No. 622,007. Patented Mar. 28, 1899.

H. S. KELLY.

FRICTION CLUTCH.

(Application filed Oct. 11, 1898.)

(No Model.) 2 Sheets—Sheet 1.

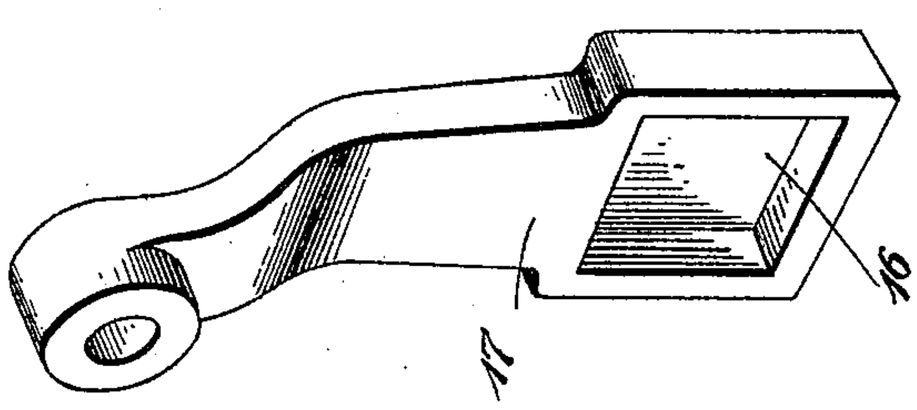

Fig. 3.

