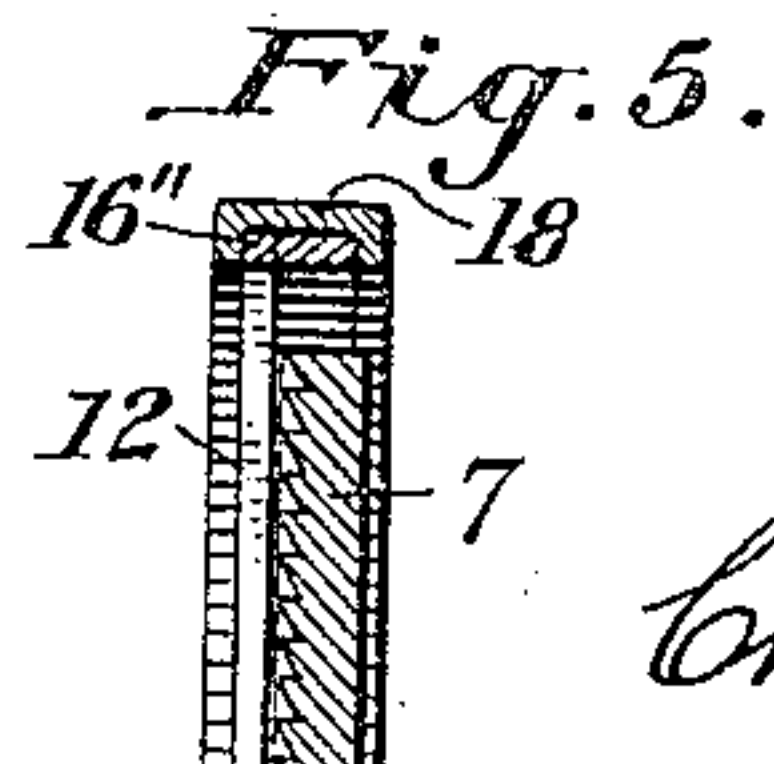
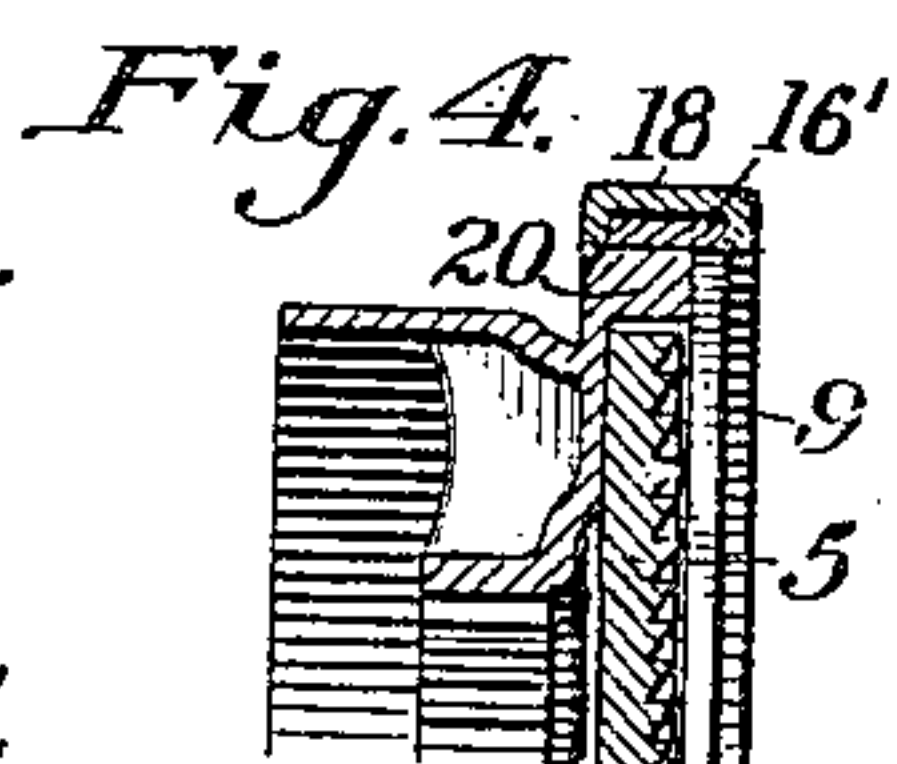
