T. N. BOURKE.

OPERATING ROD.

APPLICATION FILED OCT. 1, 1921.

1,438,016. Patented Dec. 5, 1922.

Fig. 1

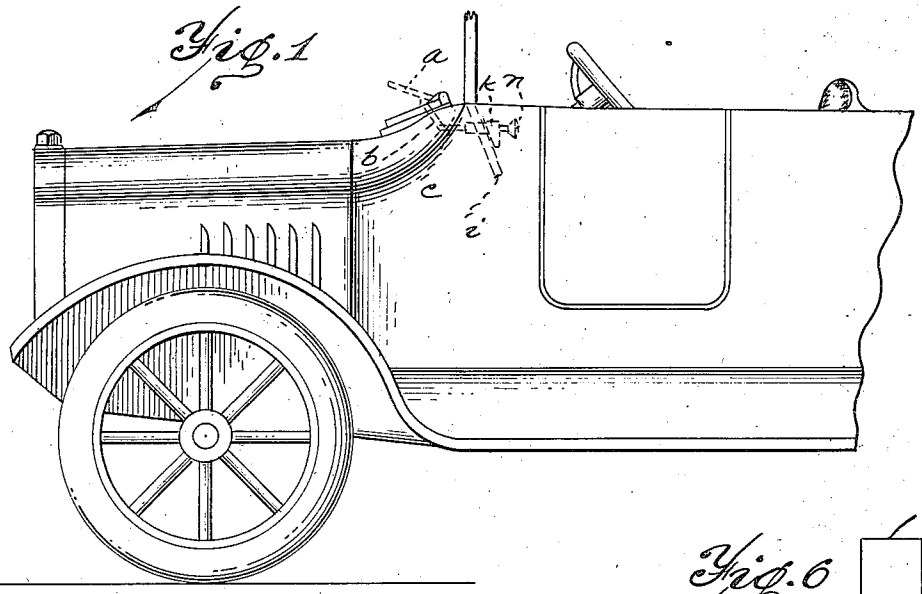
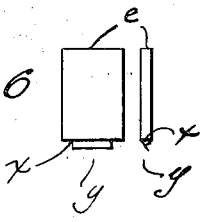


