

No. 627,301.

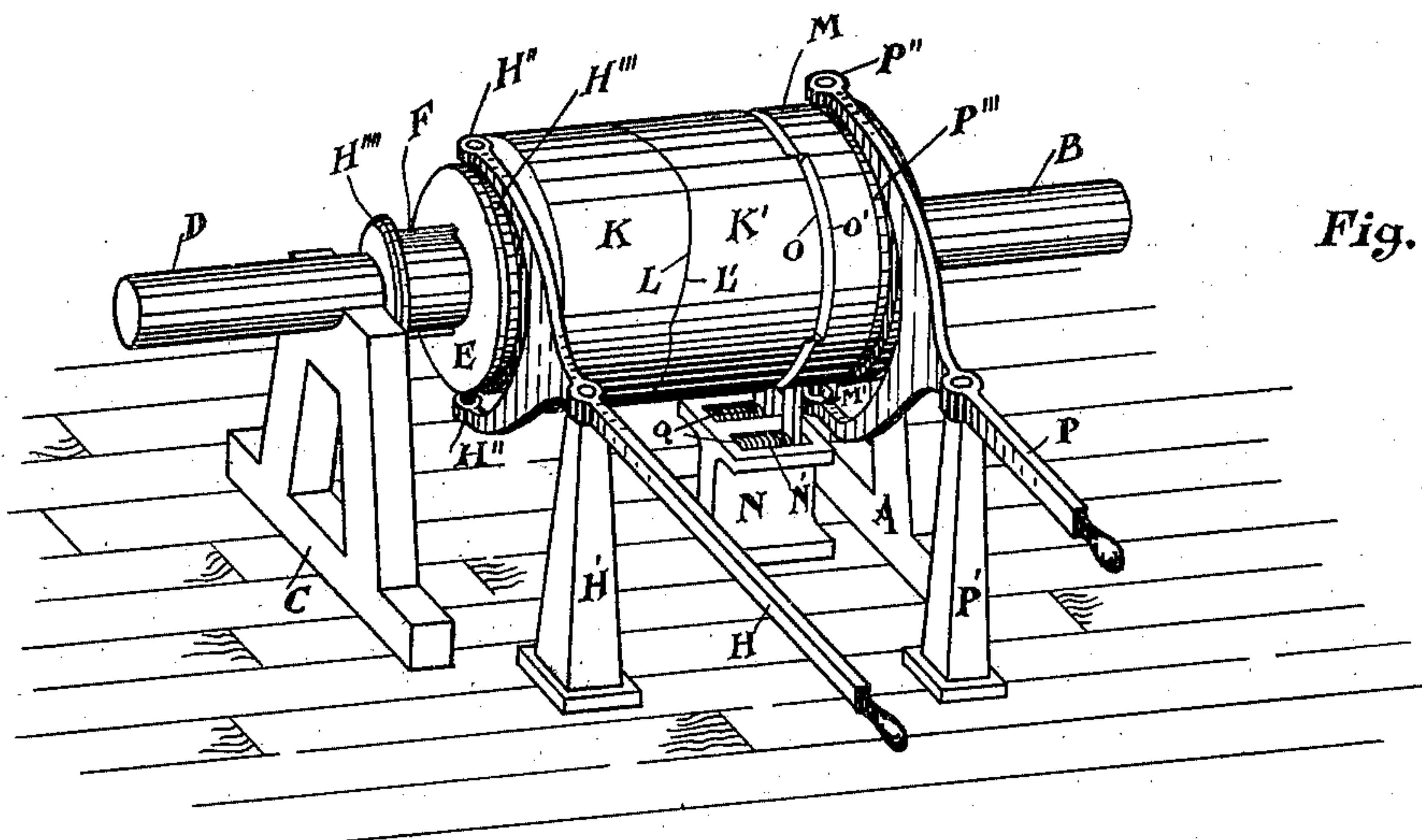
