

(No Model.)

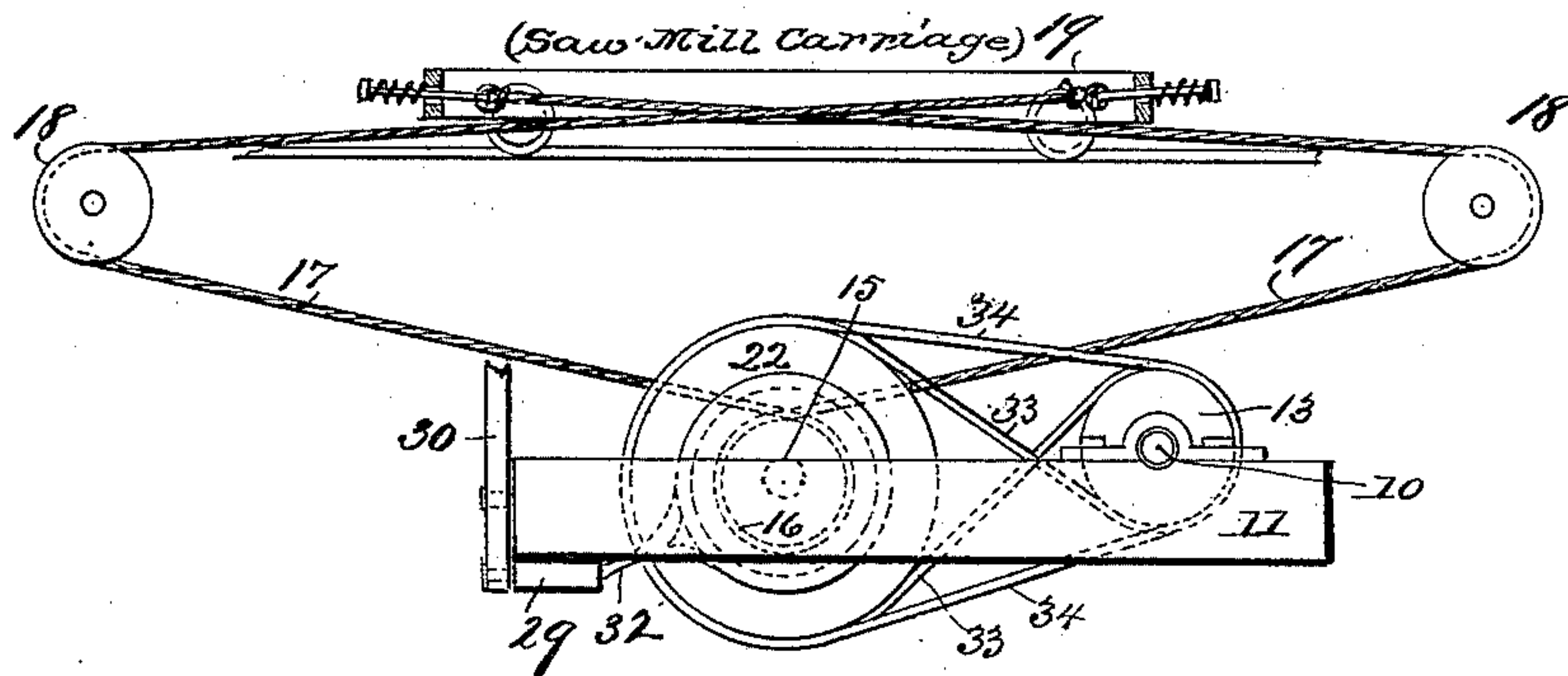
2 Sheets—Sheet 1.