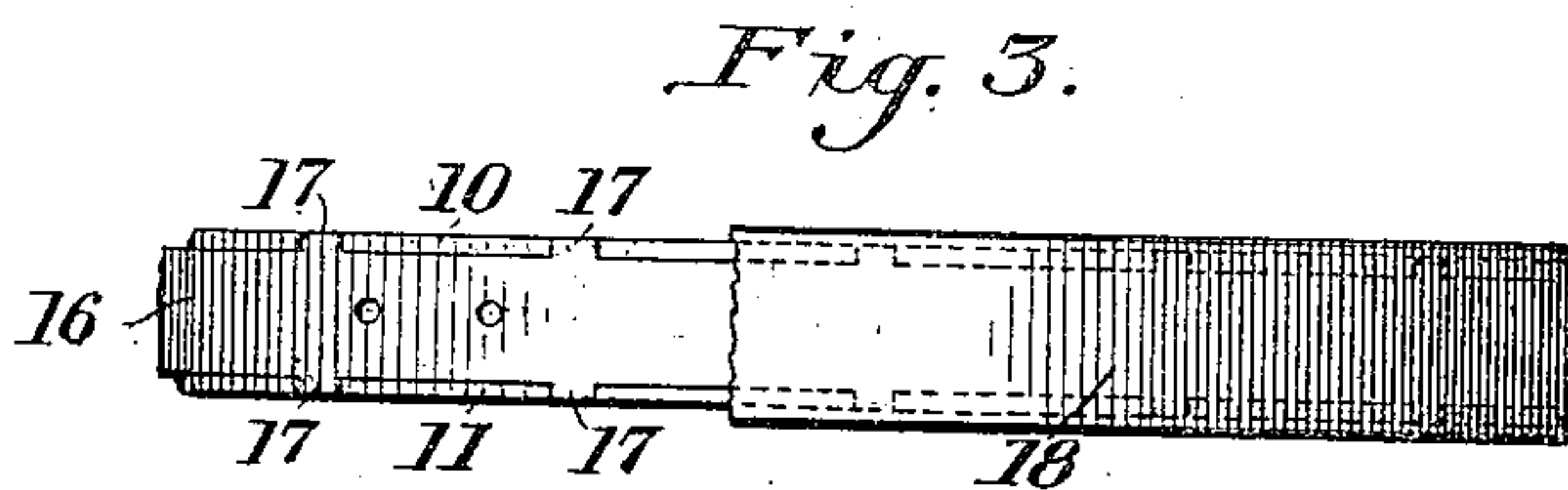