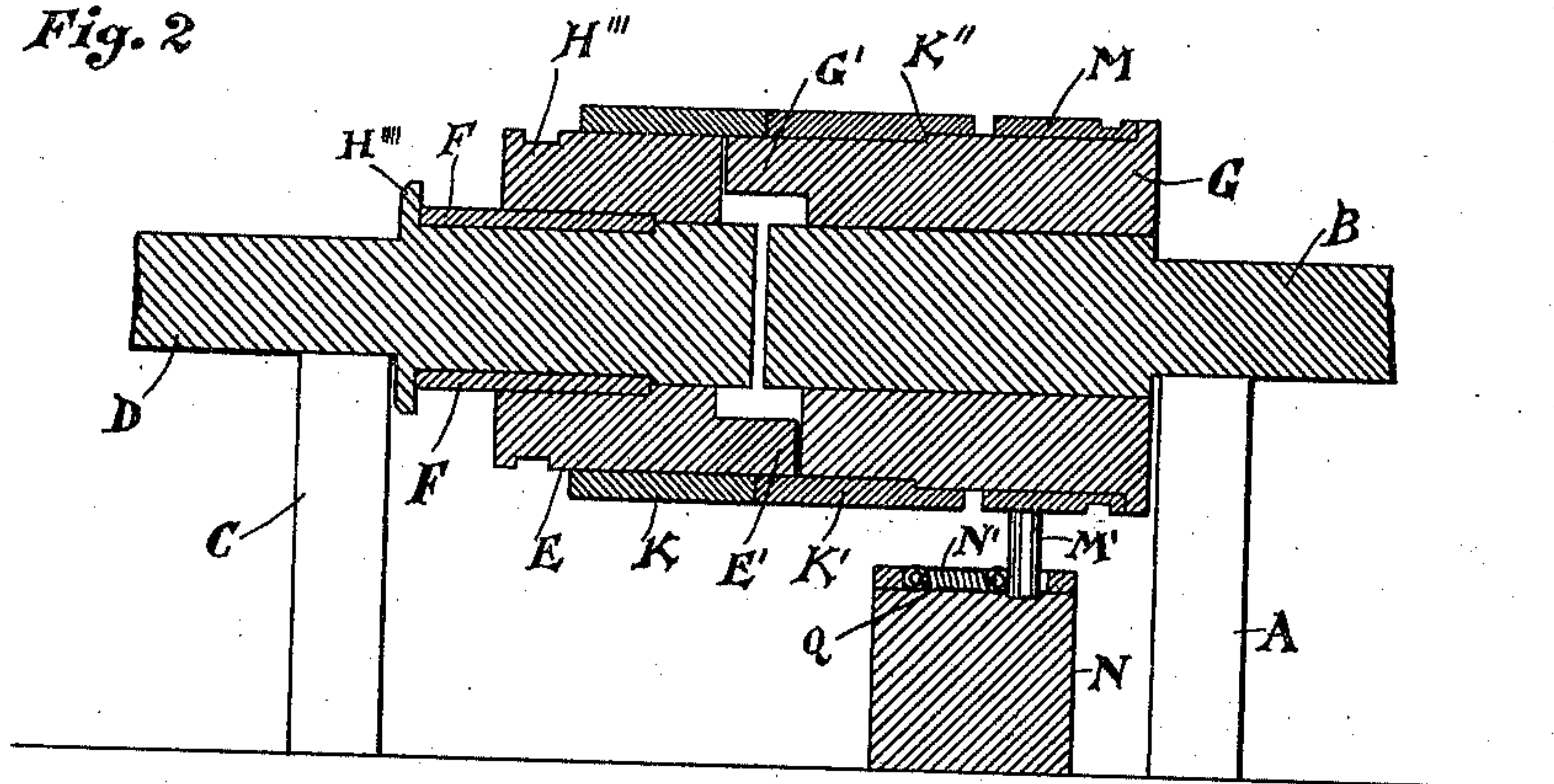
Patented June 20, 1899.

