

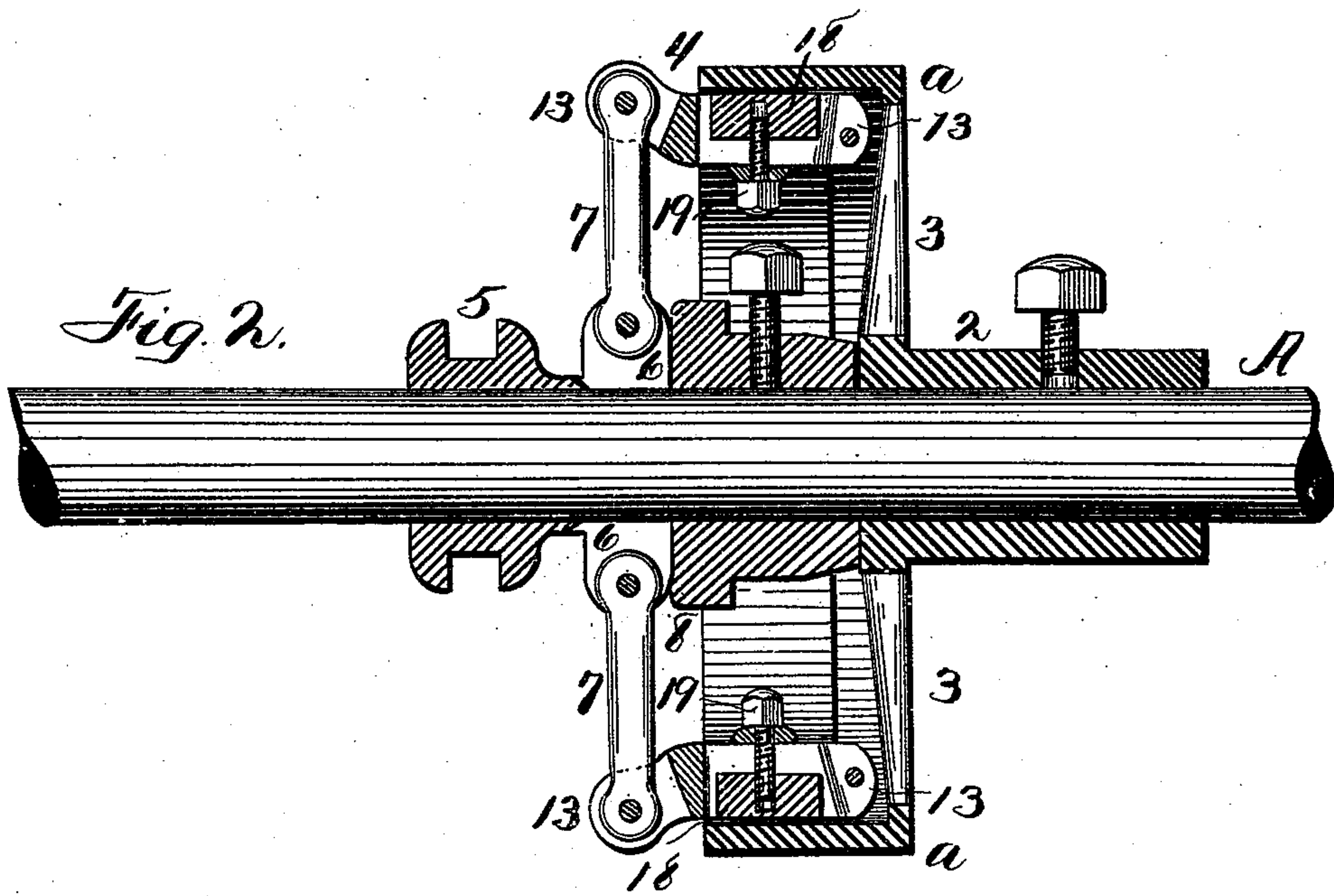
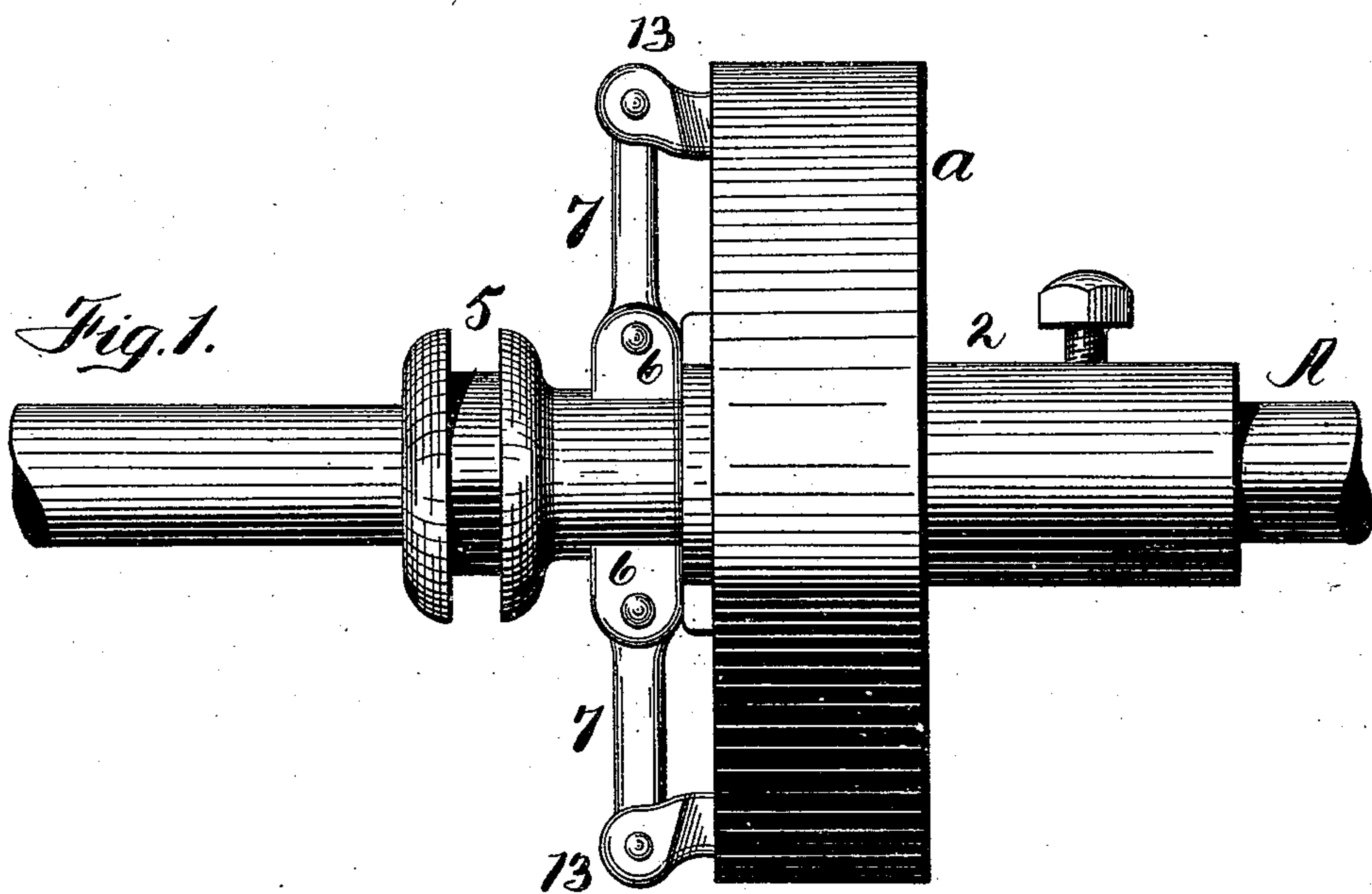
(No Model.)

