

(No Model.)

A. WYKER.  
HOPPER FOR ROLLER FEED MILLS.

No. 553,092.

Patented Jan. 14, 1896.

fig. 3.

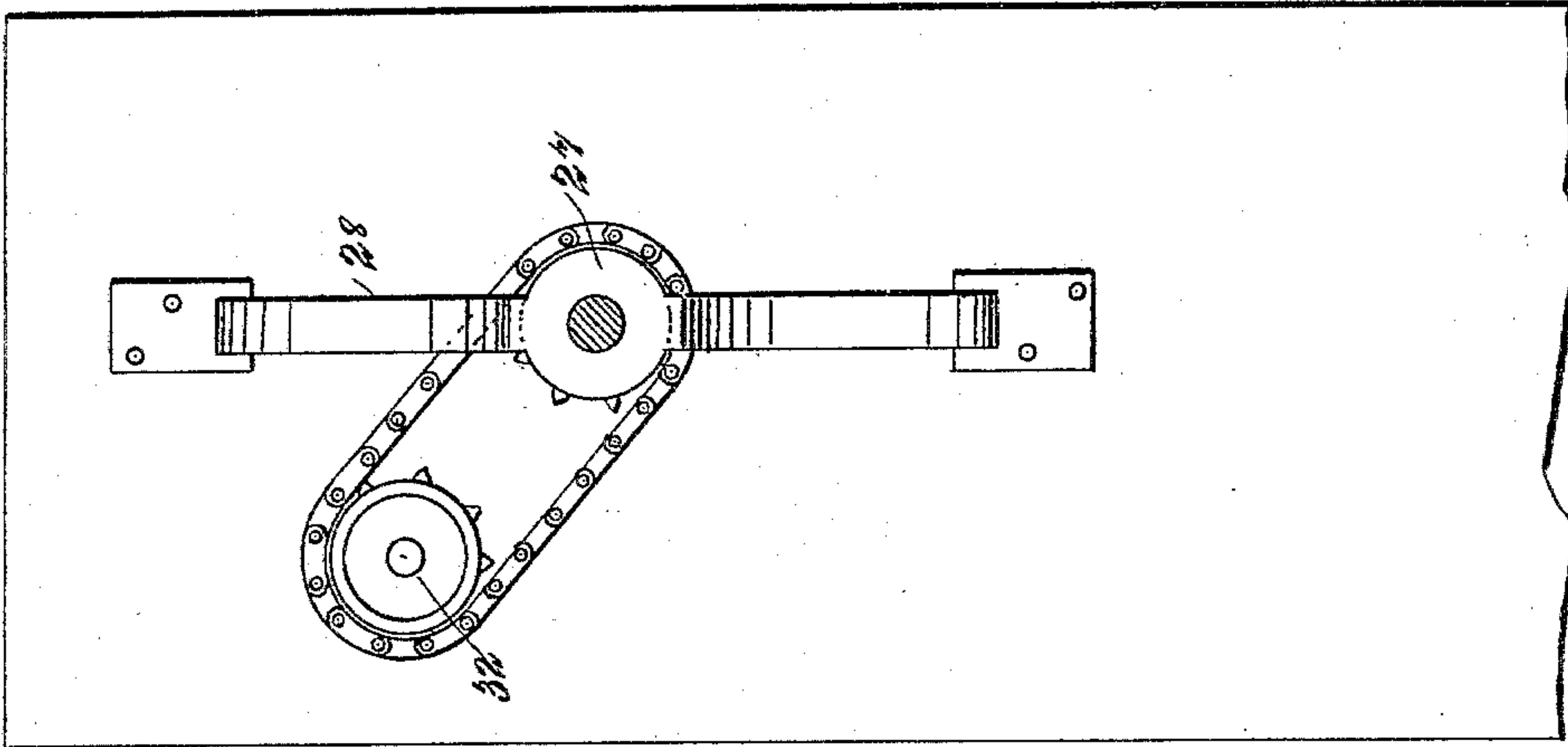


fig. 2

