

(No Model.)

W. E. NICKERSON.
INTERMITTENT GRIP DEVICE.

No. 390,796.

Patented Oct. 9, 1888.

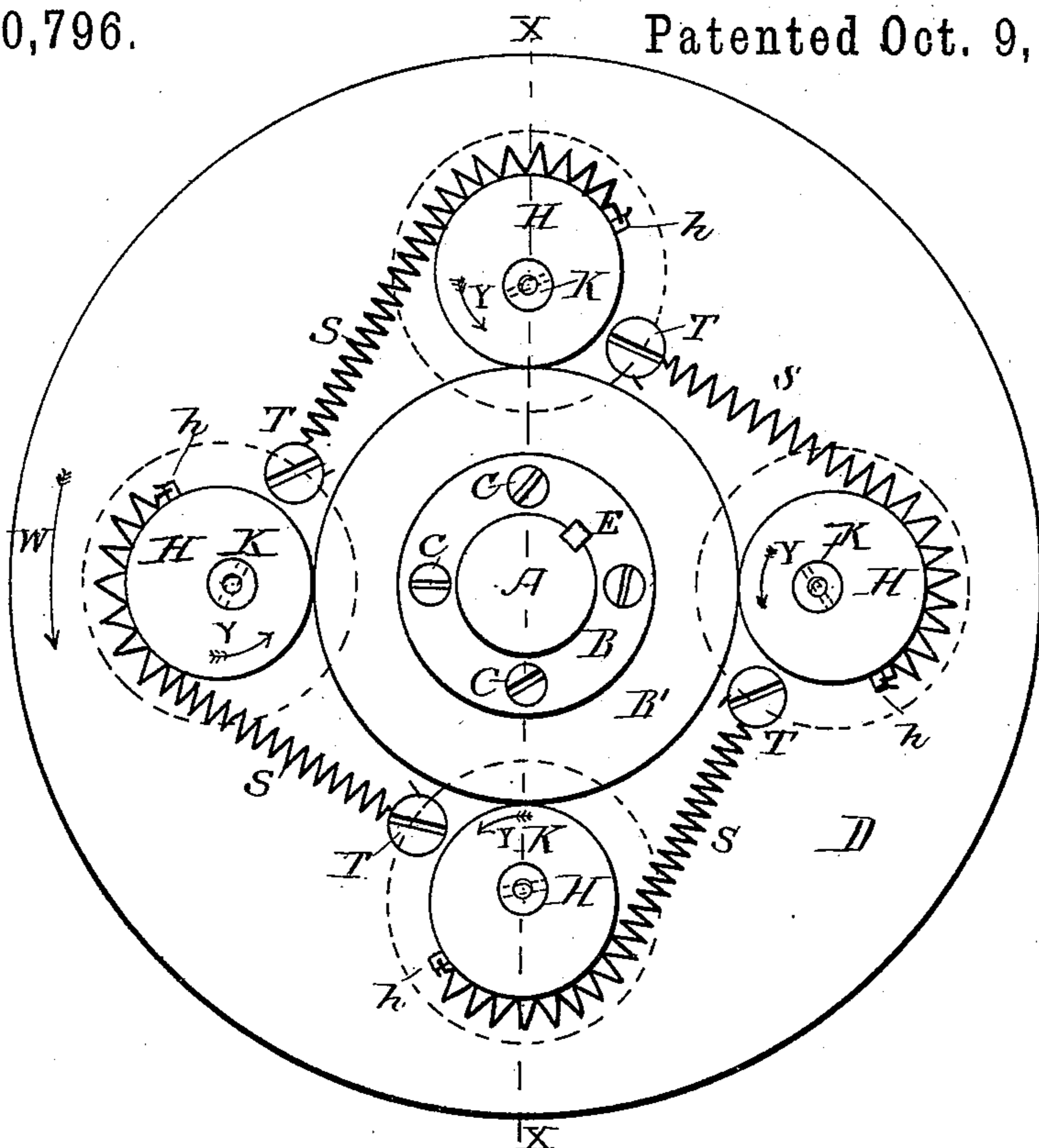
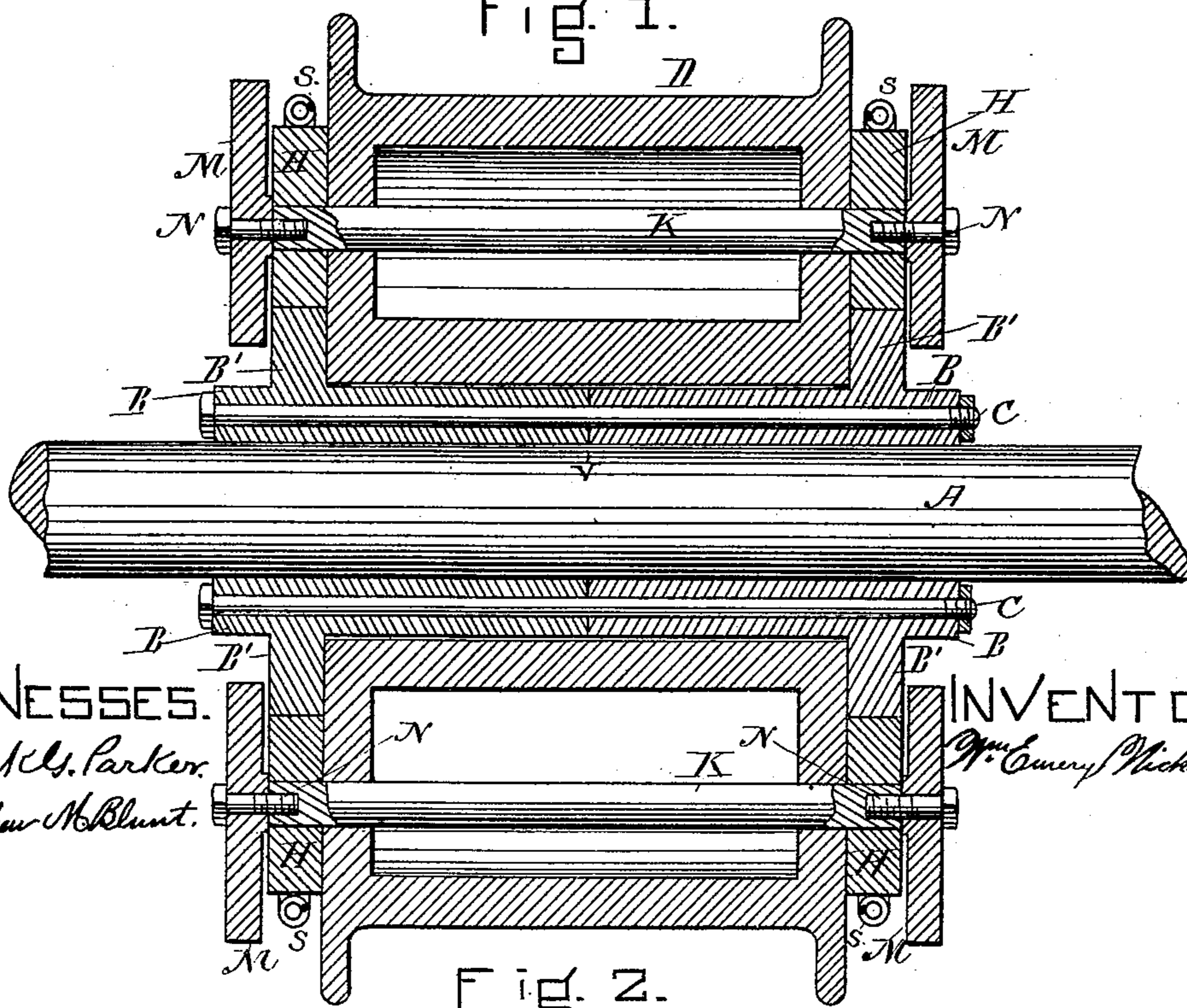


Fig. 1.



