

No. 750,864.

PATENTED FEB. 2, 1904.

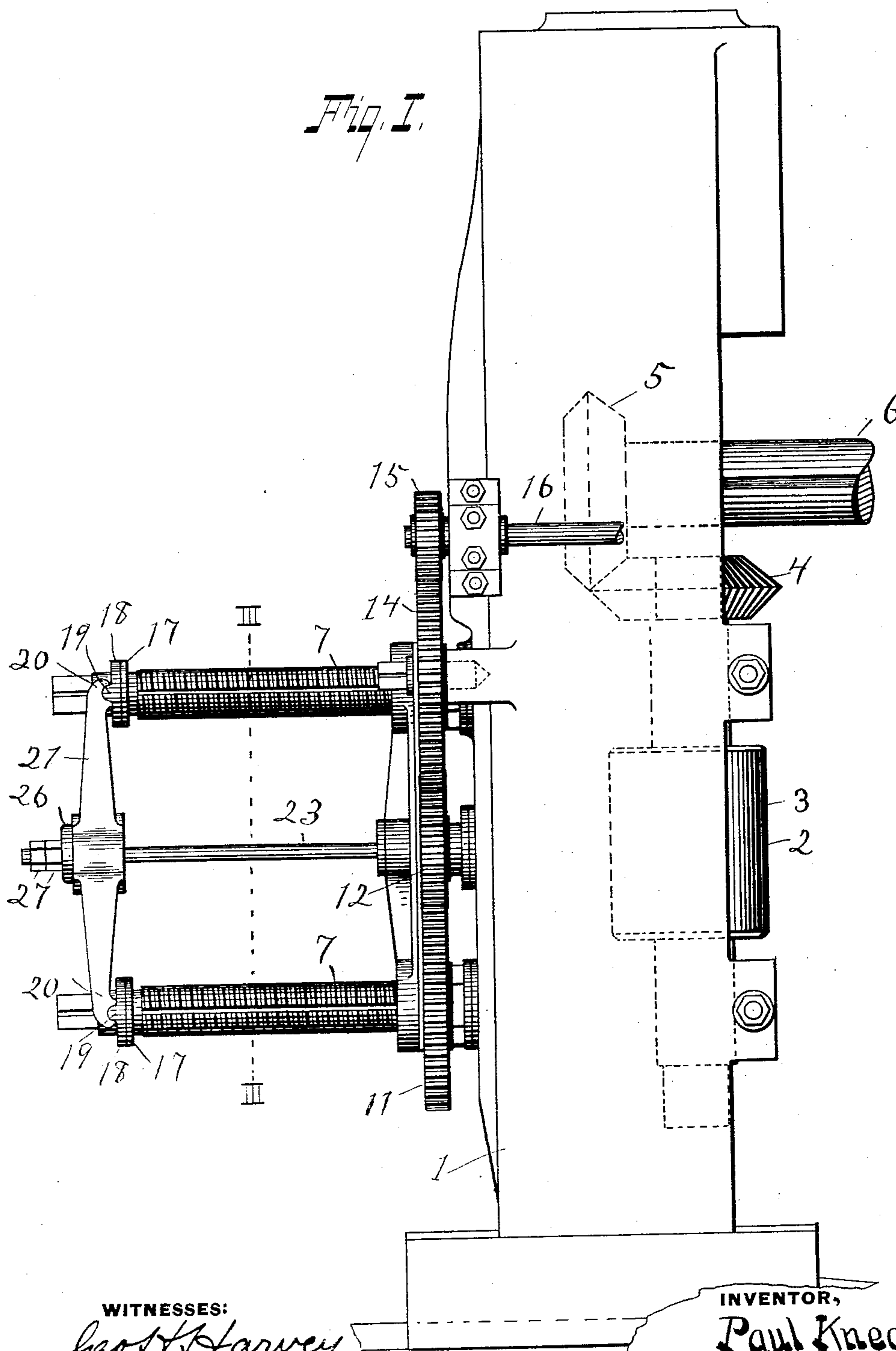
P. KNECHT.