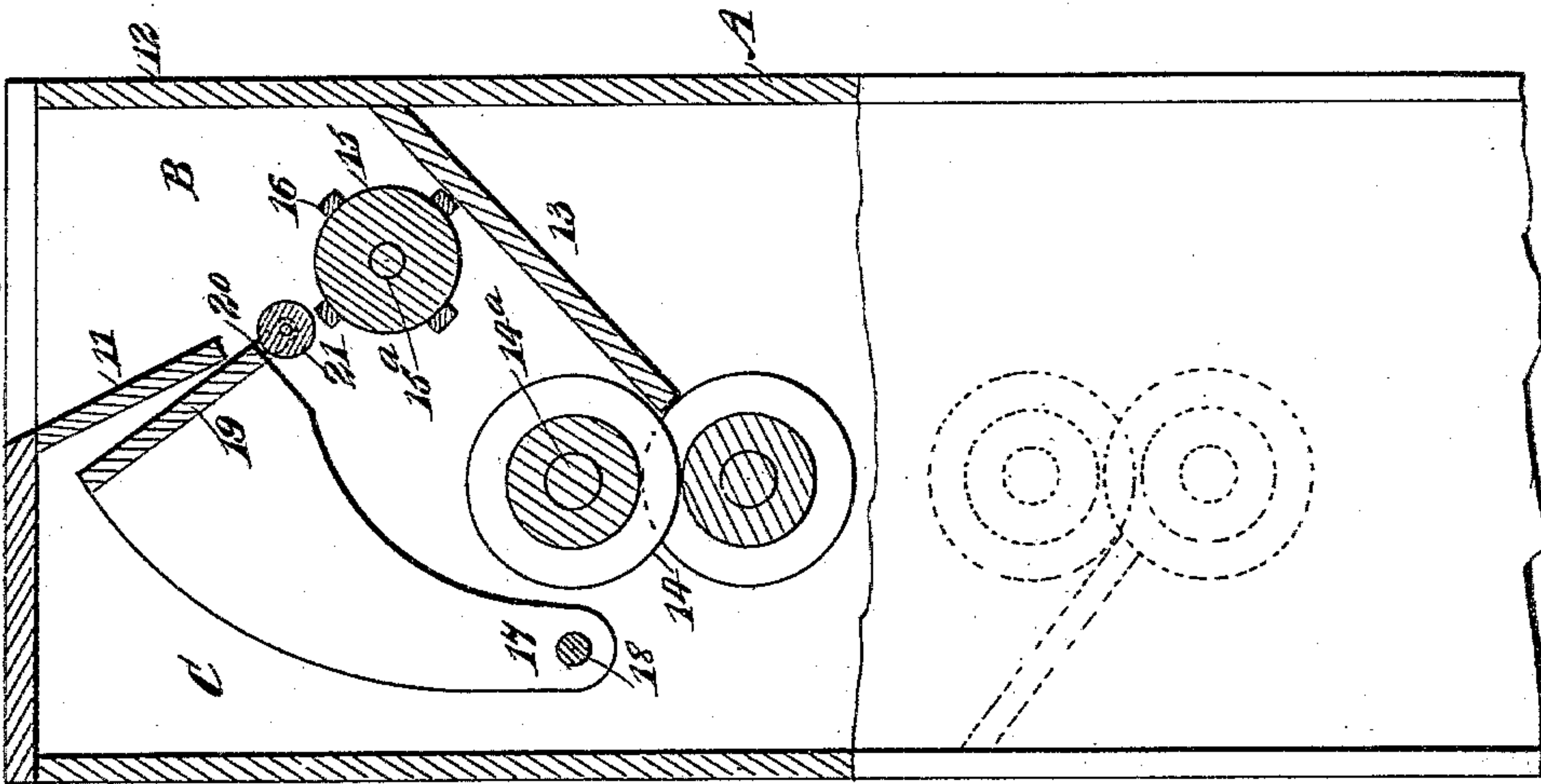
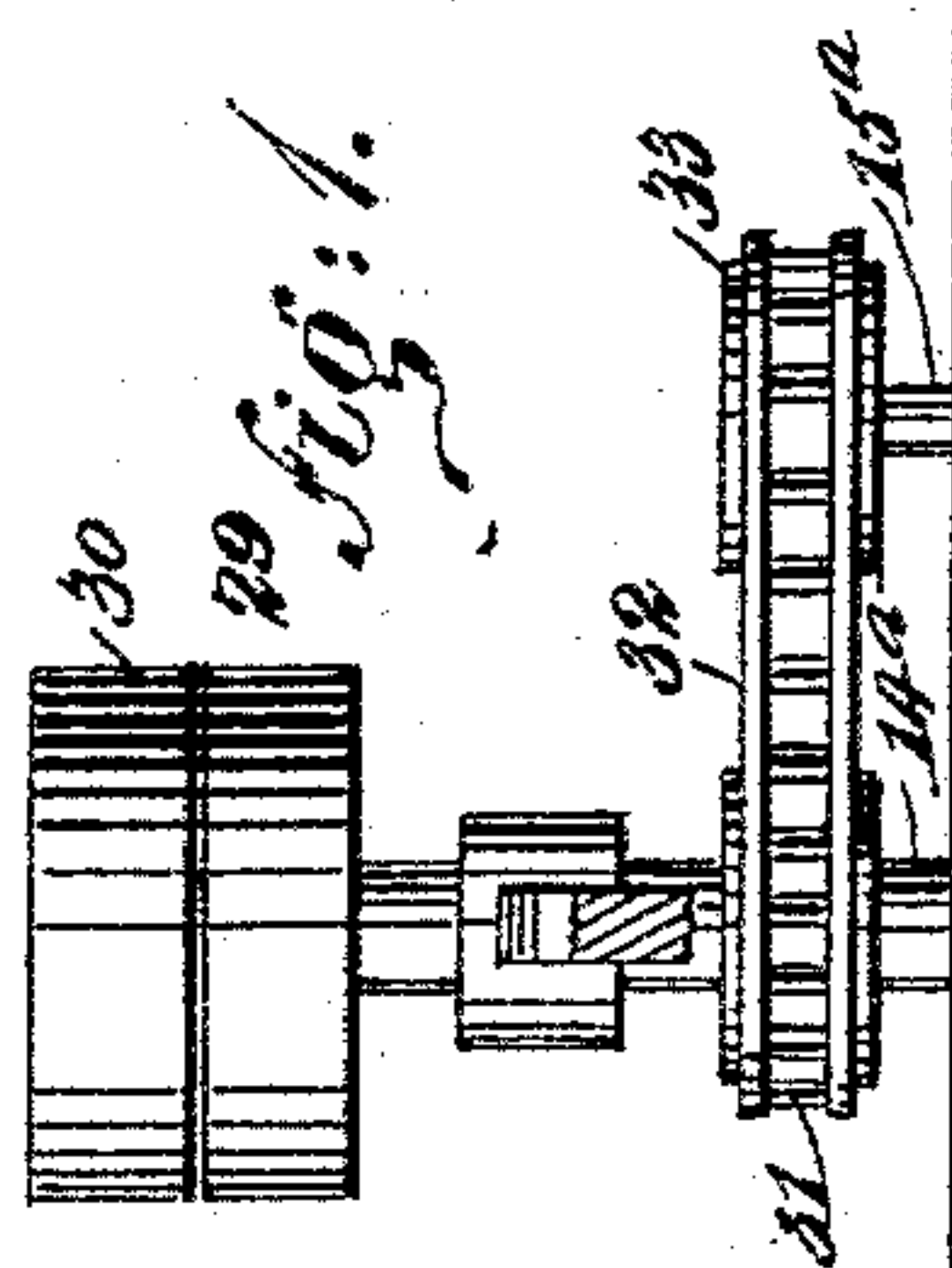
