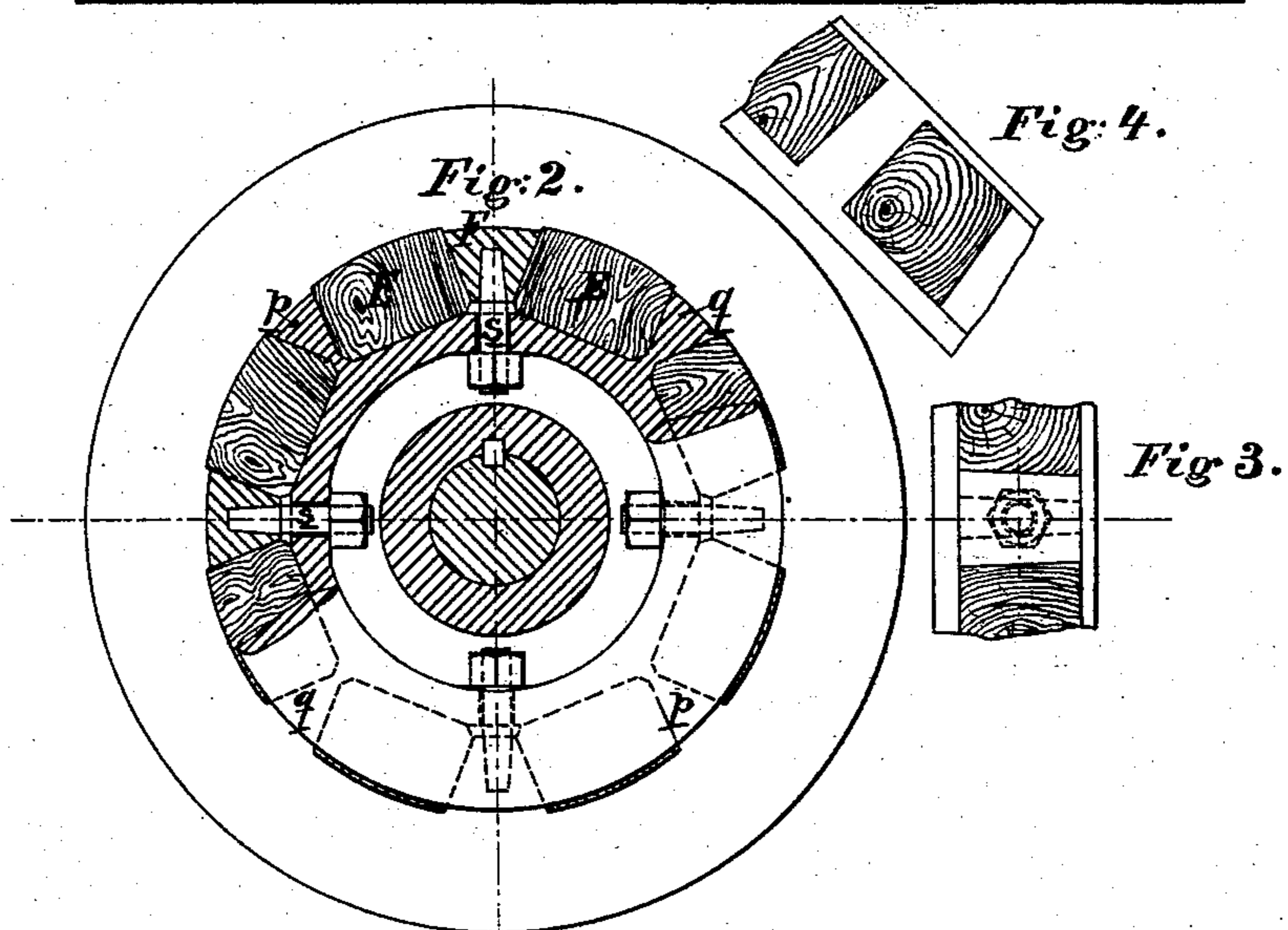
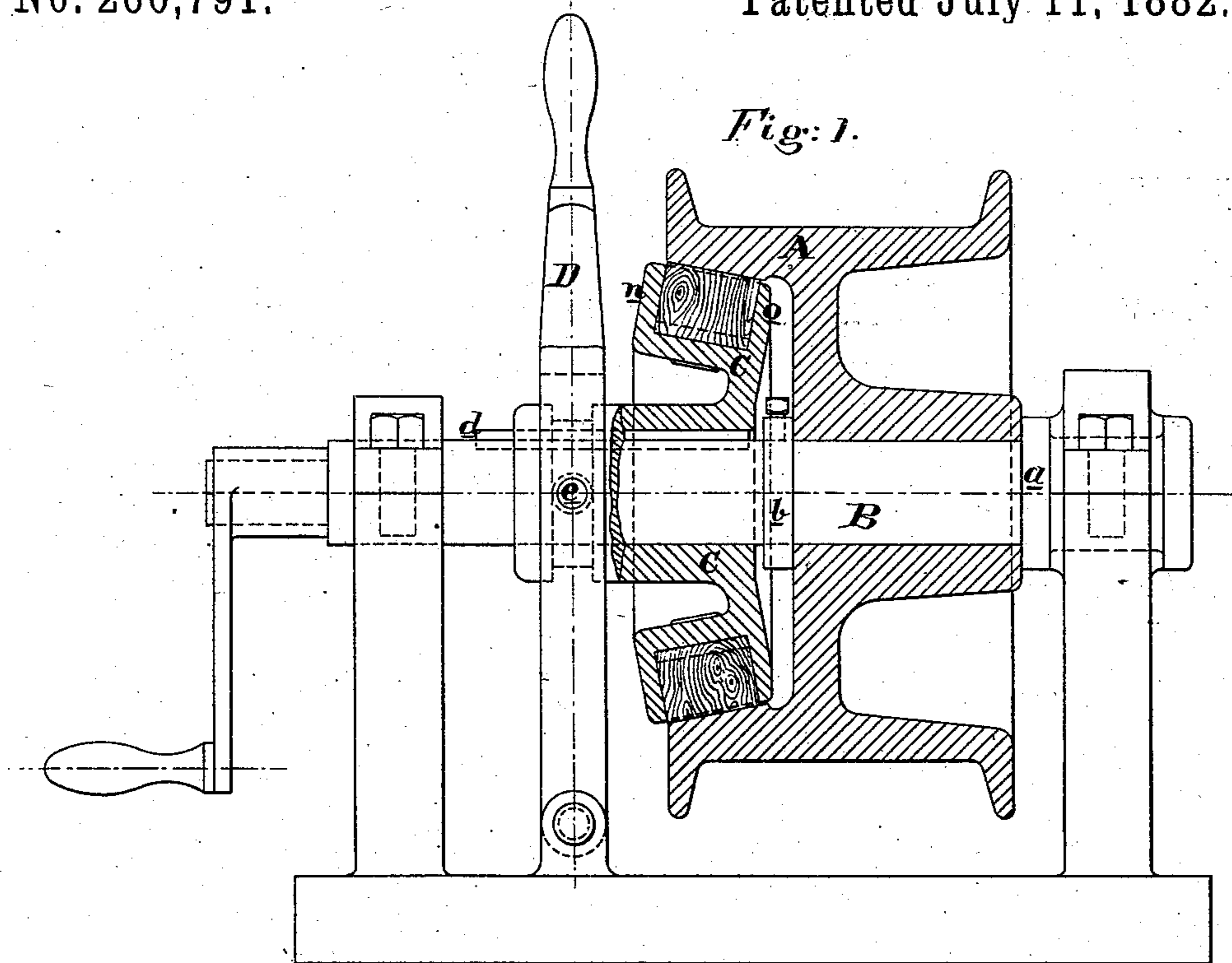