S. J. WHITE.  
REVERSING GEAR.

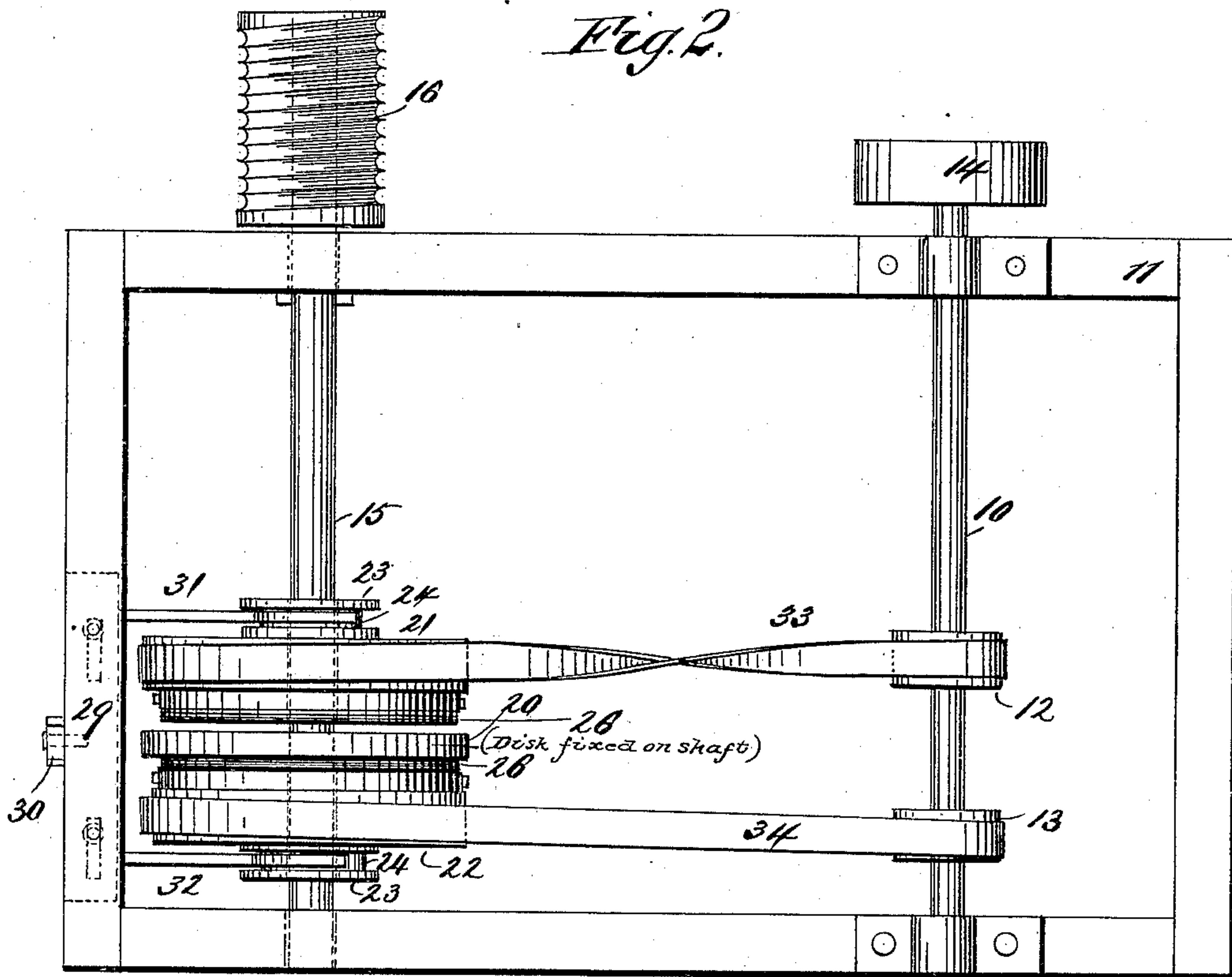
No. 397,676.

Patented Feb. 12, 1889.

