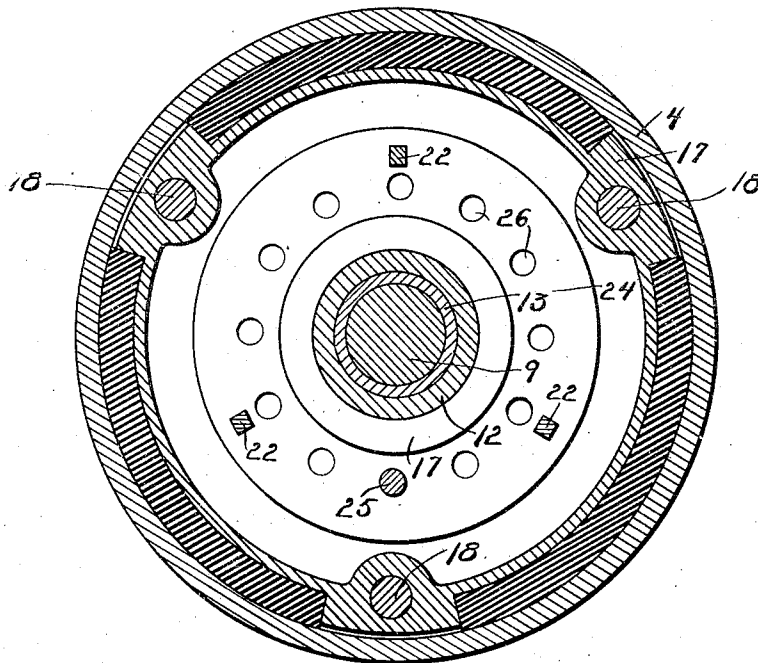
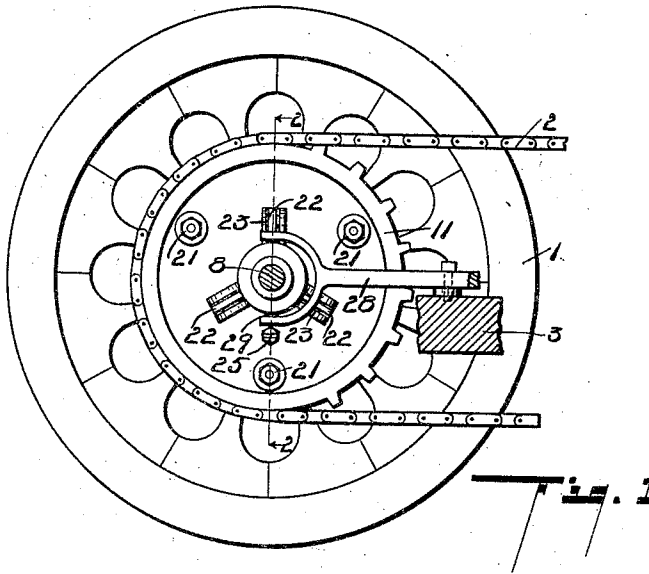


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CLUTCH.

APPLICATION FILED AUG. 12, 1909.

940,970.

Patented Nov. 23, 1909.
2 SHEETS—SHEET 1.



