2 Sheets--Sheet 1.

S. H. BUSHNELL.

Horse Hay-Rake.

No. 160,387. Patented March 2, 1875.

Fig. 1

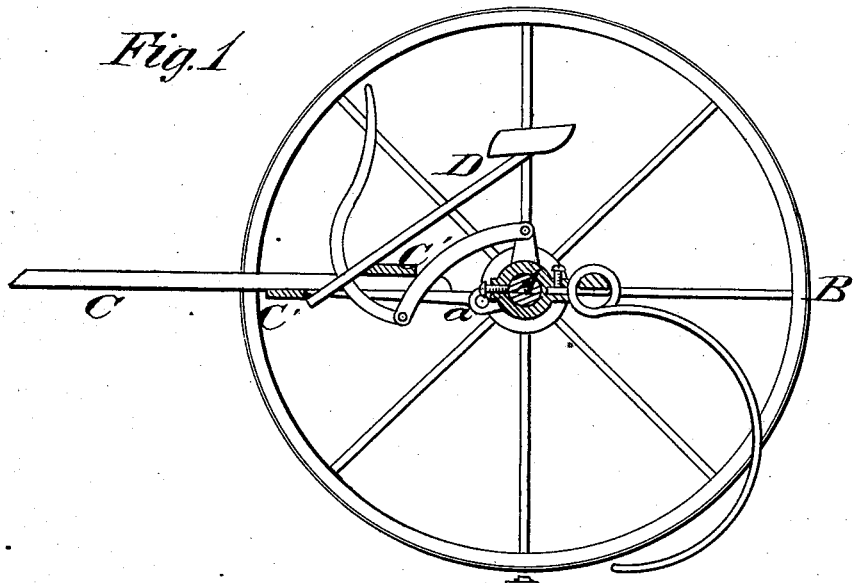
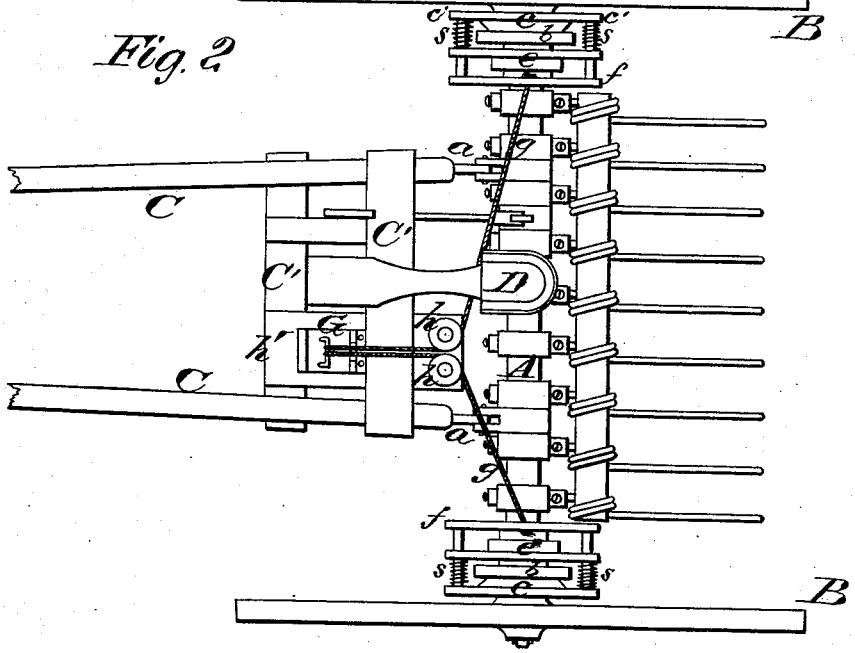


Fig. 2



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2 Sheets--Sheet 2.

