

No. 719,777.

PATENTED FEB. 3, 1903.

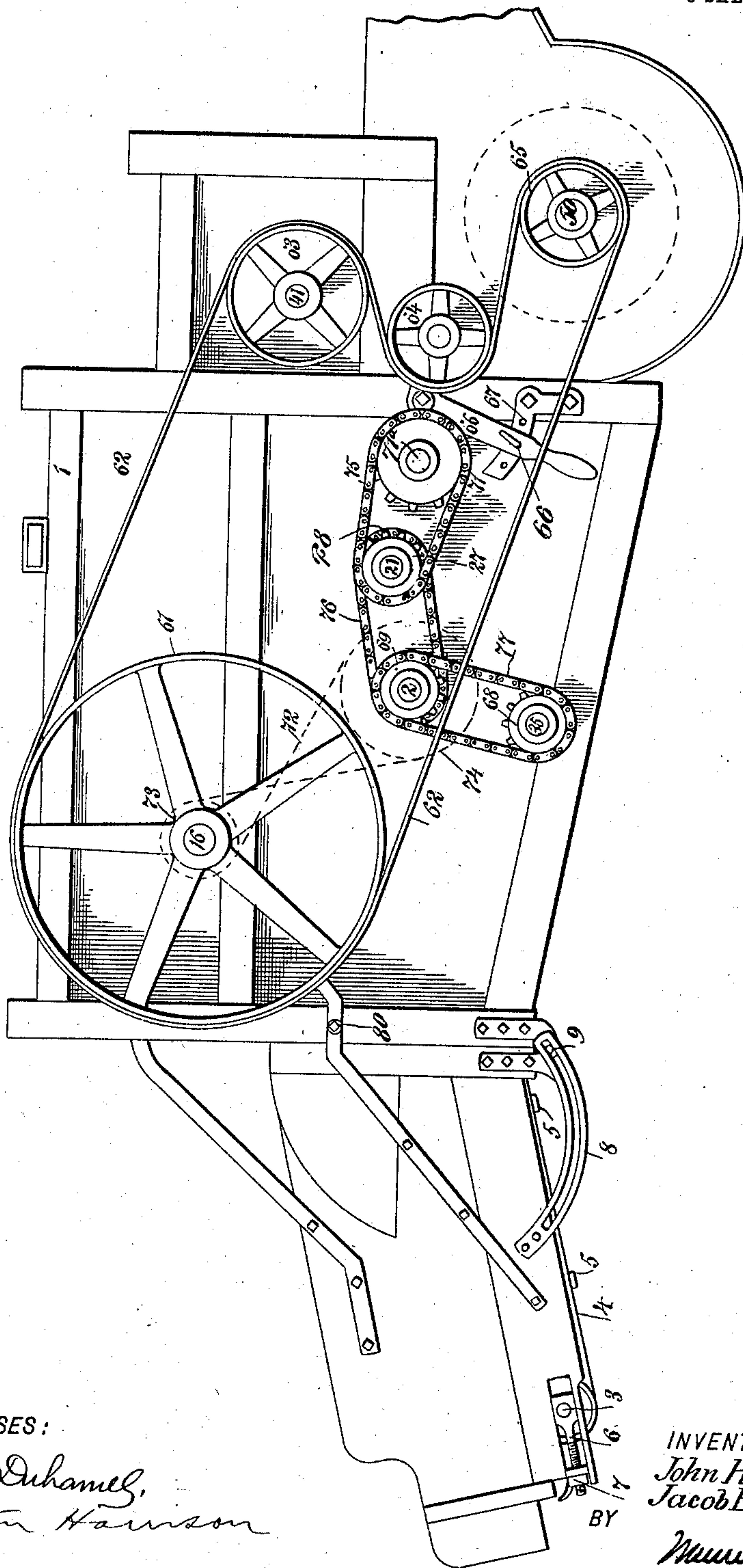
J. H. FLORENCE & J. E. MISNER.
BAND CUTTER AND FEEDER.