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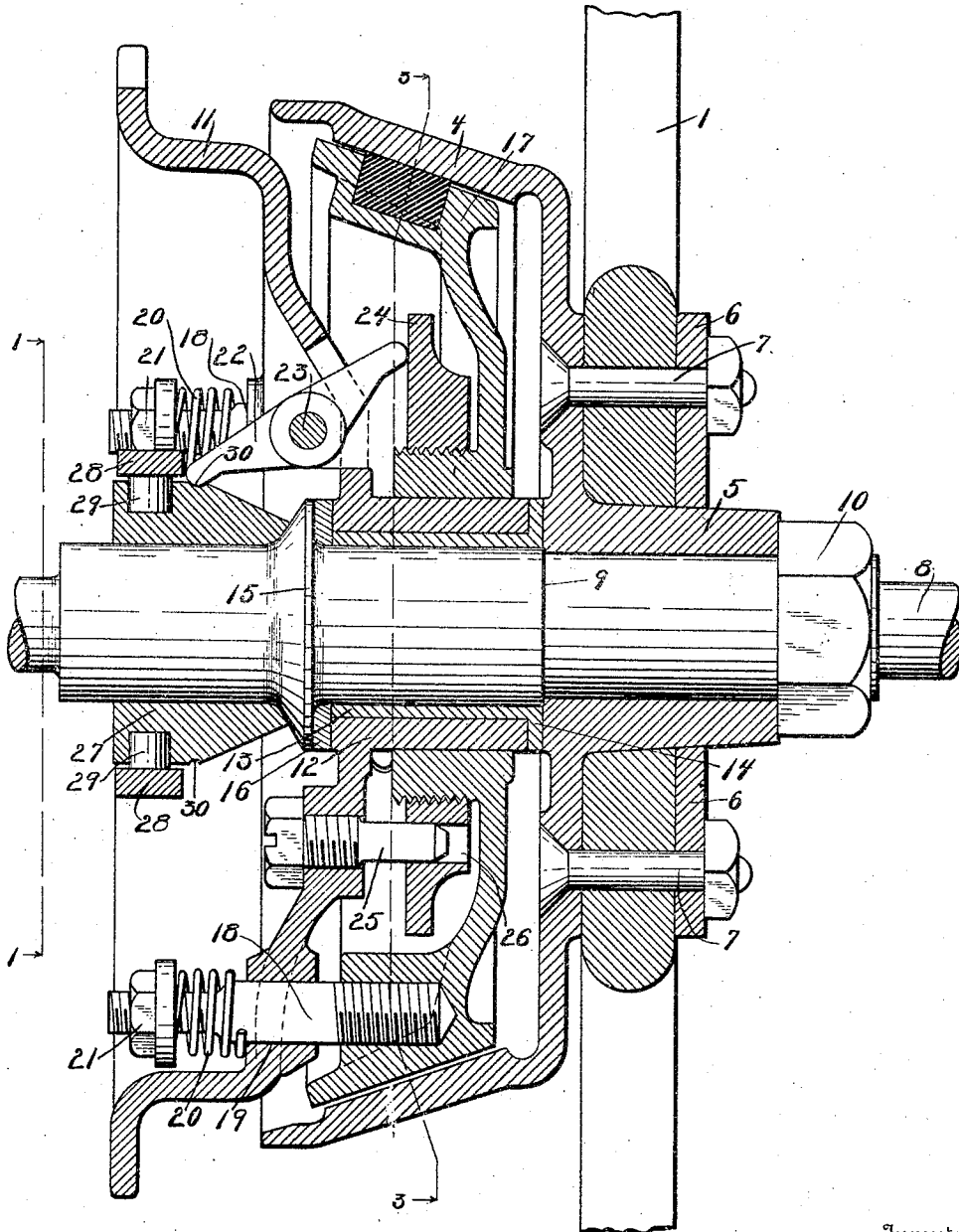
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UNITED STATES PATENT OFFICE.

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CLUTCH.

940,970.

Specification of Letters Patent.

Patented Nov. 23, 1909.

Original application filed May 1, 1909, Serial No. 493,373. Divided and this application filed August 12, 1909. Serial No. 512,564.

To all whom it may concern:

Be it known that we, WILLIAM S. HOVEY and CHARLES B. STEBBINS, citizens of the United States, residing at the city of Three Rivers, county of St. Joseph, State of Michigan, have invented certain new and useful Improvements in Clutches, of which the following is a specification.

This invention relates to improvements in clutches.

Our improved clutch is especially designed by us for use on motor cars such as are illustrated in our application for Letters Patent, filed May 1, '09, Serial No. 493,373, of which application this is a division, although it is adapted and desirable for use in various relations.

The main objects of this invention are to provide an improved clutch which is strong and effective, and at the same time one which is comparatively simple and economical in structure and compact in its arrangement of parts.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

We accomplish the objects of our invention by the devices and means described in the following specification.

The structure described constitutes one effective embodiment of our invention. Other embodiments would be readily devised by those skilled in the art.

The invention is clearly defined and pointed out in the claims.