3 Sheets—Sheet 1.

C. B. RUMSEY.  
FRICTION CLUTCH.

No. 551,840.

Patented Dec. 24, 1895.



WITNESSES:

*Charles W. Morvin.*  
*Jessie O. Murray.*

INVENTOR

*Chas. B. Rumsey.*

BY

*Smith & Arisow*  
ATTORNEYS.

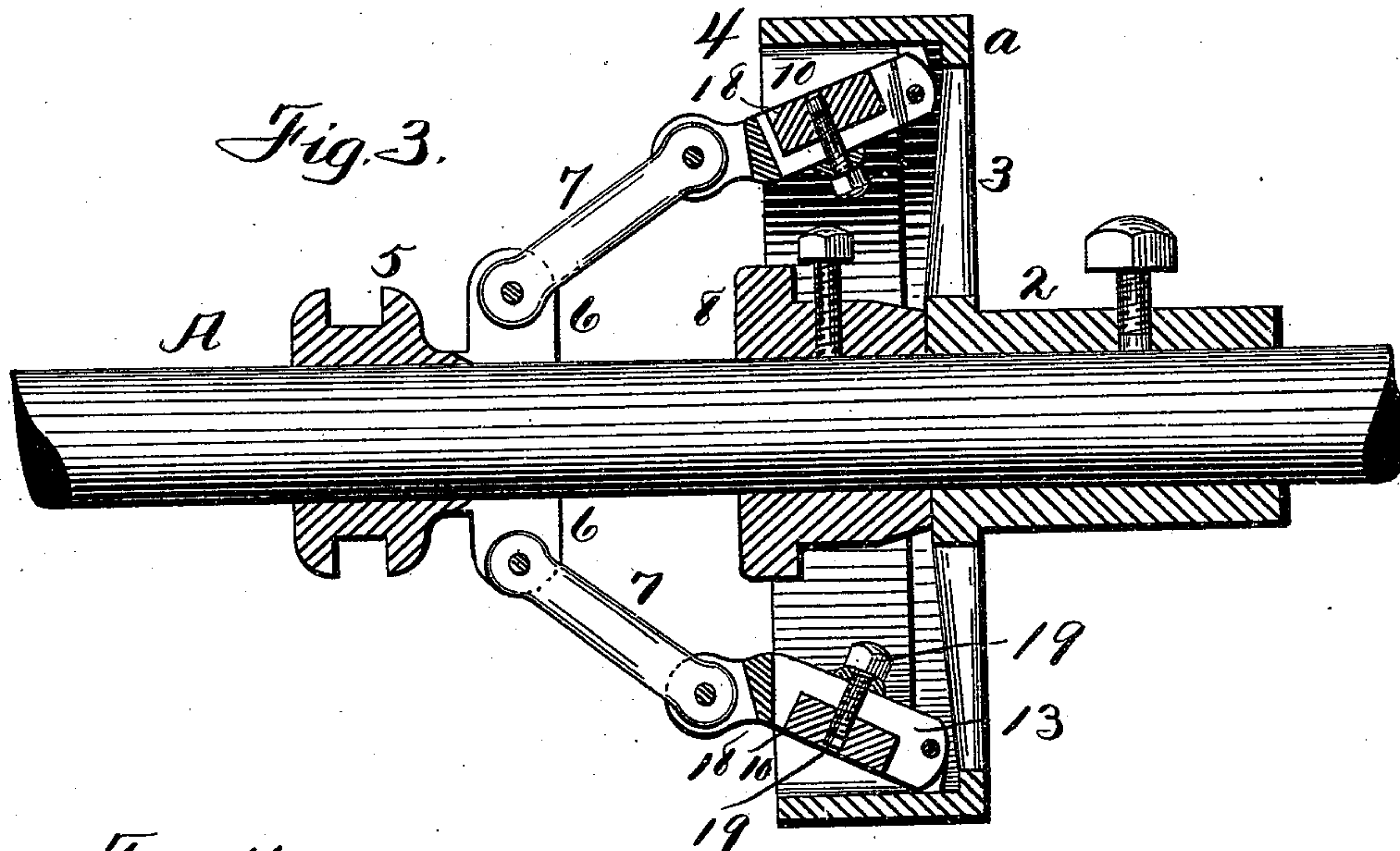
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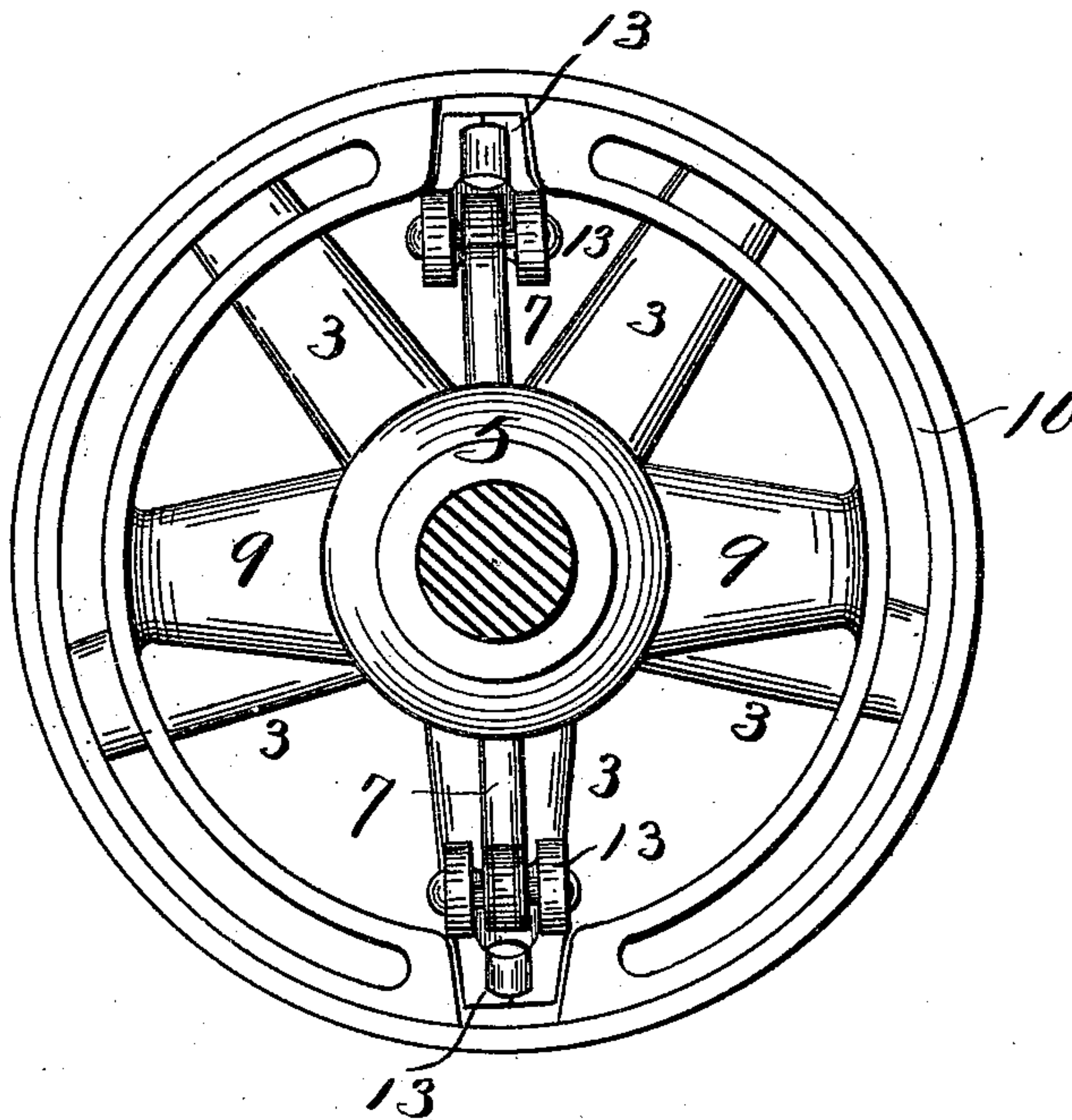
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*Fig. 4.*



