let A represent the bed-frame on which my horse-power is mounted, and to which the bed-plate B is bolted. On this bed-plate B the cylinder or drum C revolves, its pedestal D resting on the bed-plate, as shown.

In the center of the bed plate is secured the hollow slotted standard E, which projects up through the pedestal of the drum C, its upper end extending above the upper edge of the drum. Vertical slots F are formed on two sides of this standard E, for the lugs G on the clutch H to project through the standard. This clutch H slides up and down inside the hollow standard E, the vertical motion being imparted to it by a pitman connected to a crank, K, on the shaft I, which extends to the proper distance from the horse-power, and has the hand-bar J formed on its outer end. By moving this handle J one way or the other, the shaft I and crank K are rotated, the pitman then moving the clutch H with its lugs G up or down, as the case may be.

Outside of the slotted standard E is the collar L, formed to slide up and down on the standard. Pivoted to this collar are four or more radial arms, M, which project through holes N in the periphery of the drum. These holes N are cut away or enlarged on their inner edges, so that the ends of the radial arms will slide loosely in them, whether the arms are at right angles to them or at a lower angle. The ends of these radial arms are slightly curved, as shown, for the purpose hereinafter described.

On top of the standard E is mounted the windlass-arm O, so arranged as to revolve about said standard loosely. On the under side of this windlass-arm, on each side of the drum, is a lug or projection, P, as shown, so arranged as to engage with the ends of the radial arms M when they project through the holes N to the outside of the drum.

The lugs G on the clutch H inside the standard, which project through the slots F, grasp the collar L in such a manner that it may revolve about the standard and between the lugs; but when the clutch is raised or lowered, as described, the lugs raise and lower the collar L with its radial arms.

Now, as these radial arms M are pivoted to the collar L and move freely in the holes N in the drum or cylinder C, when the clutch is lowered and the collar down to its lowest point, the radial arms are drawn in, so that their ends do not project outside of the drum, and the lugs P on the windlass-arm O do not touch them; but when the collar is raised the ends of the arms project, and the lugs P on the windlass engage with the ends of the arms and revolve the windlass.

The operation of my device is as follows: The horse is harnessed to the extended portion of the windlass-arm O. As he walks around in a circle the windlass-arm is revolved loosely in the standard, the lugs on said windlass-arm passing close to the periphery of the cylinder or drum C. Now, when it

is desired to set the drum in motion, the rope is wound around it, the handle or lever-bar J is drawn over, thus rotating the shaft I with its crank K, and the pitman-rod connected with said crank pushes the clutch H up inside the hollow standard E. The lugs G on the clutch support the collar L with its radial arms, and said clutch is raised and their outer curved ends are projected through the holes N, so as to stand outside the cylinder. Then the lugs P on the revolving windlass-bar O engage with the projecting ends of the radial arms, and motion is imparted to the cylinder which winds up the rope, bringing with it any weight which may be attached to the other end. If it is desired to stop any further motion by moving the lever-arm the other way, the collar is drawn down by the lugs on the clutch, and the projecting ends of the radial arms are drawn back flush with the face in the drum, when the lugs on the windlass-arm will pass freely around without revolving the drum. The usual strap-brake may be attached to the drum in the usual way, and may be operated by a first lever placed close beside the hand-lever J.

This horse-power is intended more particularly for hoisting from mines or hoisting material up on buildings, &c., by the means employed. The motion of the drum is regulated by the operator without his having to be near the horse or without the horse having to be stopped to stop the hoisting. The hand-lever may be placed close beside the shaft of a mine, outside of the circle in which the horse travels, and just at the proper moment a movement of the lever disengages the lugs on the windlass from the projecting ends of the radial arms and the revolution of the drum ceases. Then the brake may be applied, which will hold the load at the proper point. A load may be lowered by means of the brake, while the horse continues his motion in the opposite direction. The height to which a load may be hoisted may be regulated to a nicety, and the lever may be held in the hand of the operator, ready to stop the motion of the drum at any moment.

This device may be cheaply constructed and operated. The cylinder is left open, so that any spare rope may be coiled inside, passing through a hole in the cylinder, and when more rope is needed it may be drawn out, thus avoiding the necessity of knotting or splicing or providing new ropes for different lengths of hoist.

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

1. The horizontally-rotating hoisting-drum C, mounted upon the hollow slotted standard E, said standard having the sliding clutch H inside, in combination with the exterior sliding collar L, with its radial arms M extending through the sides of the drum, so as to be projected or retracted, substantially as herein described.

2. The horizontally-rotating drum C, with its interior radial arms M fitted to be projected or retracted through its periphery, as shown, in combination with the driving-arm O and the lugs P, substantially as herein described.

3. The horizontally-rotating drum C, with its interior adjustable arm M and operating-clutch H, as shown, in combination with the horizontally-extended shaft I, with its handle J and crank-arm K, substantially as shown, and for the purposes herein described.

In witness whereof I have hereunto set my hand.

CHARLES H. BAKER.

Witnesses:
FRANK A. BROOKS,
WM. H. THOMPSON.