### ADJUSTING MECHANISM FOR ROLLS, &c.

APPLICATION FILED JULY 6, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



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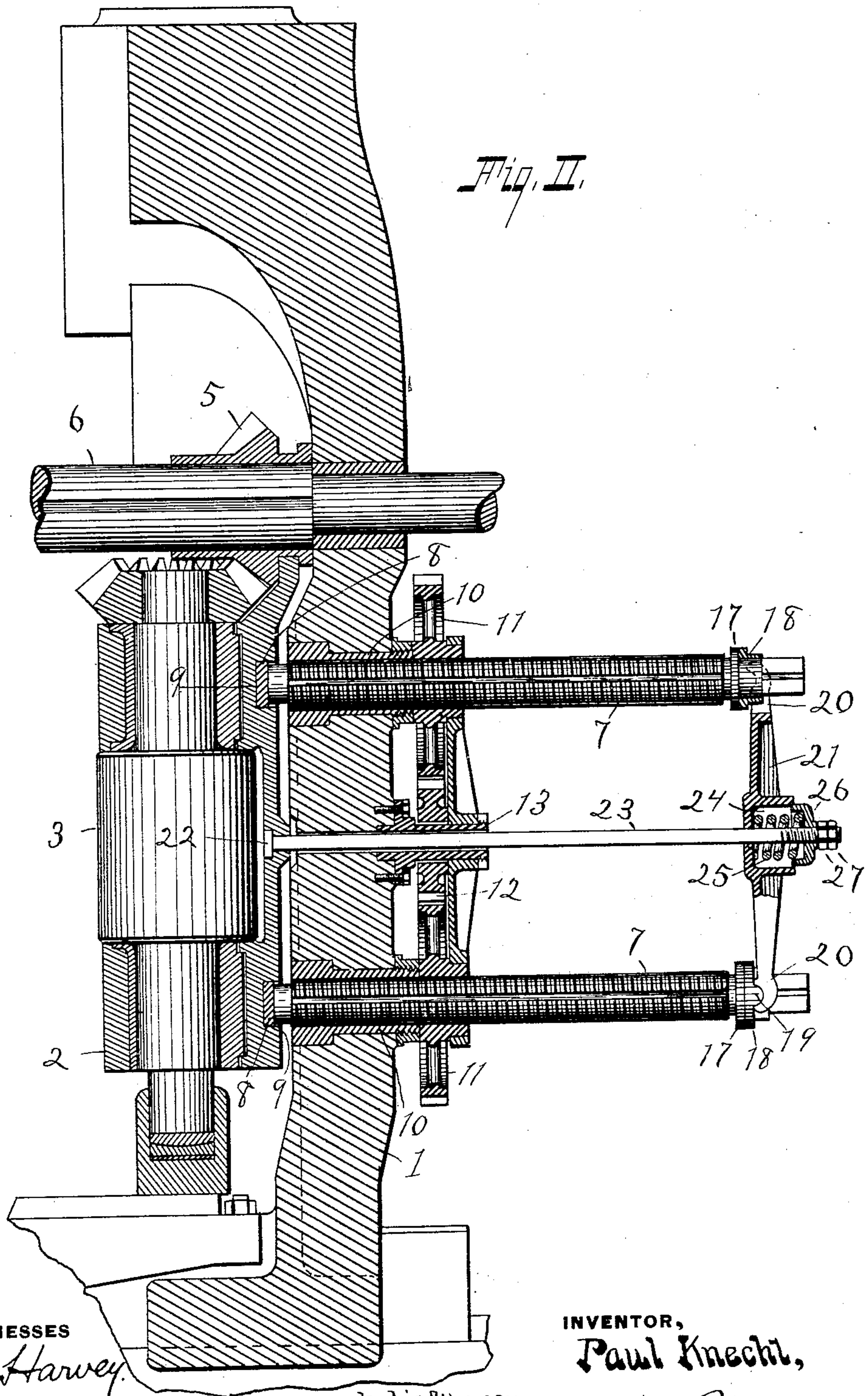
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WITNESSES