WITNESSES:

*Charles H. Morron*  
*Jessie E. Murray*

INVENTOR  
*Chas. B. Rumsey.*

BY  
*Smith & Arison*  
ATTORNEYS.

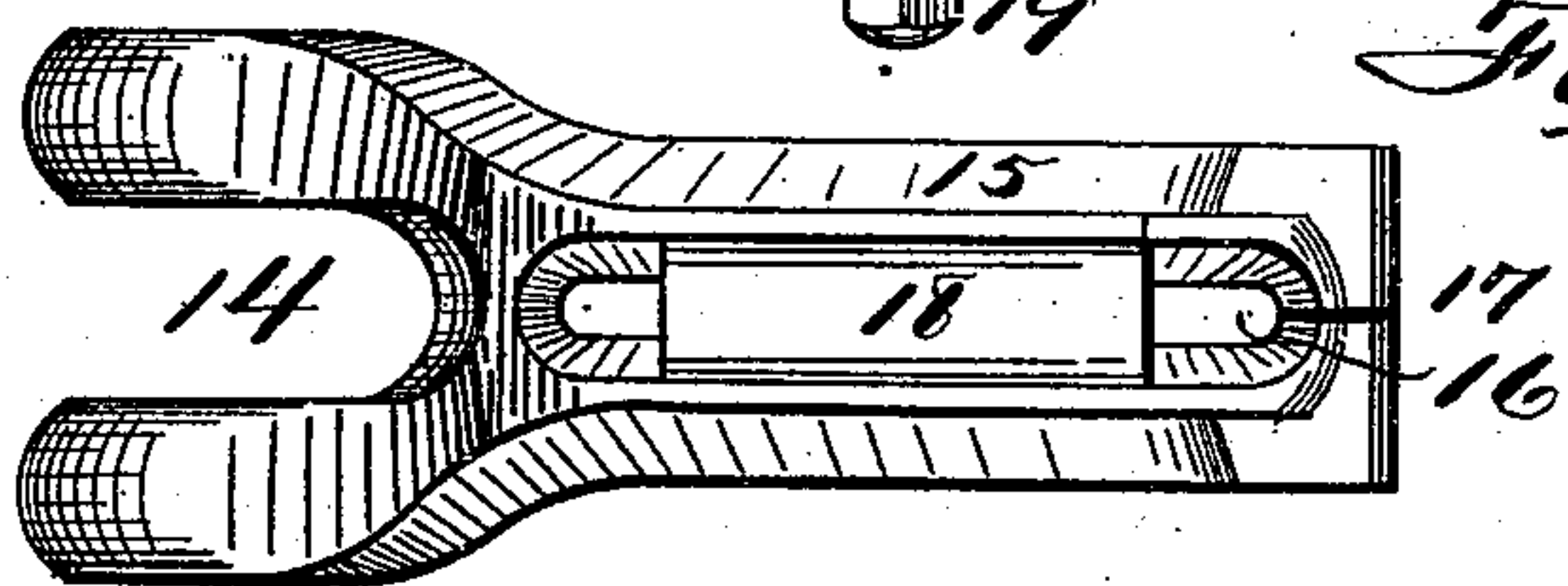
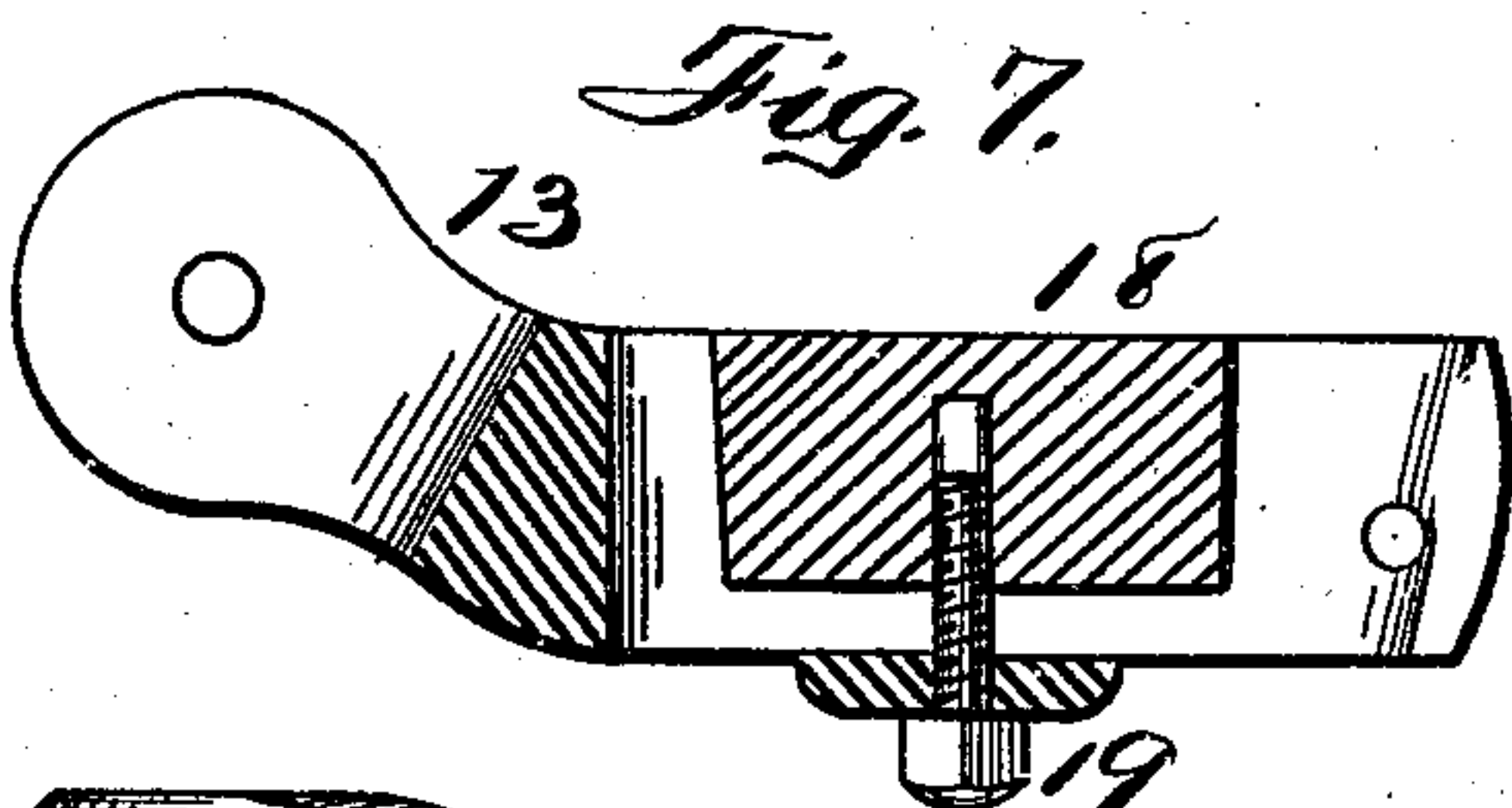
