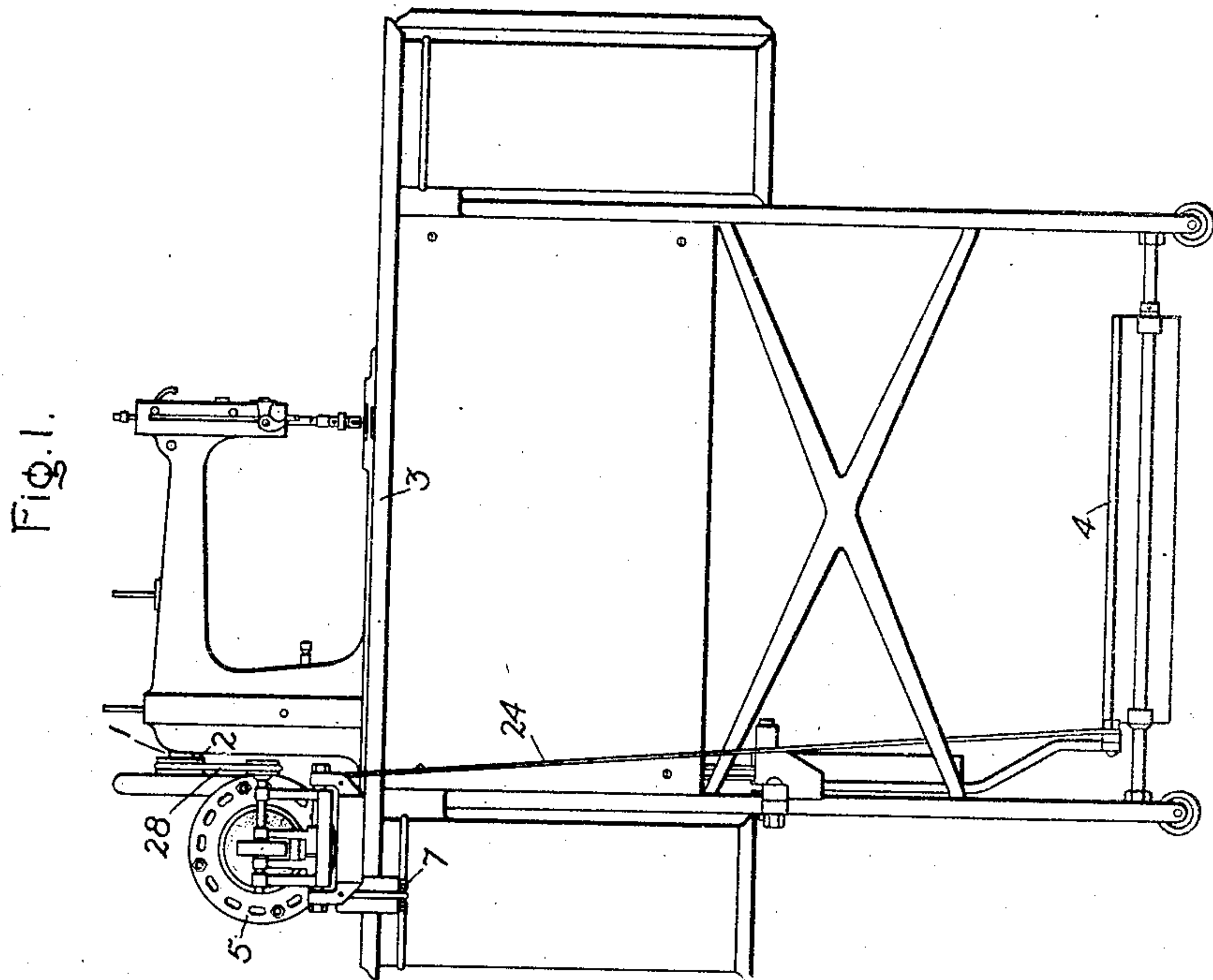