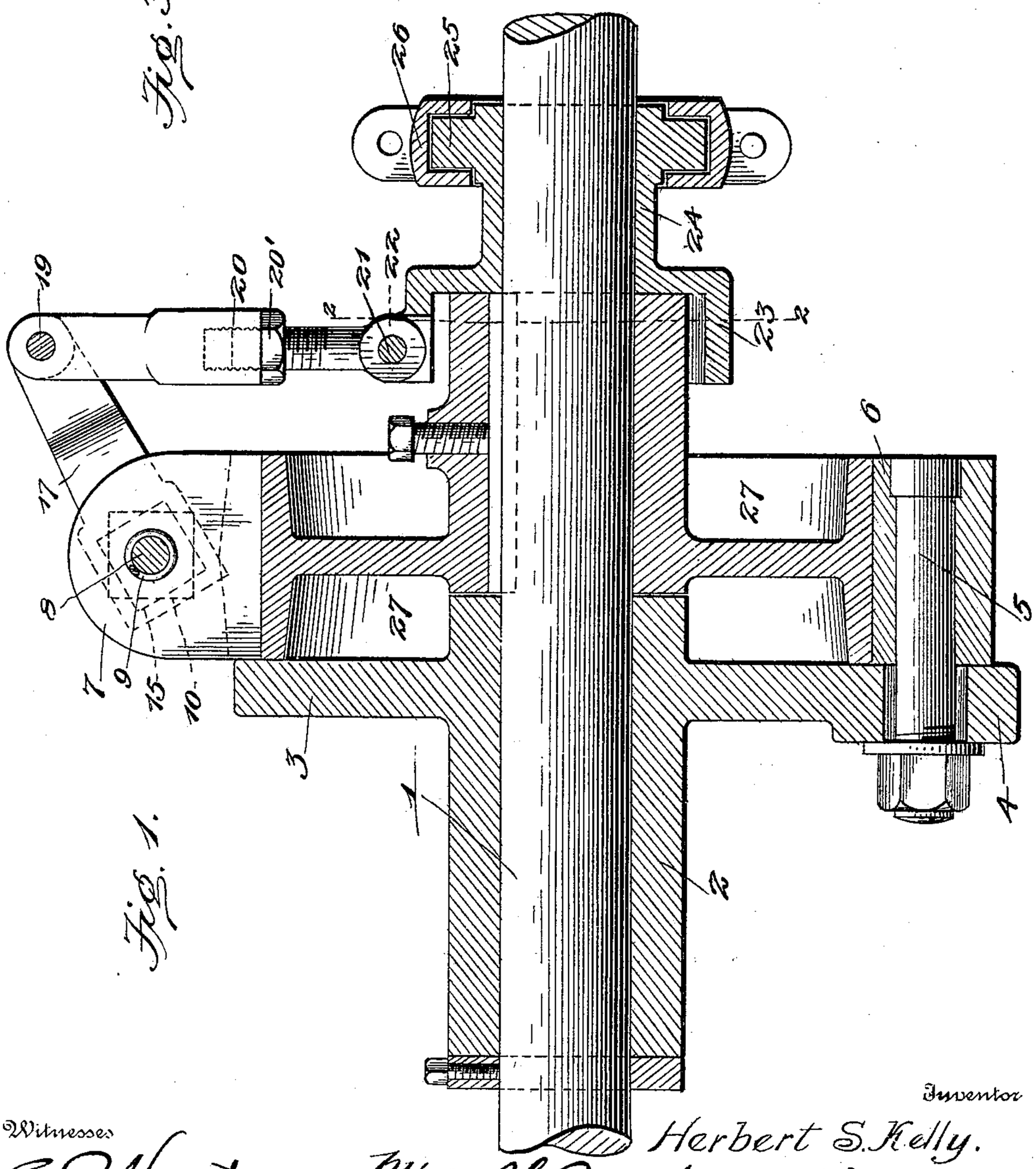

Fig. 1.

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2 Sheets—Sheet 2.

Fig. 2.