*Fig. 1.*



*Fig. 2.*



WITNESSES:

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*S. J. White*

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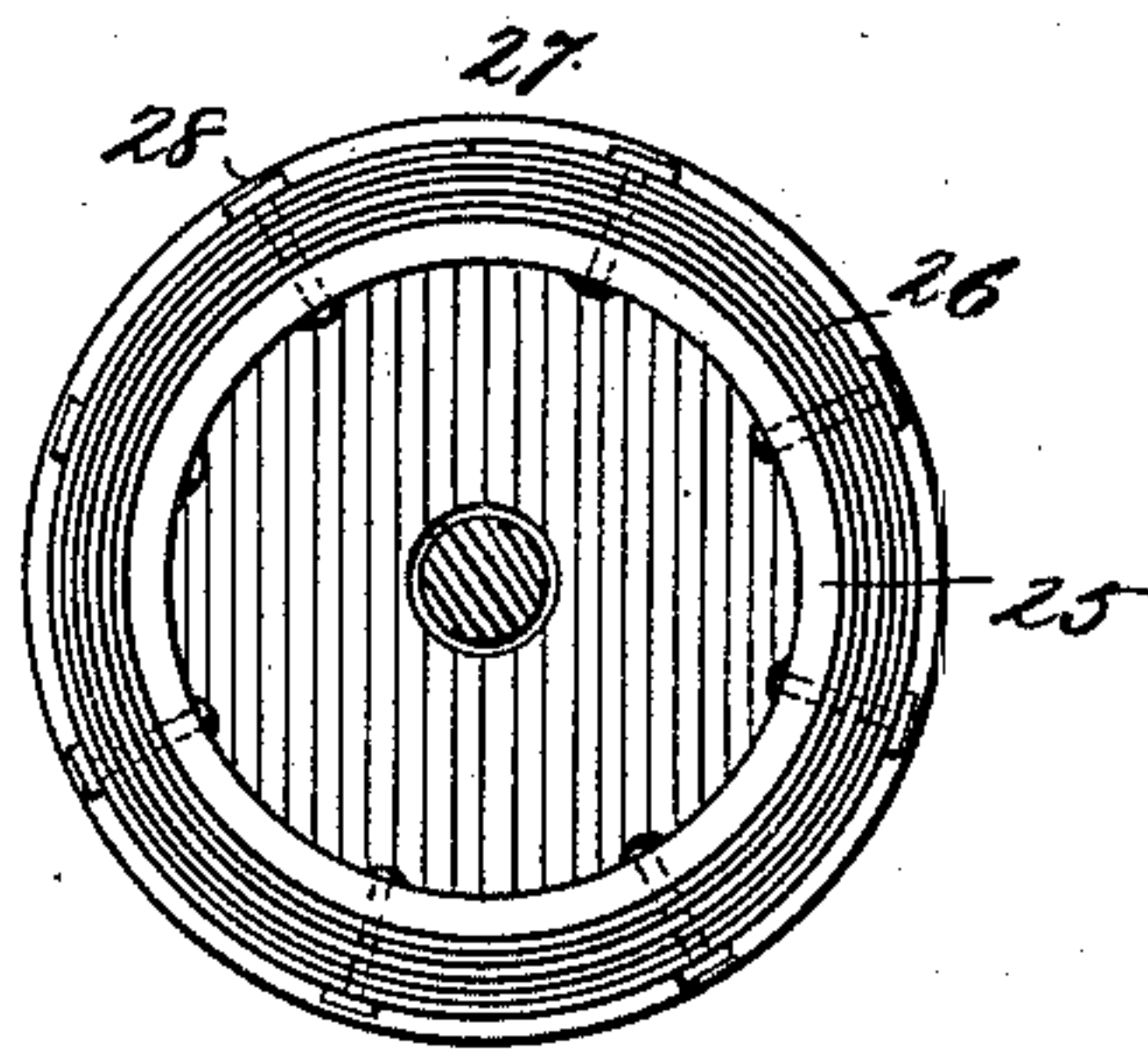