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INTERMITTENT GRIP DEVICE.

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Application filed October 3, 1887. Serial No. 251,286. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EMERY NICKERSON, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Intermittent Grip Devices, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to so construct an intermittent grip device that it may be particularly adapted for holding against strains exerted in one direction only. This object I attain by the mechanism shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my device; and Fig. 2 is a vertical section of the same, taken on line *x x* of Fig. 1.

In the drawings I have shown one form or adaptation of my friction-clutch. In this form the central shaft, A, is stationary and has keyed to it by two keys, one of which is shown at E, Fig. 1, a spool or bushing, B, divided in the center *v*, Fig. 2. For convenience in connecting the pulley D to the shaft, the two parts of the spool B B are held together by the screws C C.

At each end of the spool B, I have circular flanges B'. These flanges are made of hard metal and cannot turn on their axis, as they form a part of the spool B which is keyed to the shaft A, as has already been set forth. The circular flanges B' B' extend beyond the faces of the pulley D, as shown, and are made sufficiently thick to give a broad peripheral bearing.

Upon each face of the main pulley D, I place a number (four in this case) of eccentrics, H H H H, swinging upon rods K, to which they are held by washers M M and screws N N. (See Fig. 2.)

Each of the eccentrics H H is kept in such a position by springs S S that it will be ready to act when needed, the tendency of the springs being to draw the eccentrics H in the direction indicated by the arrows Y Y, as shown in Fig. 1. The springs S S S S are connected severally at *h h h h* to the eccentrics H H H H, and at T T T T to the face of the pulley D. (See Fig. 1.)

The action of my device may be explained

as follows: In turning the pulley D in the direction indicated by the arrow W the eccentrics H H H H will move bodily in the direction indicated by the arrow W, but will, by the action of friction on the circular flanges B' B', have a tendency to move—that is, rotate—on their own axes in the direction of the arrows Y Y Y Y, and the springs S S S S will also act to move the eccentrics in the same direction, thus causing a great frictional bearing between the eccentrics H H H H and the flanges B' B'—in fact preventing the rotation of the pulley D in the direction of the arrow W. In case the pulley D rotates in a direction opposite to that indicated by the arrow W, then the frictional bearing of the eccentrics H H H H on the flanges B' B' will have a tendency to make the eccentrics rotate against the arrows and in a direction against the tendency of the springs S S S S; in other words, the bearing-surfaces of the eccentrics and flanges will have a tendency to separate and thus leave the pulley D free to rotate in a direction opposite to that indicated by the arrow.

My invention is especially adapted for use as a windlass, although it may be applied to various purposes—for instance, to the cloth-roll of a loom, or to a treadle device, around which—that is, the drum D—a rope may be coiled in several turns—that is, turns enough so that the user, by exerting a slight strain, can prevent slipping. The eccentric clutches H H entirely prevent any rotation of the drum; but when the user wishes to let the rope go he can slack up and the rope will slip around the drum, and when he wishes to haul in any number of men may pull on the rope and cause the drum to revolve, and although the strain on the rope may be enormous a very slight strain on the end of the rope in the hands of the user will prevent any slip, and as the drum cannot rotate the rope is held against any strain.

It will be observed that the gripping action in my device is not between one pulley and another one by its side, but between the pulley D, which carries the eccentrics H H, and the shaft A. The gripping devices cause a frictional connection between the pulley D and the spool of the shaft A only when the pul-

ley D is going in one direction, as has been explained.

I claim—

5 In an intermittent grip device, the combination of the shaft A and the bushings B B, having circular flanges B' B', with the eccentrics H H, springs S S, and pulley D, all operating

together substantially as described, and for the purpose set forth.

WM. EMERY NICKERSON.

Witnesses:

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