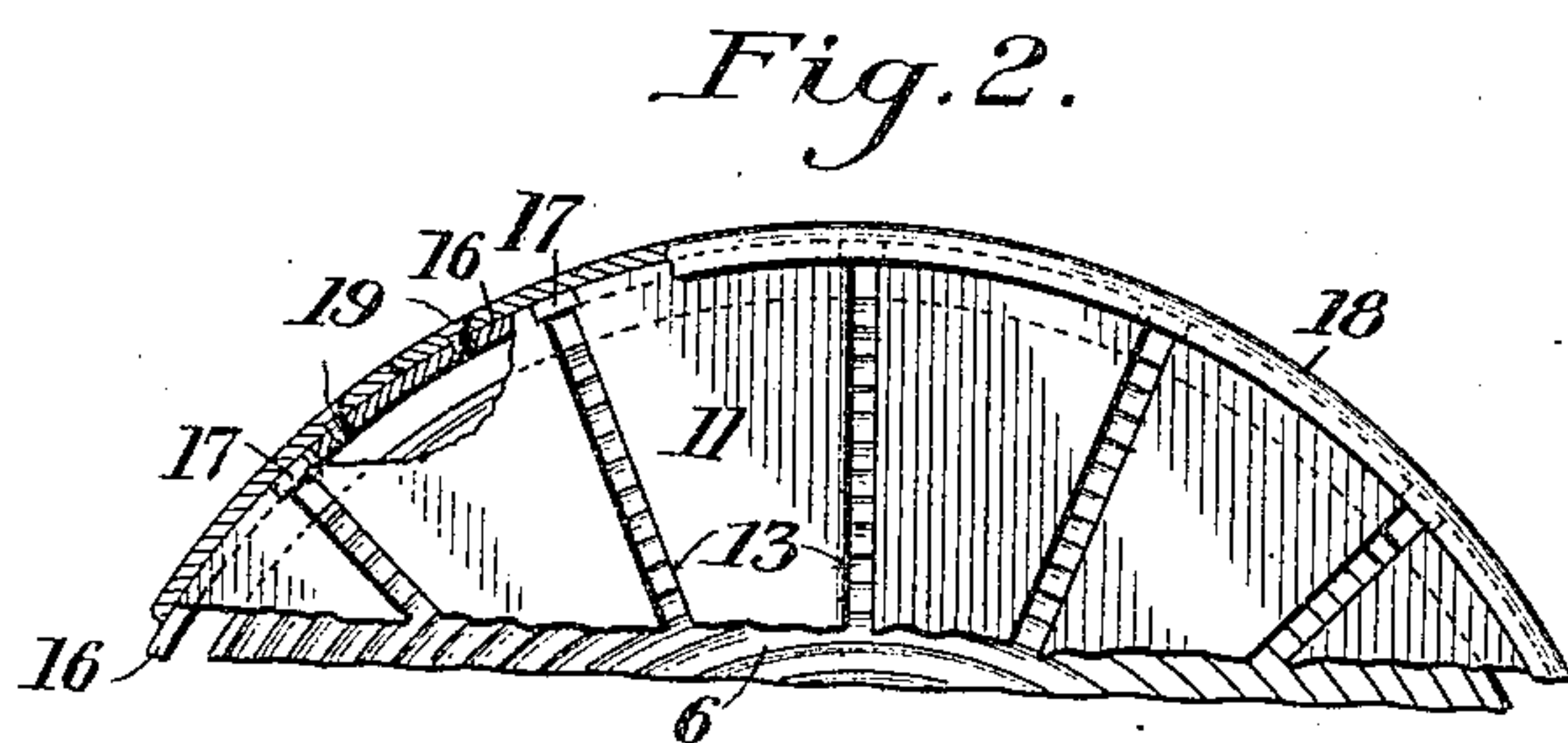
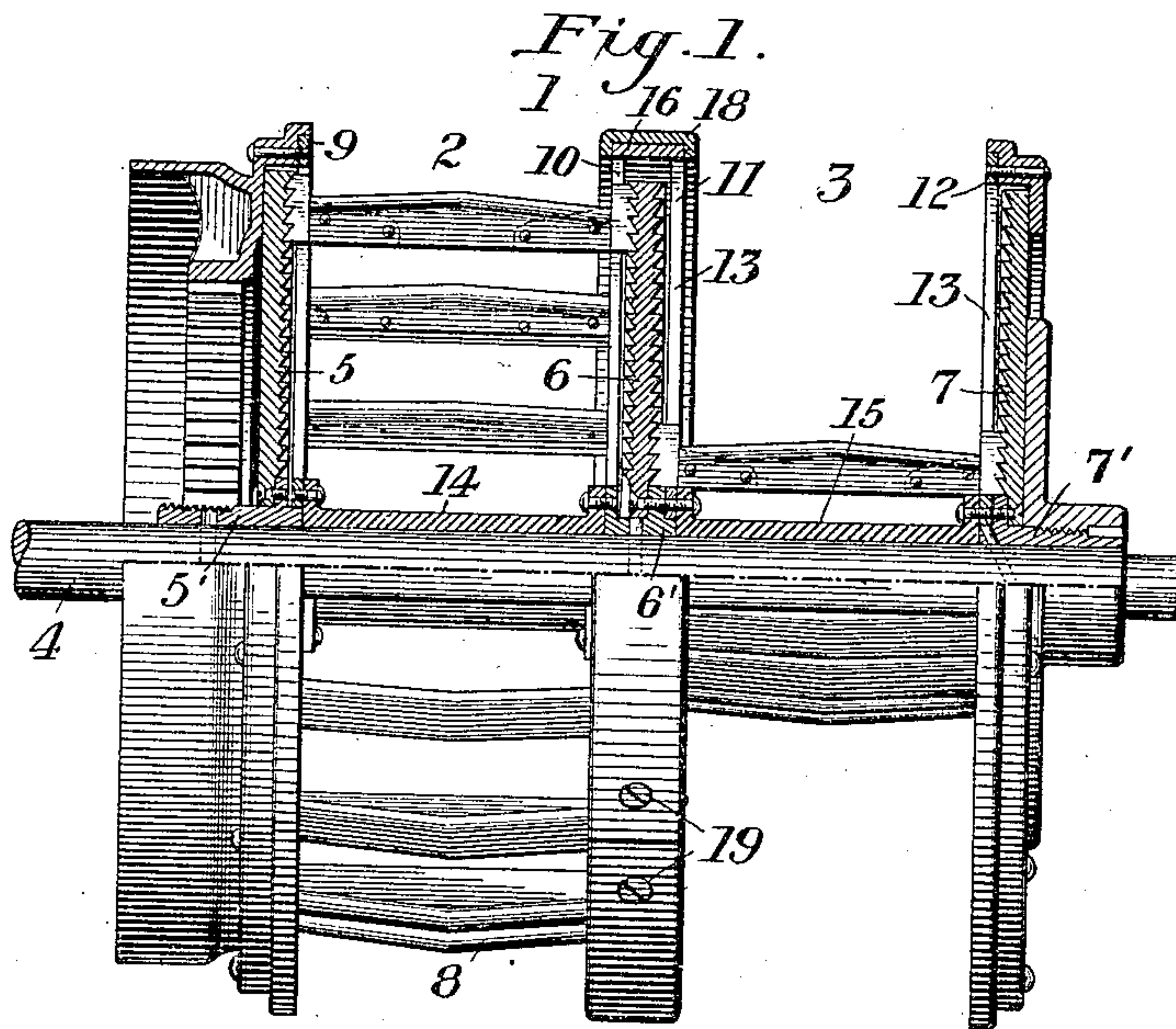


