

(No Model.)

C. C. BRUSH.

HORSE POWER AND CAPSTAN.

No. 277,216.

Patented May 8, 1883.

Fig. 1

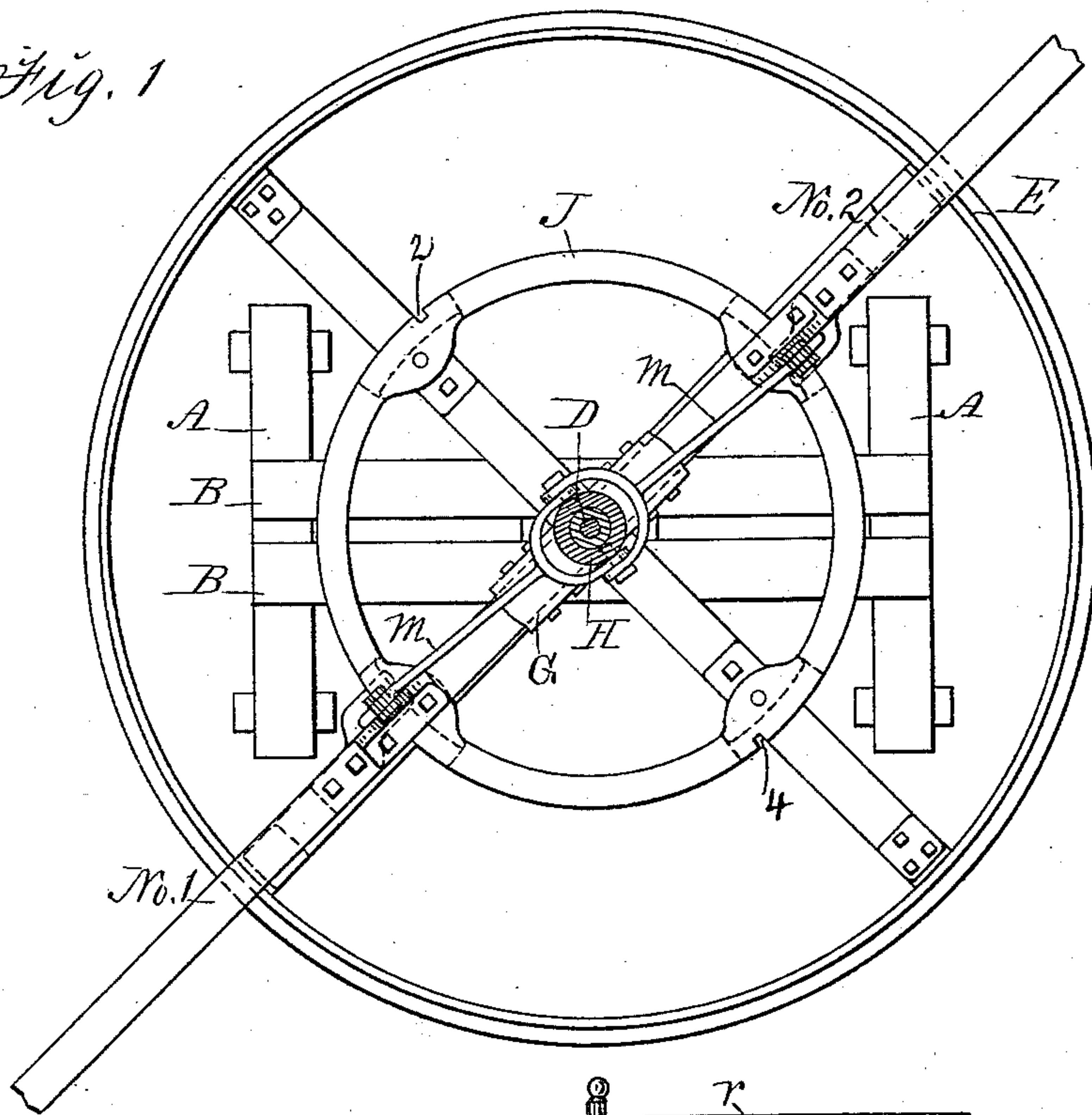
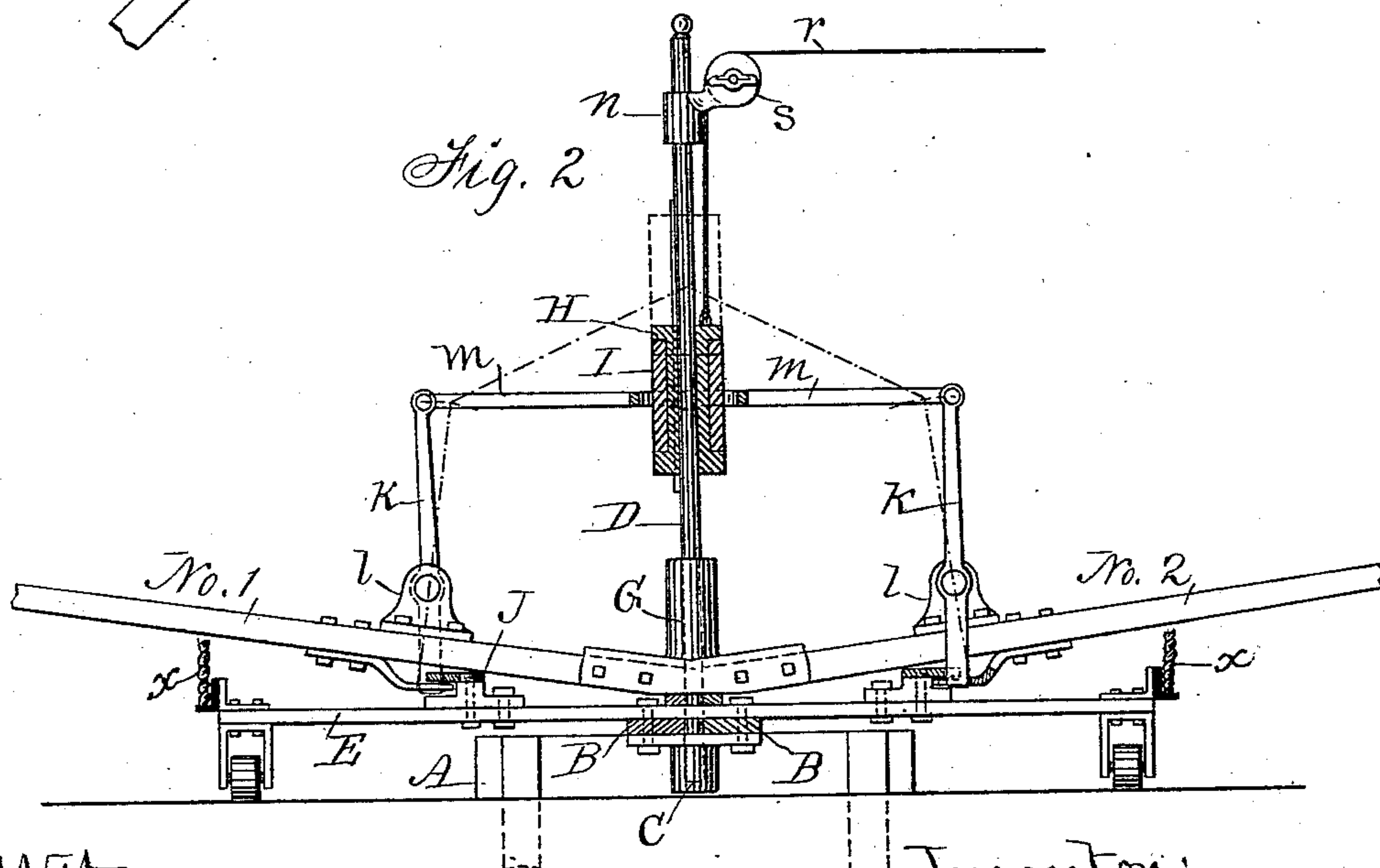


