E. E. DAGLISH & W. L. LORKIN.

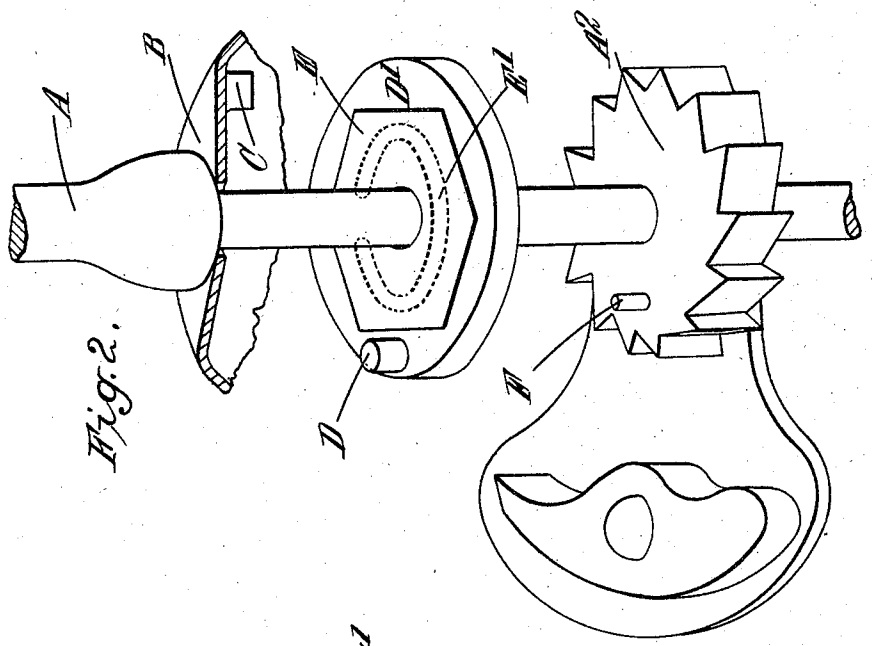
WINDING MECHANISM.

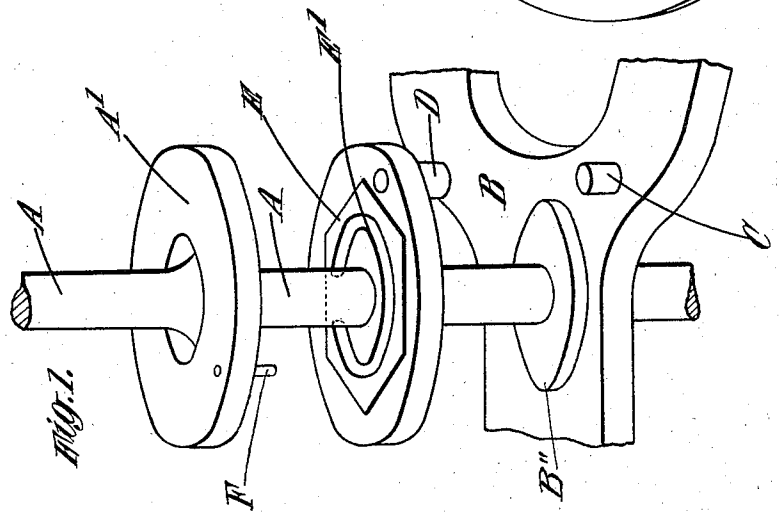
APPLICATION FILED SEPT. 27, 1913.

1,179,289.

Patented Apr. 11, 1916.

2 SHEETS—SHEET 1.





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2 SHEETS—SHEET 2.

Fig. 3.

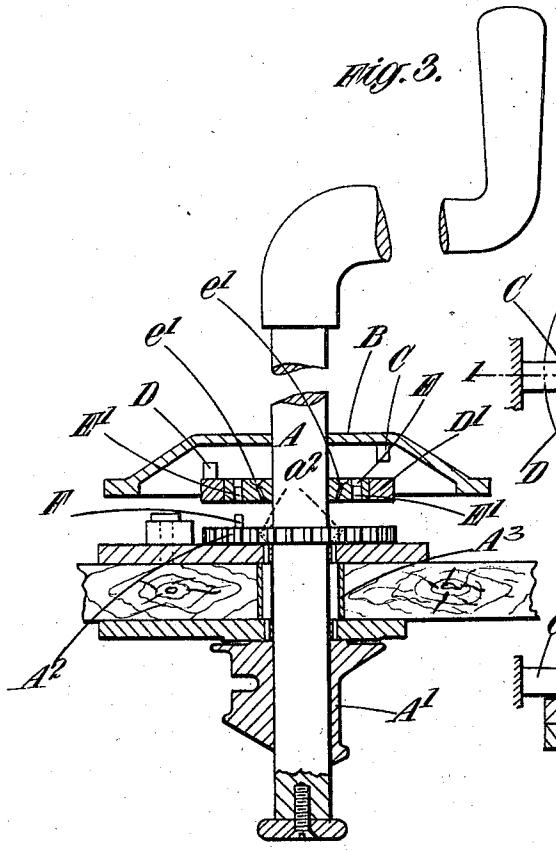


Fig. 4.