*Geo. H. Harvey.*  
*F. W. Barber*

INVENTOR,

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by his Attorney

*Wm. L. Pierce*



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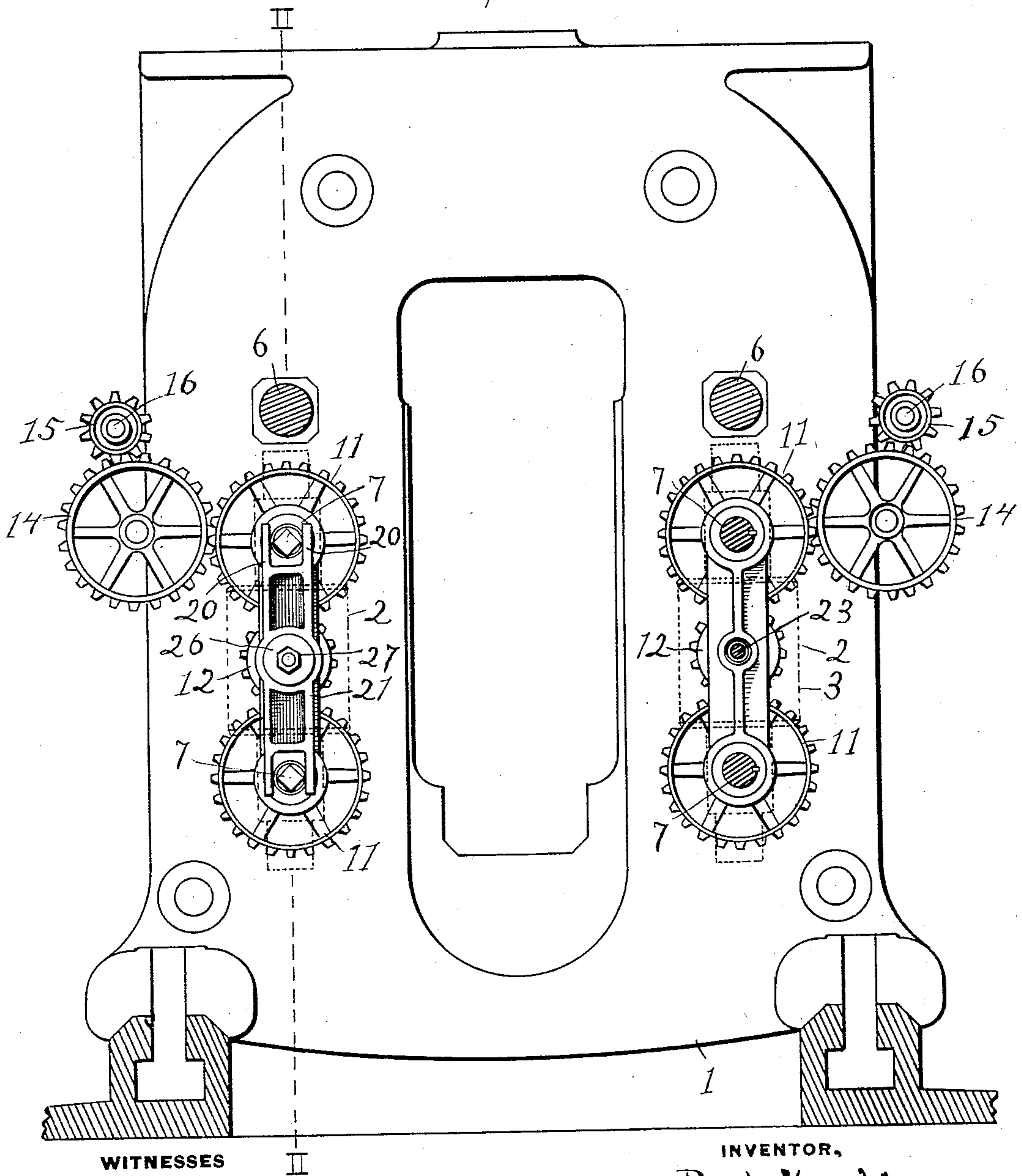
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4 SHEETS—SHEET 3.

