

No. 684,480.

Patented Oct. 15, 1901.

E. B. WAGNER & J. E. DAVISSEN.

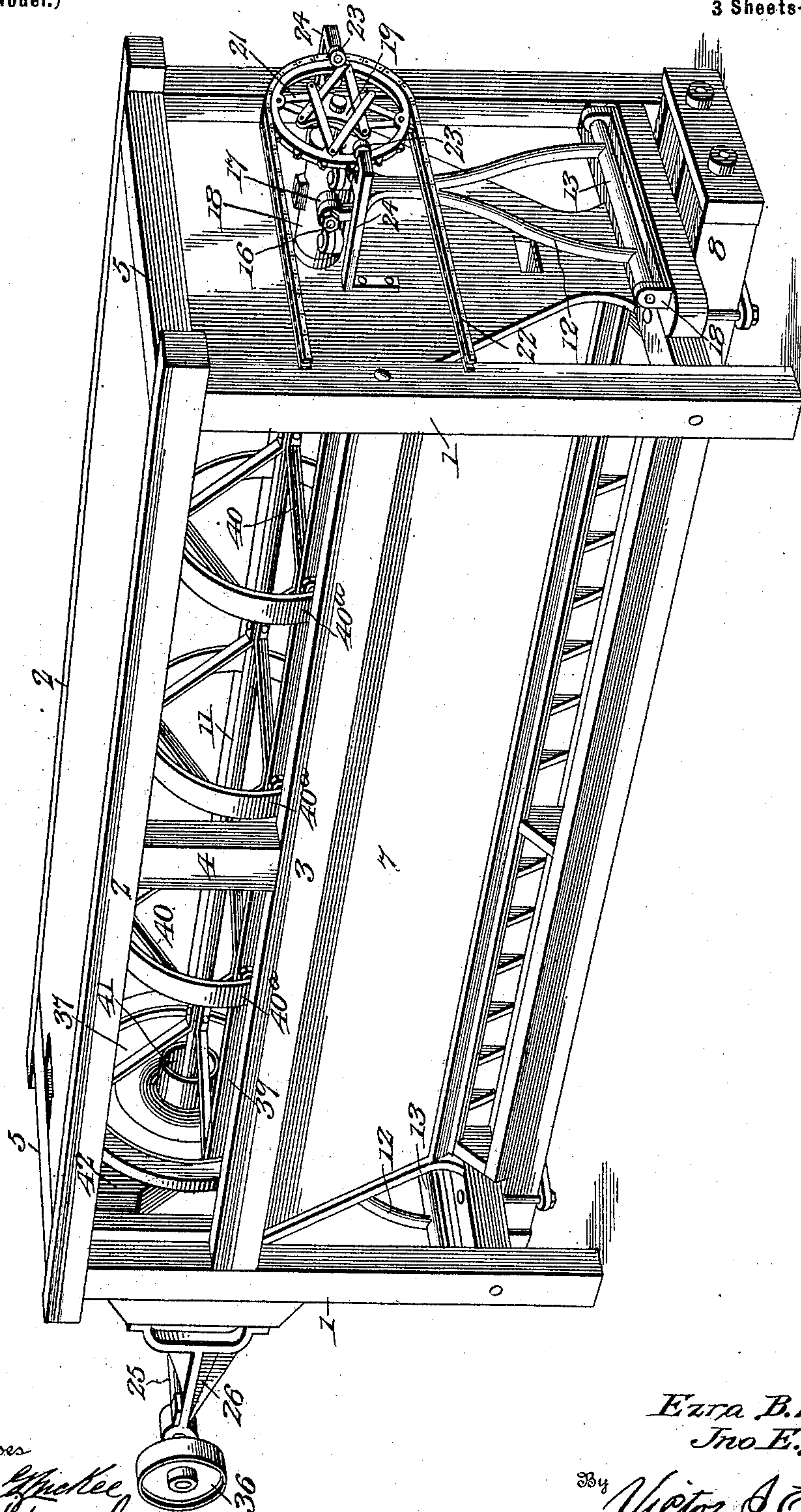
FLOUR DRESSING REEL.