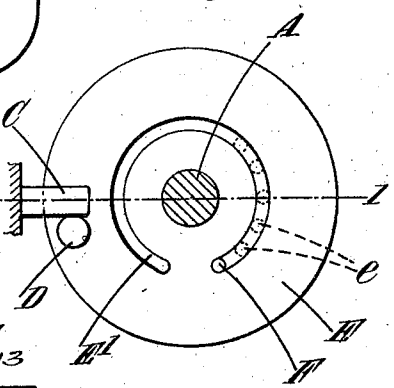
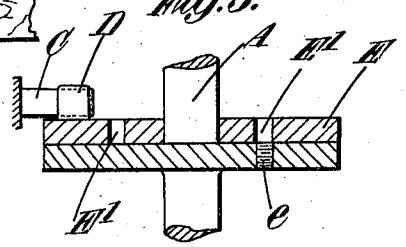


Fig. 5.



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UNITED STATES PATENT OFFICE.

ERNEST EDGAR DAGLISH AND WALTER LEONARD LORKIN, OF STRAND, LONDON, ENGLAND.

WINDING MECHANISM.

1,179,289. Specification of Letters Patent. Patented Apr. 11, 1916.

Application filed September 27, 1913. Serial No. 792,203.

To all whom it may concern:

Be it known that we, ERNEST EDGAR DAGLISH and WALTER LEONARD LORKIN, both residing at 2 and 3 Norfolk street, Strand, in the county of London, England, have invented certain new and useful Improvements in or Relating to Winding Mechanism, of which the following is a specification.

This invention relates to hand actuated or power driven winding mechanism and is particularly intended for use with hand actuated brake mechanism of electric cars and other vehicles, such as that of the kind wherein the operating hand wheel or hand lever is connected to the brake or brakes through the intermediary of a plain shaft or spindle, and wherein two stops are employed, the coöperation of which limits the unwinding or releasing movement of the said staff. According to the present invention one of the said stops is fixed, and the other is adapted to be displaced by the staff, or any other part that is moved by the operating hand wheel or lever, through the intervention of a lost motion device which is of such a character that the amount of lost or relative movement between the staff and the stop displaced thereby can be varied at will. In this manner the extent of the unwinding or releasing movement of the staff can be altered to adapt the mechanism to brakes in which different lengths of chain are required to be wound upon the staff in applying the brake.

In order that the said invention may be clearly understood and readily carried into effect, we will describe the same more fully with reference to the accompanying drawings in which:—

Figures 1 and 2 are perspective views showing two slightly different constructional forms of our invention. Fig. 3 is a sectional side elevation showing the lower part of the staff complete with the form of the invention illustrated by Fig. 2 and with certain other features hereinafter described. Fig. 4 is a diagrammatic view of a modified form of the invention, and Fig. 5 is a section taken approximately on the line 1—1 of Fig. 4.

In Figs. 1, 2 and 3, the essential parts of the apparatus are shown separated one from the other in order that the constructions may be more clearly seen. A represents the staff or spindle and B a fixed portion which forms part of or is attached to the vehicle upon which the brake is mounted. C represents the aforesaid fixed stop and D the movable stop.

Referring more particularly to Figs. 1 and 2, the aforesaid lost motion device comprises a plate E which is loosely mounted upon the staff A and is formed with two abutments constituted by the ends of a slot E′. These abutments are situated at a suitable distance apart and are adapted to cooperate with a projection F mounted, in the example shown in Fig. 1, on a collar A′ carried by the staff A, and in the example shown in Fig. 2, on the ratchet wheel A^2. The slotted plate E is adjustably connected to another plate D′ which carries the stop D that is adapted to coöperate with the fixed stop C. The adjustable connection between the two plates may be effected in any suitable manner, such for example as by making a part or the whole of one of the plates of polygonal shape and forming the other plate with a corresponding recess or opening to receive the said polygonal part. As shown the plate E is of polygonal shape and is capable of being detached from the plate D^1, and after detachment rotated relatively thereto so that the plate E can occupy a new position when inserted into the correspondingly shaped opening in the plate D^1. When the parts of the apparatus are assembled in operative position, the said plates rest on a boss B^{11} on the part B of the construction shown in Fig. 1, while in the constructions shown in Figs. 2 and 3, the plates rest in each case on the ratchet wheel A^2. In Fig. 1 the parts forming the lost motion device are arranged below the floor of the car platform and in Fig. 2 they are arranged above.