APPLICATION FILED NOV. 15, 1901.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

James F. Duhamel,
Walton Harrison

INVENTORS
John H. Florence
Jacob E. Misner

BY *Mumford*
ATTORNEYS

No. 719,777.

PATENTED FEB. 3, 1903.

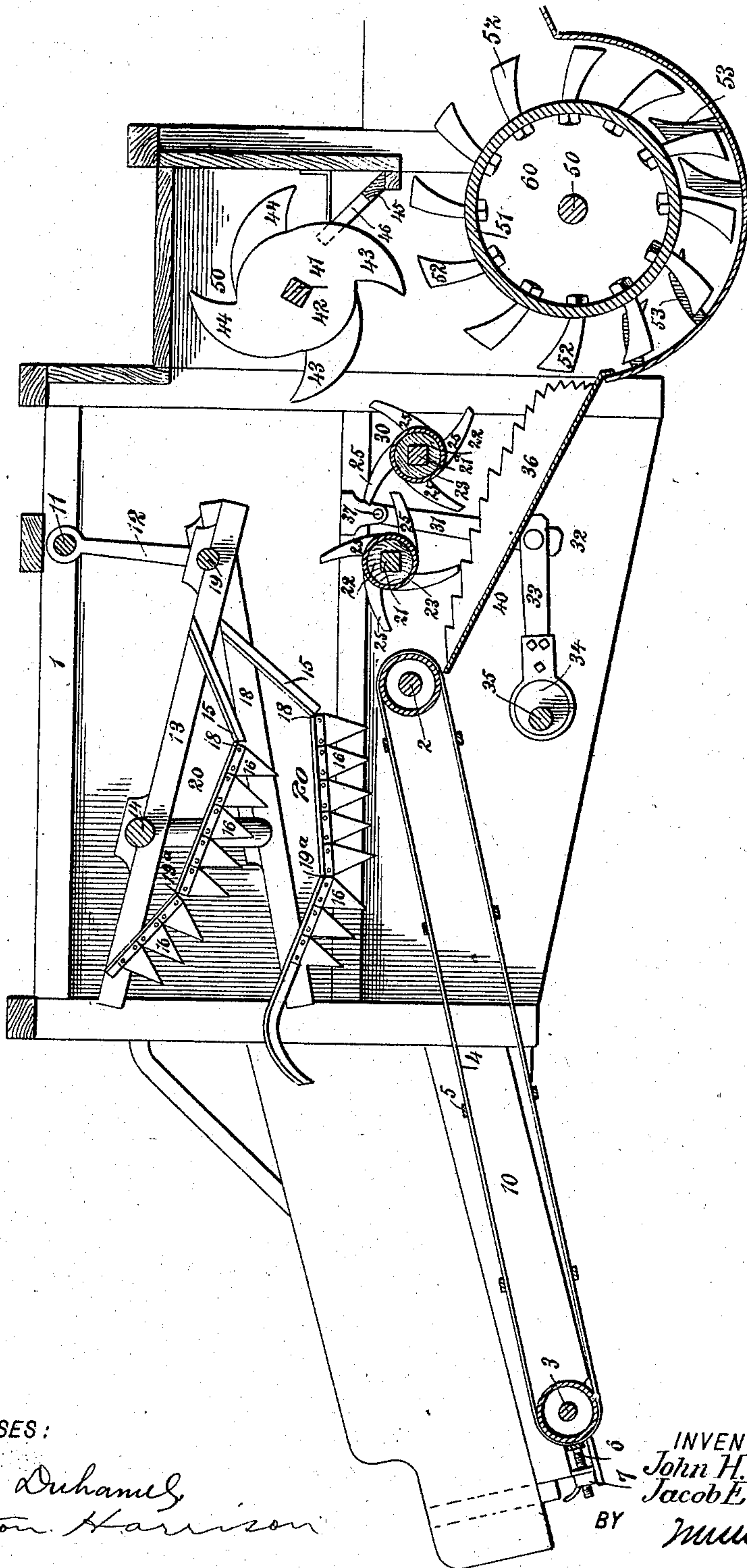
J. H. FLORENCE & J. E. MISNER.
BAND CUTTER AND FEEDER.

