(No Model.)

# J. KIRBY, Jr.

## BRAKE HANDLE.

No. 413,804. Patented Oct. 29, 1889.

Fig 1.

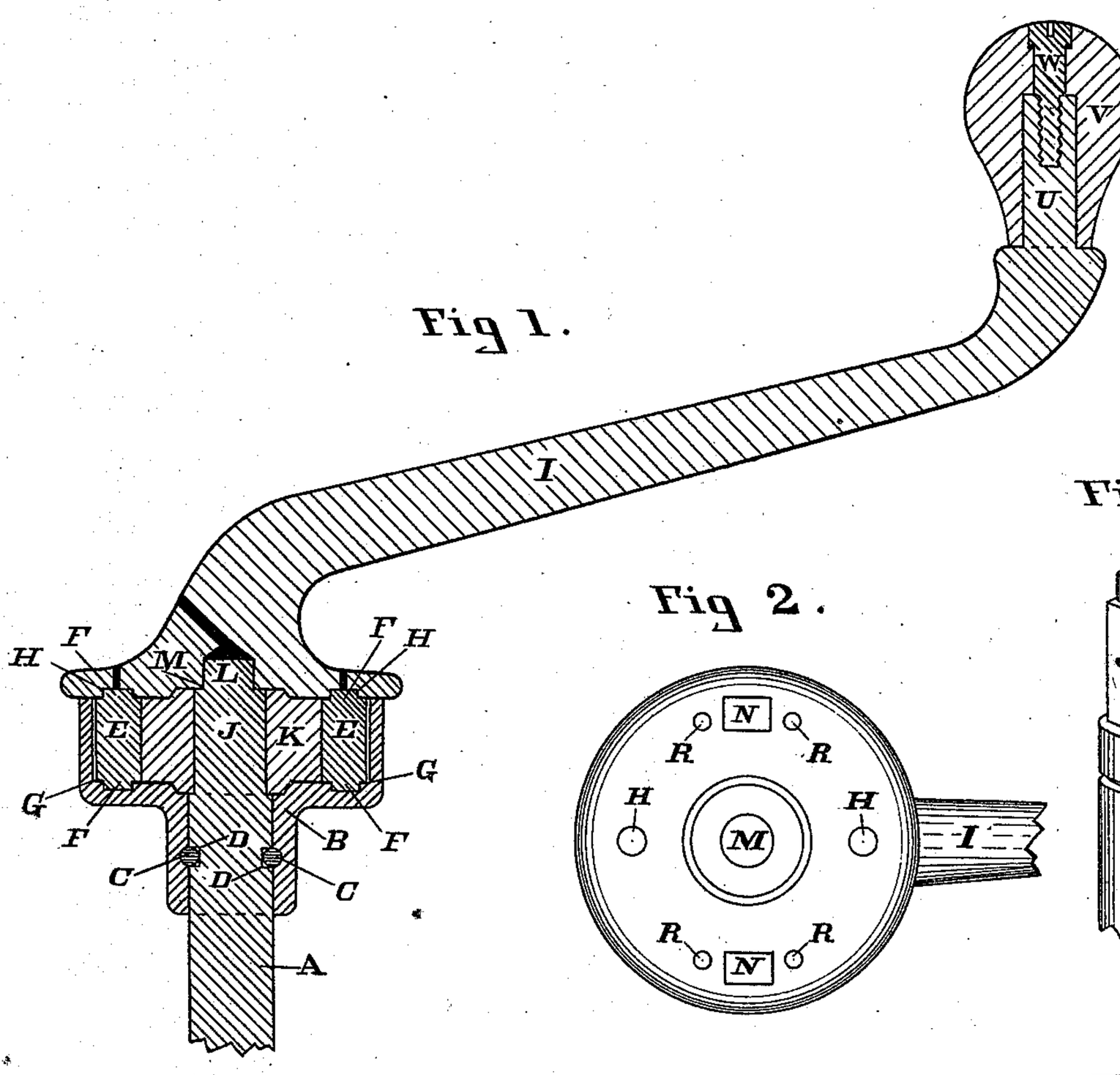



Fig 2.




Fig 3.

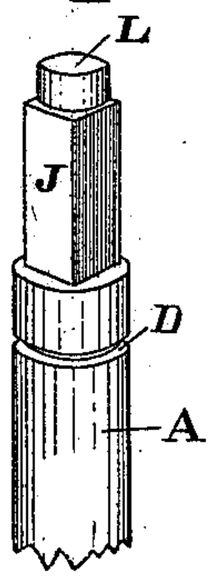



Fig 4.

