

No. 631,198.

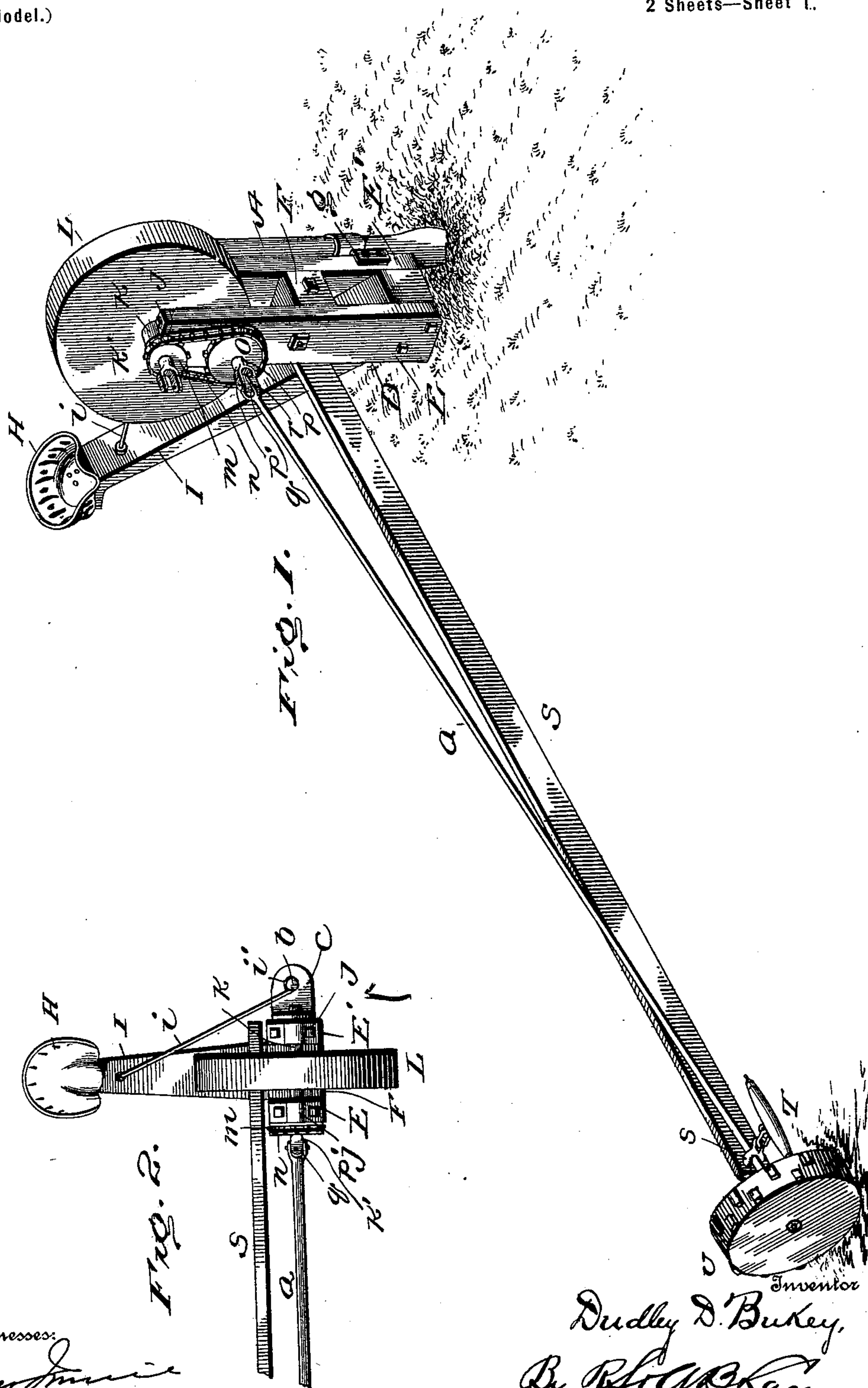
Patented Aug. 15, 1899.