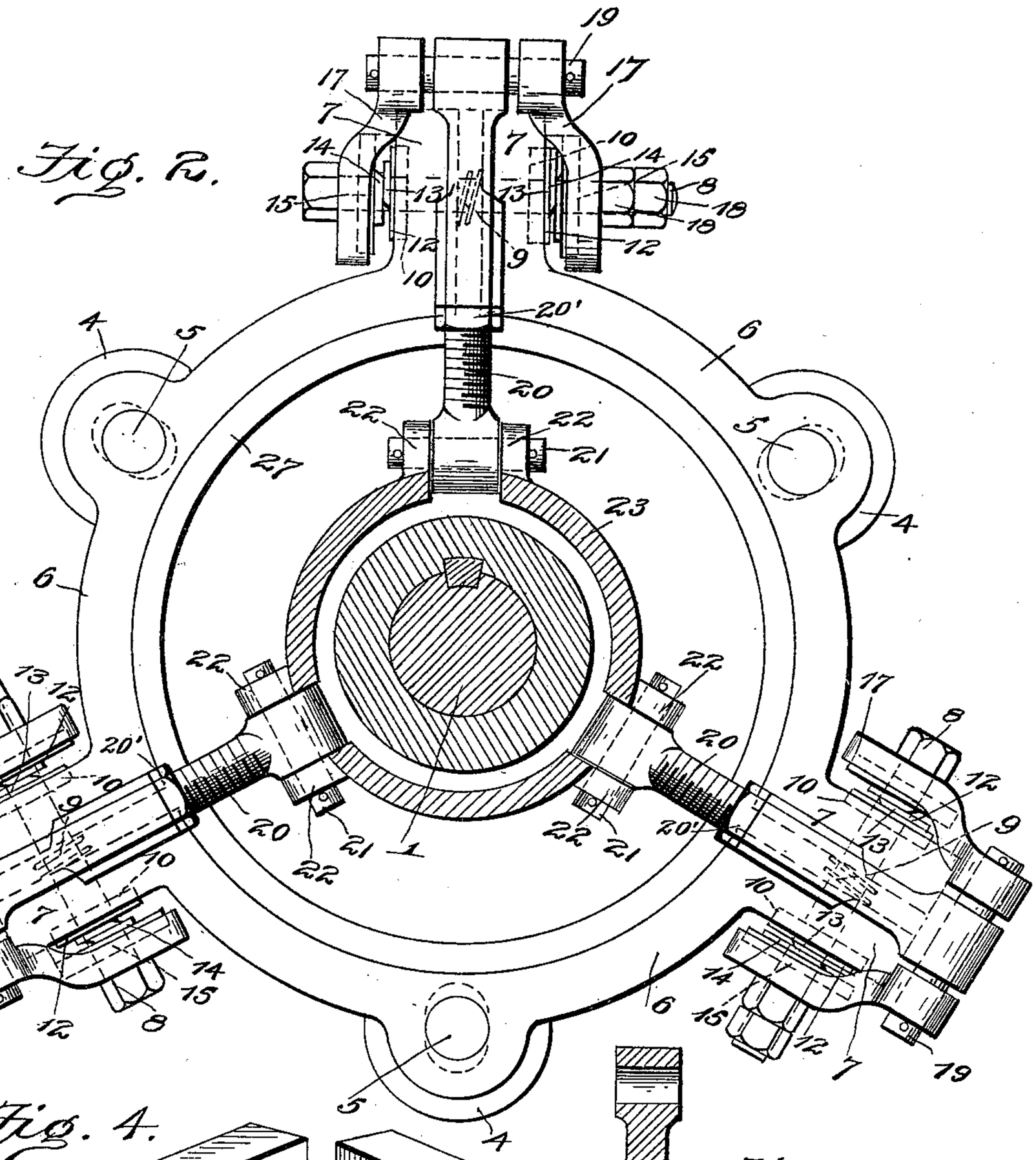

Fig. 4.

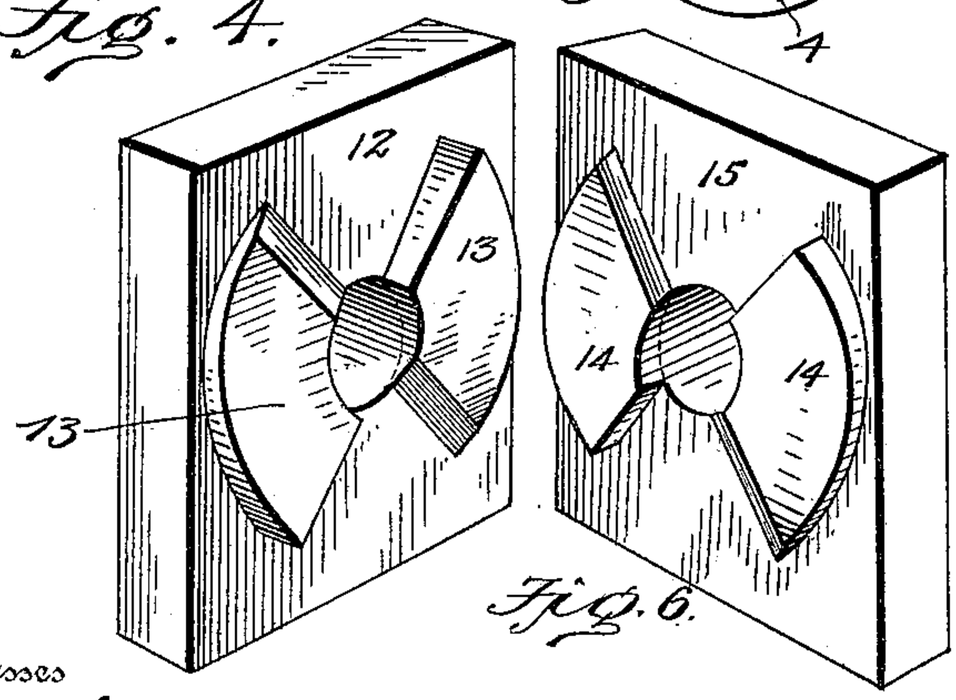

Fig. 6.

Fig. 5.

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FRICTION-CLUTCH.

SPECIFICATION forming part of Letters Patent No. 622,007, dated March 28, 1899.

Application filed October 11, 1898. Serial No. 693,244. (No model.)

To all whom it may concern:

Be it known that I, HERBERT S. KELLY, a subject of the Queen of Great Britain, residing at Salem, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Friction-Clutches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in friction-clutches; and the object is to provide a simple, effective, and powerful clutch of this character.