In the construction shown in Fig. 3, the lower part of the staff A has mounted thereon a fusee A′ to which the brake chain is attached in any suitable manner. Furthermore a roller bearing A^3 may be employed for the staff A. If desired however this form of bearing may be substituted by any other suitable form. In order to enable efficient lubrication of the bearing A^3 to be obtained, the plate E may be formed with a recess e', which communicates by means

of holes with a recess a^2 formed in the ratchet wheel A^2. The recess a^2 communicates by means of holes with the bearing A^3. The part B is perforated to enable the stem of an oil-can to be inserted.

In the example shown diagrammatically in Figs. 4 and 5 the projection F moving with the staff A is adjustably mounted thereon so that its position in relation to the ends of the slot E′ can be varied. In this case the stop D is mounted in the plate E in which the slot E′ is formed. The projection F is preferably made in the form of a screw threaded stud and is adapted to be inserted in one or other of a series of threaded holes *e* in a part moving with the staff A. The upper part of the staff A that carries the actuating handle or hand wheel is preferably made integral with the lower part that carries the members that constitute the lost motion device. We may however, if we so desire, make the two parts detachable, means being provided for connecting them in any suitable manner. When the brake has been applied the projection F moving with the staff A is in contact with or contiguous to one end of the slot E′. When the brake is released the projection F moves away from this end of the slot, and after the staff has moved a certain distance the said projection engages with the other end of the slot and moves the stop D into contact with the fixed stop C to bring the staff to rest. The movement of the staff in applying the brake, brings the parts into the position to operate as above stated when the brake is again released. In brakes of the kind shown in the drawings more than one of the aforesaid slotted plates may be employed and may be mounted upon the said staff in any suitable manner either above or below the floor of the car platform, or the plates may be carried directly by the ratchet of the said staff.

We wish it to be understood that we do not desire to limit our invention in its application to the general type of brake mechanism shown and described.

What we claim and desire to secure by Letters Patent of the United States is:—

1. In winding mechanism, the combination with an immovable stop and a single stop carried by a loosely mounted part of said mechanism, of a single lost motion device interposed between the last mentioned stop and a moving part of said mechanism and capable of being adjusted so that the amount of lost motion can be varied as desired.

2. In winding mechanism, the combination with a fixed stop and a stop carried by a loosely mounted part of said mechanism, of a plate carried by said loosely mounted part, two abutments on said plate and a projection on a moving part of said mechanism, said projection coöperating with the abutments on the plate and the relative positions of the projection and the abutments being capable of variation.

3. In winding mechanism, the combination with a fixed stop and a stop carried by a loosely mounted part of said mechanism, of a plate carried by said loosely mounted part, said plate having a slot formed therein and a projection carried by a moving part of said mechanism, said projection cooperating with the ends of the slot and the relative positions of the projection and the slot being capable of variation.

4. In winding mechanism, the combination with a fixed stop and a stop carried by a loosely mounted part of said mechanism, of a plate carried by said loosely mounted part, said plate having a slot formed therein and a projection carried by a moving part of said mechanism, said projection cooperating with the ends of the slot and said slotted plate being adjustably mounted on the part that carries it.

5. In brake mechanism, the combination with the hand operated brake staff, of an immovable stop, a member loosely mounted on said staff, a single stop carried by said member, and a single lost motion device interposed between the last mentioned stop and a moving part of said mechanism and capable of being adjusted so that the amount of lost motion can be varied as desired.

6. In brake mechanism, the combination with the hand operated brake staff, of a fixed stop, a member loosely mounted on said staff, a stop carried by said member, a plate carried by said member, two abutments on said plate, and a projection on a moving part of said mechanism, said projection cooperating with the abutments on the plate and the relative positions of the projection and the abutments being capable of variation.

7. In brake mechanism, the combination with the hand operated brake staff, of a fixed stop, a member loosely mounted on said staff, a stop carried by said member, a plate carried by said member, said plate having a slot formed therein, and a projection carried by a moving part of said mechanism, said projection coöperating with the ends of the slot and the relative positions of the projection and the slot being capable of variation.

8. In brake mechanism, the combination with the hand operated brake staff, of a fixed stop, a member loosely mounted on said staff, a stop carried by said member, a plate carried by said member, said plate having a slot formed therein, and a projection carried by a moving part of said mechanism, said projection coöperating with the ends of the slot and said slotted plate being adjustably mounted on the part that carries it.

9. In brake mechanism, the combination with the hand operated brake staff, of a fixed stop, a member loosely mounted on said staff, a stop carried by said member, a plate carried by said member, said plate having a slot formed therein, a projection carried by a moving part of said mechanism, said projection coöperating with the ends of the slot and said slotted plate being adjustably mounted on the part that carries it, a fusee on said shaft, and a roller bearing for said staff.

In testimony whereof we affix our signatures in presence of two witnesses.

ERNEST EDGAR DAGLISH.
WALTER LEONARD LORKIN.

Witnesses:
T. LIBBY WARDLE,
O. J. WORTH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."