D. D. BUKEY.
HORSE POWER.

(Application filed Mar. 15, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
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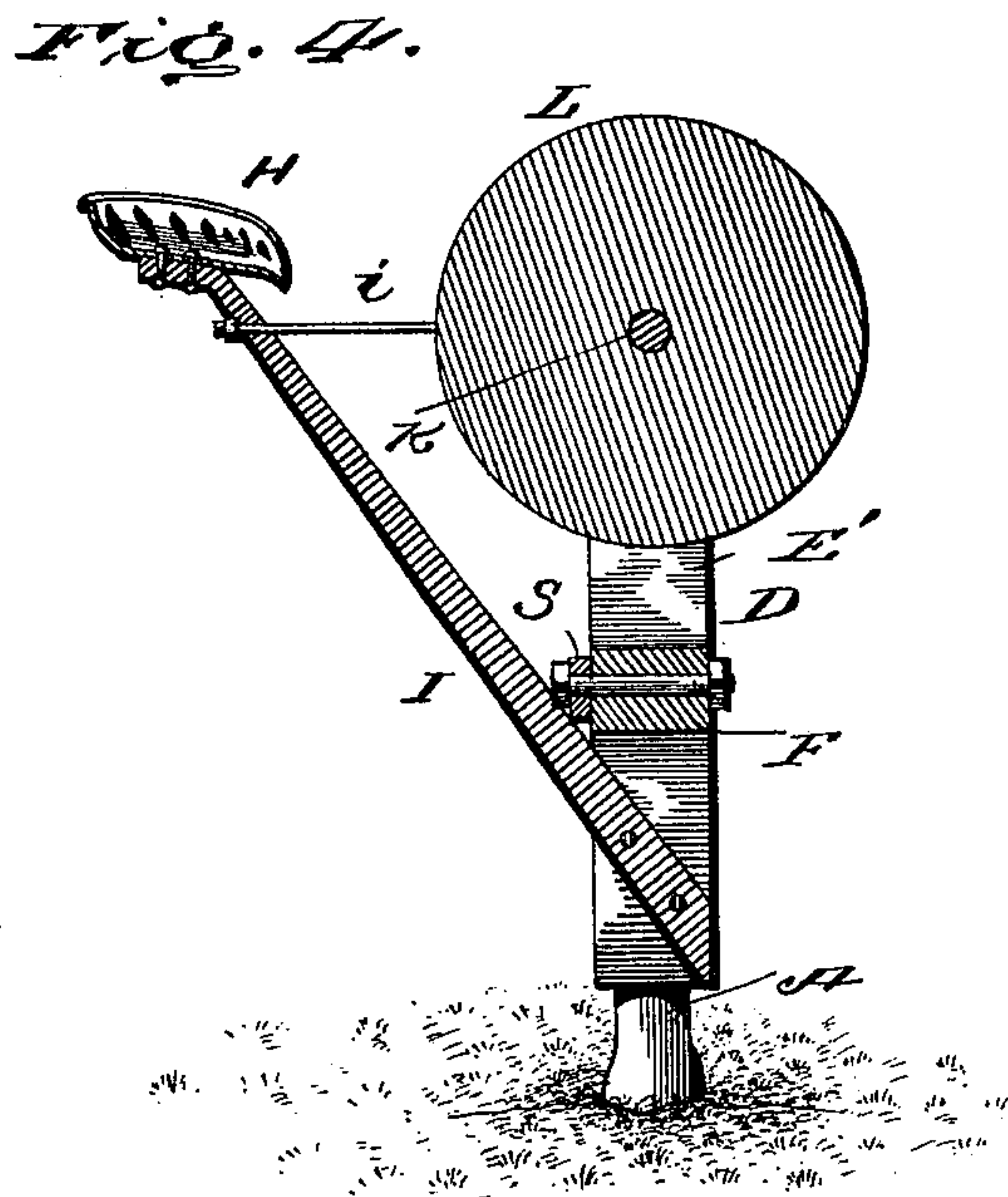
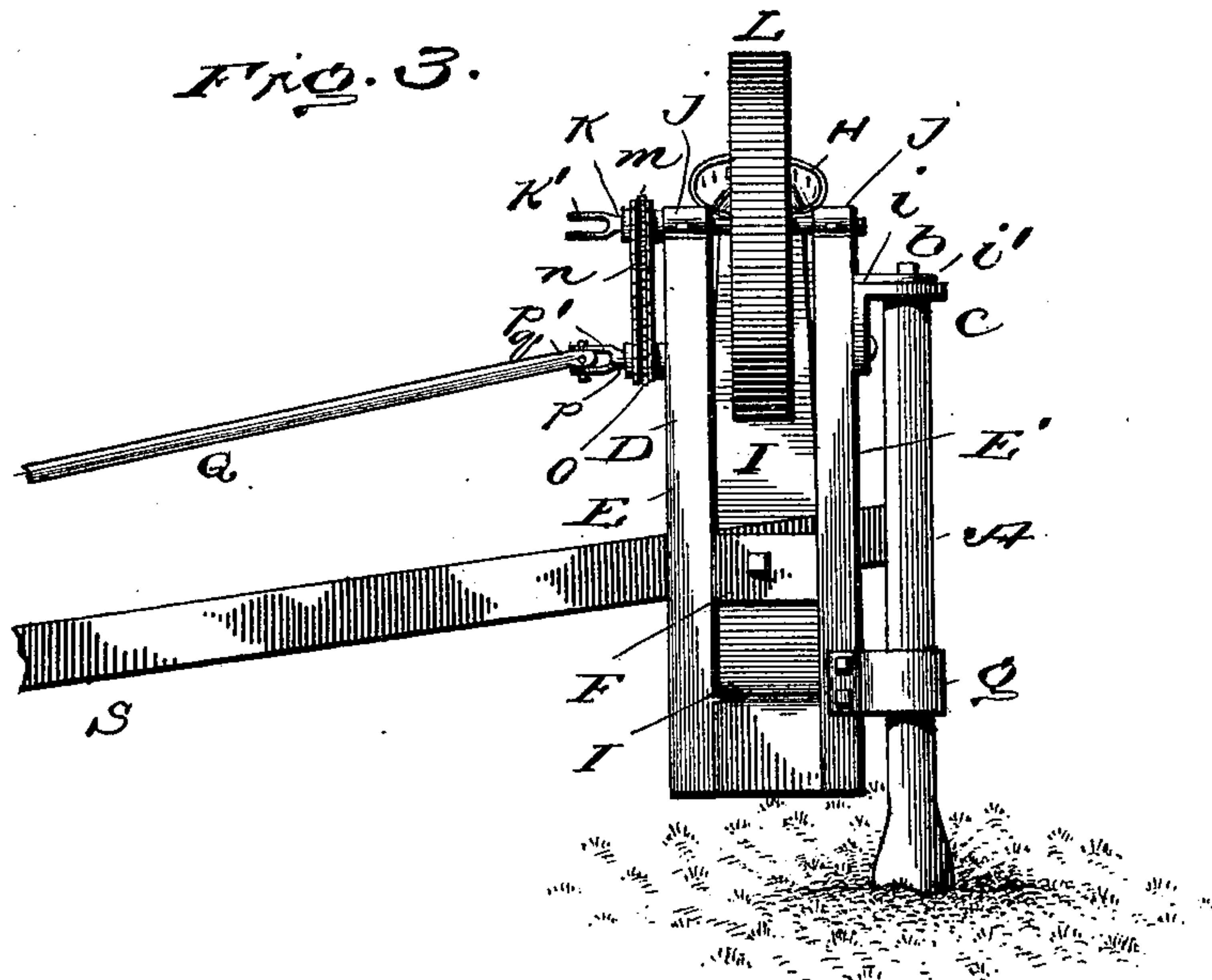
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UNITED STATES PATENT OFFICE.