(Application filed Feb. 23, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



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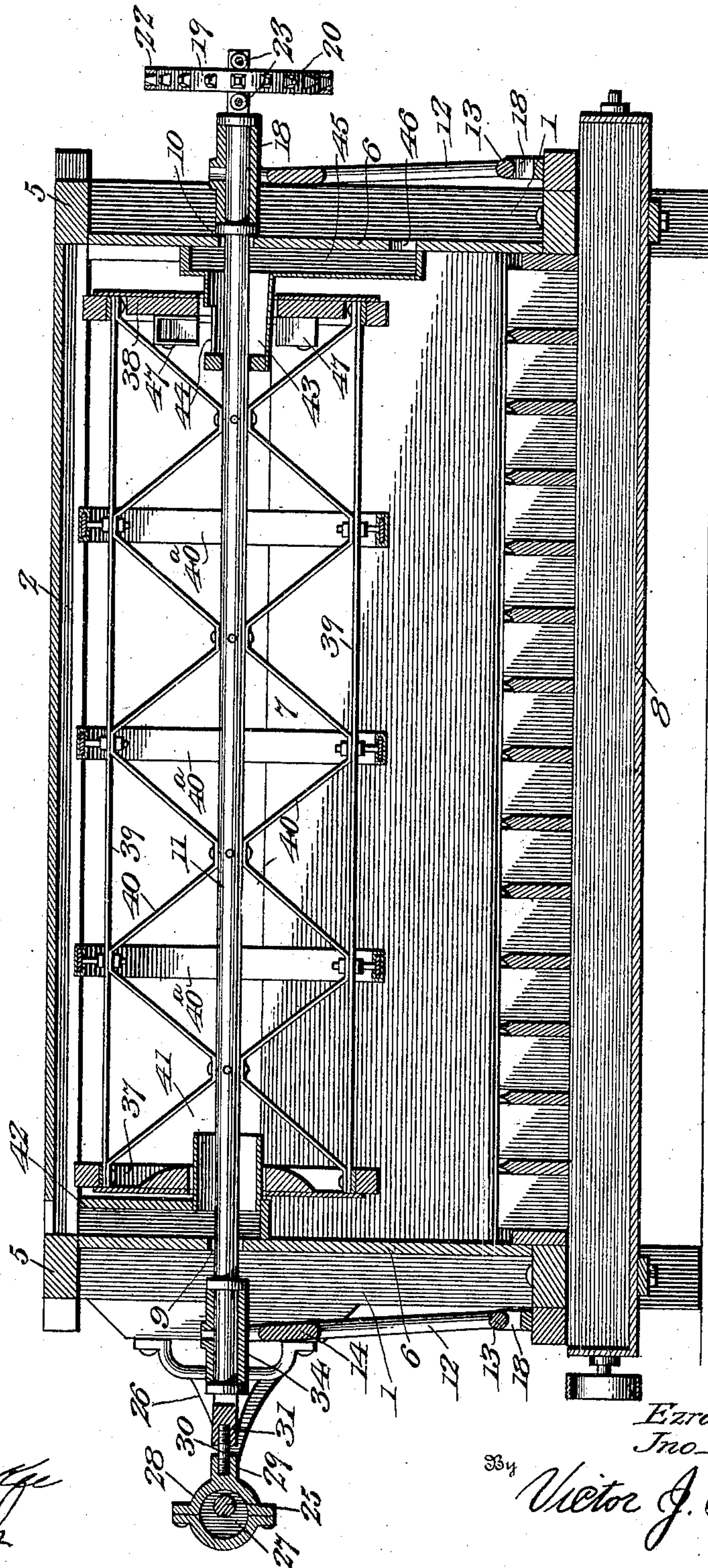
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Fig. 2.