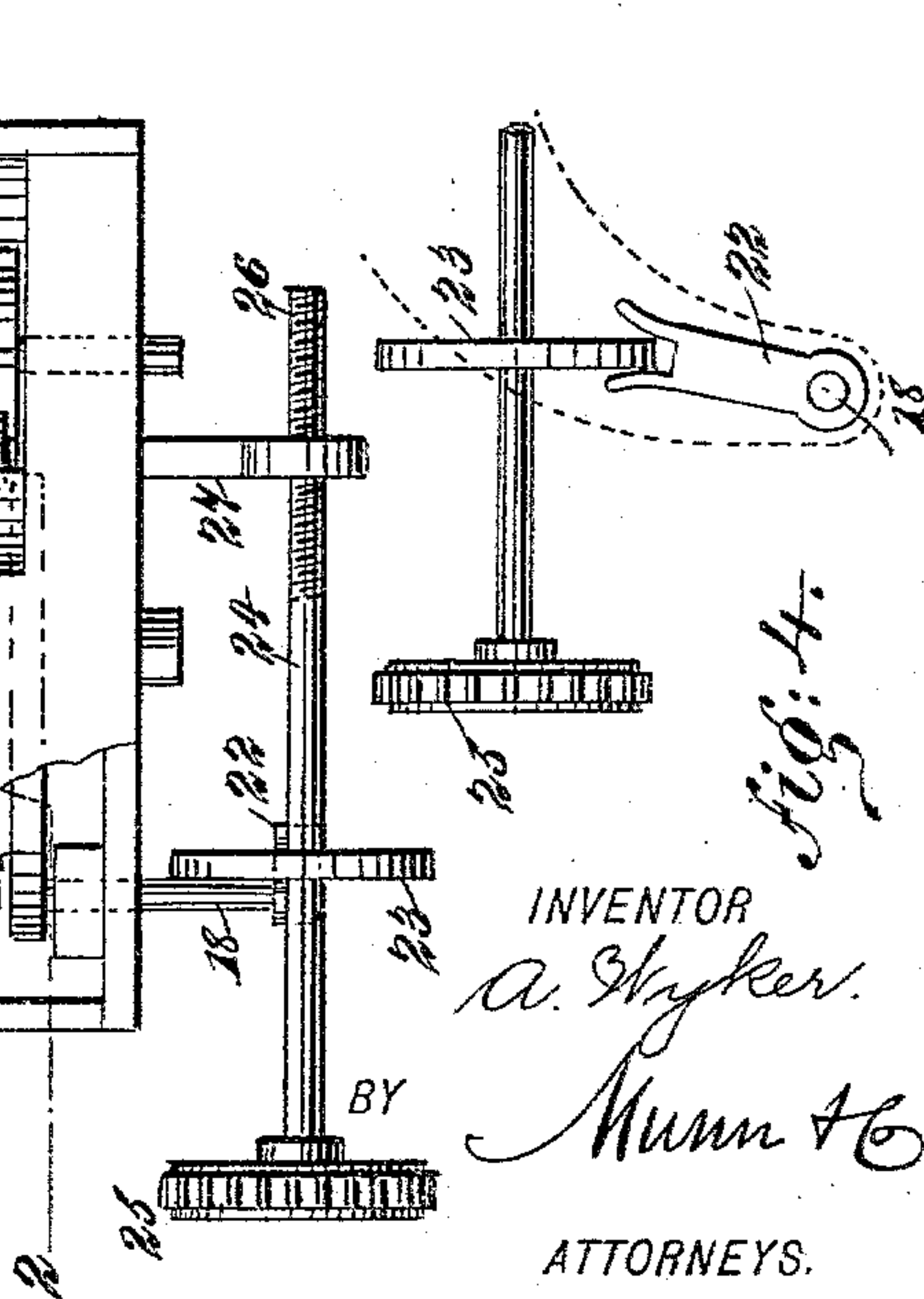
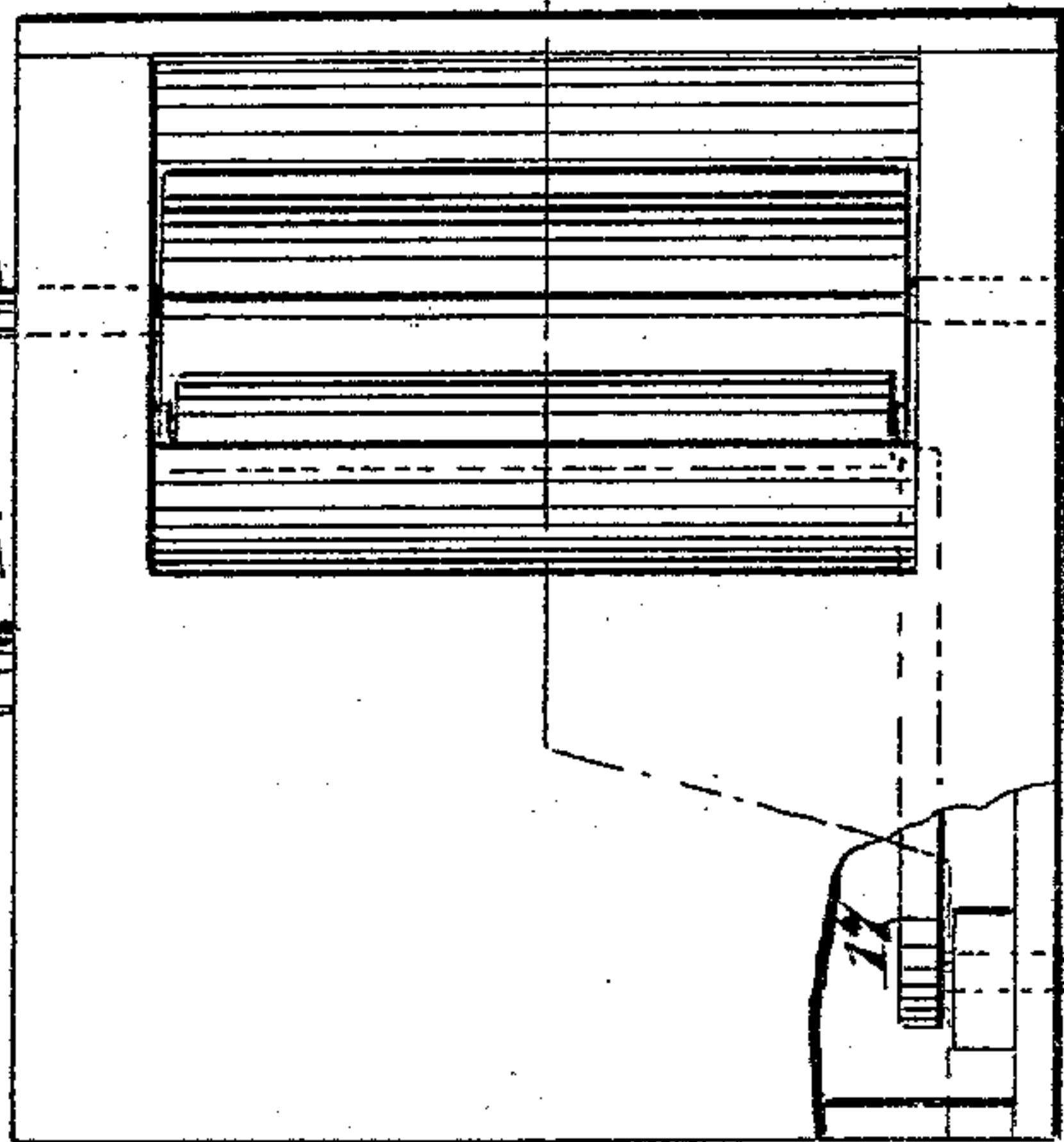