APPLICATION FILED NOV. 15, 1901.

NO MODEL.

3 SHEETS—SHEET 2.

Fig. 2.



WITNESSES:

James I. Duhamel
Walton Harrison

INVENTORS
John H. Florence
Jacob E. Misner

BY

Mumford
ATTORNEYS

No. 719,777.

PATENTED FEB. 3, 1903.

J. H. FLORENCE & J. E. MISNER.

BAND CUTTER AND FEEDER.

APPLICATION FILED NOV. 15, 1901.

NO MODEL.

3 SHEETS—SHEET 3.

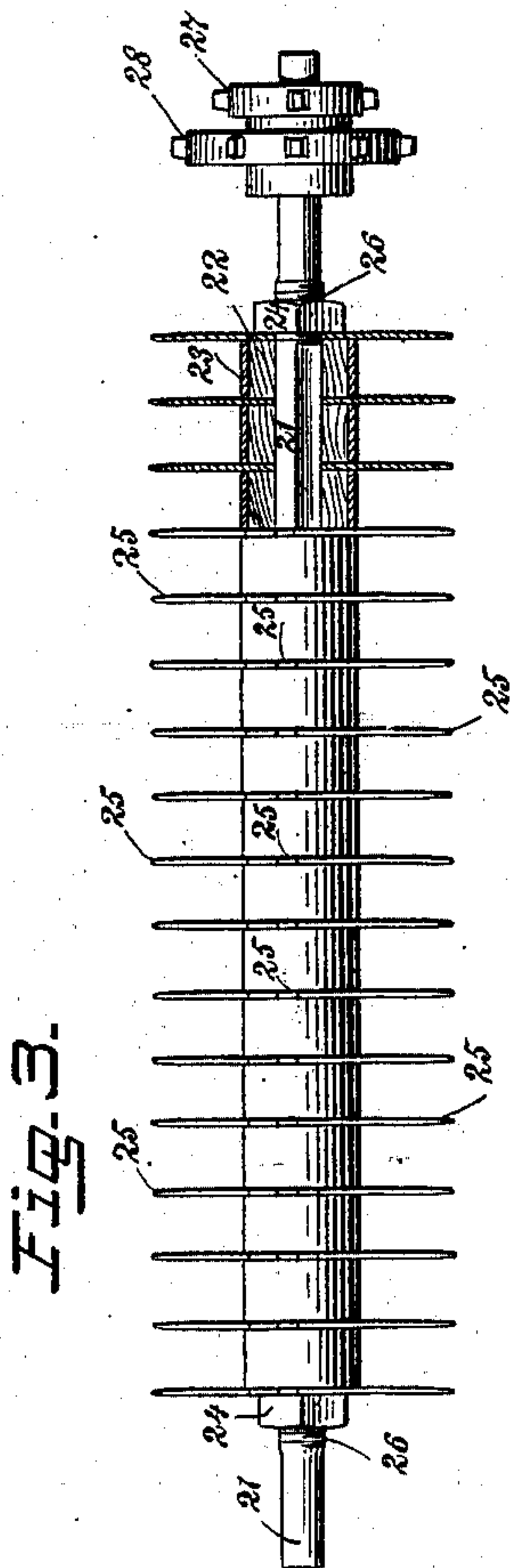
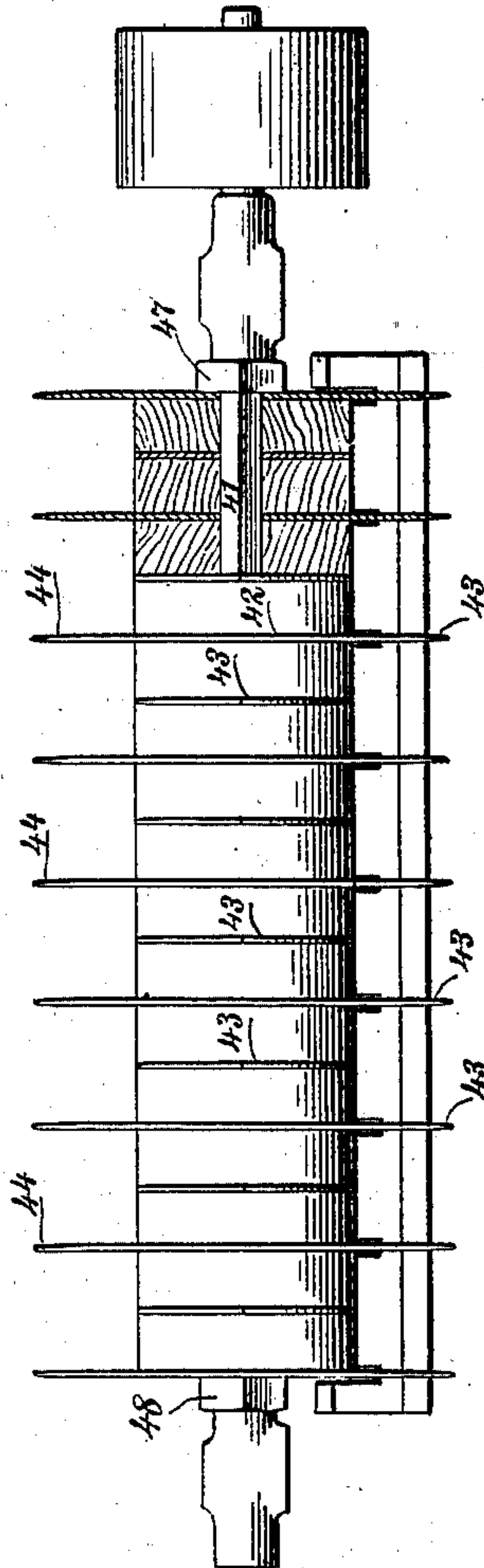


