No. 711,443. Patented Oct. 14, 1902.

A. SHARP.

HANDLE FOR OPERATING CYCLE BRAKES.

(Application filed Mar. 3, 1902.)

(No Model.)

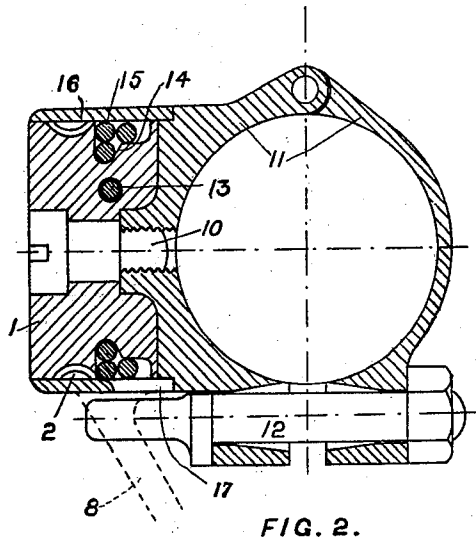


FIG. 2.

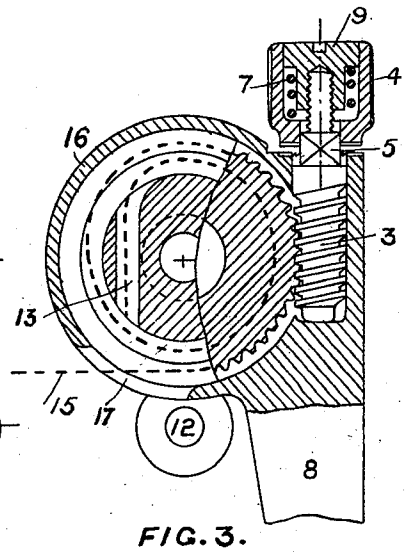


FIG. 3.

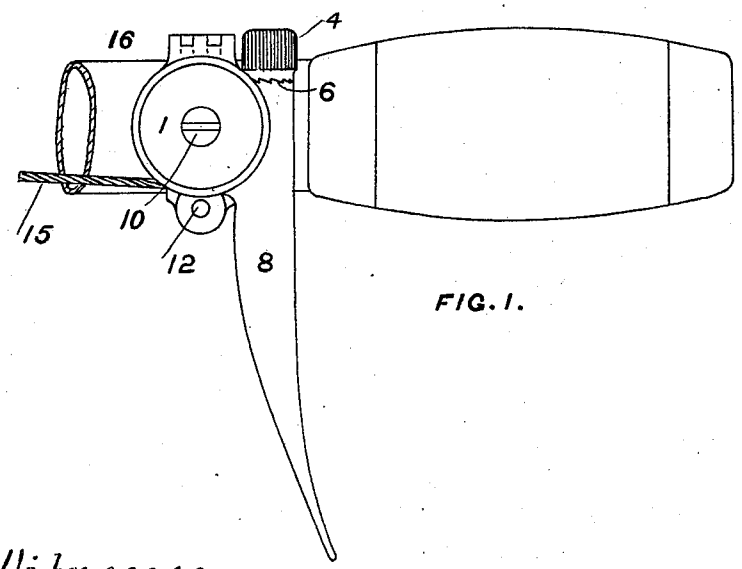


FIG. 1.

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UNITED STATES PATENT OFFICE.

ARCHIBALD SHARP, OF LONDON, ENGLAND.

HANDLE FOR OPERATING CYCLE-BRAKES.

SPECIFICATION forming part of Letters Patent No. 711,443, dated October 14, 1902.

Application filed March 3, 1902. Serial No. 96,495. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD SHARP, a subject of Edward, King of Great Britain and Ireland, residing at 47 Victoria street, London, S. W., England, have invented certain new and useful Improvements in Handles for Operating Cycle-Brakes and the Like, of which the following is a specification.

My invention relates to an improved lever or handle for operating the brake of a cycle or other mechanisms, in which the motion of the handle is transmitted by a wire or cable.

The improved operating lever or handle is a device in which two methods of using any cable-operated brake are combined. The brake can be applied quickly by pressing the said lever, springs taking off the brake when the lever is released. The brake can also be screwed on by turning a small milled head and left on. This answers the purpose of a brake-lock when the cycle is left standing, and can also be used for long descents, relieving the hand from the strain of long-continued pressure. The handle end of the cable is wound on a small drum of sufficient surface to take a long length of cable, thus providing for the raising and lowering of the handle-bar.

In the drawings hereunto annexed, Figure 1 is a general arrangement showing the lever fixed to the handle-bar of a cycle. Fig. 2 is a section through the center of the aforesaid drum normal to the handle-bar. Fig. 3 is a section partly through the aforesaid drum and partly through the hereinafter-mentioned worm-wheel, both planes of section being parallel to the axis of the handle-bar.

