

(No Model.)

W. M. McINTYRE.
SPEED PULLEY.

No. 534,448.

Patented Feb. 19, 1895.

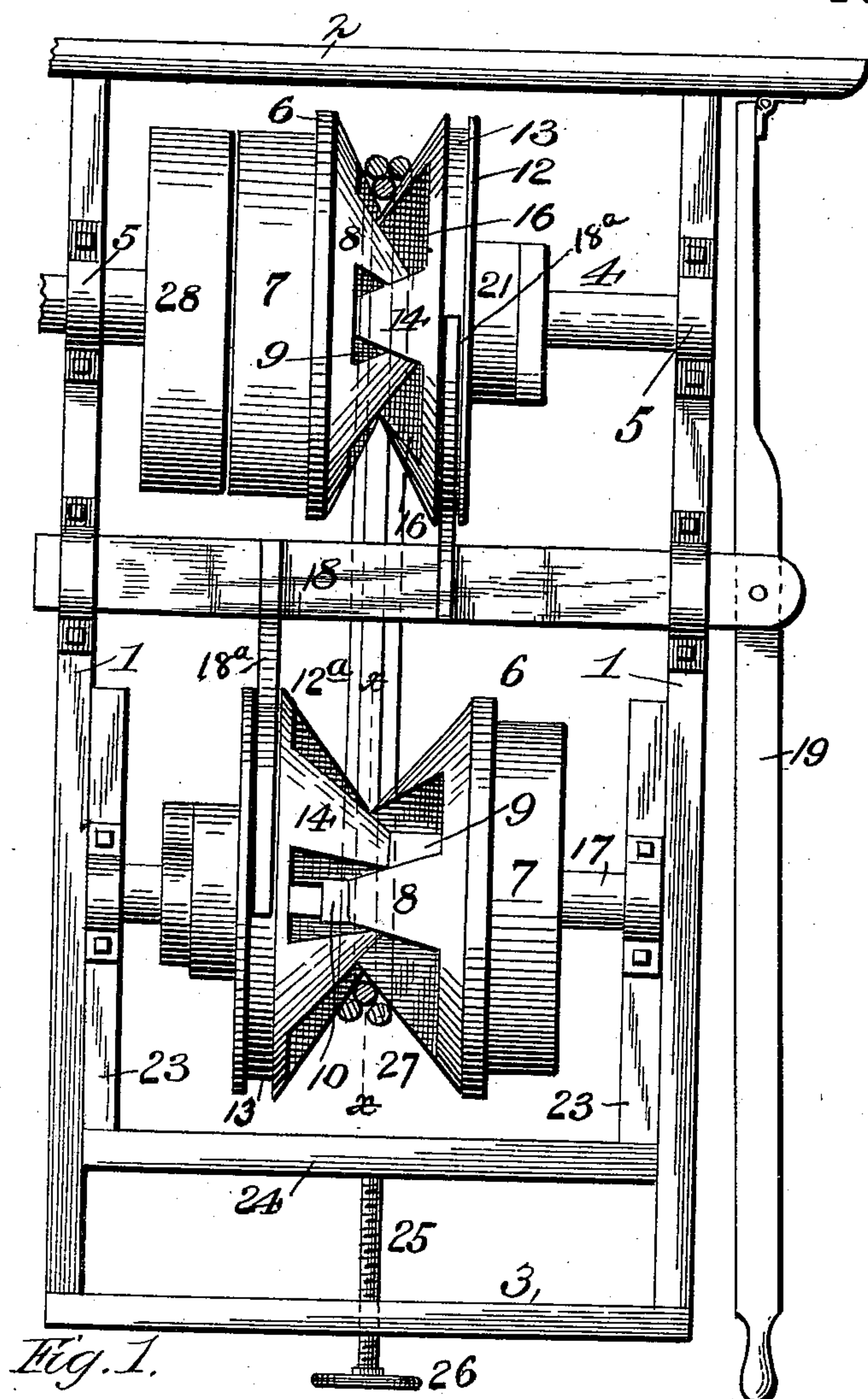


Fig. 1.