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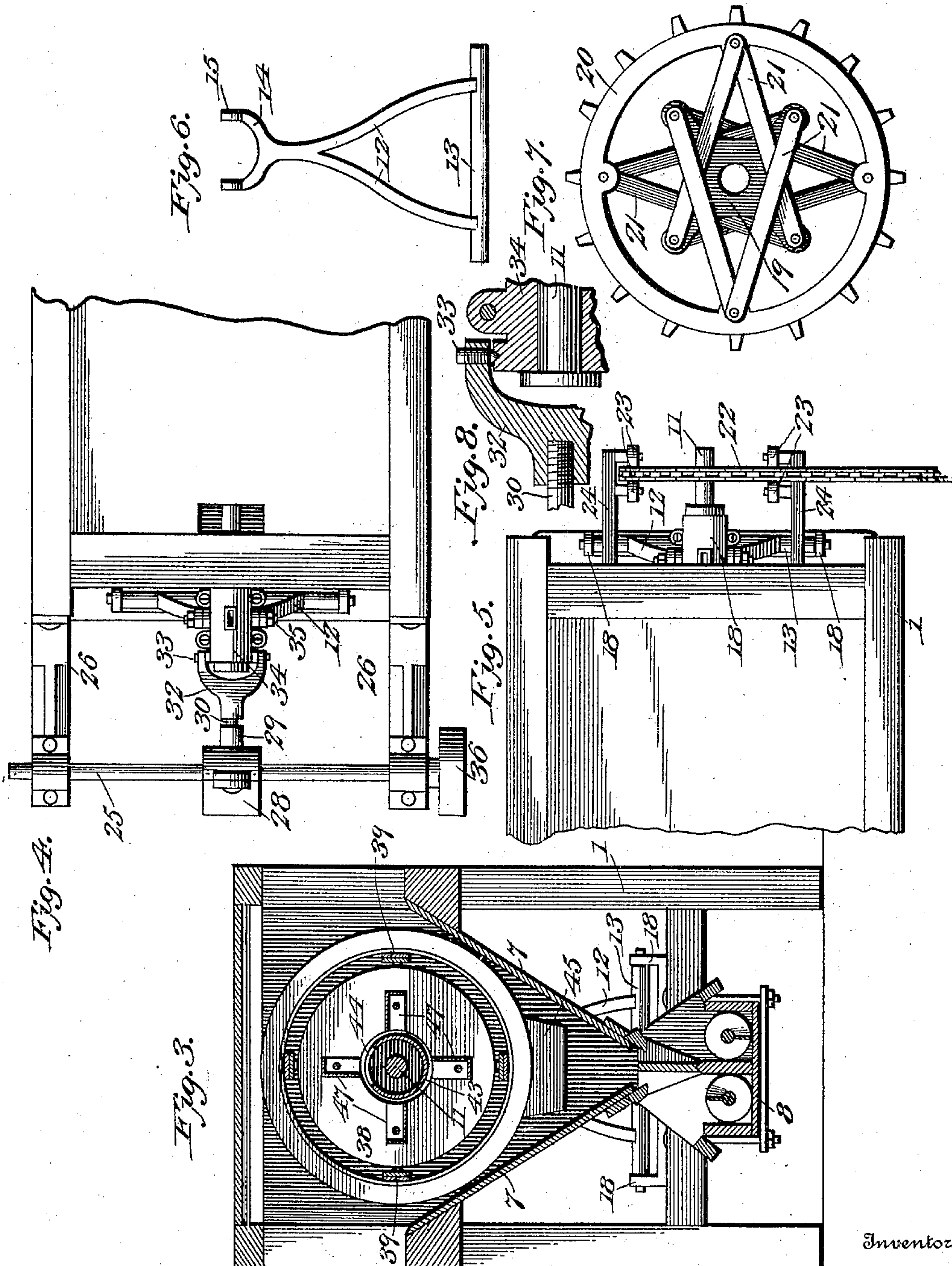
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

EZRA BURR WAGNER AND JOHN E. DAVISSEN, OF JACKSON, MICHIGAN.