(No Model.)

W. SELLERS.  
FRICTION CLUTCH.

No. 260,791.

Patented July 11, 1882.



**Witnesses:**

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# UNITED STATES PATENT OFFICE.

WILLIAM SELLERS, OF PHILADELPHIA, PENNSYLVANIA.

## FRICITION-CLUTCH.

SPECIFICATION forming part of Letters Patent No. 260,791, dated July 11, 1882.

Application filed April 3, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM SELLERS, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Friction-Clutches, of which improvement the following is a specification.

My invention relates to that class of friction-clutches in which the power is transmitted through coned surfaces, which are pressed together proportionately to the power to be transmitted, while the surfaces are proportioned to sustain this pressure without material deterioration. The friction-surfaces of such clutches have heretofore been made of almost every variety of material—such as iron and iron, iron and brass, iron and leather, iron and wood, and other variations. When these surfaces are both of metal they are liable to seize when not properly oiled. Iron and leather are not durable under heavy work, besides being expensive in first cost. Iron and wood are free from the liability to seize under any condition of surface; but they are heavy because the part which holds the wood required to be exceptionally strong to resist the strains which the methods for holding the wood have heretofore produced. They are troublesome to fit up from the same cause, and they are difficult to keep in repair, because wood is liable to shrink in most situations where such clutches are employed.