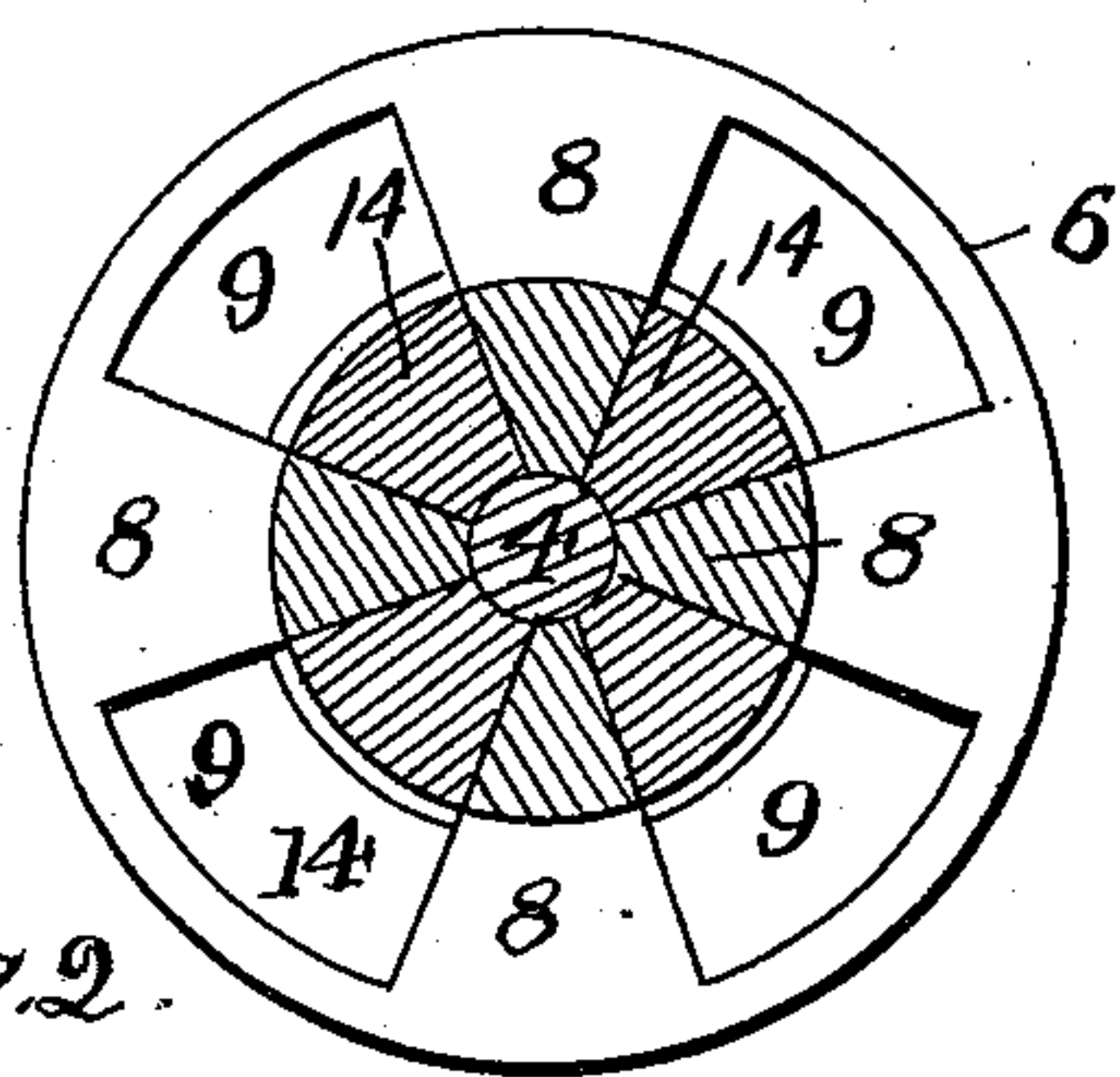


Fig. 2.

