

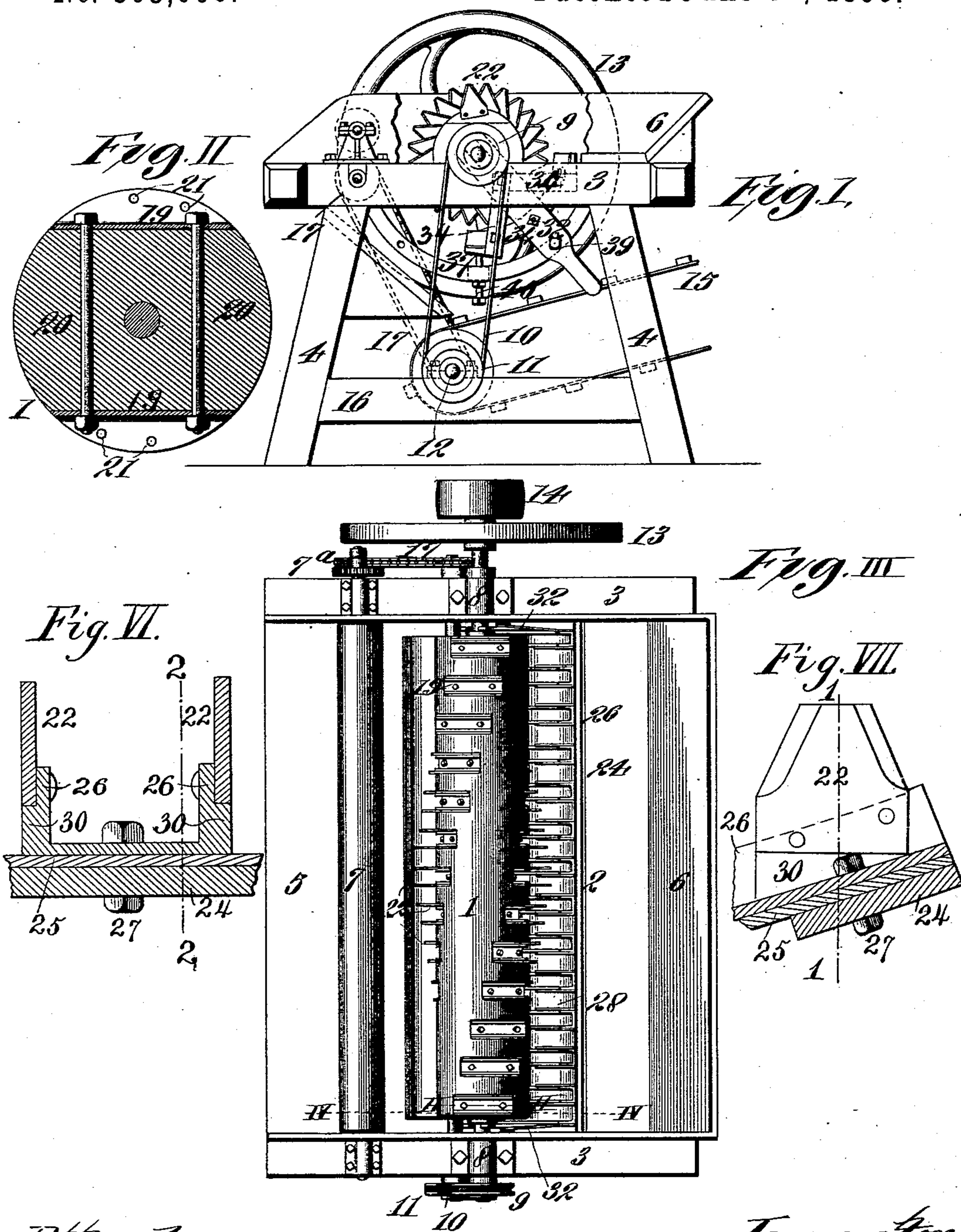
(No Model.)

2 Sheets—Sheet 1.

J. N. BARNES.
FEED CUTTER.

No. 563,006.

Patented June 30, 1896.



Attest:
E. J. Knight
A. Finley.