A structure constituting an effective and preferred embodiment of the features of our invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which,

Figure 1 is a side elevation of a car wheel having our improved clutch applied thereto. Fig. 2 is an enlarged detail vertical section taken on a line corresponding to line 2—2 of Fig. 1. Fig. 3 is a transverse section taken on a line corresponding to broken line 3—3 of Fig. 2.

In the drawing, similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, 1 represents the car wheel in connection with which we have

illustrated our improved clutch. This may, it is obvious, be any desired member which it is desired to drive through the clutch.

2 represents the drive chain and 3 a portion of the car frame.

The conical driven clutch member 4 is connected to the wheel 1, it being preferably formed integrally with the hub 5 of the wheel as is illustrated. The wheel is in the structure illustrated secured upon the hub 5 by means of the removable flange 6 and the bolts 7. The axle 8 is shouldered at 9 to engage the inner end of the hub and the wheel is retained on the axle by means of the nut 10. The driving wheel or sprocket 11 is provided with an offset hub 12 which projects into the driven member 4. A bushing 13 is preferably provided for the hub of the driving wheel 11, the bushing having a flange 14 at its inner end which bears against the end of the hub 5 of the driven member 4. The axle 8 is provided with a flange 15 between which and the end of the hub 13 of the driving wheel we preferably arrange a bearing washer 16. This provides effective bearings for the parts and a convenient means for assembling and securing them in place.

The driving clutch member 17 is adjustably mounted on a hub 13 of the driving wheel 11, it being slidably connected to the driving wheel 11 by means of the driving pins 18. These pins are threaded into the driving clutch member 17 and slidably arranged through holes 19 provided therefor in the driving wheel 11. On these pins are springs 20 which retract or draw the driving clutch member out of its engaging or driving position. The tension of these springs is regulated by the nuts 21 threaded upon the pins. The driving member is thrown into its engaging position by means of the actuating levers 22 which are mounted on suitable pivots 23, carried by the driving wheel 11, so that their inner ends engage a ring-like member 24 carried by the driving clutch member 17, the member 24 being arranged on the hub of the driving clutch member as clearly appears from Fig. 2. This member 24 is preferably threaded upon the hub so that it may be adjusted thereon. The member 24 is secured in its adjusted position by means of the locking pin 25 carried by the driving wheel 11, the

pin being arranged to engage suitable holes 26 provided therefor in the member 24.

The levers 22 are actuated by means of the conical cam 27 which is slidably mounted upon the axle 8 to engage the ends of the levers as clearly appears in Fig. 3. When this cam is shifted inwardly the outer ends of the levers are raised thus throwing their inner ends against the member 24, forcing the driving clutch member into engagement with the driven clutch member. The clutch actuating cam 27 is shifted by means of the forked lever 28 which is provided with suitable cam-engaging lugs 29. The cam is preferably provided with a groove 30 in which the ends of the levers 22 engage to retain the clutch in engagement. The driving clutch member is preferably provided with friction members 31.

By this arrangement of the parts we secure a clutch mechanism which is very powerful, and is at the same time compact so that it may be conveniently operated within the small space permitted in such a structure as is illustrated in our application referred to, the clutch mechanism being substantially embraced in the flange of the car wheel.

We have illustrated our improved clutch in the form in which we have embodied it in practice. We are aware, however, that it is capable of considerable variation in structural details without departing from our invention, and we desire to be understood as claiming the same not only in the specific form illustrated but also broadly within the scope of the appended claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. The combination of a driven wheel; an axle; a conical driven clutch member secured to said driven wheel; a driving wheel mounted on said axle, the hub of said driving wheel projecting into said clutch member; a conical driving clutch member slidably arranged on the hub of said driving wheel; pins on said driving clutch member slidably arranged through said driving wheel; retracting springs for said driving clutch member arranged on said pins; actuating levers carried by said driving wheel; a cone-like lever-actuating cam mounted on said axle to engage said levers; means for actuating said cam; a member with which said levers are adapted to engage, threaded upon the hub of said driving clutch member; and a pin carried by said driving wheel for securing said member in its adjusted position.