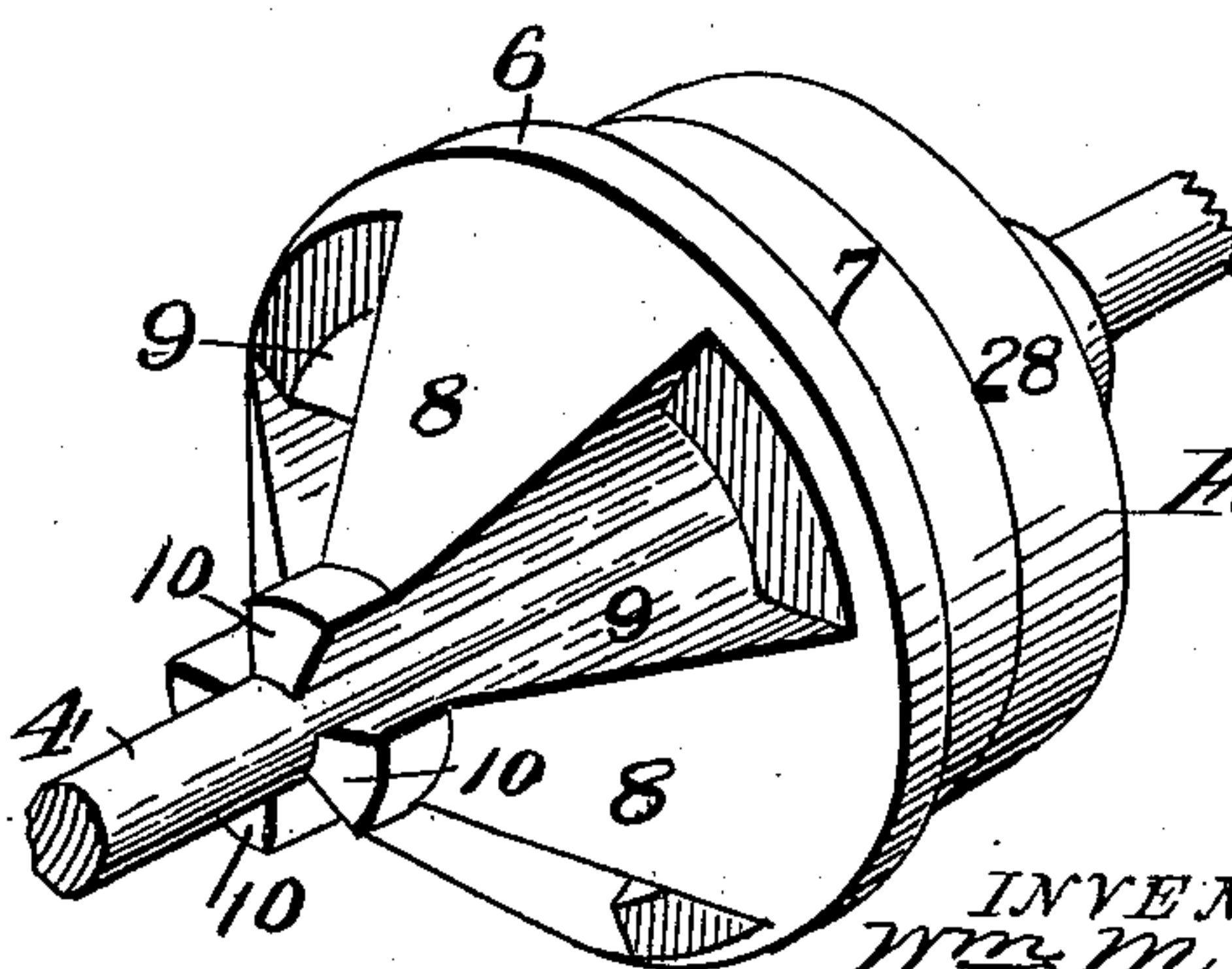


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM M. MCINTYRE, OF WILKINSBURG, PENNSYLVANIA.

SPEED-PULLEY.

SPECIFICATION forming part of Letters Patent No. 534,448, dated February 19, 1895.

Application filed April 19, 1894. Serial No. 508,131. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. MCINTYRE, a citizen of the United States, and a resident of Braddock township, (Wilkinsburg P. O.) in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Speed-Pulleys; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in speed pulleys of that class or description for which Letters Patent of the United States were granted to me December 5, 1893, No. 510,283, and the object of the present invention is to improve the same whereby they shall be rendered more simple and economical in construction, and more efficient in use.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation showing two pulleys constructed according to my invention, connected together by three round belts, and also showing means for shifting the slidable parts of the pulleys, and also means for taking up the slack of the belts. Fig. 2 is a cross sectional view on the line $x-x$, Fig. 1. Fig. 3 is a detail perspective view of one of the pulleys.

