

(No Model.)

I. L. ROBERTS.  
CLUTCH.

No. 253,889.

Patented Feb. 21, 1882.

Fig. 1.

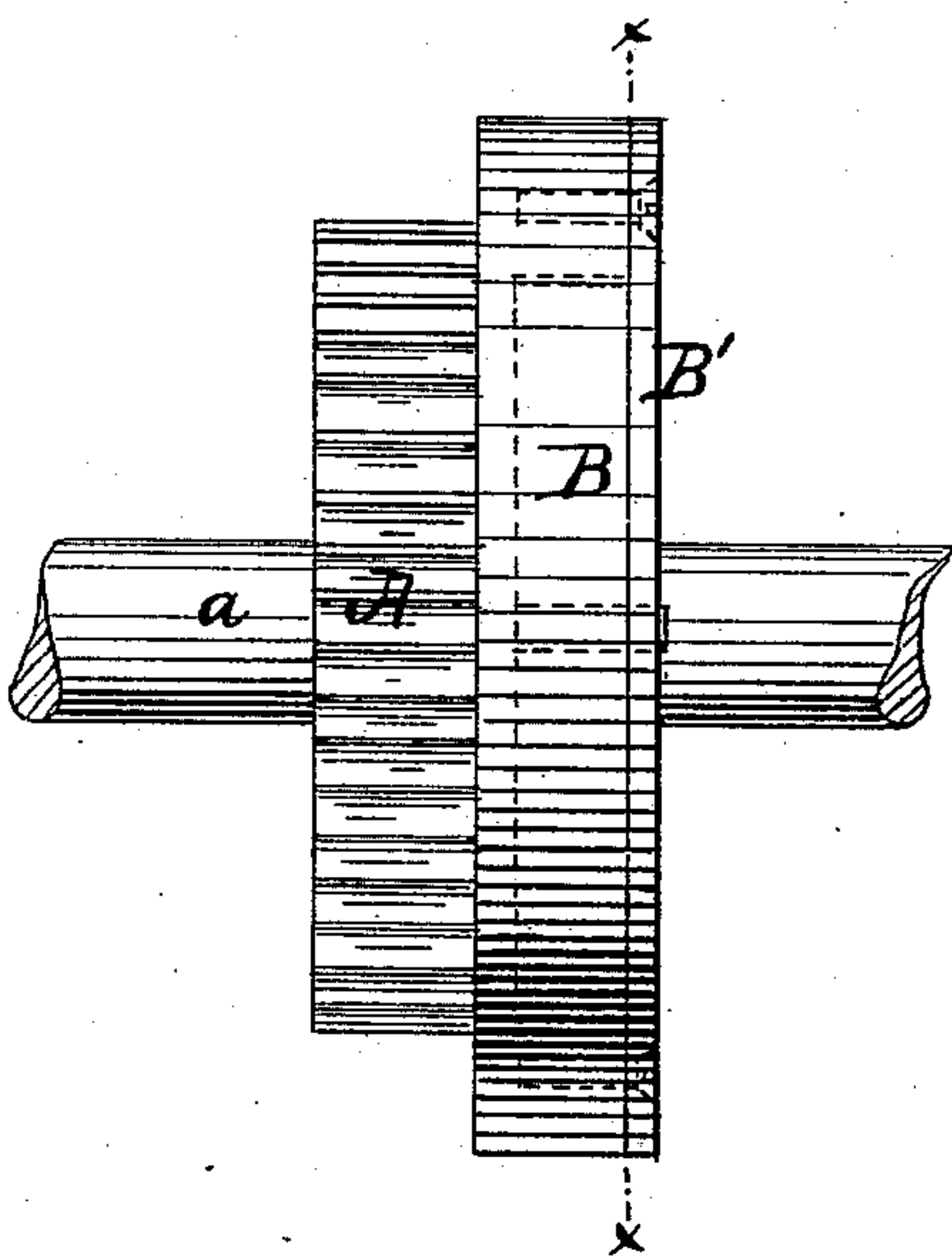