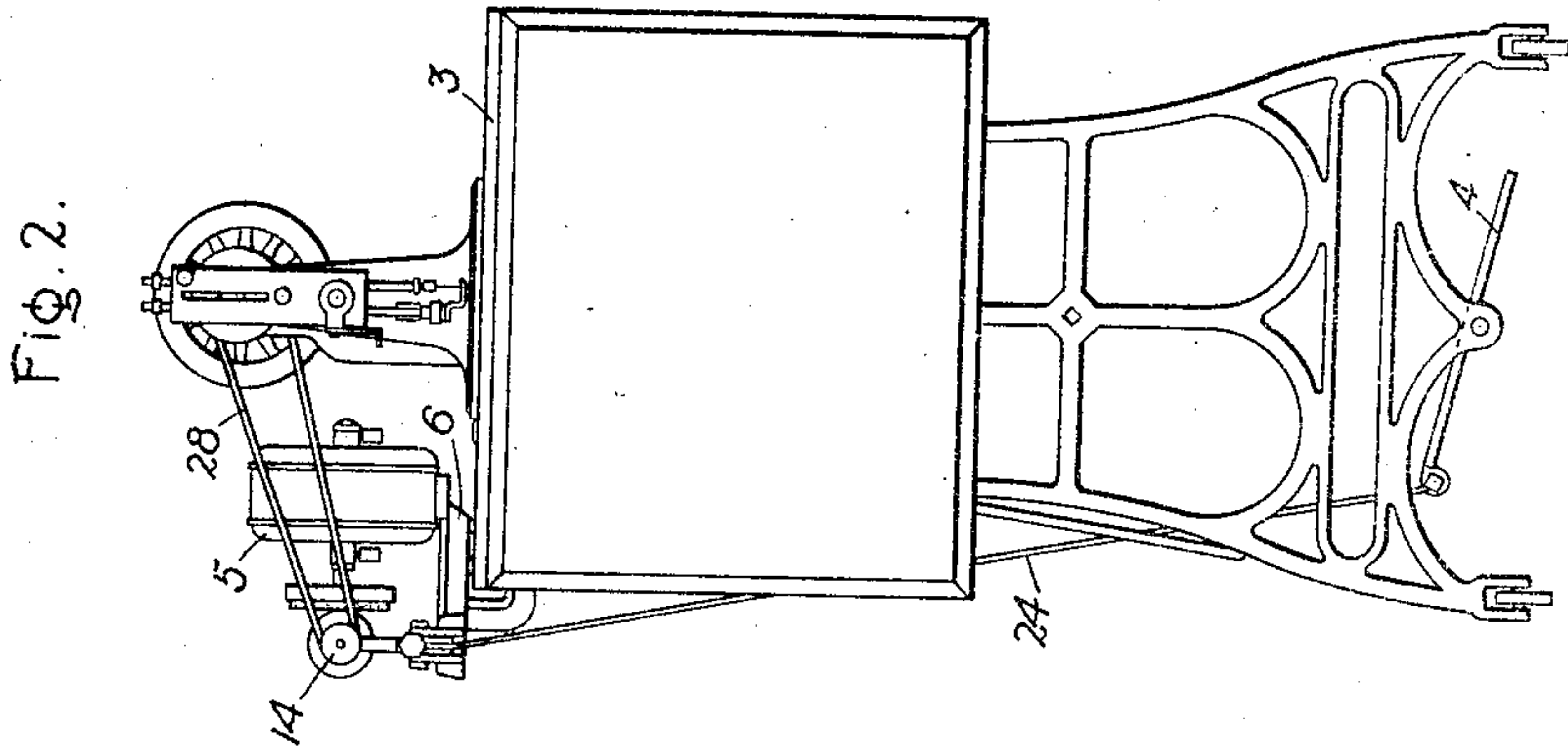