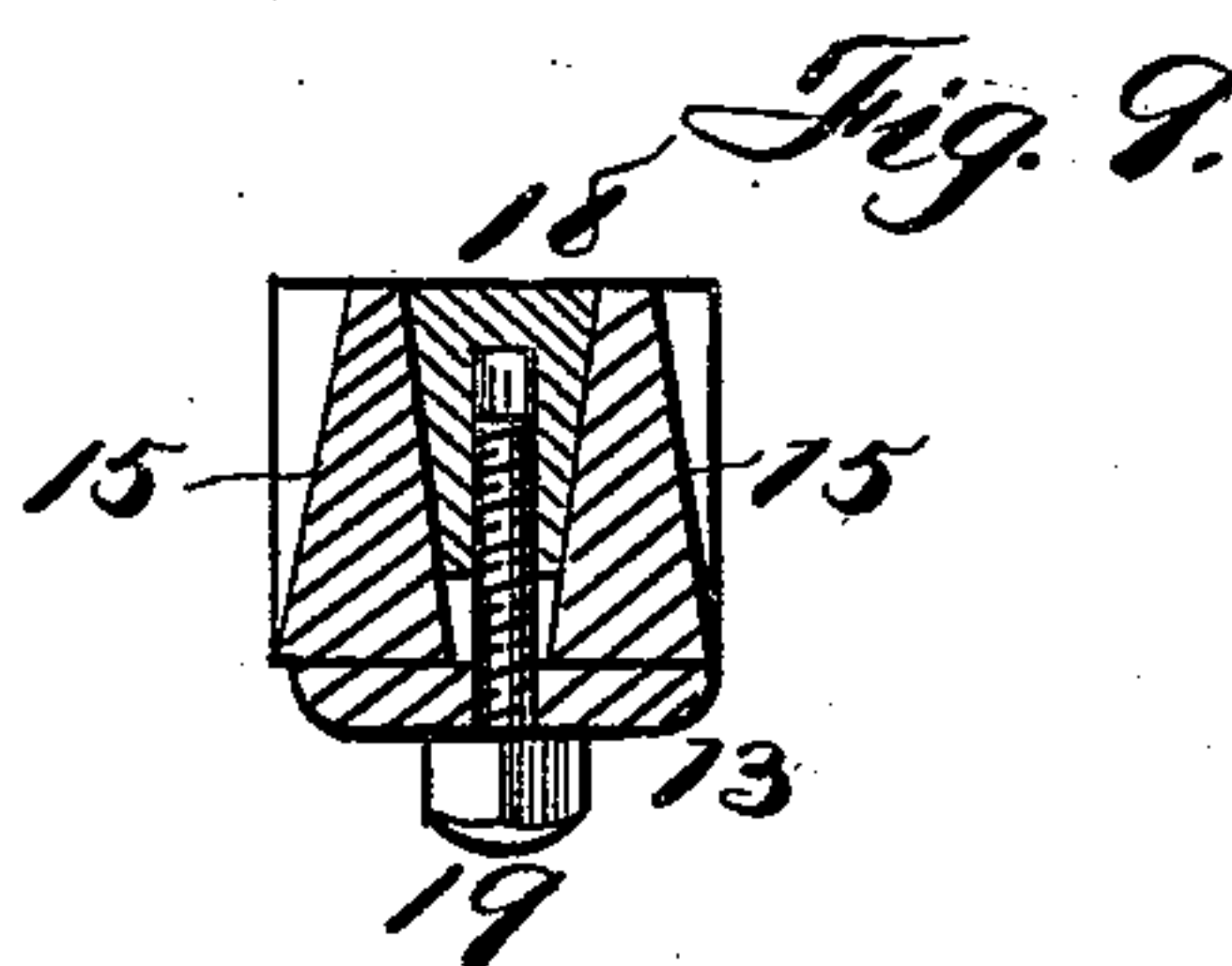
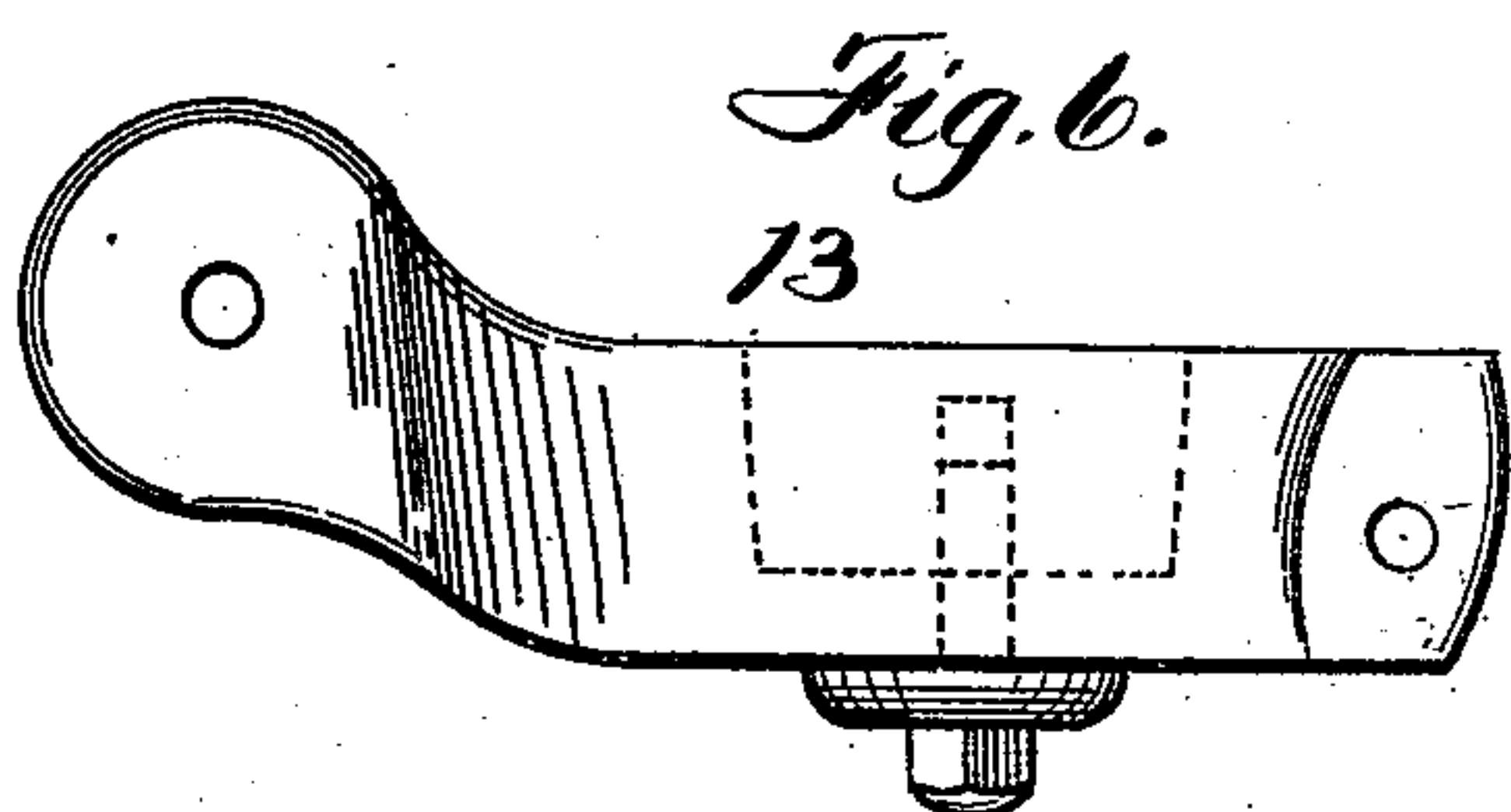