Fig. 4.



WITNESSES:

James F. Duhamel,
Walton Harrison

INVENTORS

John H. Florence
Jacob E. Misner

BY

Mumford
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN H. FLORENCE AND JACOB E. MISNER, OF WICHITA, KANSAS.

BAND-CUTTER AND FEEDER.

SPECIFICATION forming part of Letters Patent No. 719,777, dated February 3, 1903.

Application filed November 15, 1901. Serial No. 82,374. (No model.)

To all whom it may concern:

Be it known that we, JOHN H. FLORENCE and JACOB E. MISNER, citizens of the United States, and residents of Wichita, in the county of Sedgwick and State of Kansas, have invented a new and Improved Band-Cutter and Feeder, of which the following is a full, clear, and exact description.

Our invention relates to harvesting-machines, more particularly of the type used in separating grain, such as wheat, from the straw.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of our invention. Fig. 2 is a longitudinal section thereof. Fig. 3 is an elevation, partly in section, of one of the retarders; and Fig. 4 is an elevation, partly in section, of the rotary knife.

Upon the frame 1 are mounted revoluble rollers 2 3, and upon these rollers is mounted an endless canvas belt 4, provided with plain slats 5, arranged crosswise thereon, these parts constituting an endless carrier. An adjustment for the carrier is also provided, and consists of movable links 6, which are threaded and provided with thumb-nuts 7 for the purpose of loosening and tightening the endless canvas belt at will. A slotted member 8 is provided with a pivotal pin 9, thus enabling the left-hand end of the feeder to be swung bodily downward and folded under the middle of the feeder. The pin 8 is detachably secured in place. It normally holds the posts together, as shown; but when removed it allows the left-hand end to swing downward, as above described. The carrier as a whole is designated as 10.