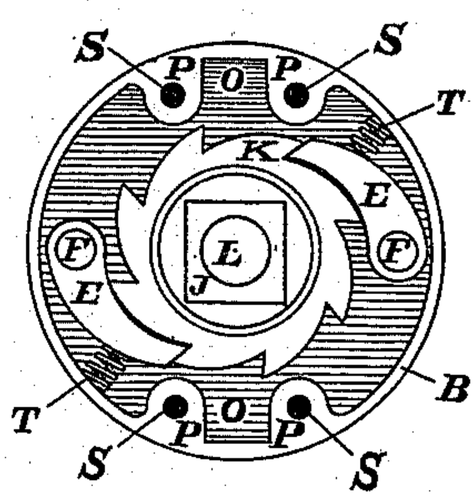



Fig 5.

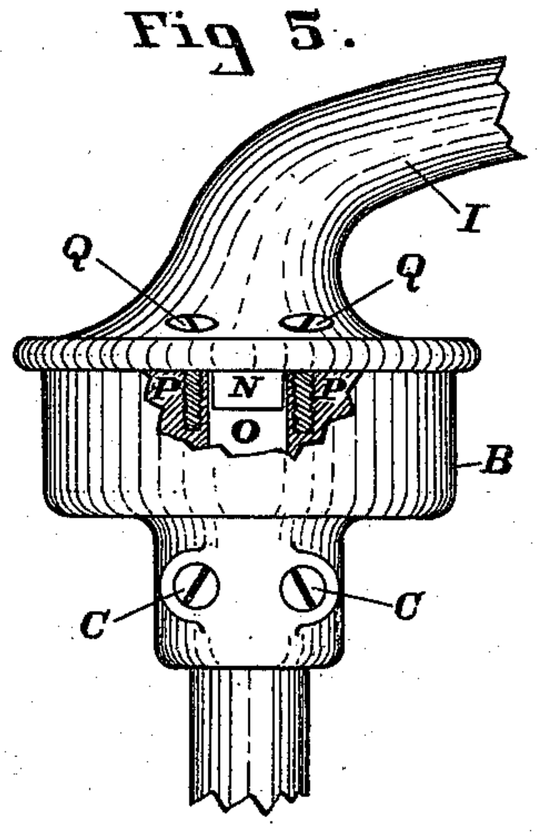



Fig 6.

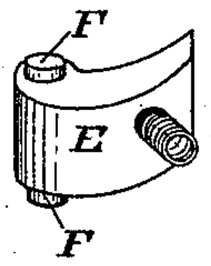
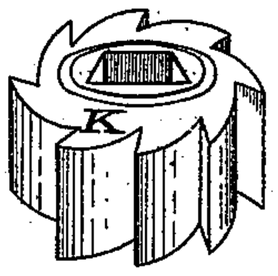



Fig 7.




WITNESSES:

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## BRAKE-HANDLE.

SPECIFICATION forming part of Letters Patent No. 413,804, dated October 29, 1889.

Application filed August 19, 1889. Serial No. 321,205. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN KIRBY, Jr., a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Brake-Handles, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improvement in car-brake handles, and more particularly to that class having ratchet mechanism connected therewith, whereby when the handle is turned in one direction it will rotate the brake-rod, and when turned in the opposite direction will move independently of the brake-rod.

The object of this invention is to produce a brake-handle having ratchet mechanism which shall be so arranged and disposed within the said handle that it will be kept free from the entrance of dust or moisture; which shall be so constructed that should one of the parts become broken or worn out from constant use it may readily be replaced with but a small amount of trouble, and which shall be simple of construction, efficient and durable in use, and comparatively inexpensive of production.

With these objects in view the invention consists, broadly, of a casing rotatably mounted upon the brake-rod, a ratchet-wheel fitted within the said casing and removably mounted upon the brake-rod, pawls adapted to engage the said ratchet-wheel, and a brake-handle adapted to fit over the said casing and hold the various parts mounted therein in place.

The invention further consists in the various novel details of construction, as will be hereinafter fully described in the specification, illustrated in the drawings, and more particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, and in which like letters of reference indicate corresponding parts, I have illustrated one form of brake-handle embodying the essential features of my invention, although the same may be carried into effect in other ways without in the least departing from the spirit thereof, and in these drawings—

Figure 1 is a vertical sectional view of a brake-handle, showing the relative arrangement and position of the different parts. Fig. 2 is a bottom plan view of that portion of the brake-handle which is secured to the casing. Fig. 3 is a perspective view of the upper portion of the brake-rod. Fig. 4 is a top plan view of the casing, showing the ratchet-wheel and pawls for engaging the same. Fig. 5 is an elevation, partly in section, showing the manner of securing the brake-handle to the casing. Fig. 6 is a perspective detail view of one of the pawls, showing its peculiar configuration; and Fig. 7 is a perspective view of the ratchet-wheel.