In the said drawings the reference-numeral 1 designates two hangers secured to a beam 2 and connected together at their lower ends by a bar 3. In the upper part of the hangers is mounted a driving shaft 4, journaled in boxes 5. I, however, do not wish to limit my invention to such construction, as said shaft may be journaled in brackets, if desired, as will be well understood by those skilled in the art to which the invention pertains, and may also be arranged horizontally instead of vertically, or in any position found convenient or desirable. Fixed to said shaft is a rim 6, having formed therewith on one side, a pulley 7, for a driving belt not shown. On the opposite side the rim is formed with a series of triangular shaped segments 8,

with spaces 9 therebetween, which segments at their ends are formed with horizontal lugs 10, the inner sides of which are curved to conform to the curvature of the shaft against which they abut.

The numeral 12 designates a slidable rim formed with a peripheral groove 13, and also with segments 14, having lugs 15 similar to the segments and lugs 8 and 10, with intervening spaces 16. These rims, segments, and lugs, are identical with each other, the only difference being that one of the rims is slidable on the shaft, while the other is fixed, and the segments of one rim work between the segments of the other. The two rims thus connected and arranged form two cone-shaped sections which constitute a pulley, the cones pointing in opposite directions, or toward each other, and the segments of one fitting and slidable in the spaces between the other cone or part.

Located below said shaft 4 is a driven shaft 17 also provided with a fixed rim 6, triangular-shaped segments 8, lugs 10, spaces 9 and pulley 7 formed precisely similar to those above described with which are adapted to engage the segments 14, and lugs 15 of a slidable rim 12^a identical in construction with the slidable rim on the driving shaft, the only difference being in the arrangement, the fixed rim of one shaft being arranged above the slidable rim of the other, and vice versa. Located between the two shafts is a horizontal slidable bar 18, connected with an operating lever 19 and provided with oppositely extending arms 18^a, which engage with the grooves in the slidable rims.

The driven shaft 17 is journaled in a vertically adjustable frame comprising the standards 23 and horizontal bar 24, connecting their lower ends together. This horizontal bar is provided with a central screw-threaded aperture in which works a screw-threaded rod 25 having a milled head 26 by which it may be rotated. By rotating this rod the frame carrying the driven shaft may be elevated to take up the slack of the belts.

The numeral 27 designates the driving belts, three being shown in the present instance, although more or less may be employed if found necessary or desirable, the pitch of

the cone-segments being very acute, so as to allow of the employment of any number of said belts. These belts are rounded or cylindrical in cross section. The object of the 5 peripheral grooves 13 in the slidable cone-sections is to allow the arms 18^a of the shifting bar to engage therewith.

The operation will be readily understood: When it is desired to vary the speed of the 10 driven pulley the operating lever is moved to the right or left, which will correspondingly move the shifting-bar 18, which in turn will move the slidable cones toward or from the fixed cones. Suppose for instance that it is 15 desired to decrease the speed of the driven pulley. The lever 19, Fig. 1, is moved outwardly causing the shifting bar 18 to move the lower slidable section toward the fixed section, thereby causing the segments of the 20 former to slide in the spaces between the segments of the fixed section, whereby the circumference of the pulley where the belts pass around the same is increased. At the same time the slidable section of the upper pulley 25 is moved away from the fixed section decreasing the circumference. By a reverse movement the speed of the driven pulley can be increased.

The numeral 28 designates a loose pulley 30 on the driving-shaft.

Having thus fully described my invention, what I claim is—

The combination with the driving shaft, the loose pulley mounted thereon, the fixed rim secured to said shaft and formed on one 35 side with an annular pulley, and the other side with segments and lugs with alternating spaces, the slidable rim having a boss and a peripheral groove, and segments and lugs adapted to engage with the spaces between 40 the segments of the fixed rim, the horizontally slidable bar having oppositely extending arms engaging with said grooves, and the pivoted lever connected with said bar of the vertically adjustable frame, the shaft journaled 45 therein, the fixed and slidable cone sections carried thereby, the horizontally movable shifting bar having arms adapted to engage with the said slidable sections, the operating lever connected therewith and the belts 50 connecting said pulleys, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

WILLIAM M. MCINTYRE.

Witnesses:

JNO. KENNEDY,
JESS. E. HILL.