FLOUR-DRESSING REEL.

SPECIFICATION forming part of Letters Patent No. 684,480, dated October 15, 1901.

Application filed February 23, 1901. Serial No. 48,534. (No model.)

To all whom it may concern:

Be it known that we, EZRA BURR WAGNER and JOHN E. DAVISSEN, citizens of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented new and useful Improvements in Flour-Dressing Reels, of which the following is a specification.

Our invention relates to flour-dressing reels, the object being to provide a reel of simple and durable construction which will have both a reciprocating and rotary movement.

A distinguishing feature of the invention over the prior art is that we impart a longitudinal reciprocating movement to the supporting-shaft of the reel as well as to the reel-heads; and the invention consists in the improved mechanism hereinafter described for effecting this movement of the reel-shaft, and in other features of construction, which will be fully set forth in connection with the accompanying drawings, which form part of this specification, and defined in the appended claims.

In the drawings, Figure 1 is a view in perspective of a flour-dressing reel embodying the invention. Fig. 2 is a central longitudinal vertical section of the same. Fig. 3 is a transverse vertical section of the reel. Fig. 4 is a plan view of the feed end of the reel. Fig. 5 is a plan view of the discharge end thereof. Fig. 6 is an elevation of one of the frames forming part of the operating mechanism of the reel. Fig. 7 is an elevation of the driving sprocket-wheel of the shaft provided with a flexibly-secured hub for permitting the longitudinal movement of the shaft, and Fig. 8 is a detail sectional view showing the conical bearings of the vibrating frame.

The frame of the machine comprises corner posts or standards 1, connected by parallel longitudinal bars 2 and 3, braced together by one or more vertical braces 4 and transverse bars 5.

6 designates the end boards of the compartment within which the reel is mounted, connected by converging sides 7, which direct the flour passing through the bolting-cloth of the reel to suitable receiving-troughs 8, adapted to contain spiral conveyers. The

end boards 6 are formed with openings 9 and 10 for the passage of the reel-shaft 11, the ends of which extend beyond the boards 6, as clearly shown in Fig. 2.

At each end of the machine is arranged a vibratory frame comprising diverging arms 12, projecting from a horizontal shaft 13, and a yoke 14, the arms of which are formed with bearings 15 to receive journal-pins 16, which are formed with conical points to adapt them to fit corresponding sockets 17, projecting from opposite sides of bearing-sleeves 18, through which the ends of the shaft 11 extend.

Upon the discharge end of the shaft 11 is mounted a sprocket-wheel comprising a hub 19 and a rim 20, connected together by overlapping spring-arms 21, which are pivotally secured to the hub and rim, as clearly shown in Fig. 7. This sprocket-wheel is adapted to be connected by means of a sprocket-chain 22 with any suitable source of power, and the rim of said wheel is guided in its rotary movement by two pairs of antifriction-rollers 23, mounted upon bracket-arms 24, projecting from the adjacent end 6 of the machine. The spring connections between the hub 19 and the rim 20 of the wheel permit an endwise movement of the shaft 11 without affecting the rotation of the wheel, and said shaft is supported in its longitudinal movement by the vibrating frame, the conical bearings of which insure an easy vibration of the frame with little friction.

At the feed end of the machine is arranged a shaft 25, mounted in bracket-bearings 26, projecting from the end of the frame, and upon said shaft 25 is arranged an eccentric 27, within a journal-box 28, the said box being of greater width than the eccentric to extend beyond the sides thereof and prevent the undue waste of lubricant.

The journal-box 28 is formed with a socket 29 to receive one end of a screw-coupling 30, the opposite end of which extends within a socket 31 of a yoke 32, having a pivotal connection by means of conical pins 33 with one end of a sleeve 34, which latter serves as one of the bearings of the shaft 11. The sleeve 34 is also pivotally connected by means of conical bolts 35 with the upper end of the yoke-arms 14 of the adjacent vibrating frame.