Upon a transverse shaft 11 there are mounted a number of pendent links 12, which are normally free to swing in planes parallel with the general direction of the machine. Upon each of these links is a hook 19, and secured to said hooks are a number of band-knives 20. Each of these band-knives consists of a beam 13, mounted upon the four-throw crank 14 and provided with a metallic strip 15, which is bent in two places 18 19^a and is provided with sickle-teeth 16. It will be noticed

that these sickle-teeth lie in different lines upon different sides of the bend 19^a. These knives, as their name implies, are used to automatically cut the bands, and we have found them to be very efficient for that purpose.

The retarders are shown at 30 and their detail construction is as follows: Upon a pair of shafts 21 21^a, extending transversely across the frame and having square bodies and cylindrical ends, are fitted a number of wooden disks 22, each surrounded by a metallic sleeve 23 and held together by means of nuts 24, which engage threads 26 upon said shafts. Sandwiched between these metallic sleeves and also between the wooden disks are the four-pointed star-like members 25. The structure of these two shafts, together with their appurtenances, is practically the same; but they are caused to rotate at different speeds, the one to the left having three times the speed of the other.

A link 31 depends from a bearing 37, and upon the lower end of this link is a pivot 32, which is engaged by an eccentric-rod 33, mounted loosely upon an eccentric 34, which is rigidly secured upon the revoluble shaft 35. The rotation of this shaft causes said link 31 to swing slightly. A feed-pan 36 is actuated by the swinging of this link, the lower end of the feed-pan being adjacent to the wheat-wheel.

Upon a shaft 41, having a square body and cylindrical ends, located transversely of the frame, are a number of blades 42, provided with spiral-shaped points 43 44, as shown more particularly in Fig. 2. These members constitute a rotary knife, the points of the blades of which pass through the slots 46 of the straw-gate 45 when the shaft 41 is rotated. Upon a transverse shaft 50 is mounted a cylindrical member 51, provided with beaters 52, these members constituting the so-called "wheat-wheel," which revolves adjacent to a grid 53 in the usual manner.

The gearing is as follows: From the large wheel 61 on the shaft 16 runs a belt 62 around a pulley 63, mounted upon the shaft 41, thence around an idler-pulley 64, controllable by a hand-lever 66 and adjustable by means of a set-screw 66^a, carried by the lever and

adapted to enter apertures in a bracket 67, thence around a pulley 65 mounted upon the shaft 50, back to the large wheel 61. A crossed band 72 connects a pulley 74 upon the shaft 2 with a pulley 73 on the shaft 16. The large sprocket-wheel on the shaft 21^a and a sprocket-wheel on the shaft 21 are connected with each other by a sprocket-chain 75. The shaft 2 is connected with the shaft 21 by means of a sprocket-wheel 28 on the shaft 21, a similar sprocket-wheel on the shaft 2, and a sprocket-chain 76. The shafts 35 and 2 are connected by means of sprocket-wheels 68 69 and a sprocket-chain 77. Power is applied to the shaft 16 in the usual manner.

The operation of our invention is as follows: The straw carrying the grain is fed to the endless carrier in the usual manner and is carried upward to the band-knives, which cut the bands, then passes to one of the retarders 30 immediately adjacent to the upper right-hand end of the endless carrier, this retarder having a comparatively high speed, and then passes over this retarder to the other retarder, which has a comparatively slow speed, and thence to the wheat-wheel, the straw being operated upon by the rotary knife. The straw-gate prevents the straw from passing through, so that the knife acts

directly upon the straw; otherwise the device operates as any other similar feeder.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

A self-feeder for grain-separators, comprising a frame, an endless carrier mounted thereon, a revoluble cylinder, a plurality of revoluble retarding devices each provided with tangentially-disposed teeth and disposed intermediate of said carrier and said cylinder, a rotary knife disposed adjacent to one of said retarding devices and immediately adjacent to the cylinder, means for actuating said rotary knife and said retarding devices all at different rates of speed, a shaker-frame disposed adjacent to said retarding devices and extending substantially from said endless carrier to said cylinder, and means for actuating said shaker-frame.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN H. FLORENCE.
JACOB E. MISNER.

Witnesses:

B. F. LAKE,
ELSBURY MARTIN.