*Fig. III.*



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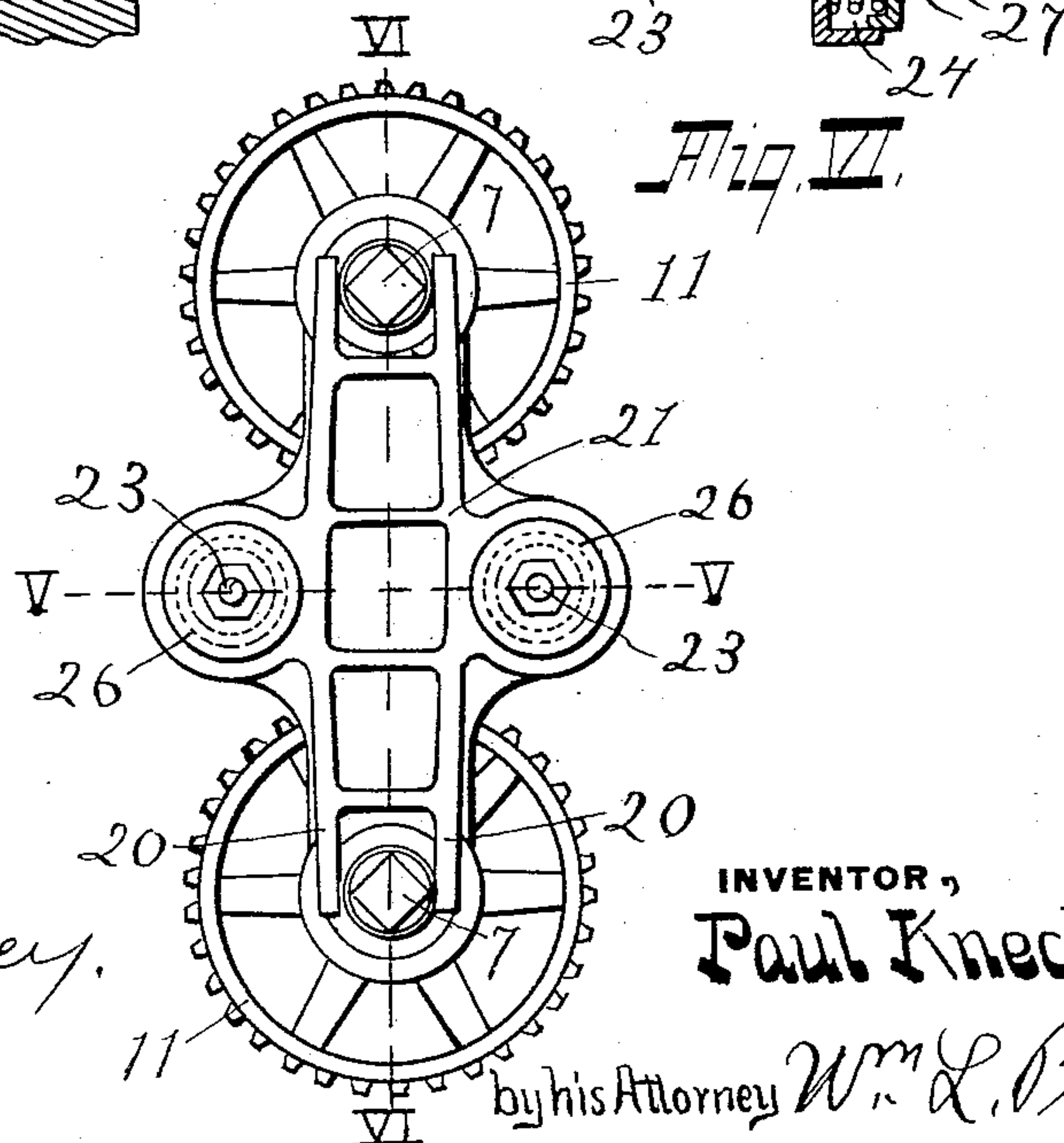