No. 816,184.

PATENTED MAR. 27, 1906.

C. J. REED.
EXPANSIBLE PULLEY.
APPLICATION FILED JUNE 28, 1904.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES J. REED, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
REED-MORRILL ELECTRIC CO., A CORPORATION OF PENNSYLVANIA.

EXPANSIBLE PULLEY.

No. 816,184.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed June 28, 1904. Serial No. 214,508.

To all whom it may concern:

Be it known that I, CHARLES J. REED, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Expansible Pulleys, of which the following is a specification.

In United States Patents Nos. 758,474 and 758,561, granted to me April 26, 1904, I have shown and claimed a mechanism for transmitting power from a driving to a driven shaft and enabling the speed of the driven shaft to be varied with reference to that of the driving-shaft, comprising a double pulley placed between and belted to pulleys on the driving and the driven shafts. Each drum of the double pulley consists of a set of radially-adjustable rim-sections, the ends of which pass through radial slots in circular guide-plates and have teeth entering spiral grooves in circular adjusting-disks. Differential-gear mechanism is provided to rotate the guide-plates with reference to the adjusting-disks, thereby simultaneously moving either set of rim-sections inwardly and the other outwardly, contracting one drum and expanding the other. The shaft of the double pulley is carried by rock-arms to compensate for changes in the working length of the belts by which it receives and transmits power.