Inventor:
John Newton Barnes,
By Knights Bros
Attys

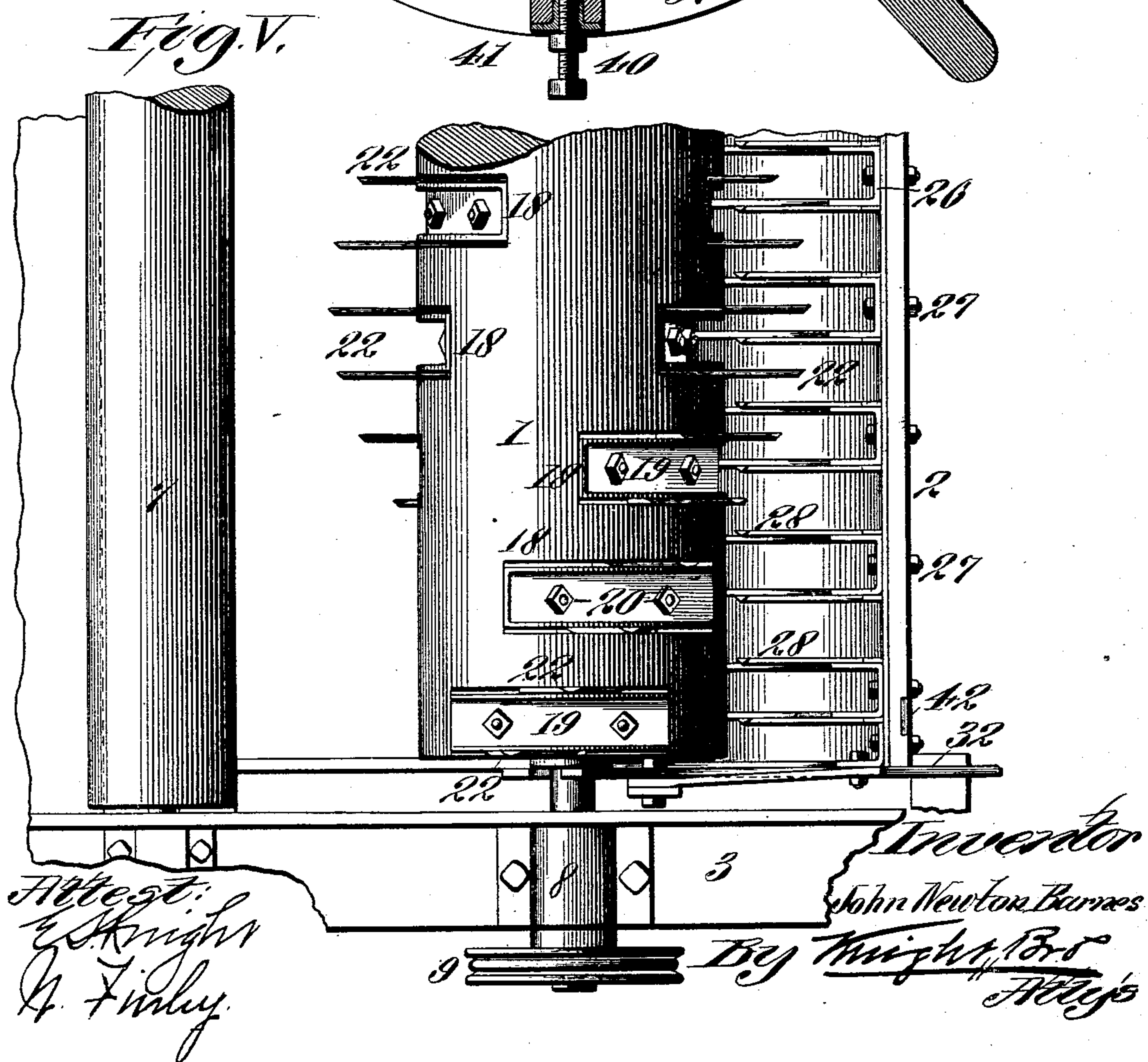
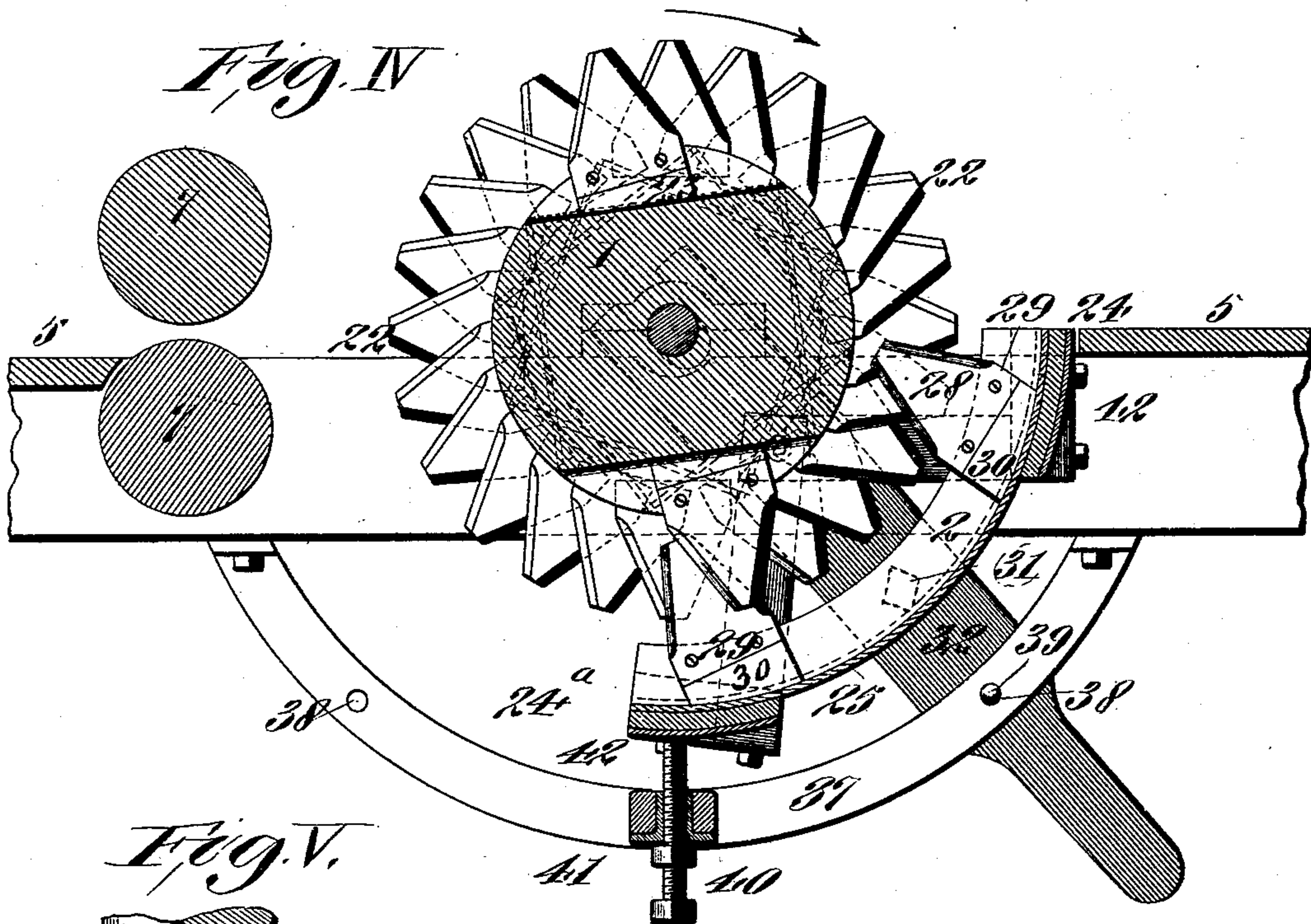
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UNITED STATES PATENT OFFICE.