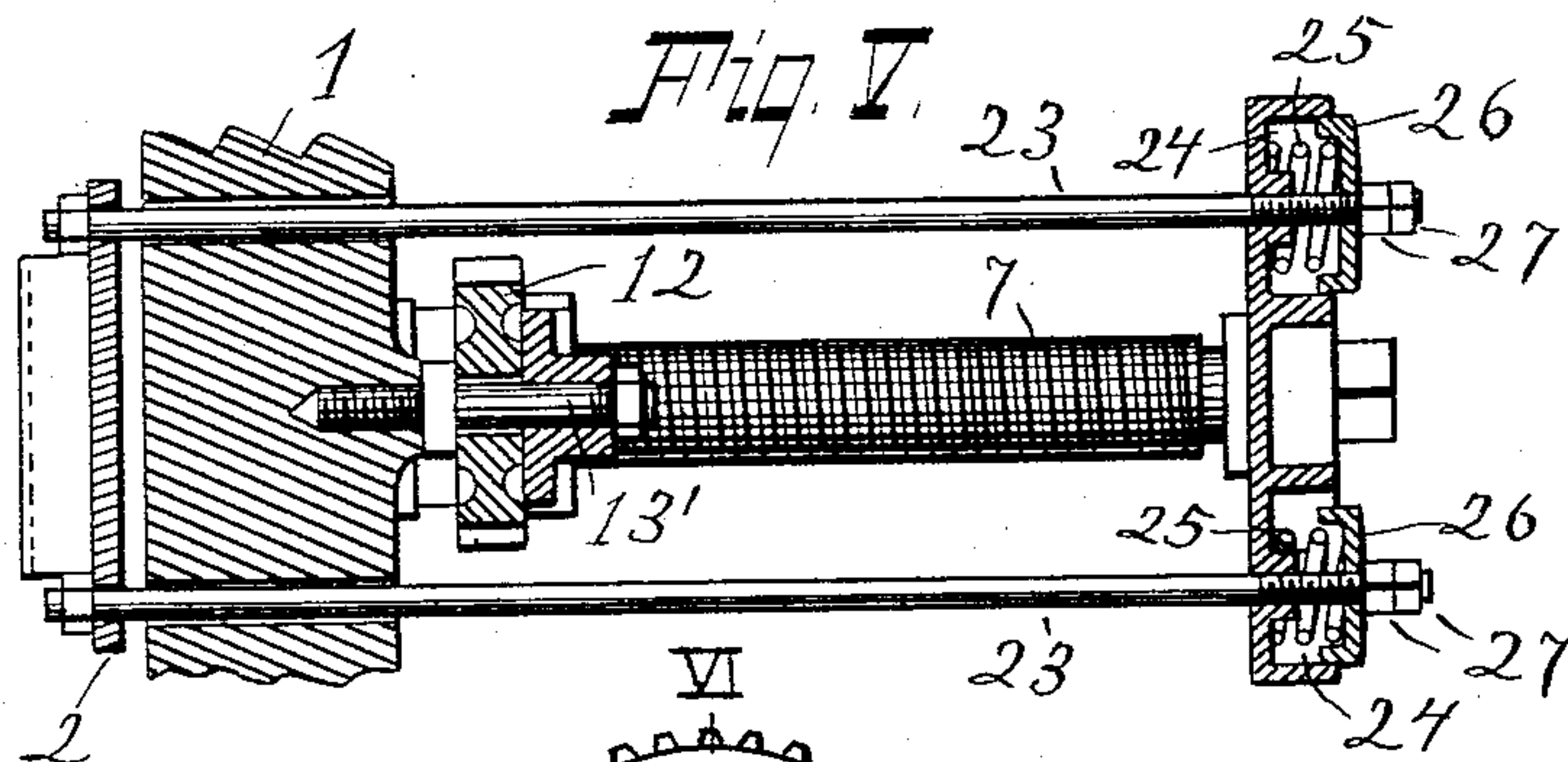
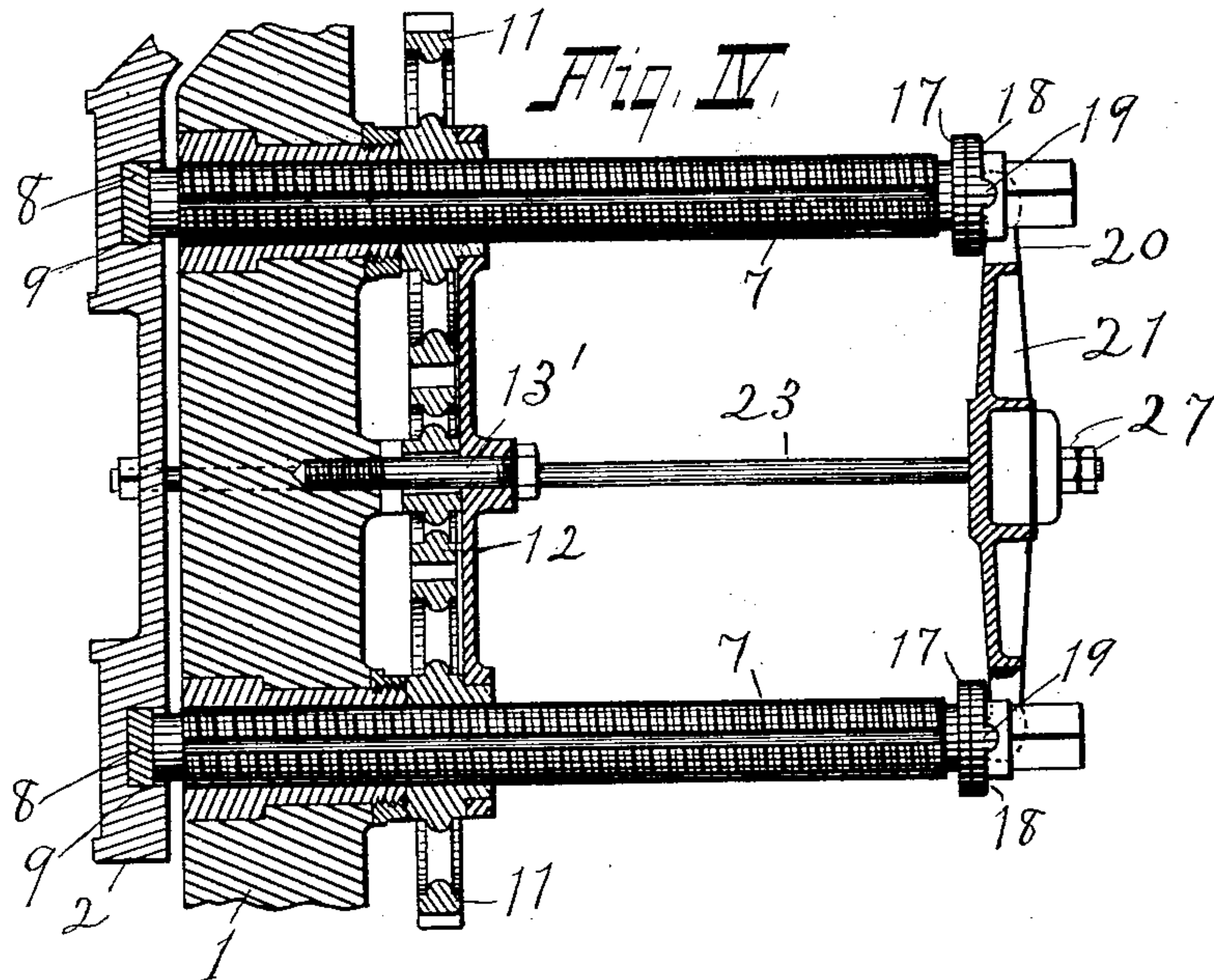
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# UNITED STATES PATENT OFFICE.