The shaft 25 is provided with a driving-pulley 36, adapted to be connected with any suitable source of power.

The numerals 37 and 38 respectively designate the heads of the reel, supported upon the shaft 11 by means of longitudinal bars 39, secured to opposite sides of the shaft 11 by metallic strips 40 bent to zigzag form and bolted to the shaft 11 and to the parallel bars 39, as clearly shown in Fig. 2. Upon the bars 39 are also secured a plurality of rings 40^a, which, together with the peripheries of the heads 37 and 38, support the bolting-cloth of the reel. (Not shown.)

The head 37 of the reel is formed with a central opening through which projects a feed-spout 41, communicating with a chute 42, through which the material is introduced into the reel. The head 38 is also formed with a central opening through which extends a tubular discharge-cylinder 43, formed with an opening 44, communicating with the discharge-chute 45, having an outlet 46. To the inner side of the head 38 of the reel are secured a plurality of boxes or buckets adapted to take up material from within the reel and deliver it to the receiving-opening 44 of the discharge-cylinder 43.

The operation of the mechanism constructed as above described is as follows: The shaft 11 receives its rotary motion from any suitable source of power through the intermediacy of the sprocket-wheel and its belt 22. As the head 37 at the receiving end of the reel is fixed to the shaft 11 said head revolves around the feed-spout 41, said spout projecting well into the reel to deliver the flour thereto. The revolution of the shaft 25 causes the eccentric 27 to impart reciprocating longitudinal movement to the shaft 11, and as said shaft 25 is revolved at a much higher speed than the shaft 11 a sieving movement of the reel results. The vibrating frames, which support the bearings of the shaft 11, have a free pivotal movement at both their upper and lower ends and, as has been referred to hereinbefore, the flexible connections between the hub 19 and the sprocket-rim 20 permit of the longitudinal reciprocatory movement of the shaft 11. The receiving-troughs 8 are divided by a central partition and, as illustrated in Fig. 3, the flour may be directed into either of these troughs by the manipulation of suitable valves.

We claim—

1. In a flour-dressing reel the combination with a rotary shaft; of heads supported thereon and formed with central openings; a feed-spout extending through the opening in one of said heads; and means for simultaneously revolving said shaft and reciprocating it longitudinally, comprising a vibrating frame at each end of the reel; an eccentric coupled to one end of the reel-shaft; and a sprocket-wheel comprising a ring and hub connected together by flexible connections, said hub being formed with a central opening to receive the end of the reel-shaft.

2. In a flour-dressing reel, the combination with a revoluble shaft; of heads supported thereon, and formed with central openings; a feed-spout extending within one of said openings; and means for simultaneously revolving the reel-shaft and reciprocating it longitudinally comprising vibrating frames arranged one at either end of the reel, said frames being pivotally supported at their lower ends upon the machine-frame and having a pivotal connection with bearings of the reel-shaft by means of conical bolts; an eccentric mounted upon a shaft secured to the adjacent end of the reel-shaft by a yoke and conical pivots; and a sprocket-wheel comprising a hub formed with a central opening to receive the reel-shaft; a sprocket-rim; and flexible connections between said hub and rim.

3. In a flour-dressing reel, the combination with a rotary shaft; of heads arranged on said shaft; parallel bars connected to said heads; strips bent to zigzag form for securing said parallel bars to the reel-shaft; means for revolving said shaft comprising a sprocket-wheel consisting of a hub formed with a central opening to receive the shaft; a sprocket-rim, and flexible connections between said hub and rim; an eccentric coupled to one end of the reel-shaft; and a vibrating frame at either end of the shaft comprising diverging arms secured to the horizontal shaft; and a yoke having a pivotal connection with the bearing of the reel-shaft.

In testimony whereof we affix our signatures in presence of two witnesses.

EZRA BURR WAGNER.

JOHN E. DAVISSEN.

Witnesses:

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