JOHN NEWTON BARNES, OF BUNKER HILL, ILLINOIS.

FEED-CUTTER.

SPECIFICATION forming part of Letters Patent No. 563,006, dated June 30, 1896.

Application filed December 23, 1895. Serial No. 573,136. (No model.)

To all whom it may concern:

Be it known that I, JOHN NEWTON BARNES, of Bunker Hill, Macoupin county, State of Illinois, have invented a certain new and useful Improvement in Feed-Cutters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a machine for shredding or cutting corn-fodder for feed.

My present invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a side view of my improved machine. Fig. II is an enlarged transverse section of the cylinder, taken on line II II, Fig. III. Fig. III is a top or plan view. Fig. IV is an enlarged section taken on line IV IV, Fig. III. Fig. V is an enlarged detail top view. Figs. VI and VII are detail views showing the manner of securing the knives to the channel-plates.

Referring to the drawings, 1 represents the cylinder of the machine; 2, the concave; 3, the frame of the machine, and 4 the supporting legs.

5 represents a feed-table 6; a hopper on one side of the machine, and 7 the feed-rolls on the other side of the machine.

The cylinder 1 is provided with journals supported in boxes 8, and on one end of the cylinder is a pulley 9 to receive a belt 10, that also passes around a pulley 11 on a counter-shaft 12. The other end of the cylinder is provided with a fly-wheel 13 and a pulley 14, the latter adapted to receive a belt from the motive power. From the counter-shaft 12 is driven a raddle or conveyer 15, that passes around a pulley 16 on the shaft 12, and from the shaft 12 the lower feed-roller 7 is driven through means of a belt-and-pulley connection 17. The feed-rollers are geared together by pinions 7^a.