**T. H. HATTON.**  
**DEVICE FOR UNCOUPLING CLUTCH COUPLINGS.**

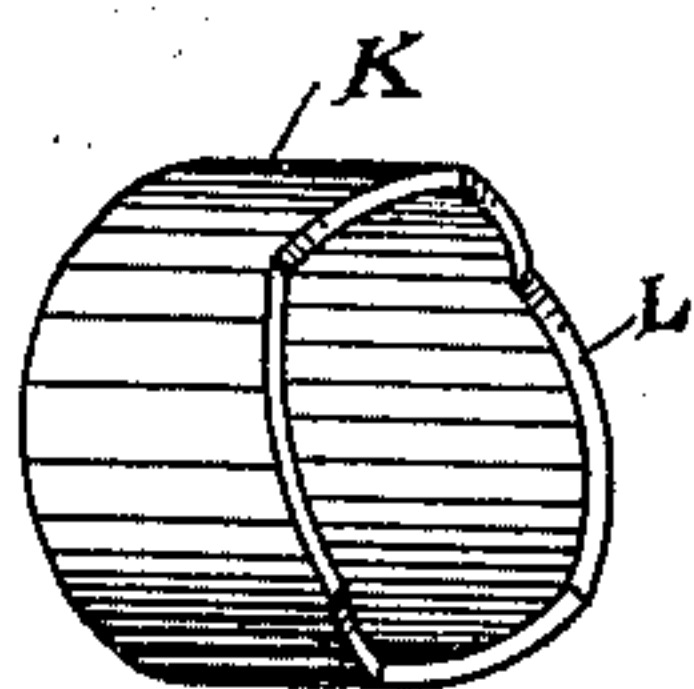
(Application filed Dec. 24, 1897.)

(No Model.)