No. 890,739.

PATENTED JUNE 16, 1908.

H. R. WELLMAN.
DRIVING MECHANISM.
APPLICATION FILED APR. 29, 1905.

3 SHEETS—SHEET 1.



Witnesses.

Harry H. Tilden
Helen Oxford

Inventor.

Harold R. Wellman.
by *Albert S. Davis*
Att'y

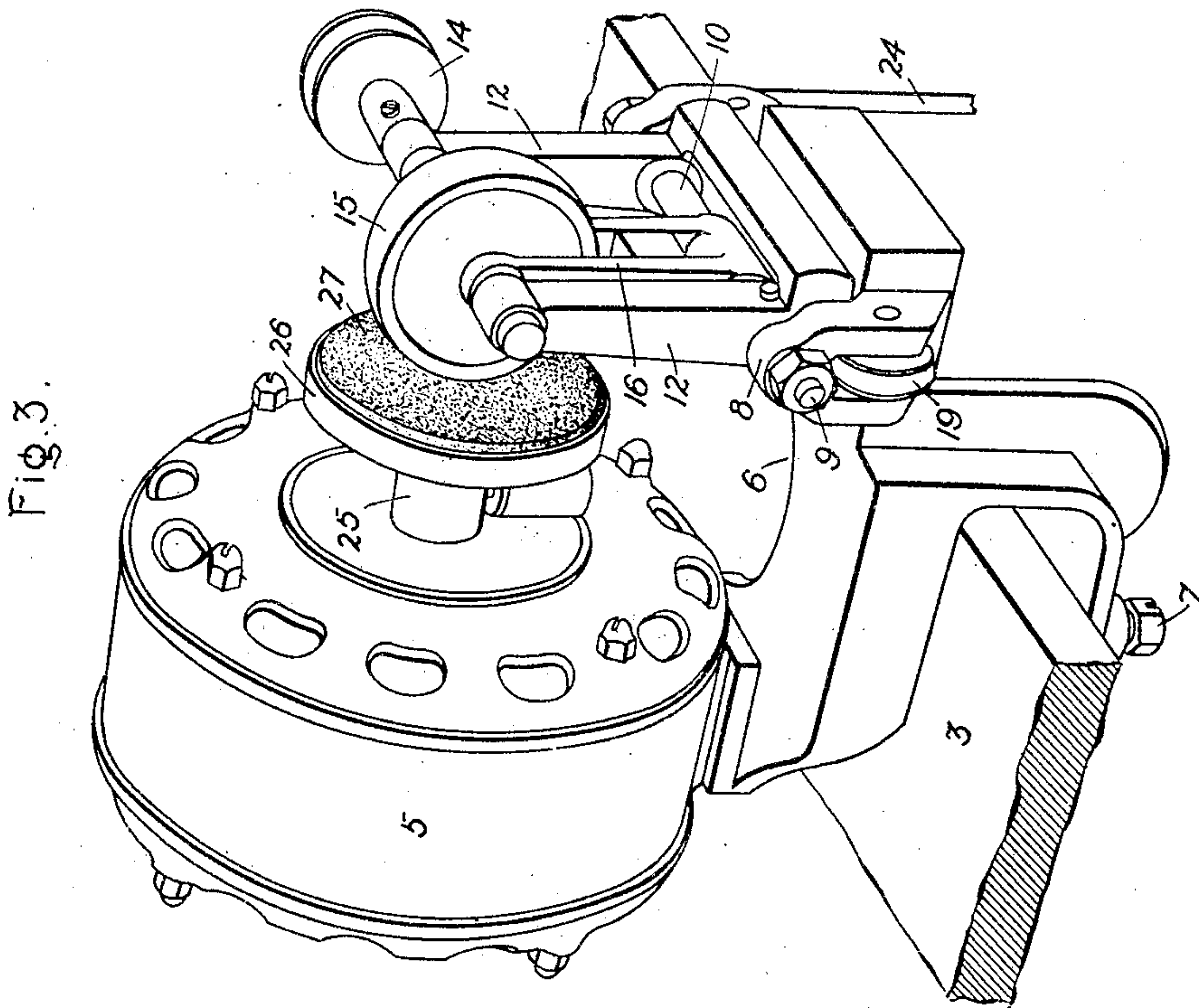
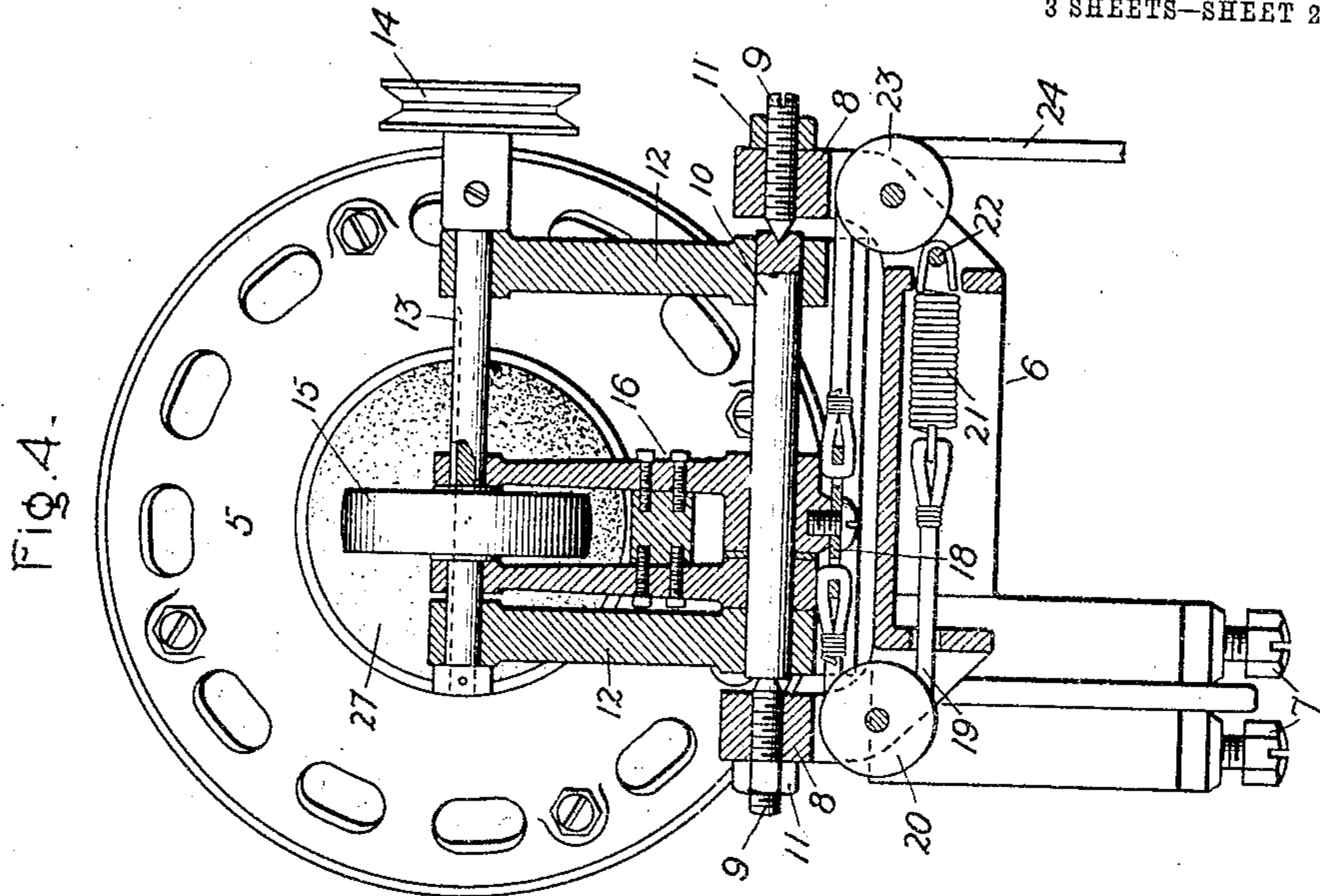
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3 SHEETS—SHEET 2.



Witnesses.