PAUL KNECHT, OF KNOXVILLE BOROUGH, PENNSYLVANIA, ASSIGNOR  
TO A. GARRISON FOUNDRY COMPANY, A CORPORATION OF PENN-  
SYLVANIA.

## ADJUSTING MECHANISM FOR ROLLS, &c.

SPECIFICATION forming part of Letters Patent No. 750,864, dated February 2, 1904.

Application filed July 6, 1903. Serial No. 164,391. (No model.)

*To all whom it may concern:*

Be it known that I, PAUL KNECHT, a citizen of the Republic of Switzerland, residing at Knoxville borough, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Adjusting Mechanism for Rolls, Shafts, and the Like, of which the following is a specification.

In the accompanying drawings, which make part of this specification, Figure I is a side elevation showing one end of a rolling-mill including my invention; Fig. II, a vertical section of the opposite end of the same, the section being taken on the line II II of Fig. III; Fig. III, an end elevation of my invention; Fig. IV, a vertical section showing a modification of my invention; Fig. V, a section on the line V V of Fig. VI, and Fig. VI an end elevation of said modified form of invention.

My invention relates to mechanism for adjusting the rolls of rolling-mills or other machines. Lost motion will exist between the carrier-frames of the rolls and the ends of the screws by which the rolls are adjusted unless some preventing means be provided.

My invention relates to means to take up such lost motion, and more particularly to such a means which will automatically prevent the existence of lost motion. I do not take up the lost motion from time to time, as is required in the rolling-mills now in use; but I take up the lost motion as fast as and at the very time it is produced. This I do without any attention whatever and without in the least stopping or interfering with the operation of the mill.

Referring to the drawings, 1 represents the end housings of the mill, and 2 represents vertical rolls having their journals supported in the roll-carrying frames 3. The rolls are driven by bevel gear-wheels 4, attached to their upper ends and meshing with bevel gear-wheels 5 on the shaft 6.

Passing horizontally through the housings 1 are screws 7, preferably two for each roll, the inner ends of the screws bearing against

wear-blocks 8 in recesses 9 in the frames 2. The screws operate in threaded bushings 10, seated in the housings, and are turned by gear-wheels 11, splined thereon, so as to allow the screws to reciprocate in the wheels. The lower wheels 11 are turned by the idler 12, rotatable on the post 13, secured to the ends of the housings 1 and meshing with both wheels 11. The upper wheels 11 are driven by the gear-wheels 14, which in turn are driven by the pinions 15 on the shafts 16.

The outer ends of the screws 7 have annular bearing-flanges 17, against which sit collars 18, each having a pair of diametrically-placed lugs 19, having round surfaces, which serve as fulcrums for the forked ends 20 of the bridge bars or plates 21. The forked ends 20 have recesses which fit the lugs 19, as shown in Figs. I and II.

Seated in the inner sides of the frames 2 nearest the rolls are the heads 22 of bolts 23, sockets 24, in which are seated springs 25, sur- which pass through the housings 1, the posts 13, and the bridge-bars 21. The bars 21 have rounding the bolts, the outer ends of the springs being limited by disks 26, strung on the bolts and adjusted and held in place by the nuts 27.

The nuts 27 will be turned down, so as to compress the springs 25, and as the bolts 23 tend to pull the frames 2 toward their adjacent housings and the screws tend to push them away therefrom it is clear that the springs will automatically take up the wear between the screws and the frames without stopping the rolls.

Referring to Figs. IV, V, and VI, the parts are designated the same as in the other figures so far as the construction is the same, and where the structure is analogous the same reference characters are used with exponents. The middle gear-wheel 12 is in Figs. IV and V mounted on the bolts 13', secured in the frame 2. The rods 23 do not pass through the wheel 12; but a rod 23 is situated on each side of the wheel 12, as shown in Fig. V, and their inner ends being secured back of the

frame 2, while the other ends are secured by springs 25, disks 26, and nuts 27, arranged as in Fig. II.

The bridges 21, resting loosely on the lugs 5 19, allow for any inequalities which may exist in the lengths of the screws.

The bridges or yokes 21 may be made of or contain resilient material, in which case the spring 25 may, if desired, be dispensed with, 10 and in cases where it is not desired to take up the wear automatically the yoke need not be made of or contain resilient material and the spring 25 need not be used, as the nuts 27 can be adjusted from time to time to take up the 15 wear.

Having described my invention, I claim—

1. In combination, a roll, a frame carrying the same, screws for adjusting the frame, a bridge connecting the screws, and means be- 20 tween the bridge and the frame for holding

the screws and the frame in constant contact, whereby the wear between the frame and the screws will be taken up automatically and as fast as it takes place.

2. In combination, a roll, a frame carrying 25 the same, screws for adjusting the frame, a bridge connecting the screws, and a spring-controlled connection between the bridge and the frame for holding the screws and the frame in constant contact, whereby the wear 30 between the frame and the screws will be taken up automatically and as fast as it takes place.

Signed at Pittsburg this 2d day of July, 1903.

PAUL KNECHT.

Witnesses:

F. N. BARBER,  
A. M. STEEN.