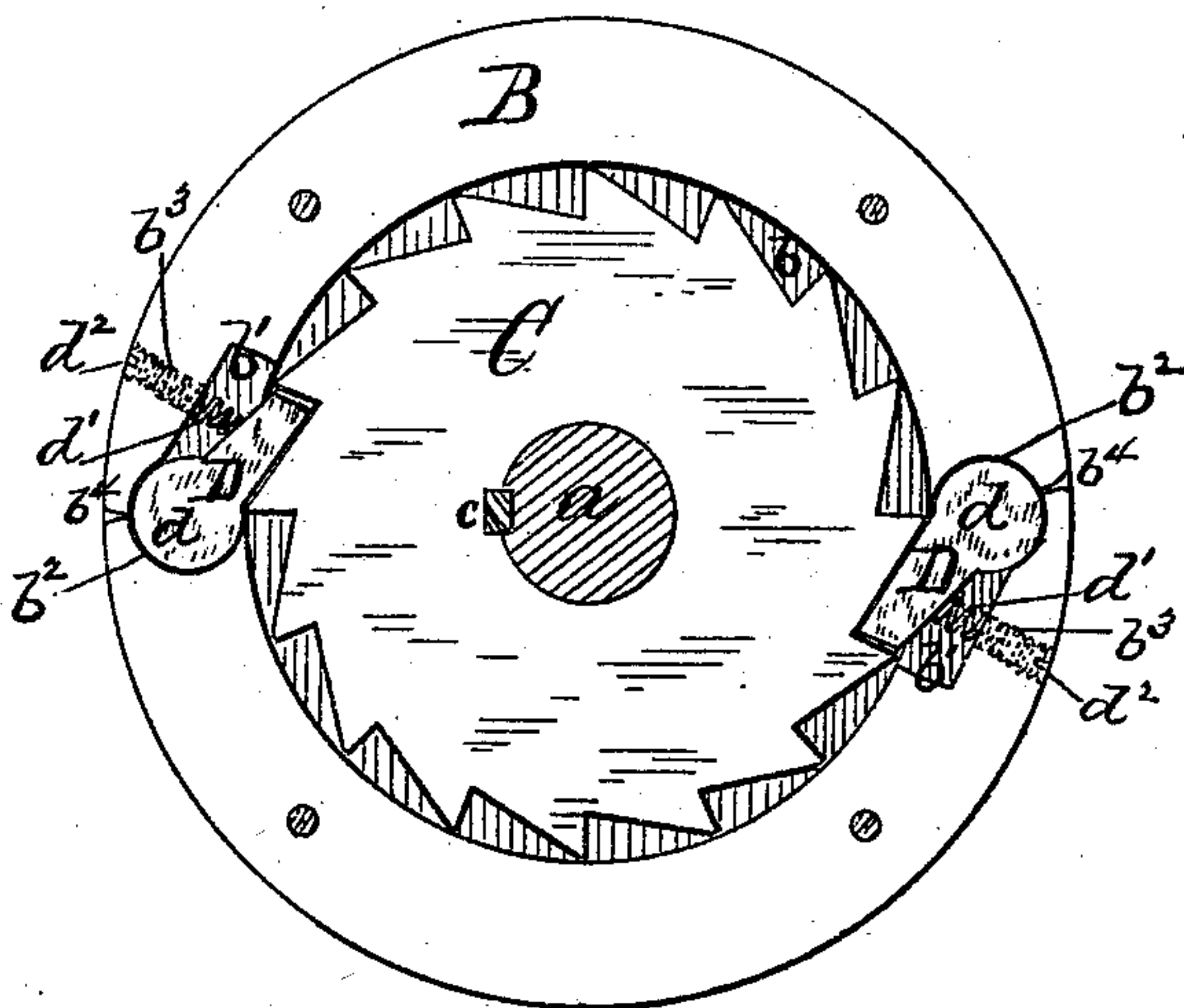


Fig. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ISAIAH L. ROBERTS, OF JACKSONVILLE, FLORIDA.

