

(No Model.)

M. W. GROVESTEEN.

CLUTCH.

No. 347,708.

Patented Aug. 17, 1886.

Fig. 2.

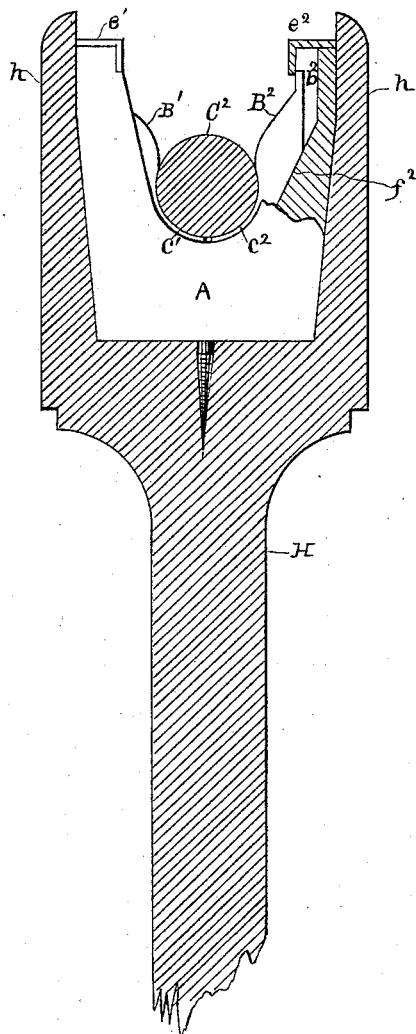


Fig. 1.

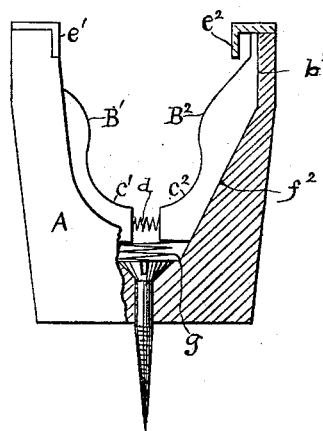
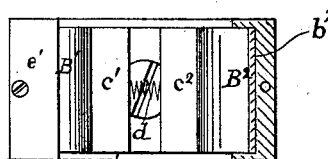


Fig. 3.



WITNESSES:

Charles A. Terry.
Caroline E. Davidson.

Milton W. Grovesteen. INVENTOR
BY
Robert Edgecomb
ATTORNEY

UNITED STATES PATENT OFFICE.

MILTON W. GROVESTEEEN, OF NEW YORK, N. Y.

CLUTCH.

SPECIFICATION forming part of Letters Patent No. 347,708, dated August 17, 1886.

Application filed December 17, 1885. Serial No. 186,004. (No model.)

To all whom it may concern:

Be it known that I, MILTON W. GROVESTEEEN, a citizen of the United States, residing in the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Clutches, of which the following is a specification.

My invention relates to the class of devices employed for temporarily coupling a rope or cable with any desired object which is to be moved thereby or which is to convey its movement to the cable.

The object of the invention is to provide a suitable clutch or grip which may be conveniently applied to pulleys and in other positions for automatically grasping the cable by reason of the pressure exerted as it is passing over or through the same.

The invention consists in constructing a clutch or grip in substantially the following manner: Two jaws, which are independent of each other, are normally held in a forward position and separated from each other through the instrumentality of a suitable spring. When the rope or cable passes between them, or they are pressed against the cable, the jaws are driven inward, and, riding upon suitable converging shoulders, they are caused to approach one another. This movement of the jaws causes the cable to be gripped and wedged firmly in the clutch. The greater the pressure or pull exerted upon the cable the greater will be the closing pressure exerted by the jaws upon the cable. The jaws are preferably held in sockets formed in the arms or sides of a U-shaped supporting-case. The jaws are beveled upon their outer surfaces, and extend into a V-shaped opening converging toward the bottom of the case. Normally the jaws are held forward by a spring tending to press them apart. When a cable is passing between the jaws, it forces them downward, compressing the spring, and, by reason of the converging shoulders, it forces them toward each other.