Referring to the drawings, A designates the brake-rod, the lower portion of which is secured in any suitable manner to the platform of the car and the upper portion to the dash-board. At a point near the upper end of the said rod is mounted a revoluble casing B, which is held in place upon the said rod by means of pins or screws C, which fit in a circumferential groove D, formed in the brake-rod. Thus the casing will be allowed to rotate, yet cannot be moved from the rod without first removing the pins or screws C. Within this casing are mounted pawls E, any suitable number of which may be employed, which pawls are provided with pintles F, adapted to engage recesses G and H, formed, respectively, within the upper side of the bottom of the casing and the under side of the lower end of the brake-handle I. The upper end of the brake-rod is formed with a square shank J, upon which fits a ratchet-wheel K, while the point is formed with a rounded pintle or stud L, which fits within a recess M in the brake-handle. The object of this pintle or stud is to prevent the casing having any lateral play, which would tend to wear out both the ratchet-wheel and the pawls.

The brake-handle before referred to may be of any desired configuration, and provided on its lower end with downward-extending lugs or projections N, adapted to fit within the recesses O, formed between lugs P in the casing. When the brake-handle is placed in position upon the casing, screws Q are inserted through the openings R and engage threaded openings S, formed in the lugs P.

As any violent strain would have a tendency to loosen or break these screws, the lugs P, before referred to, will be found to remove all or nearly all strain from the screws, the latter serving principally to hold the parts together. The brake-handle is also provided with oil-holes, by means of which the interior of the casing may be lubricated, and the pawls are provided with springs T, which hold them in normal contact with the ratchet-wheel.

As it may be desirable to provide the brake-handle with a revoluble hand-piece, instead of the stationary hand-piece generally used, the upper end of the brake-handle is formed with a reduced portion U, and on this is mounted a hand-piece V, which may be of any desirable material, but preferably in this instance of wood, and is held in place upon the brake-handle by means of a screw W. This will render unnecessary the ordinary leather hand-piece employed by conductors, and, being secured as it is, it may be readily removed when it is desired to replace it by a new one.

In operation the brake-handle is turned out until it has reached a dead-center, or a point where it will be necessary for the operator to change his position before exerting further pressure thereon, and the toe-dog is then brought into engagement with the usual retaining-ratchet, thus holding the brake-rod securely in position. The handle is then turned back a sufficient distance to bring it into operative position, and is then pushed forward, the same operation being repeated until the brakes are applied as tightly as desired.

It will be readily seen from the foregoing description that, although this particular form of brake-handle is simple of construction, it will be found of the highest efficiency and durability in use, and will operate under all circumstances, from the fact that, as none of the parts are exposed to dust or the weather, they are not liable to get out of order. Moreover, by having the pawls and ratchet removably mounted within the case, should either of the parts become injured from use, it will be only necessary to remove the brake-handle and replace the worn part with a new one.

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

1. In a brake-handle, the combination of a casing rotatably mounted upon the brake-rod, a ratchet-wheel mounted within the casing and engaging the brake-rod, one or more pawls adapted to engage the ratchet-wheel, and a brake-handle secured to the casing and designed to operate the same.

2. In a brake-handle, the combination of a casing rotatably mounted upon the brake-rod, a ratchet-wheel mounted within the casing and removably fitted upon the brake-rod, one or more pawls adapted to engage the ratchet-wheel, and a brake-handle adapted to fit over the casing, hold the various parts mounted therein in place, and operate the said casing.

3. In a brake-handle, the combination of a casing rotatably mounted upon the brake-rod and having recesses formed therein, a brake-handle adapted to be secured to the casing and having recesses similar to those in the casing, pawls having pintles adapted to engage the recesses, and a ratchet-wheel adapted to be engaged by the pawls.

4. In a brake-handle, the combination of a casing rotatably mounted upon the brake-rod, ratchet mechanism mounted therein, inward-extending lugs formed on the interior of the said casing, and a brake-handle having downward-extending lugs adapted to fit between the lugs in the casing.

5. In a brake-handle, the combination of a brake-rod having a circumferential groove, a casing fitting on the brake-handle and having pins or screws adapted to engage the said groove, ratchet mechanism mounted within the casing, and a brake-handle for operating the casing.

6. In a brake-handle, the combination of a casing rotatably mounted upon the brake-rod, a ratchet-wheel mounted within the casing and engaging the said brake-rod, one or more pawls also mounted withing the casing and adapted to engage the ratchet-wheel, the said pawls and ratchet-wheel moving in the same plane, and a brake-handle adapted to operate the casing.

7. In a brake-handle, the combination of a casing rotatably mounted upon the brake-rod, ratchet mechanism carried by the casing, a brake-handle secured to the casing, the upper end of which is reduced, a revoluble hand-piece mounted upon the reduced portion, and means for holding the hand-piece in place.

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

JOHN KIRBY, JR.

Witnesses:
C. U. RAYMOND,
H. S. MILLER.