Fig. 6



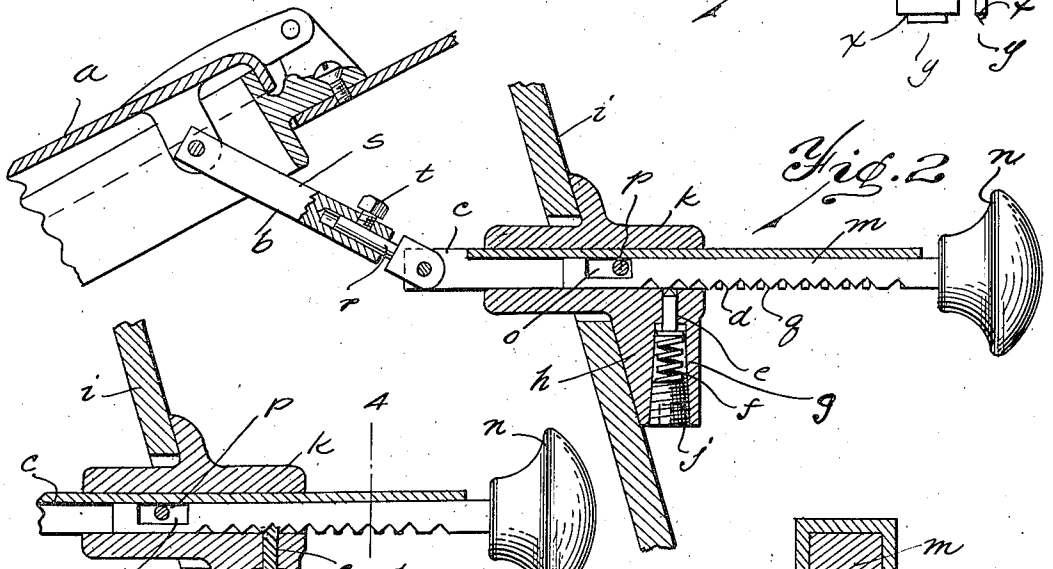


Fig. 2

Fig. 3

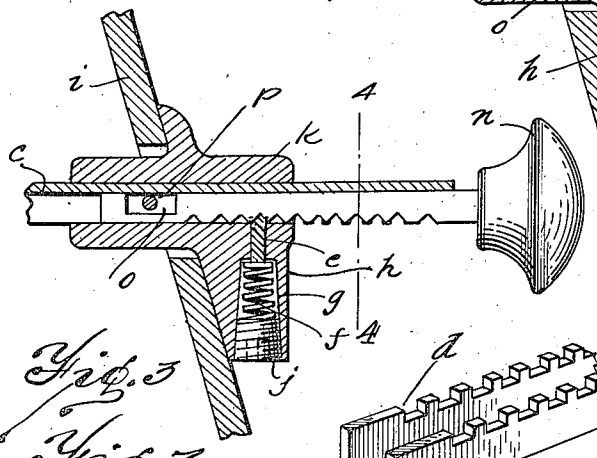


Fig. 4

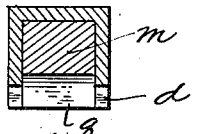


Fig. 7

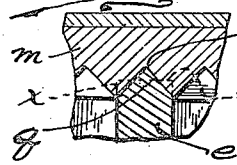
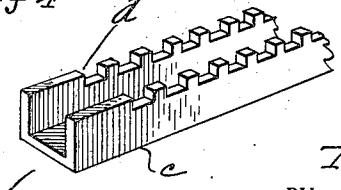


Fig. 5



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Patented Dec. 5, 1922.

1,438,016

UNITED STATES PATENT OFFICE.

THOMAS N. BOURKE, OF DETROIT, MICHIGAN, ASSIGNOR TO SLAYMAKER ELECTRIC WELDING COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

OPERATING ROD.

Application filed October 1, 1921. Serial No. 504,728.

To all whom it may concern:

Be it known that I, THOMAS N. BOURKE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Operating Rods, of which the following is a specification.

This invention relates to operating rods for ventilators, or similar members, and has for its object a composite push rod member in which the inner member has a limited movement with respect to the outer member to act as a releasing cam to disengage the restraining dog. The result is that this rod may be operated from one end and absolutely lock against any actuating from the opposite end.

One of its main places of usefulness is to hold a ventilator lid on an automobile in open or closed position. The operating rod may be located on the instrument board of the car and connected by suitable connections with the ventilator.

In the drawings,—

Fig. 1 is a side elevation of a car equipped with the ventilator and the operating rod.

Fig. 2 is an enlarged cross section through the instrument board and a portion of the ventilator showing the operating rod in position to pull the ventilator up or down.

Fig. 3 is a similar view showing the operating rod locked.

Fig. 4 is a cross section on the line 4—4 of Fig. 3.

Fig. 5 is a fragmentary perspective of the outer telescoping part of the operating rod.

Fig. 6 shows two elevations of the locking dog.

Fig. 7 is a fragmentary section showing how the dog notches interlock.

a designates a ventilating lid which may be opened and closed by the link *b* connected with the operating rod section *c*. This is the outer telescoping rod section having locking notches *d* to receive the square shoulders *x* of the locking dog *e*. This locking dog is upwardly projected by the spring *f* engaging in the socket *g* in the fixture or bearing *h*. This fixture is secured to the instrument board *i*. A screw plug *j* screws into the end of the socket *g* to form an abutment for the outer end of the spring. The upper portion of the fixture *h* forms a sleeve *k* that guides the operating rod in a substantially horizontal path.