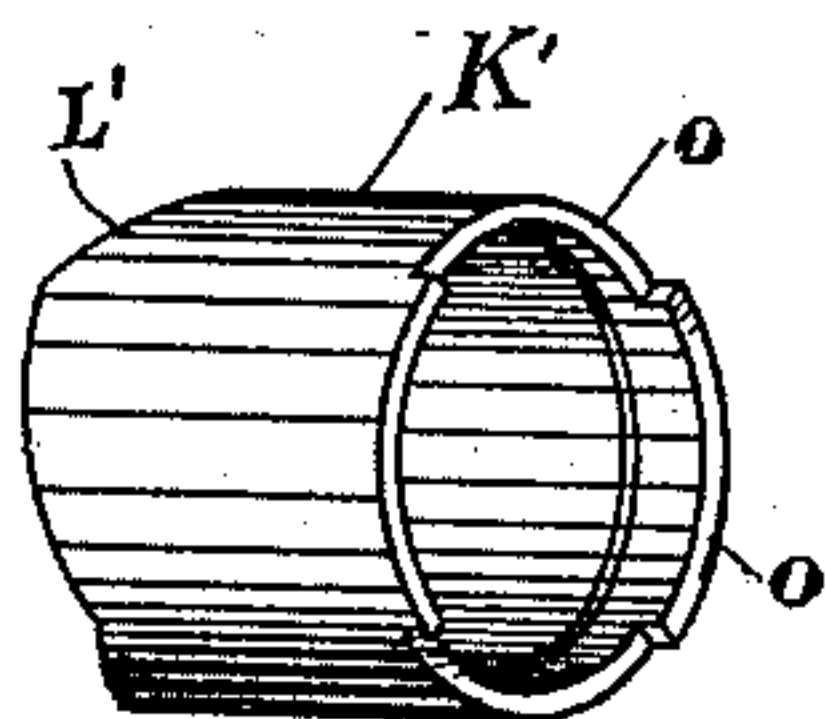
*Fig. 2*



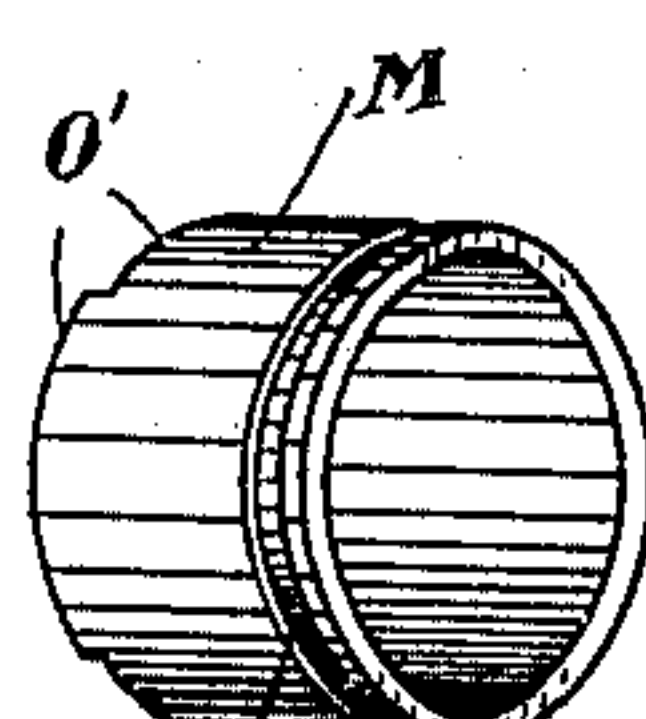
*Fig. 1.*



*Fig. 3*



*Fig. 4*



*Fig. 5.*

WITNESSES:

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# UNITED STATES PATENT OFFICE.

THOMAS H. HATTON, OF MUNCIE, INDIANA, ASSIGNOR OF ONE-HALF TO  
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## DEVICE FOR UNCOUPLING CLUTCH-COUPPLINGS.

SPECIFICATION forming part of Letters Patent No. 627,301, dated June 20, 1899.

Application filed December 24, 1897. Serial No. 663,290. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS H. HATTON, a citizen of the United States, residing at Muncie, in the county of Delaware and State of Indiana, have invented a new and useful Improvement in Devices for Uncoupling Clutch-Couplings, of which the following is a specification.

This invention relates to a new and useful improvement in a device for uncoupling clutch-couplings; and it consists in the construction and arrangement of parts hereinafter described, and definitely pointed out in the claims.

The aim and purpose of this invention is to provide an uncoupling device which can be easily operated by a lever to uncouple a line-shaft which has been clutched together without stopping the shaft and which will operate when the shaft is turning in either direction.

A further object of this invention is to provide a device which when in operative position will be automatic and will positively unlock the shafting by the movement thereof.

It is also the purpose to construct a device which can be cheaply manufactured and readily applied to a clutch.

These and other objects not hereinbefore mentioned are accomplished by the construction illustrated in the accompanying drawings, wherein like letters of reference indicate corresponding parts in the several views, and in which—

Figure 1 is a perspective view of the device applied to a shafting. Fig. 2 is a vertical central longitudinal section of Fig. 1, and Figs. 3, 4, and 5 are detail perspective views of the uncoupling members.

In the drawings, A designates a base for supporting the power-shaft B, and C designates a base for supporting the driven shaft D. The power-shaft B is driven by any suitable mechanism. (Not shown.) The two shafts are adapted to be clutched together by means of an ordinary crab-clutch. This clutch consists of the sliding sleeve E, secured on the shaft D by means of the splines F, and the stationary sleeve G on the shaft B, the two sleeves being provided with the teeth E' and G', respectively, which are complemen-

tary and adapted to engage one another when the shafts are coupled, as plainly shown in Fig. 2. The sleeve E is moved into engagement with the sleeve G by means of the bifurcated lever H, which is pivoted on the post H' and is provided with pins H'', which engage the annular groove H''' on the sleeve, all of the ordinary and usual construction.

H''' designates a shoulder on the shaft D for limiting the movement of the sleeve in the opposite direction.

The uncoupling device consists of a collar K, which is shrunk on the sleeve E and fast thereon, and the loose collar K', which is rotatable on the sleeve G. The collar K' is prevented from moving to the right and out of position by means of the shoulder K'' formed on the sleeve G. The collars are provided with the complementary and oppositely-inclined faces L and L', as plainly shown in Figs. 1, 3, and 4. When the two shafts B and D are coupled, as hereinbefore described, the complementary inclined faces L L' of the collars K K' will coincide, as shown in Fig. 1, and the two collars will rotate as one, for the reason that the collar K is fast on the sleeve E and will rotate therewith. When the collar K' is prevented from rotating, as hereinafter described, the collar K will continue to rotate and the inclined faces L and L', one being stationary and the other moving, will act as a cam and throw the collar K and sleeve E to the left, thereby uncoupling the clutch. By providing the collars with the oppositely-inclined complementary faces the device will act when the shaft is rotating in either direction. It will thus be seen that the uncoupling device is positive in its action, and that the clutch will be at once automatically uncoupled when the collar K' is prevented from rotating, and that it is not necessary to stop the driving-engine, and that the rotation of the shafts is necessary to effect this uncoupling.