To this end the invention consists in the construction, combination, and arrangement of the several parts of the device, as will be hereinafter more fully described, and particularly pointed out in the claim.

The accompanying drawings show my invention in the best form now known to me; but many changes in the details might be made within the skill of a good mechanic without departing from the spirit of my invention, as set forth in the claim at the end of this specification.

The same reference characters indicate the same parts of the invention in the several views.

Figure 1 is a longitudinal section of my improved clutch as it appears applied to a line of shafting. Fig. 2 is a transverse section on the line 2 2 of Fig. 1, looking in the direction of the arrow. Fig. 3 is a detail perspective view of one of the cam-arms. Fig. 4 is a similar view of one of the cam-plates 12. Fig. 5 is a sectional detail of one of the radially-adjustable connecting-rods. Fig. 6 is a perspective view of one of the cam-plates 15.

1 denotes the shaft, and 2 a sleeve loosely mounted thereon and formed with an integral disk plate 3, provided with equilaterally-arranged and slotted ears 4 4 4 to receive the guide-bolts 5 5 5.

6 6 6 represent segmental brake-shoes fulcrumed on the bolts 5 and having their outer ends terminating in the radial ears 7 7, the contiguous parallel ears of each pair of brake-shoes being loosely connected by a bolt 8. A spiral spring 9 encompasses the bolt 8 between each contiguous pair of ears, and the outside face of each ear is formed with a rectangular recess or pocket 10, concentric with the bolt-hole, to receive a correspondingly-formed plate 12, the outer face of which is formed with the radial cam-faces 13 13, which abut against corresponding though reversely-formed cam-faces 14 14 on the rectangular plate 15, one of which is seated in the pockets 16 in the contiguous faces of the cam-arms 17 17, which are loosely mounted on the outer ends of the bolts 8. The threaded end of each of these bolts is provided with the jam-nuts 18 18, by means of which the parts supported by said bolts may be adjusted with reference to each other. The outer ends of each parallel pair of cam-arms 17 17 are connected by a rod 19, on which is loosely mounted the outer end of a connecting rod or bar 20, the inner end of which is pivoted on a bolt 21, fixed in the parallel radial ears 22 22, formed integral with the annular collar 23 on one end of the sleeve 24, which loosely encompasses the shaft 1. The opposite end of this sleeve 24 also carries a radial flange or collar 25, which is loosely encompassed by a boxing 26, fixed to a shifter-lever, (not shown,) so that the sleeve 24 may be moved longitudinally back and forth on the shaft 1.

27 denotes a pulley keyed on the shaft 1 so that its periphery is completely encompassed by the segmental brake-shoes 6 6 6.

From this construction it will be understood that when the sleeve 24 is moved toward the pulley the rods 20 force the free ends of the cam-arms 17 outwardly, which causes their inner ends to press the parallel ears of the brake-shoes together, thereby contracting the circle formed by the brake-shoes and causing the shoes to bind or firmly clamp or clutch the face of the pulley. A movement of the sleeve 24 in the opposite direction reverses the position of the parts and permits the springs 9 to withdraw the brake-shoes from the pulley.

In Fig. 5 I have shown the connecting-rod made in two pieces, so as to be adjusted longitudinally, if desired, the threaded stem being provided with a jam-nut 20′ to lock the members in their adjusted position.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

In combination, the driving-shaft, the pulley fixed thereon, the sleeve 2 loosely mounted

on said shaft and formed with the disk plate 3 provided with the radially-slotted ears, the segmental brake-shoes formed at their outer ends with the radial recessed ears 7 7, and pivoted on bolts secured in the slotted ears of said disk plate, bolts 8 extending through said ears 7 7, the recessed cam-arms 17 fulcrumed on said bolts 8, cam-faced plates removably secured in the contiguous faces of said ears 7 and arms 17, the sleeve 24 loosely encompassing said driving-shaft, and the rods 20, connecting said sleeve 24 and arms 17, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HERBERT S. KELLY.

Witnesses:
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CHARLES H. DANFORTH.