Harry W. Tilden
Helen Oxford

Inventor.

Harold R. Wellman.

by Albert S. Davis
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3 SHEETS—SHEET 3.

Fig. 5.

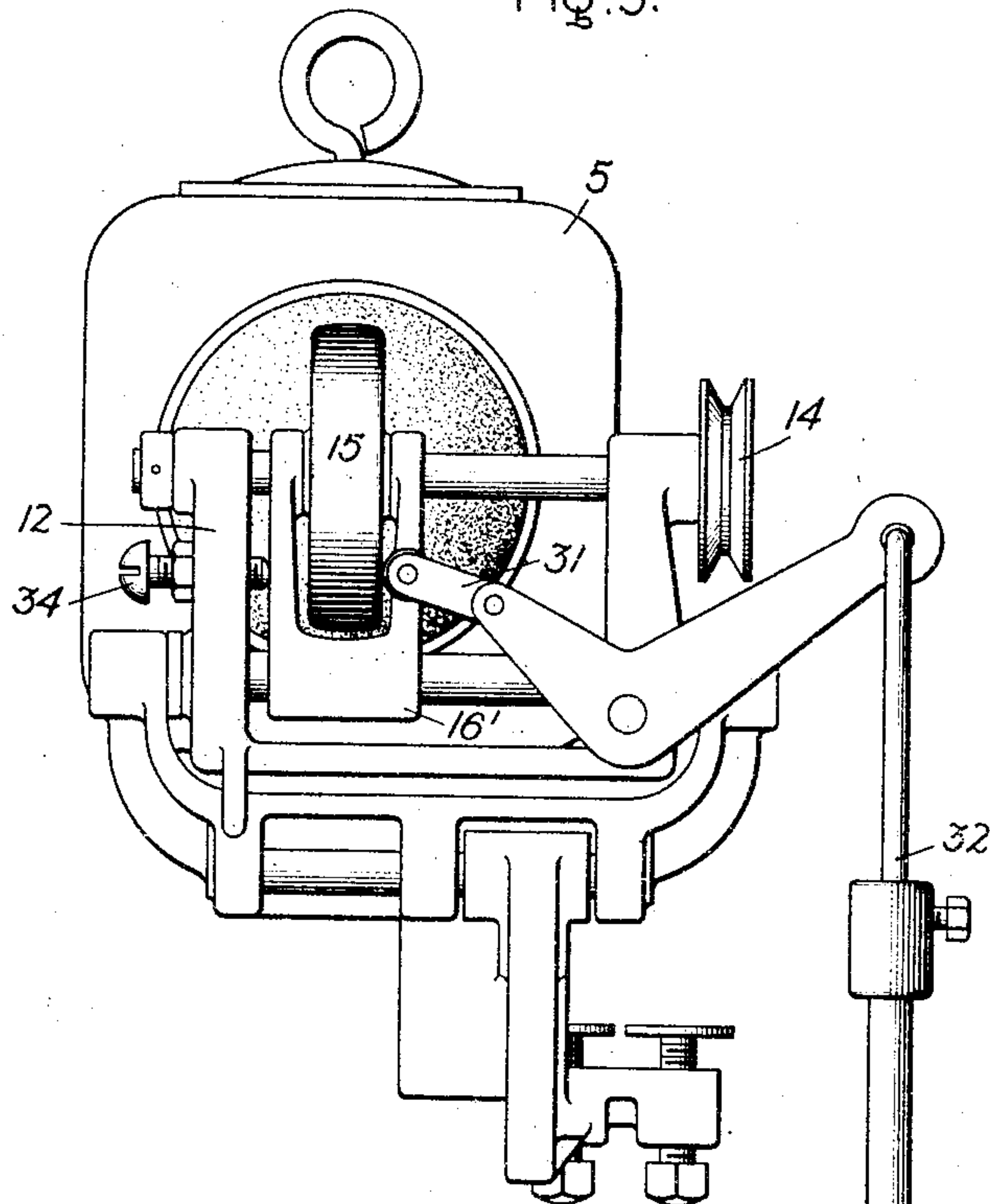
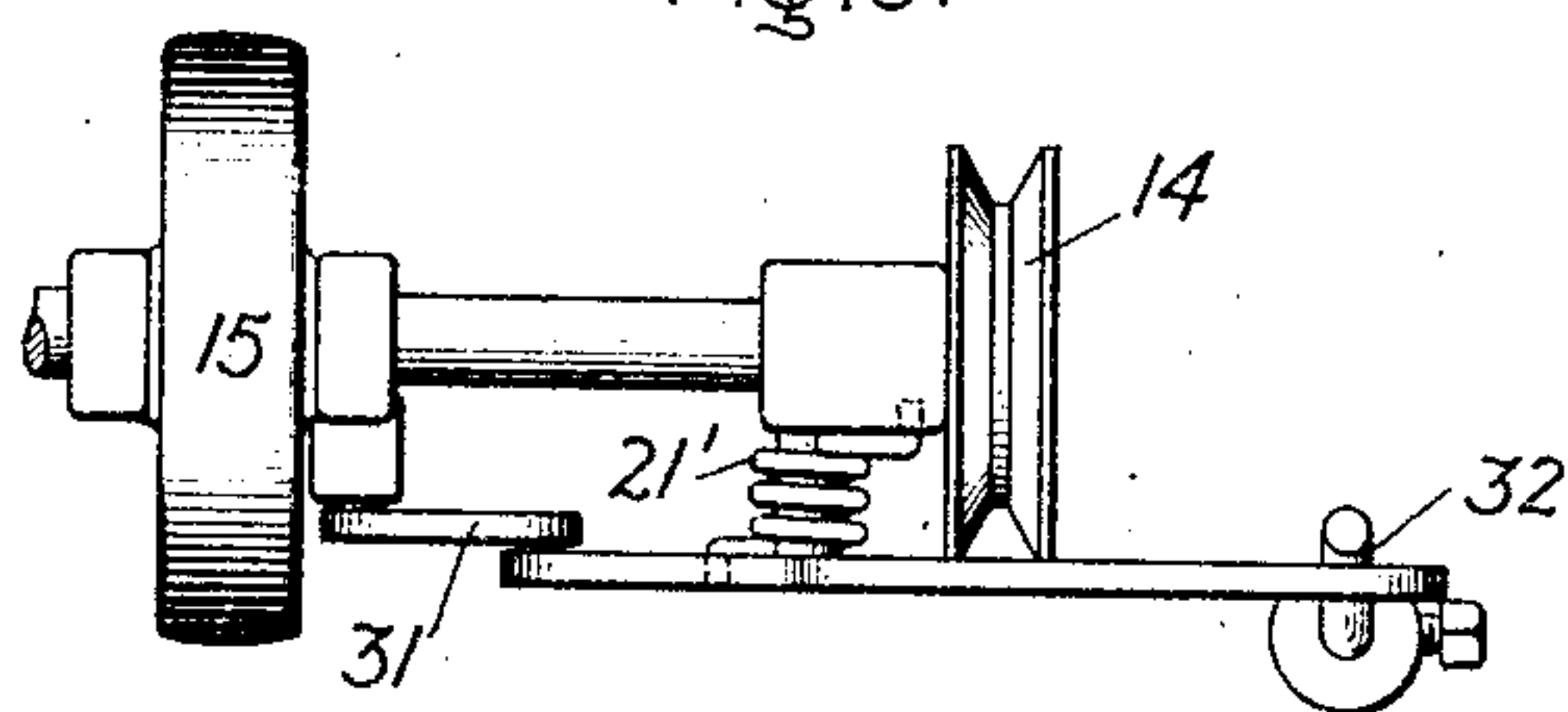