The present invention relates to expansible pulleys, especially of the type shown in these patents, and specifically to means for rigidly connecting the adjacent guide-plates of the two drums. The preferred means comprises a tie-ring having projections which enter the guide-slots of these plates and a channel-ring which surrounds and is secured to the tie-ring.

Referring to the accompanying drawings, Figure 1 is a side elevation of the double pulley with parts above a horizontal axial plane in vertical axial section. Fig. 2 is a side elevation of the upper portion of one of the intermediate guide-plates and the intermediate double adjusting-disk with parts of the channel-ring and tie-ring broken away. Fig. 3 is an edge view of the parts shown in Fig. 2 with part of the channel-ring broken away, and Figs. 4 and 5 are detail views of modifications.

The double pulley 1, comprising drums 2

and 3, is carried by a shaft 4. The pulley has three spirally-grooved rim-section-adjusting disks 5 6 7, carried by and screwed to short sleeves 5' 6' 7', which are pinned to the shaft. The disks 5 and 6 are spaced apart to receive between them one set of rim-sections 8, and the disks 6 and 7 are spaced apart to receive between them the other set of rim-sections. Between and closely adjacent to the grooved faces of the adjusting-disks are the rim-section-guiding plates 9 10 11 12, which have radial slots 13, receiving the ends of the rim-sections. The plates 9 10 are rigidly secured to the flanged ends of a sleeve 14, which is revolubly supported on the pulley-shaft 4 between the adjusting-disks 5 6. The plates 11 12 are rigidly secured to the flanged ends of a sleeve 15, which is revolubly supported on the shaft between the adjusting-disks 6 7.

The described construction and arrangement of the adjusting-disks, guide-plates, and rim-sections is substantially that of my specified patents. In these patents the adjacent guide-plates are rigidly connected by peripheral flanges which extend over the edge of the intermediate double adjusting-disk and are bolted or riveted together.

The present improved means for rigidly connecting the adjacent guide-plates comprises a circular tie-ring 16, having lateral projections 17, which enter recesses in the outer edge of the guide-plates. These recesses are preferably the shouldered outer ends of the radial guide-slots 13. The tie-ring may be held in position by simply securing its ends together. It is preferred, however, to surround the tie-ring with a channel-ring 18, the flanges of which inclose the tie-ring. The channel-ring is secured to the tie-ring by screws 19.

Fig. 4 shows a modified construction in which the guide-plate 9 is secured to the gear member 20 by a similar tie-ring 16' and channel-ring 18. Fig. 5 shows similar rings 16'', 18 used as a stiffening-rim for the guide-plate 12, in place of the cast-iron ring shown in Fig. 1.

I claim—

1. A pulley, comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, and a ring having

projections entering openings in a guide-plate, as set forth.

2. A pulley, comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, a ring having projections entering openings in a guide-plate, and a channel-ring surrounding and secured to said ring, as set forth.

3. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, the adjacent guide-plates of the two drums having openings, and a tie-ring having projections entering said openings, as set forth.

4. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections said plates and disks being relatively revoluble, the adjacent guide-plates of the two drums having openings, a tie-ring having projections entering said openings, and a second ring surrounding and secured to said tie-ring, as set forth.

5. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, the adjacent guide-plates of the two drums having openings, a tie-ring having

projections entering said openings, and a channel-ring surrounding and secured to said tie-ring, as set forth.

6. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, and a tie-ring having projections entering the slots of the adjacent guide-plates of the two drums, as set forth.

7. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, a tie-ring having projections entering the slots of the adjacent guide-plates of the two drums, and a second ring surrounding and secured to said tie-ring, as set forth.

8. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, a tie-ring having projections entering the slots of the adjacent guide-plates of the two drums, and a channel-ring surrounding and secured to said tie-ring, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES J. REED.

Witnesses:

LOUIS DU HADWAY,
WILLIAM H. REMSEN