The improved operating-lever 8 is pulled against a stop 12 by the action of the take-off springs of the brake and carries a small drum, on which is wound the tension wire or cable 15 from the brake. The said tension-wire is preferably stranded to give it the required flexibility. In Fig. 3 it is represented by the thick dotted line.

The winding-drum 1 is provided with a worm-wheel 2, fastened thereto or cut thereon, the worm or screw 3 being turned by the milled head 4 or by projecting arms.

The milled head 4 can slide on a prolongation of the worm 3, the square 5 on the latter compelling them both to turn together. The bottom of the milled head 4 is provided with saw-shaped teeth 6, which are normally pressed by the spring 7 into corresponding teeth on the lever 8, so that unwinding of the cable 15 is prevented. The spring 7 and milled head 4 are kept in place on the end of the worm 3 by means of the nut 9, screwed hard on the projecting end of the worm 3. To wind the cable 15 on the drum 1, a simple turning motion is imparted to the milled head 4, the inclined surfaces of the teeth 6 on the milled head 4 sliding freely over those on the lever 8. To unwind the cable 15, the milled head 4 has to be lifted against the pressure of the aforesaid spring 7 until the teeth 6 of the milled head 4 and lever 8 are clear, when a turning motion in the opposite direction can be imparted to it.

In the arrangement shown in the drawings hereunto annexed the handle is fastened to the handle-bar by means of the pair of hinged clamping-pieces or clamps 11, which are gripped around the handle-bar by the bolt 12, a prolongation of which forms the stop for the lever 8. The pin 10 is screwed into one of the pieces 11 and forms an axis for the drum 1 and also serves as the fulcrum of the lever 8, the upper part of which forms a hollow cylinder 16, which fits over the drum and worm-wheel. A portion of the said cylinder 16 is cut away at 17 to allow the cable to emerge from the drum, as clearly shown in the sections, Figs. 2 and 3. The end of the cable 15 is slipped into the hole 13. To facilitate this, the ends of the cable-strands carry a small ferrule. Provision is made in the drum 1 so that the first turn of the wire wound on the said drum rests against the sides of the tapered groove 14. As the cable jams in this tapered groove, it is only necessary to wind a very short length of cable on the drum to get the former securely fixed to the latter. Thus to fix the cable to the lever it is only necessary to slip the end into the hole 13 and then wind the drum 1 until the cable is fairly tight. The lever 8 is then slipped over the drum 1, inclosing the latter with the cable wound on it. The worm 3 is then put in place and can be used to wind the cable on the drum, the pull of the cable tending to press the point of the worm against the bottom of the hole in the lever, in which it rests.

The worm can always be readily removed by turning in the reverse direction, and upon such removal the cylinder 16, with lever 8, is free to be detached.

Having thus described my invention, what I claim is—

1. In a handle for operating cycle-brakes and like mechanism, the combination of a short lever, a winding-drum carried by said lever and embraced by a portion thereof, means for turning said drum, means for connecting the drum with the brake, and means for locking said lever and turning means.

2. In a handle for operating cycle-brakes and like mechanisms where the motion of the handle is transmitted by a wire or cable, the combination of a short lever, a stop against which the said lever is normally pulled by the said cable, a winding-drum carried by the said lever, a worm-wheel on the said drum, a worm gearing with the said worm-wheel and suitably mounted on the said lever and a head on said worm by which it may be turned at will.

3. In a handle for operating cycle-brakes and like mechanisms where the motion of the handle is transmitted by a wire or cable, the combination of a short lever, a stop against which the said lever is normally pulled by the said cable, a winding-drum carried by the said lever, a worm-wheel on the said drum, a worm gearing with the said worm-wheel and suitably mounted on the said lever, a head turning with but capable of sliding on a suitable prolongation of the said worm, serrated teeth on the contact-surfaces of the said head and lever, and a small spring which presses the said head against the said lever.

4. In a handle for operating cycle-brakes and like mechanisms where the motion of the handle is transmitted by a wire or cable, the combination of a short lever, a stop against which the said lever is normally pulled by the said cable, a winding-drum carried by the said lever, a worm-wheel on the said drum, a worm gearing with the said worm-wheel and suitably mounted on the said lever, a head turning with but capable of sliding on a suitable prolongation of the said worm, serrated teeth on the contact-surfaces of the said head and lever, a small spring which presses the said head against the said lever, a clamp or clamps for attachment to the handle-bar, and a fulcrum-pin screwed into one of the said clamps and serving as an axis for the said drum and lever to turn on.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

ARCHIBALD SHARP.

Witnesses:

HARRY T. P. GEE,

F. E. JOHNSON.