DUDLEY D. BUKEY, OF McPHERSON, KANSAS.

HORSE-POWER.

SPECIFICATION forming part of Letters Patent No. 631,198, dated August 15, 1899.

Application filed March 15, 1898. Serial No. 673,963. (No model.)

To all whom it may concern:

Be it known that I, DUDLEY D. BUKEY, a citizen of the United States, residing at McPherson, in the county of McPherson and State of Kansas, have invented certain new and useful Improvements in Horse-Powers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in that class of devices known as "horse-powers," in which provision is made for utilizing the power of a horse for driving machinery and other similar purposes; and the object of my invention is to provide a horse-power which is simple and inexpensive in construction, efficient in operation, and designed to secure a rapid speed of rotation of the driven parts.

With these and other objects in view my invention consists in the novel features of construction, combination, and arrangement of parts hereinafter more fully described, and particularly pointed out in the appended claims.

In the drawings hereto annexed and forming a part of this specification, Figure 1 is a perspective view of a horse-power constructed in accordance with my invention. Fig. 2 is a top plan view of the same, a portion of the beam and drive-shaft being broken away. Fig. 3 is a front elevational view of the parts as shown in Fig. 2. Fig. 4 is a vertical longitudinal section through the supporting-frame of the device.

Like letters of reference designate corresponding parts throughout the several views of the drawings.

Referring now more particularly to said drawings, A represents a post or standard, which may be anchored in the ground or rise from a suitable fixed foundation. This post is provided at its upper end with a short spindle *b*, on which a bearing-bracket *c*, projecting from the supporting-frame D of the device, is mounted to revolve.

The frame D comprises in its construction two parallel vertical side bars *E E'*, connected midway of their lengths by a cross-bar *F*, which maintains them in fixed relation. The bearing-bracket *c* is secured to the side bar *E'*

and serves as a support for the frame as well as a bearing on which said frame is mounted to revolve. A strap *g* is bolted to the lower end of this side bar and encompasses the post or standard A and serves to prevent the lower end of the frame from tilting upwardly or outwardly under the weight of the driver or workman occupying the seat H, which is mounted upon the upper end of an inclined post I, having its lower end projecting between the two side bars of the supporting-frame and bolted or otherwise secured thereto. In order to prevent the upper end of this seat-post from sagging and to relieve the supporting-frame of a portion of the weight of the occupant thereof, I provide a stay-rod *i*, secured at one end to said post and provided at its other end with an eye *i'* encompassing the short spindle *b* and fitted to turn thereon as the frame revolves.