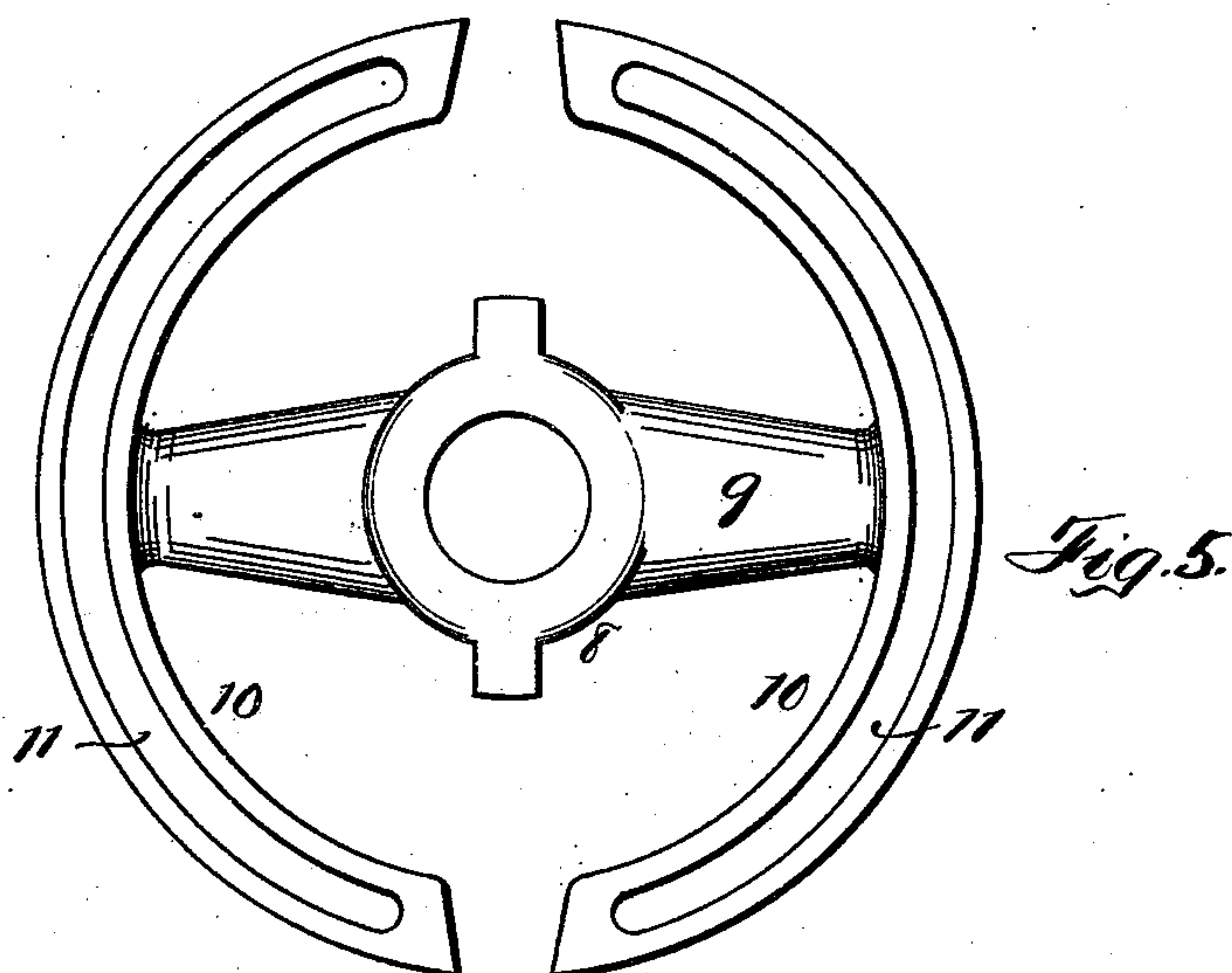
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WITNESSES:

*Charles W. Murray.*  
*Jessie O. Murray.*

INVENTOR  
**Chas. B. Rumsey**

BY

*Smith & Arinson*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

CHARLES B. RUMSEY, OF HOMER, NEW YORK.

## FRICITION-CLUTCH.

SPECIFICATION forming part of Letters Patent No. 551,840, dated December 24, 1895.

Application filed May 31, 1895. Serial No. 551,102. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES B. RUMSEY, of Homer, in the county of Cortland, in the State of New York, have invented new and useful Improvements in Friction-Clutches, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to friction-clutches adapted to transmit power from a rotating-shaft to a pulley, drum or gear, comprising a loose drum or gear and internal expanding segments adapted to be sprung outward elastically or otherwise and thereby brought into close frictional contact with the inner face of said pulley, drum or gear, so that the rotation of the shaft is thereby transmitted thereto. Its object is to improve the construction and increase the utility by decreasing the possibility of slipping by providing means whereby the frictional grip of the segments can be adjusted or varied according to the degree of the power applied thereto, whether light, medium or heavy, or the degree of the force to be transmitted by the pulley, drum or gear, or overcome by it to drive a machine or mechanism, comprising a suitable body of a pulley, drum or gear and expanding segments mounted in a suitable manner or integral with a suitable hub, the adjacent ends of said segments being separated and suitable swinging wedges being provided and connected by suitable links to a sliding collar upon the shaft, said wedges being split longitudinally and having auxiliary wedges inserted into the splits, and suitable means being provided to adjust the latter wedges, whereby the main wedges are expanded laterally, as desired, in order to vary and adjust and regulate the degree of the frictional contact of the segments with the inner face of the pulley, drum or gear.

The invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a pulley and shaft to which the clutch mechanism is ap-

plied, and showing the friction-segments in engagement. Fig. 2 is a sectional elevation of the same. Fig. 3 is a sectional elevation of the same with the segments out of engagement. Fig. 4 is an end elevation of the pulley and clutch in engagement. Fig. 5 is an elevation of a segmental friction-grip and hub. Fig. 6 is a side elevation of an expanding-lever. Fig. 7 is a longitudinal section of the same. Fig. 8 is a bottom plan thereof. Fig. 9 is a transverse section thereof through the wedge.

A is a suitable shaft upon which the pulley, drum or gear *a* is mounted loosely, comprising a hub 2, spokes 3 and overhanging rim 4. An ordinary clutch-sleeve 5 is mounted upon the shaft in any ordinary manner, as with a feather filling into a suitable way in the shaft, in order that said sleeve may always traverse the shaft in the same direct line and so that it will rotate with the shaft. Suitable ears 6 are provided upon said sleeve, to which the links 7 are pivoted. Upon the shaft the friction-grip is secured, comprising a hub 8, spokes 9 and overhanging segments 10, all integral, or in a single casting, the segments having the slotways 11, and their ends being separated by the spaces 12. Upon a suitable support, as an ear, upon one of the spokes 9, the expansion-wedges 13 are pivoted, their other ends being hinged to the links 7. These wedges comprise a body bifurcated at one end, as at 14, to make the hinge connections to a link, and transversely bored at the other to make the connection to said spoke by a suitable pivot-bolt, and having its outer intermediate faces 15 beveled so as to create a wedge and having a longitudinal slot 16, having its faces beveled or wedging substantially as shown, and having a slit 17 in one end opening into said slot, and 18 is a suitable auxiliary wedge inserted into said slot and engaging with its faces, and 19 is a suitable adjusting-screw and washer connected to said wedge, whereby the sides of said slot can be sprung apart to increase the width of the segment-expanding wedge 13.

The wedge is usually made of cast metal, as having sufficient elasticity or spring, so that when said screw is operated, said wedge will be expanded or adjusted, and thereby



will make a better fit when brought into engagement with the beveled ends of said segments, and whereby the degree of the friction-grip of the segments upon the inner face of the rim of the pulley, drum or gear can be varied to suit the use to which the pulley, drum or gear is applied and according to the amount of power or force to be transmitted by it to drive the machine or mechanism to which it is connected.

An ordinary shifting fork and lever is connected to the clutch-sleeve and by it, when said sleeve is shifted toward the pulley, drum or gear, said wedges are swung outwardly and into the spaces 12, wedging the segments apart and expanding them outwardly, throwing their outer faces into frictional contact and engagement with the inner face of the pulley, drum or gear to drive it, and when said sleeve is shifted the other way said wedges are retracted and the segments automatically and through their inherent elasticity or spring loosen their grip and the pulley, drum or gear stops its rotation, though the rotation of the shaft and expander continues.

It will be seen that the expanding-wedges are swung upon a pivot, and not traversed in a direct line to be brought into contact with the ends of the segments; that the motion is positive; that when the links are brought into alignment with each other and into parallelism with the spokes then the clutch is "on the center" and locked against accidental displacement, and that this style of expansible wedges can be applied to any type of expansion-grip segments which have a space or spaces between their ends, and

that said wedges are swung into and out of parallelism with the shaft.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a clutch mechanism, the combination with suitable expansible segments, of a pivotally mounted segment, an expanding wedge carried by said segment supported and slotted and slitted substantially as shown, a wedge within said slot, and means to adjust it to vary the width of said expanding wedge, links connected to said expanding wedge and a suitable reciprocating support for said links whereby said wedges are swung into or out of engagement with said wedges.

2. In a clutch mechanism, the combination with suitable expansible segments and spokes and hub carrying them, of an oscillating segment-expanding wedge forked at one end and pivotally mounted at that end, and having a longitudinal slot, the side walls of which are converging and provided with a slit through the end opening into said slot, an auxiliary wedge mounted in said slot and a bolt whereby said expanding wedge is adjusted to vary the width of the segment-expanding wedge and means to swing this wedge upon its end pivot into or out of engagement with said segments to expand them or permit them to resume their normal conditions.

In witness whereof I have hereunto set my hand on this 22d day of May, 1895.

CHAS. B. RUMSEY.

In presence of—

W. H. FOSTER,  
E. C. OLNEY.