Fig. 6.



Witnesses.

Harry H. Tilden
Helen Orford

Inventor.

Harold R. Wellman.

by *Albert H. Davis*
Att'y

UNITED STATES PATENT OFFICE.

HAROLD R. WELLMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO GENERAL INCANDESCENT ARC LIGHT COMPANY, A CORPORATION OF NEW YORK.

DRIVING MECHANISM.

No. 890,739.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed April 29, 1905. Serial No. 258,096.

To all whom it may concern:

Be it known that I, HAROLD R. WELLMAN, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Driving Mechanisms, of which the following is a specification.

My present invention relates to driving mechanisms, and more particularly to the means for transmitting power from a driving motor to a driven machine, such as a sewing machine.

The various features of novelty which characterize my invention are pointed out with particularity in the claims annexed to and forming a part of this specification. For a better understanding of my invention, however, reference may be had to the accompanying drawings and descriptive matter in which I have illustrated and described various forms of my invention.

Of the drawings, Figure 1 is a side elevation of an electrically driven sewing machine embodying my invention; Fig. 2 is an end elevation of the machine shown in Fig. 1; Fig. 3 is a perspective view showing the motor and a portion of the power transmitting device; Fig. 4 is an end elevation of the construction shown in Fig. 3 with parts broken away and in section; Fig. 5 is an end elevation of a modified form of power transmitting device; and Fig. 6 is a modification of the construction shown in Fig. 5.

Referring to the drawings, Figs. 1 and 2 show in conventional form a sewing machine provided with a main spindle or shaft 1 carrying a pulley 2, platform 3, and treadle 4. An electric motor 5 of any suitable type is secured to the sewing machine frame work in any suitable manner as by means of a bracket 6 and clamping screws 7. The bracket 6 may be formed integrally with the motor frame or may be detachably secured thereto. In either case it may be regarded as a part of the motor frame. A threaded passage is formed in each of a pair of similar ears 8 projecting from the bracket 6 (see Figs. 3 and 4). Screws 9 are threaded in the passages formed in the ears. The inner ends of the screws 9 which are in line with each other are conical and form pivotal supports for a member 10 which may be in the form of a rod or shaft as shown. By adjusting the screws 9 the member 10 may be adjusted in the direction of its length if necessary. Locking nuts

11 are employed to lock the screws in fixed relation to the projections 8.

A pair of arms 12 are secured to the member 10, one at each end of the member. The upper and free ends of the arms 12 have journaled in them a counter shaft 13 substantially parallel to the shaft 4. One end of the counter shaft 13 which projects through the corresponding arm 12 carries a grooved pulley 14. A frictional driving pulley or disk 15 is splined on the counter shaft 13. Means are provided for moving the pulley 15 along the shaft 13 comprising a member 16 which may be formed of two parts secured together and located one on each side of the pulley.

The upper ends of the parts of the member 16 are formed with openings through which the shaft 13 extends. Similar openings are formed in the lower parts of the member 16 through which the member 10 extends.

A plate or member 18 secured to the member 16 below the member 10 has secured to it one end of a cord or other flexible member 19. The flexible member 19 passes over a pulley 20 journaled in any suitable manner at the left hand end of the bracket 6. The other end of the cord 19 is secured to one end of a helical spring 21, the other end of which is secured to the bracket 6 by a pin 22. The cord 19 and spring 21 normally hold the member 16 against the left hand arm 12 as seen in Fig. 4. A pulley 23 similar to the pulley 20 is journaled to the bracket member 6 near its right hand end as seen in Fig. 4. A flexible cord or member 24 passing over the pulley 23 has one end secured to the plate 18 and the other end secured to the treadle 4 of the sewing machine.

The end adjacent the frictional disk or pulley 15 of the main rotating shaft 25 of the motor which is substantially perpendicular to the counter shaft and in the same plane with it carries a friction disk 26. This may be provided with a facing 27 of leather or other suitable material. The shafts 13 and 1 are geared together by a belt 28 which may be of the ordinary character for operating sewing machines and runs over the pulleys 14 and 2.