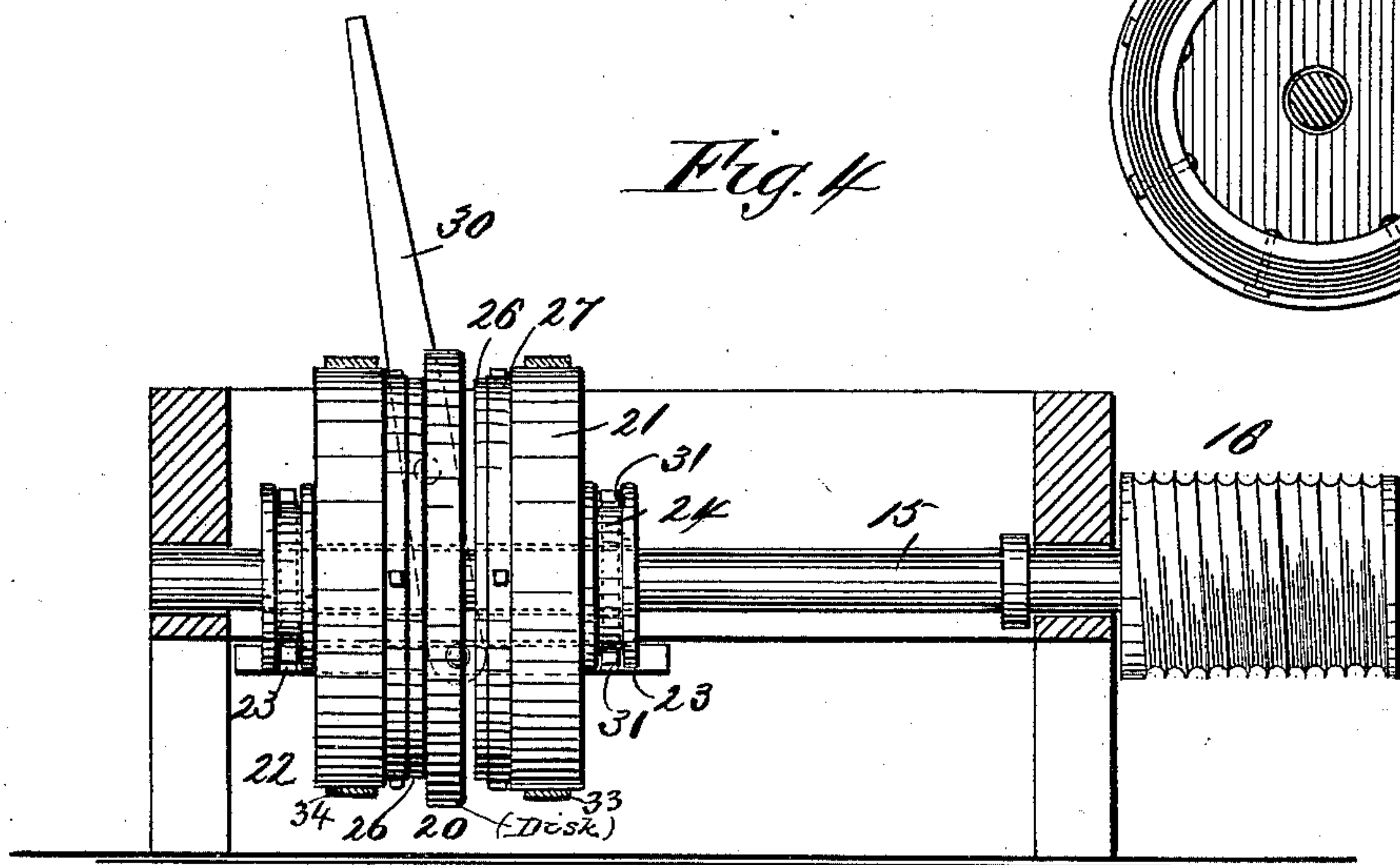
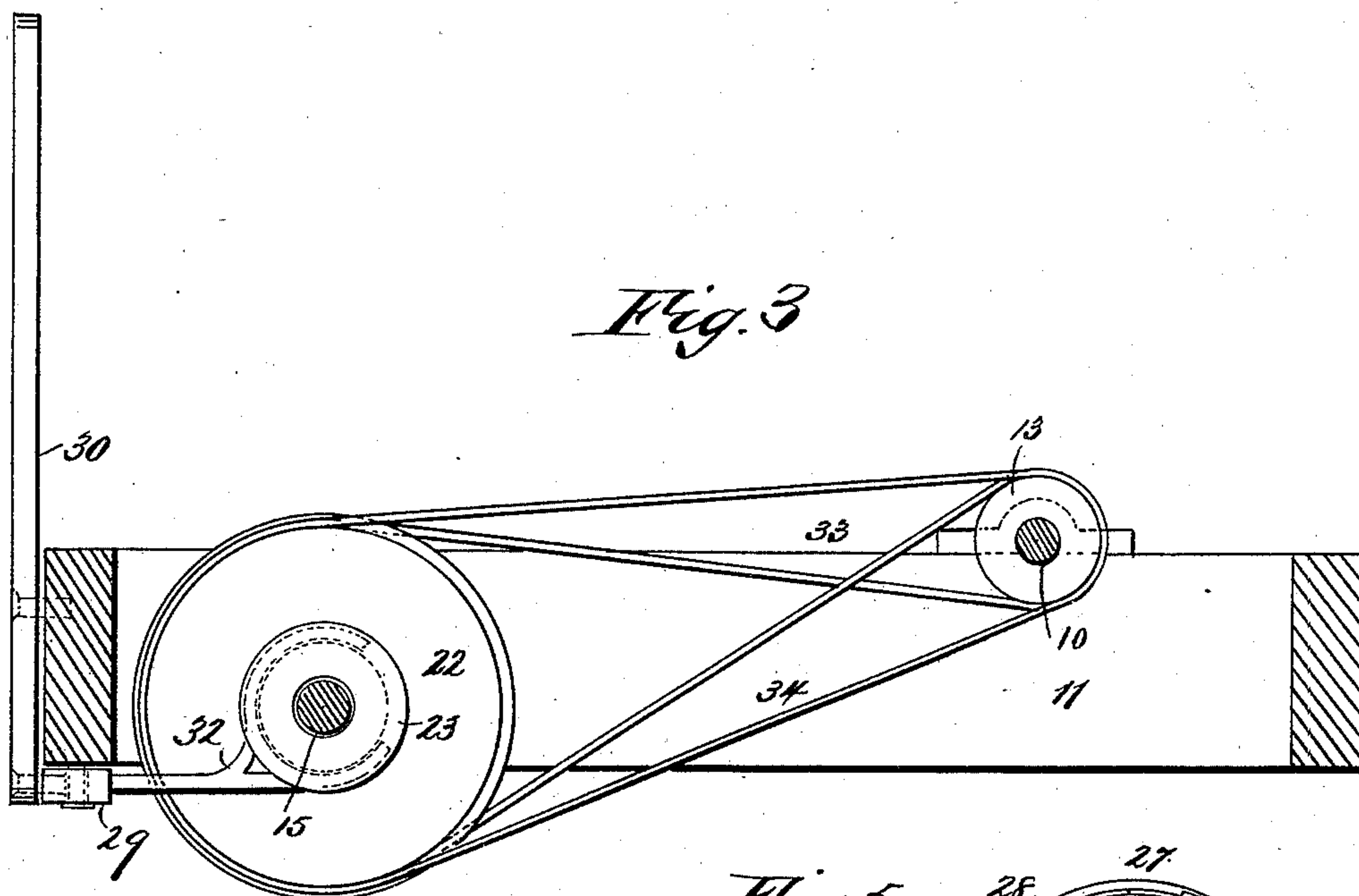
*Munn & Co*