The collar K' is prevented from rotating when it is desired to uncouple the clutch by means of the clutch member M, which is slidably secured on the sleeve, but does not rotate therewith. The member M is loose on the sleeve G and is prevented from rotating there-



with by means of the depending pins M', which work in the longitudinal grooves N' on the post N, which is positioned under the shafting. The collar K' and member M are provided with the complementary engaging teeth O O', which will engage one another when the member is moved to the left. When the collar K' and member M are in engagement, it will be seen that the collar is instantaneously prevented from rotating. The member is moved to the right or left by means of the bifurcated lever P. (Plainly shown in Fig. 1.) The lever is supported and pivoted on the post P' and is provided with pins P'', which engage in the annular groove P''' in the member. When the collar K' has been stopped and the shafts uncoupled, the member M is unclutched from the collar K', so that the shafts can be clutched when desired. If necessary, I can provide a spring Q in the slot N' for unclutching the member M automatically when pressure is taken off of the lever P.

I am aware that many minor changes can be made in the construction and arrangement of parts without in the least departing from the nature and principles of my invention. I am also aware that it is not new to provide a shaft with a rigidly-secured collar provided with one inclined face and a loose collar on the shaft provided with a complementary inclined face and means for preventing the rotation of the loose collar when the shaft is rotated in one direction.

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

1. In a device for uncoupling clutch-couplings, the combination with a power-shaft, driven shaft, and means for clutching the shafts together, of a collar carried by and moving with one of the shafts, provided with oppositely-inclined faces, a collar loosely carried by the other shaft provided with oppositely-inclined faces complementary to the faces on the first collar, and means for preventing the rotation of the loose collar and thereby effecting the uncoupling of the shafts when rotating in either direction.

2. In a device for uncoupling clutch-couplings, the combination with a power-shaft, driven shaft, and means for clutching the shafts together, of a collar fixedly secured on one shaft and provided with an inclined face on one end, a second collar rotatably secured on the other shaft and provided with an inclined face complementary to the face on the

fixed collar, a third collar, and means for preventing its rotation, and means for locking said second and third collars together for preventing the rotation of the second collar, substantially as described.

3. In a device for uncoupling clutch-couplings, the combination with a power-shaft and driven shaft and means for clutching the shafts together, of a collar rigidly secured on one of the shafts provided with an oppositely-inclined face on one end, a collar rotatably secured on the other shaft provided with an oppositely-inclined face complementary to the face on the fixed collar, a non-rotatable clutch member slidably secured on the same shaft as the rotatable collar, and means for clutching the clutch member to the said collar.

4. In a device for uncoupling clutch-couplings, the combination with a power-shaft and driven shaft and means for clutching the shafts together, of a collar rigidly secured on one of the shafts provided with an oppositely-inclined face on one end, a collar rotatably secured on the other shaft provided with an oppositely-inclined face complementary to the face on the fixed collar, a clutch member slidably secured on the same shaft as the rotatable collar, a post, a pin on the clutch member engaging the post to prevent the rotation of the member on the shaft, and means for clutching the clutch member to the said rotatable collar.

5. In a device for uncoupling clutch-couplings, the combination with a power-shaft and driven shaft and means for clutching the shafts together, of a collar rigidly secured on one of the shafts provided with an oppositely-inclined face on one end, a collar rotatably secured on the other shaft provided with an oppositely-inclined face complementary to the face on the fixed collar, a clutch member slidably secured on the same shaft as the rotatable collar, a post provided with parallel slots, depending pins on the clutch member engaging the slots in the post, means for clutching the clutch member to the said rotatable collar, and springs in the slots engaging the pins for throwing the clutch member in the opposite direction.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS H. HATTON.

Witnesses:

WM. DU VAL BROWN,  
THOS. L. RYAN.