Mounted on a bearing *j* on the upper ends of the side bars of the supporting-frame is a shaft *k*, which carries a grindstone or emery-wheel L, which is arranged to rotate in the space between the upper ends of said side bars. This shaft carries at one end a sprocket-pinion *m*, which is driven by a sprocket-chain *n*, passing over the same and around a drive-sprocket *o*, mounted on a shaft *p*, having bearing in the side bar E. The projecting ends of the said shafts *k p* are formed with yokes *k' p'*, which constitute a part of a swivel or universal joint whereby either one of said shafts may be connected at will to the drive-shaft Q. The inner end of this shaft is formed with a similar yoke *q*, which is jointed in the present instance to the yoke *p'* on the end of the shaft *p* by means of a gimbal-block *r*, whereby rotary motion is imparted from said drive-shaft to the drive-sprocket *o* and from said drive-sprocket to the sprocket-pinion *m* and shaft *k* through the medium of the sprocket-chain *n*. The drive-shaft may, however, be connected directly to the shaft *k* whenever it is desired to drive the grindstone or emery-wheel at a less rapid rate than that afforded by connecting said shaft to the drive-sprocket *o*. This may be readily and quickly accomplished by simply detaching the gimbal-block from the yoke on one shaft and connecting it to the yoke on the other shaft.

The outer end of the drive-shaft is mounted

in bearings *s*, pivoted to a beam or sweep *S*, and this bearing is provided with an eye or clevis to which a singletree *T* is secured. The inner end of the sweep is connected to the frame *D* by a hinge joint or pivot *s'*, whereby freedom of vibration of the same in a vertical plane is insured. The bearing *s* serves to compensate for the variation in the movements of the beam and shaft when the wheel runs over an irregular surface or encounters an obstruction and relieves the inner ends of said parts and the frame of strain. Mounted on said outer end of the drive short counter-shaft is a rigid drive wheel or roller *U*, provided around its periphery with the usual steps or spurs to prevent it from slipping or sliding, as well as to enable it to secure a firm hold upon the surface of the ground.

The operation is as follows: A horse is hitched to the singletree *T* in the usual manner and driven in a circle around the post or standard *A*, and the supporting-frame is thereby caused to revolve around said standard. As the ground wheel or roller *U* is rigidly connected with the drive-shaft, said shaft will be caused to revolve with it and in turn impart rotary motion through the medium of the swivel or universal joints to the drive-sprocket *o*. This shaft, as hereinbefore described, transmits power to the shaft *k* through the medium of the sprocket-chain and sprocket-pin, whereby rapid rotation of the grindstone or emery-wheel is secured. The operator sitting on the seat *H* is thereby enabled to readily and conveniently sharpen his tools or cutlery.

Although I have shown and described my invention in the present instance as being operatively connected to drive a grindstone or emery-wheel, it is to be understood that it is not limited to this particular purpose, as it may be employed to transmit power to machinery of various kinds and for operating saws, churns, corn-shellors, &c.

It is obvious that changes in the form, proportion, and minor details of construction may be made within the scope of the invention

without departing from the spirit or sacrificing any of the advantages thereof.

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

1. A horse-power apparatus comprising a rotary frame, a beam or sweep pivoted at its inner end to the frame to have vertical movement, a bearing pivoted to the sweep near the outer end thereof and arranged at a right angle thereto, a shaft journaled in the frame, a drive-shaft connected at its inner end by a universal joint to said shaft on the frame and journaled at its outer end in said bearing, and a ground-wheel independent of the beam and rigidly mounted upon the said outer end of the drive-shaft so as to communicate motion directly thereto, substantially as described.

2. A horse-power apparatus comprising a post or standard, a frame mounted to rotate thereon, a main shaft journaled in the frame and provided at one end with a sprocket-pinion and a yoke, a short counter-shaft also journaled in the frame and provided with a sprocket-wheel and a similar yoke, a chain connecting said pinion and wheel, a beam or sweep pivoted at its inner end to the frame, a bearing pivoted to the sweep near the outer end thereof and arranged at a right angle thereto and carrying a clevis for attachment of a singletree, a drive-shaft journaled in said bearing and provided at its inner end with a yoke, a gimbal-block normally mounted in said yoke and adapted to be connected to the yoke on either the main shaft or counter-shaft so as to vary the speed of rotation of the former, and a ground-wheel independent of the sweep and rigidly mounted upon the outer end of the drive-shaft, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DUDLEY D. BUKEY.

Witnesses:

W. S. MCGIFFERT,
WINFIELD S. BUKEY.