In order that the wood may most perfectly sustain the pressure and friction to which it must be subjected in such clutches, it is necessary that the end of its grain shall be presented to the metal surface against which it first slides, and, as the pressure is increased, through which it transmits the power.

It is the object of my invention to improve this form of friction-clutch by securing the wood to the metal frame which carries it in a convenient and inexpensive manner, and so that this wood may be readily tightened in place if it should become loose from any cause; also to lessen the cost of this frame, as well as to lighten and strengthen it; and to this end my invention consists in providing recesses in the circumference of a circular metal frame with two wooden friction-blocks to each recess, and securing each pair of blocks therein by a radial wedge between them; and it also consists

in securing wooden friction-blocks upon the circumference of a circular metal frame by radial wedges bolted to the frame between the blocks.

In the accompanying drawings, which make part of this specification, Figure 1 is a side elevation of my improved friction-clutch, partly in section. Fig. 2 is an end elevation of the circular metal frame and its wooden friction-blocks, partly in section. Fig. 3 is a plan of a portion of the circular metal frame, showing the radial wedge between two wooden friction-blocks; and Fig. 4 is a plan of a portion of the circular metal frame, showing the bar at the end of each recess between two wooden friction-blocks.

In Fig. 1 the drum A, from which the power is transmitted by a rope or chain wound upon its exterior, is shown in section, and runs loosely upon the shaft B, which is supported upon a suitable frame, and is held in place laterally by the fixed collar *a* on the outside of the drum, and the loose collar *b* on the inside. This collar *b* is secured to the shaft B by a set-screw. Beyond the collar *b*, I provide a circular metal frame, C, which slides freely upon the shaft B; but is prevented from turning thereon by the feather-key *d*. The hub of this frame C is prolonged, so as to receive a groove in which are blocks pivoted at *e*, through which the frame C is moved endwise upon the shaft B by the lever-handle D, as is well understood. The circular rim of this frame C is divided into four pockets, which are formed by the flanges *n o* and cross-bars *p q*, and into the pockets thus formed wooden friction-blocks E E are placed, and securely held by the radial wedges F when these wedges are drawn toward the center of the frame C by the screw-bolts *s*. I prefer to make the sides of these blocks E E parallel where they are clamped between the radial wedges F and the cross-bars *p q*, because by so doing I am enabled to dress up all the blocks in one piece and then cut them off to the required length, whereby the fitting is rendered extremely inexpensive. The radial wedges F and cross-bars *p q* are made to conform thereto, so that when these wedges are tightened the blocks are firmly held. When all the blocks have been placed in position and secured therein, I turn off their ends to conform to the conical end of the drum A.

It will be observed from the foregoing description that should the wooden blocks shrink so as to become loose, they can be tightened without removing the circular frame from its position by simply tightening the screw-bolts 5 s; also, that if the ends of these blocks wear, they can be readily readjusted by slacking a screw-bolt, taking out the two blocks thus released, and replacing them with paper or tin 10 under them, so as to pack them out to the desired extent and again securing them by tightening the screw-bolt. This operation can be repeated until all are readjusted. In some instances it may be desirable to secure such 15 wooden friction-blocks upon a smooth cylindrical surface, for which purpose it is only requisite to double the number of radial wedges and screw-bolts—that is, to provide radial wedges and screw-bolts in place of the fixed 20 cross-bars *p q*; but in this case there should be provision for a positive support against the outward thrust of the wooden blocks in case they should become loose from any cause. A

flange, as at *n*, or a projection from each side of the wedges in the place of this flange, would 25 afford all the needed support.

Having thus described the object and nature of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a friction-clutch, a series of pockets arranged about the circumference of a metal frame, in combination with a series of radial wedges and wooden friction-blocks, whereby each radial wedge secures two friction-blocks in each pocket, substantially as and for the 35 purposes set forth.

2. In a friction-clutch, a circular metal frame, in combination with a series of wooden friction-blocks alternating with a series of radial wedges, whereby the friction-blocks are secured 40 upon the circumference of the metal frame, substantially as and for the purposes set forth.

WM. SELLERS.

Witnesses:

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