fig. 1.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ARTHUR WYKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND ERWIN W. MOYER, OF SAME PLACE.

## HOPPER FOR ROLLER FEED-MILLS.

SPECIFICATION forming part of Letters Patent No. 553,092, dated January 14, 1896.

Application filed October 3, 1895. Serial No. 564,505. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR WYKER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Hopper for Roller Feed-Mills, of which the following is a full, clear, and exact description.

My invention relates to an improvement in hoppers especially adapted for roller feed-mills and mills of like description, the hopper being so constructed as to regulate the supply of material to the rollers in the mill in a simple and economical manner.

The object of the invention is to so construct the feed mechanism that a regulating-roller will be provided capable of being expeditiously and conveniently adjusted to or from the feed-cylinder in such manner that the amount of material passing over the feed-cylinder to the rollers of the machine may be accurately regulated.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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 plan view of the upper portion of a feed-mill, illustrating the feed mechanism, portions of the mill and attachments being in section. Fig. 2 is a vertical section taken substantially on the line 2 2 of Fig. 1. Fig. 3 is a side elevation of the upper portion of the mill, and Fig. 4 is a detail view of the regulating device for the feed mechanism.

In carrying out the invention the body A of the mill may be of any desired formation, being shown in the drawings as somewhat rectangular in cross-section, and in the top of the body, near what may be termed the "rear wall," an opening 10 is made, in which the material is to be introduced, and from the front wall of this opening 10 a board 11 is downwardly and rearwardly extended, the distance between the board at its bottom and the rear wall of the mill being somewhat less than the distance between the top of the said board and the rear wall of the mill.

The rear wall 12 of the mill, together with

the inclined dividing-board 11, constitute the upper portion of a hopper B, and at the bottom of this hopper a directing-board 13 is secured to the rear wall of the mill, being inclined downwardly and forwardly to a point near the two upper rollers 14 of the mill and adapted to first receive the material to be operated upon. Above the lower directing-board 13, and practically in alignment with the bottom portion of the board 11 of the hopper, a feed-cylinder 15 is journaled in the bottom of the aforesaid hopper B. This cylinder is preferably secured upon a shaft 15<sup>a</sup>, which extends beyond one side of the machine a predetermined distance, and the cylinder is provided with longitudinal ribs 16 secured upon its face.

In connection with the feed-cylinder a regulating device C is employed, and this regulating device consists preferably of two side pieces 17, each side piece being secured at its lower end to a trunnion 18 journaled in the sides of the body A of the machine, preferably in front of the uppermost of the rollers 14. Each side piece 17 of the regulating device is upwardly and rearwardly curved, the two side pieces being connected by a cross-bar 19, the said bar being given an inclination substantially like that of the upper forward board 11 of the hopper B. The connecting bar or plate 19 is preferably made of a width corresponding to the sides 17 of the regulating device, and the said plate or cross-bar extends downward a sufficient distance, or is provided with downwardly-extending bearings 20 to constitute journals for the trunnions of a regulating-roller 21, and this roller is located over the feed-cylinder 15, practically filling up the space between the said feed-cylinder and the under edge of the connecting bar or plate of the regulating device, while the cylinder 15 is made to somewhat closely approach the bottom or directing board 13 of the hopper.