It will be observed that the parts are so proportioned and arranged that in the out-of-service position of the apparatus shown in the drawings, the periphery of the pulley 15 engages the center of the disk 26. The out-of-service position of the pulley 15 may be

changed by adjusting the screws 9. The tension of the belt 28 serves to press the pulley against the face of the disk 26 with the proper force. The tension of the belt may be adjusted by shifting bracket 6 relative to the table.

When it is desired to operate the sewing machine the motor is first set in motion in the usual manner. As the pulley 15 is in engagement with the center of the disk 26 the rotation of the latter will not rotate the shaft 13. When the operator is ready to start the machine the left hand edge of the treadle as seen in Fig. 2 is depressed. This will, through the cord or flexible member 24, move the member 16 and the pulley 15 to the right as shown in Fig. 4. As soon as the pulley 15 moves out of the position in which it engages the center of the disk 26 it will begin to rotate and thus through the splined shaft 13, pulley 14, and belt 28 will rotate the sewing machine spindle in the ordinary manner. The speed of the shaft 13 and hence that of the sewing machine mechanism increases as the pulley 15 is moved farther away from the center of the disk 26. As soon as it is desired to stop the movement of the sewing machine the pressure tending to hold down the left hand end of the treadle 4, as seen in Fig. 2, is removed. The spring 21 will then immediately return the pulley 15 to the position shown in the drawings.

The construction shown in Fig. 5 differs from that shown in Figs. 1 to 4 in the means for moving the pulley 15 along the face of the disk 26. The member 16' corresponding to the member 16 of the construction first described is connected to one arm of a bell crank lever by a link 31. The other end of the bell crank lever is secured to the treadle by suitable connecting means such as the adjustable connecting rod 32. With this arrangement the pulley 15 may be thrown to the out-of-service position by the treadle, or any suitable device such as the spring 21' shown in Fig. 6 may be employed to normally hold the pulley 15 in the position shown in Fig. 5. An adjustable stop 34 in the form of a bolt passing through the left hand arm 12 forms a means for adjusting the idle position of the pulley 15.

The constructions described form very simple and efficient means for transmitting the power from the driving motor and for regulating the stopping and starting of the sewing machine proper, and the speed of the sewing machine shaft while in operation. The mechanism shown and described is sim-

ple in construction, neat and compact in appearance, and possesses excellent mechanical properties. The electric motor and power transmitting device can be correctly and quickly applied to any of the standard sewing machines.

While my invention is particularly adapted for use in sewing machines it will be obvious that it may be used in other machines where the same or similar speed regulation of the driven shaft is desired.

It will be readily understood that many changes may be made in the form of my invention without departing from its spirit, and I do not wish the claims hereinafter made to be limited to the construction shown more than is made necessary by the state of the art.

What I claim as new and desire to secure by Letters Patent of the United States, is—

1. In combination, a motor comprising a frame and a revolving shaft, a friction disk carried at one end of said revolving shaft, a counter shaft extending substantially parallel to the face of said friction disk, a pulley on the counter shaft the periphery of which engages the face of said disk, a frame in which the counter shaft is journaled, pivotally connected to the motor frame to turn about an axis parallel to the counter shaft, means for moving the pulley in the direction of the axis of the counter shaft, means tending to hold the pulley in an initial position, and means for adjusting the initial position of the pulley.

2. In combination with a machine having a driven shaft, of a treadle and a table or platform, an electric motor comprising a revolving member and a frame, means for securing said motor to said table with said revolving shaft perpendicular to the driven shaft, a counter shaft movably secured to the motor frame and parallel to the driven shaft, a pulley splined on the counter shaft with its periphery engaging the face of said member remote from the driven shaft, and a belt connecting the counter shaft and the driven shaft, the tension of said belt regulating the pressure of contact between the pulley and said revolving member, and means connecting said pulley to the treadle whereby the oscillation of the latter moves the pulley along the shaft on which it is splined.

In witness whereof, I have hereunto set my hand this 26th day of April, 1905.

HAROLD R. WELLMAN.

Witnesses:

C. A. CUMMINGS,

H. G. MACLEOD.