I am aware that it has been proposed to construct a clutch with jaws which move in the direction of the length of the cable, and to provide the same with springs which tend to close the jaws upon the cable.

It has been proposed to construct a grip by placing between two converging plates two

jaws or levers pivoted to each other in such manner that the long arms bear against the plates and receive the cable, while the short arms bear against a movable slide, to which a spring is applied, tending to separate the grip-surfaces from the cable.

In the accompanying drawings, Figure 1 is a front elevation, partly in section, of a clutch embodying the features of the invention; and Fig. 2 shows its application to a wheel or pulley. Fig. 3 is a plan of the clutch.

Referring to the figures, A represents a suitable inclosing-case, which may be of cast-iron, brass, or other suitable material, for holding the jaws B' and B². These jaws are contained in corresponding openings, b², formed in opposite sides of the U-shaped inclosing-case. The jaws are preferably cut away through their upper portions, but approach each other near their lower ends, as shown at c' and c², thereby forming a bearing-surface for the cable C², which it is designed shall be grasped by the clutch. A spring, d, extending between the jaws below the bearing-surfaces, tends to press them apart. The upper or outer ends of the jaws extend behind suitable shoulders, e' and e², which preferably consist of removable caps secured to the case, and thus the jaws are prevented from being thrust out of the case. The inner or lower ends of the jaws are cut away upon their outer surfaces and bear upon corresponding converging shoulders formed in the case A. The tendency of the jaws to separate by reason of the spring d causes them to slide upward into the position shown in Fig. 1. When, however, sufficient pressure is exerted upon the bearing-surfaces c' and c², the jaws are forced downward, and at the same time they are brought toward each other by reason of the surfaces, as shown in Fig. 2. A spring, g, may be employed in addition to the separating-spring d, for the purpose of forcing the jaws outward; but such construction is not always essential.

It will be readily understood that the greater the amount of pressure exerted against the bearing-surfaces of the jaws, the greater will be the grip given to the cable by the pressure of the jaws towards each other.

A pulley or belt wheel, H, as shown in Fig. 2, may be equipped with a series of these grips or clutches, each case A being separately se-

cured into the periphery of the wheel, which is preferably constructed with flanges *h h*.

The shape of the jaws may be somewhat modified, and the precise manner in which they are caused to approach each other is also capable of being varied, the principle being that the jaws are moved bodily toward each other when pressed in by the tension or pressure of the cable, chain, or rope which is passing through it, or along which it is being carried.

It is evident that this form of grip is applicable to other purposes than pulley-wheels. It may, for instance, be readily adapted to couple cars with a cable employed in cable railways.

I claim as my invention—

1. A cable-grip consisting of the combination, substantially as hereinbefore set forth, of the converging shoulders, two independently-movable jaws sliding upon the same, transverse bearing-surfaces upon said jaws for receiving the cable, and a spring tending to normally press said jaws apart.

2. The combination, substantially as hereinbefore set forth, in a cable-grip, of an inclosing-case, two independently-movable jaws, converging shoulders upon which the said

jaws ride, transverse bearing-surfaces upon said jaws for receiving the cable, a spring tending to force said jaws apart, and by so doing slide them upon said shoulders, and means for preventing said jaws from being thrust out of the case.

3. A cable-grip consisting of the combination of the inclosing-case or support, two independently-movable jaws, converging surfaces against which said jaws press, means for causing the jaws to separate and press against said surfaces and transverse bearing-surfaces upon said jaws for receiving the cable, substantially as described.

4. The combination, substantially as hereinbefore set forth, of the case *A*, having interior confronting converging shoulders, the jaws *B'* and *B''*, having the bearing-surfaces *c'* and *c''*, respectively, the springs *d* and *g*, tending to force said jaws outward and apart, and the projections *e'* and *e''*.

In testimony whereof I have hereunto subscribed my name this 1st day of December, A. D. 1885.

MILTON W. GROVESTEE.

Witnesses:

CAROLINE E. DAVIDSON,

CHARLES A. TERRY.