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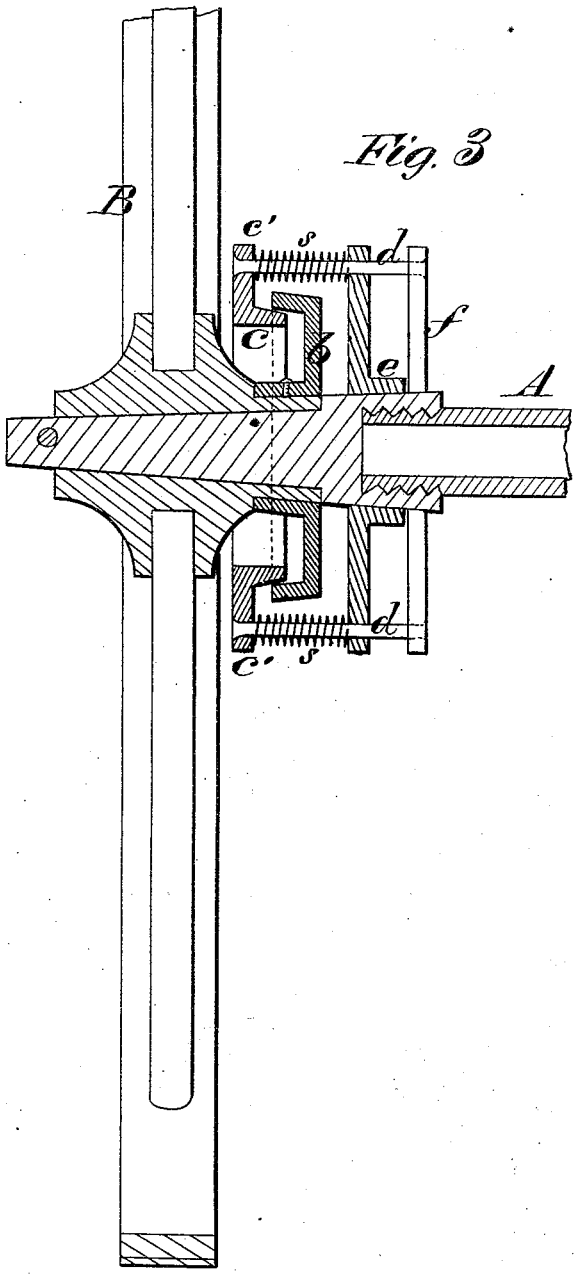
Fig. 3



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UNITED STATES PATENT OFFICE.

SOLON H. BUSHNELL, OF FAIRPORT, NEW YORK.

IMPROVEMENT IN HORSE HAY-RAKES.

Specification forming part of Letters Patent No. **160,387**, dated March 2, 1875; application filed January 23, 1875.

To all whom it may concern:

Be it known that I, SOLON H. BUSHNELL, of Fairport, in the county of Monroe and State of New York, have invented a new and valuable Improvement in Horse Hay-Rakes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a longitudinal vertical section of my horse hay-rake. Fig. 2 is a plan view of the same, and Fig. 3 is a sectional detail view.

This invention has relation to horse hay-rakes, and more particularly to means for enabling the horse to raise the rake-teeth to discharge the gathered loads.

The nature of my invention consists in the employment of spring friction-clutches, which are combined with the hubs of the transporting-wheels, and also with a treadle and connecting-chains, as will be hereinafter explained and pointed out in the claim, whereby the driver can cause the rake-teeth to be raised by the draft of the team at pleasure.

In the annexed drawings, A designates the axle of two transporting-wheels, B B, on which axle tubular bearings are rigidly but removably secured, to which the rake-teeth are fastened. C C designate the thills, which are connected to the axle A by means of hinges *a a*. On the cross-bars C′, which connect together the thills C C, the driver's seat D is mounted. The inner ends of the hubs of wheels B B have circular female clutching-plates *b* rigidly secured to them, one of which portions is shown in the sectional view, Fig. 3. Each female plate *b* is provided with a beveled clutching-ring, *c*, the beveled surface of which is exterior, while the beveled surface of the female plate is interior. The ring *c* is constructed with arms *c′ c′*, to which rods *d d* are rigidly secured. These rods pass loosely through arms which are formed on a collar, *e*, made fast on the axle A, and are again rigidly secured to an arched connecting-bar, *f*. At the middle of the length of the bars *f* chains *g g* are secured, which are carried around grooved pulleys *h h* on a piece, *h′*, and attached to a treadle, G, which is hinged on this piece *h′*. The male portions *c* of the clutches are held free from contact with the female portions *b* by means of helical springs *s*, which are coiled around the rods *d d* between the arms *c′* and the arms of collar *e*.

When the clutch-sections are not engaged the wheels B B are free to turn on the axle A, and the rake-teeth will be held down in working position.

When a load has been gathered by the rake the driver presses down upon the treadle G, and thus engages the clutches and causes the wheels B B to turn up the rake-teeth and discharge the load. When the treadle G is released the springs *s* disengage the clutches, and the rake-teeth fall into working position by their own gravity, and may be held in such position by any suitable means.

What I claim as new, and desire to secure by Letters Patent, is—

In a horse-rake having the teeth fast on the axle, the frictional clutch-sections *b c*, armed collar *e*, connecting-rod *f*, rods *d*, and springs *s*, combined with chains *g* and treadle G, substantially in the manner and for the purposes set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

SOLON H. BUSHNELL.

Witnesses:

C. L. PEACOCK,

JOHN A. MCMILLAN.

for #360,328
see 8th forward.