Fig. 2



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES C. BRUSH, OF CRYSTAL, IOWA.

HORSE-POWER AND CAPSTAN.

SPECIFICATION forming part of Letters Patent No. 277,216, dated May 8, 1883.

Application filed February 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. BRUSH, of Crystal, in the county of Tama and State of Iowa, have invented a Capstan and Horse-Power, of which the following is a specification.

The object of my invention is, first, to save time and labor in elevating hay from wagons into barns, building materials from the ground to the top of a building as its construction progresses, and in moving and elevating all kinds of material that can be subjected to the action of a portable capstan; second, to provide a portable capstan that is adapted to be used as a horse-power for driving saws, corn-shellers, and farm machinery of various kinds.

It consists in forming, arranging, and combining with a portable frame and base an upright axle, a horizontal drum or belt-wheel, one or more sweeps, and an adjustable device for rigidly connecting the axle, the drum, and sweeps at pleasure in such a manner that a rope can be wound upon the horizontal drum by the action of a horse hitched to the sweep, and unwound by the independent reverse motion of the drum while the horse stands still, all as herein fully set forth.

Figure 1 of my accompanying drawings is a top view; Fig. 2, a vertical sectional view. Jointly considered, these figures clearly illustrate the construction and operation of my complete invention.

A A represent the end pieces, and B a central cross-piece, of a portable frame and base that is preferably made of hard wood, and that may vary in form and dimensions, as required, to suit machines of different sizes.

C is a step fixed to the under side and center of the frame and base by means of screw-bolts, or in any suitable way.

D is a vertical axle, that extends through the base into the step C.

E is a drum, in the form of a horizontal wheel of large diameter, placed loosely upon the vertical axle D, to be supported on top of the base by means of a plate or bearing fixed on top of the base, or a collar fixed to the axle in such a manner that it can revolve upon the axle. It has a flanged rim on its periphery adapted to receive the coils of a rope when used as a capstan, or a belt when used as a horse-power.

G is a hub fixed to the axle D, and provided with sockets for receiving and fastening the ends of levers or sweeps Nos. 1 and 2, that extend horizontally beyond the circumference of the drum or wheel E, as required, to hitch horses to their ends.

H is a sleeve fitted to and combined with the axle D by means of a spline, or in any suitable way, so that it will rotate with the axle, and also slide up and down thereon.

I is a collar fitted to the sleeve H in such a manner that it will move vertically with the sleeve and revolve independently upon the sleeve.

J is a circular plate fixed upon the top side of the drum or wheel E, and concentric therewith. It has a series of notches, 3 4 5 6. *k k* are levers or pawls pivoted to the sweeps Nos. 1 and 2 by means of bearings *l*, fixed to the sweeps. The upper ends of these levers *k* are flexibly connected with the collar I on the sleeve H by means of rigid bars or rods *m*.

n is a pulley-bearer placed on the top portion of the axle D.

r is a rope passed downward over the pulley *s*, carried by the bearer *n*, and connected with the sleeve H.

x x represents a rope or chain fastened to the periphery of the drum E, to extend horizontally to a directing-pulley, and from thence upward to pass over an elevated pulley, as required, to lift any object attached to its free end when the drum is rotated and the rope wound upon it.

To rotate the drum that is placed loosely upon the axle, as required to lift an object, I simply allow the sleeve H to slide downward, and by force of gravity push the upper ends of the pawls *k* outward to bring their lower ends into the notches of the plate J, and thereby lock the axle, the sweeps, and the drum or belt-wheel together, so that when power is applied to the sweeps they will move jointly and wind the rope upon the drum.

To unwind the rope from the drum while the horse and sweep remain stationary, I simply elevate the sleeve H upon the axle by pulling on the rope *r*, and by means of the rods *m*, connected therewith, vibrate the pivoted pawls *k* to release them from the plate J, carried by the drum E.

To use my machine as a horse-power for operating a corn-sheller or other farm machinery, I simply detach the rope from the periphery of the drum or belt-wheel E and place a belt thereon, and connect the belt with the machine that is to be operated in such a manner that power and motion can be transmitted from the wheel E.

I claim as my invention—

10 1. A machine adapted to be used as a capstan and horse-power, consisting of a base, A, B, having a step, C, a vertical axle, D, a fixed hub, G, one or more sweeps, a loose drum or belt-wheel, E, having a notched plate, J, and
15 the locking device H I k m r s, arranged and combined substantially as shown and described.

2. In a capstan or horse-power, the combination of a base having a step on its under side

and center, a vertical axle, a loose drum adapted to be used as a driver belt-wheel, one or more arms or sweeps, and a locking device for connecting the loose drum or belt-wheel with the sweep and axle, as and for the purposes set forth.

3. The combination of the sleeve H, carrying a revolving collar, I, the vertical axle D, one or more sweeps carrying pivoted pawls k, the rods m, and the loose drum or belt-wheel E, having a notched circular plate, J, substantially as shown and described, to operate in the
30 manner set forth, for the purposes specified.

CHARLES C. BRUSH.

Witnesses:

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DANIEL L. HUGHES.