According to the adjustment of the regulating-roller 21 to and from the feed-cylinder the material contained in the hopper B will be fed in greater or less amounts to the rollers 14. The adjustment of the regulating device is accomplished by causing, for example, the right-hand trunnion 18 of the side bars or



arms of the device to be carried a predetermined distance beyond the outer face of the casing, and this extended trunnion is provided with an arm 22 attached thereto, which  
5 may be termed a "crank-arm," and the said arm is bifurcated or recessed at its upper end.

The bifurcated or recessed portion of the adjusting-arm 22 receives a disk 23, which is secured to a shaft 24, the said shaft being  
10 preferably provided with a hand-wheel 25 or its equivalent at its forward end, and the shaft at its rear end is threaded, as shown at 26 in the drawings, being made to pass through a correspondingly-threaded orifice or aper-  
15 ture made in a bearing 27 horizontally projected from the right-hand side of the machine. It is therefore evident that by turning the shaft 24 in one or the other direction the regulating device will be made to approach  
20 or will be carried away from the feed-cylinder 15, thereby increasing or diminishing the space between the working surface of the cylinder and that of the regulating-roller 21.

The shaft 14<sup>a</sup>, upon which the upper roller  
25 14 is secured, is preferably made to extend some distance beyond the left-hand side of the body of the machine and is journaled in the bearing 27 secured to the left-hand side of the body of the machine by preferably upwardly  
30 and downwardly extending arms or brackets 28. Ordinarily a fast pulley 29, together with a loose pulley 30, is carried by the extended end of the shaft 14<sup>a</sup>, as is also a sprocket-wheel 31,  
35 the latter being located preferably within the line of the bearing 27, as shown in Fig. 1, and this sprocket-wheel is connected by a link-belt 32 with a second sprocket-wheel 33, secured upon the left-hand projecting end of the feed-cylinder 15, from which it will be ob-  
40 served that the feed-cylinder is driven from the spindle or shaft of the upper roller 14.

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

45 1. In a mill for the purpose described, a hopper, rollers located at the bottom portion of the hopper, and a directing board forming a section of the hopper bottom and leading to said rollers, a feed cylinder located within the  
50 hopper above the directing board, and a regulating roller located above the feed cylinder, having adjustment to and from the same, substantially as shown and described.

2. In a mill, a hopper, rollers located at the bottom portion of the hopper, a directing board  
55 constituting a portion of the bottom of the hopper and leading to the said rollers, a cylinder adapted to feed material to the rollers and located above the directing board and above the plane of the rollers, a regulating roller  
60 capable of movement to and from the feed cylinder, being placed above the same and between the said cylinder and the lower end of the hopper at one of its sides, and an ad-  
65 justing device connected with the supports for the said regulating roller, as and for the purpose specified.

3. In a mill, a casing or body provided with a hopper, rollers at one side of the said hopper, a directing board constituting a bottom  
70 portion of the hopper and having a downward inclination, serving to direct material to the said rollers, the cylinder being provided with peripheral ribs, a regulating device consisting of pivotally connected arms, a connecting  
75 bar uniting the arms and having substantially the same inclination as that of the hopper, a regulating roller carried by the regulating device, being adjacent to its upper end and over the feed cylinder, and a regulating shaft con-  
80 nected with the aforesaid regulating device, operated from the exterior of the machine, as and for the purpose specified.

4. In a mill for grinding or separating material, a hopper, rollers adapted to receive the  
85 material, located adjacent to the bottom of the hopper, the said bottom being inclined, a feed cylinder journaled in the bottom portion of the hopper, removed from and in a plane higher than the aforesaid rollers, a  
90 frame pivoted in the body of the machine, extending upwardly from its pivot point in direction of the inclined surface of the hopper, a regulating roller carried by the regulating device and located above the feed cyl-  
95 inder, the said feed cylinder and regulating roller serving to retard the material in its passage from the hopper proper to the said rollers, a regulating shaft connected with the regulating device, and a driving connection  
100 between the roller and the feed cylinder, as and for the purpose specified.

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Witnesses:

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