ATTORNEYS.

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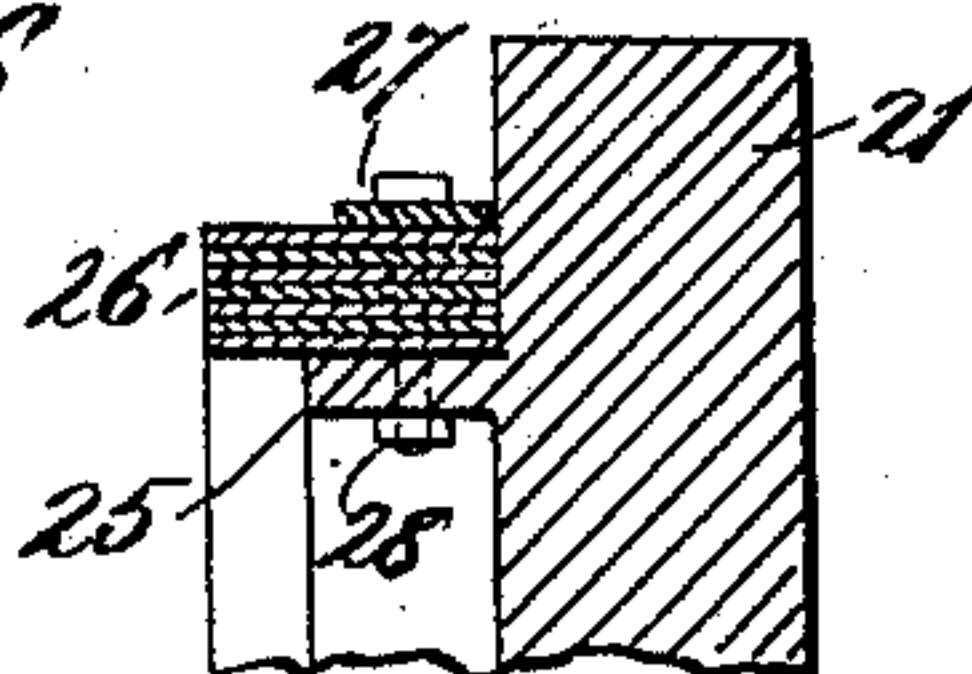
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*Fig. 6*



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ATTORNEYS.



# UNITED STATES PATENT OFFICE.

SAMUEL J. WHITE, OF BEARDEN, ARKANSAS.

## REVERSING-GEAR.

SPECIFICATION forming part of Letters Patent No. 397,676, dated February 12, 1889.

Application filed May 16, 1888. Serial No. 274,048. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL J. WHITE, of Bearden, in the county of Ouachita and State of Arkansas, have invented a new and useful Improvement in Reversing-Gear, of which the following is a full, clear, and exact description.

My invention relates to an improvement in reversing-gears, and has for its object to provide a simple, economical, and readily-manipulated device adapted for use in connection with saw-mill feeds or other mechanism to be reciprocated, such as log-jacks, log-turners, clutches, cut-off saws, shingle-saws, rip-saws, and hoisting and other machinery used in mills, factories, or elsewhere.

The invention consists in the 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 figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the device, illustrating the application of the same to a saw-mill carriage. Fig. 2 is a plan view of the device. Fig. 3 is a longitudinal vertical section. Fig. 4 is a transverse section. Fig. 5 is a side elevation of one of the friction drums or pulleys, and Fig. 6 is a partial vertical section through the same.

In carrying out the invention the drive-shaft 10 is represented as journaled in a rectangular frame, 11, the said shaft being provided with suitable driving-pulleys, 12, 13, and 14, as best shown in Fig. 2. Transversely in the said frame a counter-shaft, 15, is journaled, which counter-shaft in this instance is parallel with the main shaft 10.

To one extended end of the counter-shaft 15 a spool, 16, is secured, around which spool the rope 17 is adapted to be wound in any suitable or approved manner, which rope is carried over spaced and aligning pulleys 18 to a spring-connection with opposite sides of the saw-mill carriage 19, as best illustrated in Fig. 1. I desire it, however, distinctly understood that I do not restrict myself to the application of this device to a saw-mill carriage, as above set forth, having selected the same simply as an illustration of the application of my invention.