## CLUTCH.

SPECIFICATION forming part of Letters Patent No. 253,889, dated February 21, 1882.

Application filed December 19, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, ISAIAH L. ROBERTS, of Jacksonville, Duval county, State of Florida, have invented an Improved Clutch, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a clutch device for use in imparting a rotary motion to a shaft from the reciprocatory motion of a ratchet-bar or its equivalent; and my invention consists in the combination of devices hereinafter particularly named and described, and arranged to operate as set forth.

Figure 1 is an edge elevation of a clutch embodying my invention, and showing the same mounted on a shaft. Fig. 2 is a sectional view of the same on the line  $x x$ , Fig. 1.

A is a gear which is mounted on the shaft  $a$ , and is arranged to turn loosely on said shaft.

At B is a housing or disk which is cast with or otherwise formed upon or secured to the gear, at the side thereof, as shown, and it is arranged to turn loosely on the shaft, so as to run thereon with the gear. This disk or housing B is recessed at  $b$ , on the side opposite to that adjacent to the gear, and in this recess is the ratchet-wheel C, fixed on the shaft  $a$  by a key,  $c$ , or other suitable means. The depth of the recess  $b$  is somewhat greater than the thickness of the wheel C, so that said wheel has full play therein, and the diameter of the recess is a little greater than the diameter of said wheel, for a similar reason.

At D are shown dogs or detents, which may be one or more in number, which are pivoted in the rim of the housing B, and by means of springs are held against the toothed face of the wheel C. These dogs are made as broad throughout their extent as the face of the wheel C, so that the jaws of the dogs will take across the whole face of the wheel, on any of the teeth thereof. The dogs are given play in the housing B to allow them to pass over the teeth of the wheel C when said gear A and housing B are rotated in the direction opposite to the throw of said teeth, and this play is secured by means of a recess,  $b'$ , in the housing, back of each dog, as shown. The pivot of the dog to the housing is accomplished by cutting a cylindrical recess,  $b^2$ , in the housing, as shown, of a depth equal to the entire breadth of the

dog, and opening out into the recesses  $b$  and  $b'$ , and by forming the heel of the dog in the shape of a cylinder, as at  $d$ , adapted in size to enter and play in said recess  $b^2$ , as shown in Fig. 2. An exceedingly compact and strong pivot-joint of the dog to the housing is thus secured.

At  $d'$  is a coil-spring set in a recess or opening,  $b^3$ , extending from the recess  $b'$ , in which the dog plays, to the circumference or periphery of said housing. The spring impinges upon the dog, as shown, holding the jaw against the wheel C. The orifice of the recess  $b^3$ , at the periphery of the housing, may be closed by a set-screw,  $d^2$ , by means of which the pressure of the spring on the dog may be adjusted.

At  $b^4$  are oil-holes by which the lubrication of the pivot-joint of the dog in the housing may be done.

A plate, B', closes in the side of the housing B, and is secured by screws, as shown.

It is evident that a reciprocating bar working in the gear A will rotate the gear and housing B on the shaft alternately in opposite directions, and that the rotation of the housing in one of said directions will engage the dog or dogs with the ratchet C, and the shaft will consequently be thereby rotated in that direction during that stroke or throw of the bar. By placing a housing carrying dogs and inclosing a ratchet-wheel on each side of the gear A, and arranging the ratchet on one side with right-hand teeth and on the other with left-hand teeth, it is evident that the shaft  $a$  will be rotated in one and the same direction during both the upward and downward throw of a bar working in the gear A.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a clutch device, the combination of the gear A and housing B, loose on the shaft  $a$ , said housing being recessed at  $b$  to receive the ratchet-wheel C, keyed to said shaft, and having the dogs D, formed with cylindrical heels  $d$ , working in recesses  $b^2$ , together with recesses  $b'$ , springs  $d'$ , and the plate B', all constructed and arranged to operate substantially as and for the purpose specified.

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Witnesses:

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