2. The combination of a driven wheel; an axle; a conical driven clutch member secured to said driven wheel; a driving wheel mounted on said axle, the hub of said driving wheel projecting into said clutch member; a conical driving clutch member slidably arranged on the hub of said driving wheel; pins on

said driving clutch member slidably arranged through said driving wheel; retracting springs for said driving clutch member arranged on said pins; actuating levers carried by said driving wheel; a cone-like lever-actuating cam mounted on said axle to engage said levers; means for actuating said cam; and a member with which said levers are adapted to engage, carried by said driving clutch member.

3. The combination of a driven wheel; an axle; a driven clutch member secured to said driven wheel; a driving wheel mounted on said axle; an adjustably mounted driving clutch member; pins on said driving clutch member slidably arranged through said driving wheel; retracting springs for said driving clutch member arranged on said pins; actuating levers carried by said driving wheel; a lever actuating member mounted on said axle to engage said levers; means for actuating said cam; a member with which said levers are adapted to engage, threaded upon the hub of said driving clutch member; and a pin carried by said driving wheel for securing said member in its adjusted position.

4. The combination of a driven wheel; an axle; a driven clutch member secured to said driven wheel; a driving wheel mounted on said axle; an adjustably mounted driving clutch member; pins on said driving clutch member slidably arranged through said driving wheel; retracting springs for said driving clutch member arranged on said pins; actuating levers carried by said driving wheel; a lever actuating member mounted on said axle to engage said levers; means for actuating said lever actuating member; and a member with which said levers are adapted to engage, carried by said driving clutch member.

5. The combination of a driven wheel; an axle; a conical driven clutch member secured to said driven wheel; a driving wheel mounted on said axle, the hub of said driving wheel projecting into said clutch member; a conical driving clutch member slidably arranged on the hub of said driving wheel; actuating levers carried by said driving wheel; a cone-like lever-actuating cam mounted on said axle to engage said levers; means for actuating said cam; a member with which said levers are adapted to engage, threaded upon the hub of said driving clutch member; and a pin carried by said driving wheel for securing said member in its adjusted position.

6. The combination of a driven wheel; an axle; a conical driven clutch member secured to said driven wheel; a driving wheel mounted on said axle, the hub of said driving wheel projecting into said clutch member; a conical driving clutch member slidably arranged on the hub of said driving wheel; actuating levers carried by said driving wheel; a cone-like lever-actuating cam

mounted on said axle to engage said levers; means for actuating said cam; a member with which said levers are adapted to engage, carried by said driving clutch member and means for adjusting said member with which said levers engage.

7. The combination of a driven wheel; an axle; a driven clutch member secured to said driven wheel; a driving wheel mounted on said axle; an adjustably mounted driving clutch member; actuating levers carried by said driving wheel; a lever actuating member mounted on said axle to engage said levers; means for actuating said lever actuating member; a member with which said levers are adapted to engage, threaded upon the hub of said driving clutch member; and a pin carried by said driving wheel for securing said member with which said levers engage in its adjusted position.

8. The combination of a driven wheel; an axle; a driven clutch member secured to said driven wheel; a driving wheel mounted on said axle; an adjustably mounted driving clutch member; actuating levers carried by said driving wheel; a lever actuating member mounted on said axle to engage said levers; means for actuating said lever actuating member; a member with which said levers are adapted to engage, carried by said driving clutch member and means for adjusting said member with which said levers engage.

9. The combination of a driven wheel; an axle; a conical driven clutch member secured to said driven wheel; a driving wheel mounted on said axle, the hub of said driving wheel projecting into said clutch member; a conical driving clutch member slidably arranged on the hub of said driving wheel; pins on said driving clutch member slidably arranged through said driving wheel; retracting springs for said driving clutch member arranged on said pins; and means for actuating said driving clutch member.

10. The combination of a driven wheel; an axle; a driven clutch member secured to said driven wheel; a driving wheel mounted on said axle; an adjustably mounted driving clutch member; pins on said driving clutch member slidably arranged through said driving wheel; retracting springs for said driving clutch member arranged on said pins; nuts on said pins for adjusting the tension of said spring and means for actuating said driving clutch member.

In witness whereof, we have hereunto set our hands and seals in the presence of two witnesses.

WILLIAM S. HOVEY. [L. s.]
CHARLES B. STEBBINS. [L. s.]

Witnesses:

E. K. GEMBERLING,
D. C. MIX.