At a suitable point in the length of the counter-shaft 15 a metal disk, 20, is rigidly secured. At each side of said disk a friction pulley or drum, 21 and 22, is loosely mounted upon the said shaft 15, which pulleys are provided upon their outer faces with a hub, 23, having a peripheral groove, 24, produced therein. Parallel arms 31 and 32 engage these grooves, and are rigidly attached to a sliding bar, 29, Figs. 1 and 2, which is shifted by a pivoted lever, 30, for throwing one pulley or the other into frictional contact with the disk 20. The said pulleys 21 and 22 are each provided upon their inner faces with an annular flange, 25, as best shown in Figs. 5 and 6, which flange is preferably located between the center and the periphery.

The flange 25 is surrounded upon its outer surface with a ring, 26, of paper, of greater width than said flange, which ring is secured to the flange by a divided metal ring, 27, of less width than the paper ring, and bolts 28, passing through the flange and rings, as best shown in Fig. 6. The ring 26 may be made of one solid piece of paper, leather, or other equivalent material or a series of strips glued or otherwise attached one to the other.

To the under side of the frame opposite the several friction pulleys or drums, a bar, 29, is held to slide, which bar is reciprocated through the medium of a shifting-lever, 30, pivoted to the side of the frame and connected to the outer edge of the bar 29. From the inner face or edge of the said bar 29 bifurcated arms 31 and 32 are projected inwardly, which arms are adapted to enter the groove 24 of the hubs 23 of the two friction-drums, as best shown in Fig. 2, whereby in the manipulation of the lever 30 either of the said friction-drums may be brought in contact with the disk 20, as may be desired.

The drum 21 and the pulley 12 upon the main shaft are connected by a cross-belt, 33, the friction drum or pulley 22 and the pulley 13 upon the said main shaft being united by a straight belt, 34, whereby the two friction drums or pulleys are reversely rotated from the main shaft 10. It is evident from the construction of the shifting-lever and the attached bar 29 that when one friction drum or pulley is brought in contact with the disk the other is carried out of contact. In order that



the friction drums or rollers will not come in contact with the disk when the machine is running idly, the two pulleys 12 and 13 are fixed upon the main shaft so as to be a little  
5 out of alignment with the friction-pulleys.

From the foregoing description, read in connection with the drawings, it will be readily understood that by manipulating the lever 30 the spool 16 may be made to turn either  
10 to the right or to the left, thereby reversing the direction of the carriage 19, carrying it in the same direction as the spool.

It is apparent that the shaft 10, the pulleys thereon, and the connecting-bolts are not essential to the feed, the invention being confined  
15 to the arrangement illustrated best in Fig. 4. The spool 16 may, if desired, be placed inside instead of outside of the frame.

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

1. The combination, with the metal disk 20, having flat sides, of a shifting pulley arranged parallel thereto and provided with a later-

ally-projecting annular flange, 25, and the  
friction-ring 26, made of soft material and se-  
cured to and projecting laterally beyond the  
said flange, whereby it is adapted to bear  
against the side of the disk when the pulley  
is shifted toward the latter, as shown and de-  
scribed. 30

2. The combination of the frame 11, main shaft 10, the counter-shaft 15, the metal disk 20, rigidly secured upon the latter, friction-  
drums mounted loosely on the counter-shaft 35 and having peripherally-grooved hubs 23, the parallel arms 31 32, shifting-bar 29, and lever 30, the open belt 34, crossed belt 33, and a spirally-grooved spool, 16, on one end of the counter-shaft, the pulleys 18, and a rope, 17, 40 wound on said spool, and the shifting carriage 19, with which the rope is connected, all as shown and described.

SAMUEL J. WHITE.

Witnesses:

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JOHN BELAND.