The cylinder 1 is provided with double-edged knives or cutters arranged in spiral form, and my invention relates in part to the manner of securing these knives to the cylinder. This I do by forming recesses 18 in the cylinder and securing in these recesses channel-plates 19, each plate having a base and a flange at each side of the base, thus forming

the channel, as seen in Fig. V. These channel-plates are secured to the cylinder by means of bolts 20, which pass through the cylinder and secure opposite plates, as shown in Fig. II, so that the bolts can be easily reached when it is desired to remove a plate, and each flange of each plate is provided with perforations 21 to receive the rivets by which the knives or cutters 22 are secured in place. There is a knife fitting on the outside of each flange of each plate, as shown in Fig. V, and to permanently support these knives and to relieve their attaching-rivets of strain I form upon each flange of the channel-plates a projection 23, against which the heel of the knife or cutter bears, as shown in Fig. IV. By this manner of connecting the cutters to the cylinder they are quickly and cheaply applied in a very permanent and substantial manner.

The concave 2 is made up of two cross-strips 24 and 24^a, connected by a sheet-metal strip 25, that extends from one end of the machine to the other within the frame 3, and that extends from the outer edge of the cross-strip 24 to the outer edge of the cross-strip 24^a, as shown in Fig. IV. To the inside of the strip 25 are secured a number of channel-plates 26 by means of bolts 27, that pass through the channel-strips, through the plate 25, and through the strips 24 and 24^a. To the outer faces of these channel-strips are secured the double-edged knives or cutters 28, that are arranged in two horizontal series. These knives or cutters are made fast to the flanges of the channel-plates by means of rivets or screws 29, and to support the knives and to relieve the rivets from strain I form upon the channel-plates projections 30, against which the heels of the knives bear, as shown in Fig. IV. A concave thus constructed is inexpensive and durable.

The concave is connected by bolts 31 to arms 32, there being an arm at each end of the concave, as shown in Fig. III. The inner ends of these arms are forked to receive the journals of the cylinder 1, and each arm is further connected to the concave by means of straps 34. (See Fig. I.)

Secured to each end of the frame 3 is a semicircular plate 37, provided with holes 38 to receive a screw or pin 39, by which the arms are held to their adjustment. The concave

may be shifted from the position shown in Fig. IV to a corresponding position on the other side of the machine by removing the screws 39 and swinging the arm 32 (the arms carrying the concave with them) over to the other side of the machine, when the screws would be inserted in the other holes 38 made in the plates 37.

When the concave is in the position shown in Fig. IV, the cylinder 1 will be made to revolve in the direction of the arrow, Fig. IV, and when the concave is swung over to its other position the cylinder will be made to revolve in the opposite direction by crossing the belt 10. By thus making the concave adjustable from one side to the other of the machine both edges of the knives or cutters may be brought into use, and the machine may be used to cut different kinds of stuff. When in the position shown in Fig. IV, the machine may be used for cutting short stuff thrown into the hopper 6, and when the concave is in the other position the machine may be used for cutting long stuff, such as cornstalks or fodder, fed through between the rolls 7.

It is sometimes desirable to adjust the concave toward or away from the cylinder, and to accomplish this end I employ set-screws 40, passing through a bearing 41, secured to the plates 37. (See Fig. IV.) The inner ends of these set-screws jam against the back of the strip 24^a, or against the back of the strip 24, when the concave is shifted to the other position, and to avoid wear on the strips by the set-screws bearing against them I have provided them with narrow metal plates 42. (See Figs. IV and V.)

I claim as my invention—

1. In a feed-cutter the combination of a cyl-

inder having a number of two-edged cutters arranged thereon, a concave pivoted concentrically with relation to the cylinder-shaft and adapted to be held in cutting position on either side of the cylinder, and a number of two-edged cutters secured to said concave, substantially as set forth.

2. In a feed-cutter, the combination of a cylinder provided with knives, and a concave provided with knives; the knives being secured to the cylinder by means of channel-plates recessed into the cylinder, bolts passing through the cylinder for securing the plates to the cylinder, said plates being provided with flanges to which the knives are attached, and having projections against which the heels of the knives bear, substantially as set forth.

3. In a feed-cutter, a cylinder provided with two-edged knives, and a concave provided with two-edged knives, said concave consisting of strips 24 and 24^a, in combination with arms 32 forked to receive the journals of the cylinder and to which the concave is connected, plates 37 to which the arms are adapted to be connected in either position of the concave, and a set-screw 40, substantially as and for the purpose set forth.

4. In a feed-cutter, the combination of a cylinder provided with knives, a reversible concave provided with knives, and a feed-table; said feed-table being provided with a hopper on one side of the machine, and with feed-rolls on the other side of the machine, substantially as set forth.

JOHN NEWTON BARNES.

In presence of—

A. E. KASTIEN,
CHARLES MARTH.