This operating rod is made up of an outer telescoping section *c* which is in the form of a notched channel bar. The inner section is designated *m* and has on its inner end a knob *n*. The other end of the inner section is notched at *o*. A pin *p* secured in the side walls of the channel section passes through this notch. This notch and pin gives a limited lost motion between the two telescoping sections. The inner section has its under side notched with a plurality of notches having sloping walls and designated *q*. These form cams which can engage the center ridge *y* and force the locking dog *e* back out of the path of the rod operating sections to permit the same to be operated. When the rod is locked, as shown in Fig. 3, the pin *p* is substantially at the center of the slot *o*. Now the inner section *m* may be either pushed in or pulled out a limited distance as permitted by the pin *p* and the walls of the slot *o*. This is sufficient to throw one of the sloping side walls of the notches *q* against the locking dog and release it.

Now obviously any effort to actuate the composite operating rod from the end to which the ventilator is attached results in no movement as the locking dog remains securely in place. On the other hand, movement in either direction by grasping the knob *n* tends first to disengage the locking dog and continued movement actuates the outer telescoping section *c* which is connected with the link *b*. This connection with the link *b* is an adjustable one as the stud *r* telescopes in the rod portion *s* and may be extended or contracted by loosening the set screw *t*.

To more fully explain the operation of the locking dog, it might be well to refer to Fig. 7. It will be seen that the notches *q* are deeper than the notches *d* for the ridge or cam part of the dog and the shoulders *x* have to be in their respective notches at the same time, and inasmuch as the ridge or cam part is always in advance of the shoulders *x*, consequently the notches in the telescoping member *m* have to be deeper.

What I claim is:

1. An operating rod, having in combination, a bearing, two sections slidable through

said bearing and arranged to have a limited sliding movement with respect to each other, and means for locking one of the sections and disengageable only when a limited movement takes place between the sections and which limited movement can only be initiated at one end of the two sections.

2. An operating rod, comprising a bearing, a pair of sections slidable through the bearing and having a limited sliding movement with respect to each other, a locking member operating in said bearing for engaging one of said sections to lock the operating rod, the said locking member disengageable only by a limited relative sliding movement between the sections which movement can be initiated only at one end of the sections.

3. An operating rod, having in combination, a bearing, a pair of sections slidable through the bearing and having a limited sliding movement with respect to each other, and a locking dog adapted to engage and lock one of the sections, the other section provided with means for disengaging the locking dog when a limited relative movement is had between the two sections.

4. An operating rod, having in combination, a bearing, a pair of sections slidable through the bearing, one of the sections being provided with locking notches, a locking dog adapted to engage in said locking notches, the other section being provided with notches having sloping walls to form cams to disengage the locking dog, the said sections having a limited relative movement which may be initiated at only one end of the sections to cause the section with the cam surfaces to first disengage the locking dog before movement of the two sections is had.

5. An operating rod, having in combination, a bearing, a pair of telescoping sections engaging through the bearing, one of said sections being provided with locking notches, the other of the sections being provided with notches having sloping walls or cam faces, the said sections having a relative limited movement with respect to each other, and a locking dog engaging in said bearing and normally engaging in the locking notches but disengaged from the locking notches by a limited movement of the cam surface section which can be initiated only from one end of the sections.

6. An operating rod, having in combination, a bearing, a channel section sliding through the bearing and provided with rectangular notches in its side walls, the inner section slidable in said channel section and through the bearing and provided with notches having sloping walls, the said two sections having a relative limited movement with respect to each other, and a locking dog in said bearing projected normally into the rectangular notches of the outer section to lock the two sections but capable of being withdrawn from such notches by the limited movement of the inner section with respect to the outer section, in which movement the sloping walls of the notches of the inner section force the locking dog out of engagement with the rectangular notches of the outer section.

7. An operating handle, having in combination, a bearing, a pair of sections slidable through the bearing, one section being a channel member provided with locking notches in its side walls and having one end connecting with a member (ventilator) to be operated, an inner section slidable in the bearing and inside of the channel of the outer section and having on its open side a plurality of notches having sloping walls or cam faces, the said inner member provided with a notch and the outer member provided with a pin which permits a limited relative movement between the two sections, and a locking dog normally engaging in some of the locking notches of the outer section but disengaged from such notches by the limited relative movement of the inner section with respect to the outer section, the said cam faces of the inner section forcing the locking dog back out of the way.

In testimony whereof I affix my signature.

THOMAS N. BOURKE.