May 6, 1958 E. B. PARKES 2,832,982

WINDSHIELD WIPER ARM CONNECTION

Filed May 5, 1953

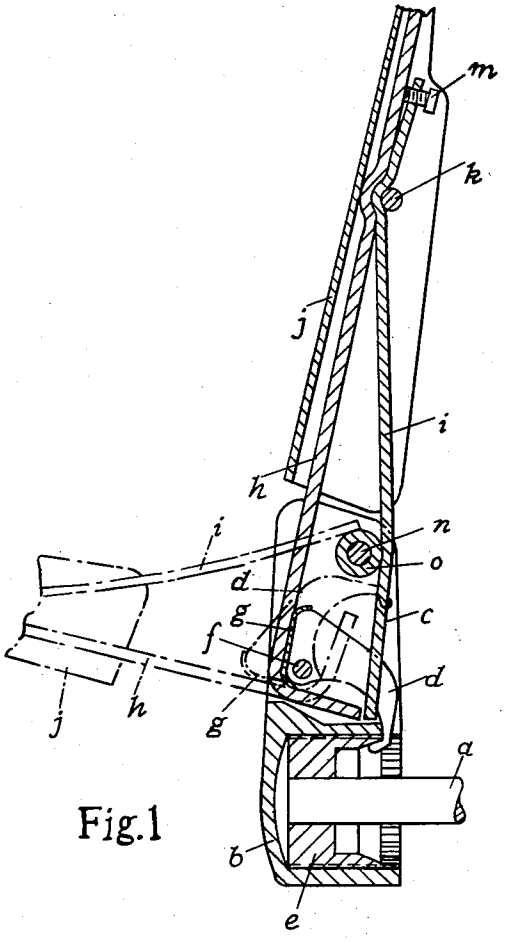


Fig.1

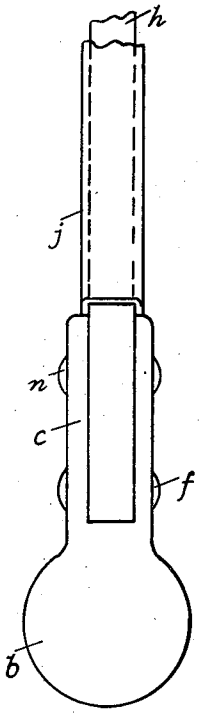


Fig.2

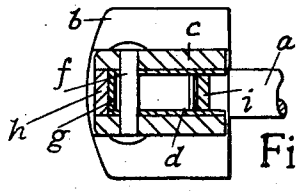


Fig.3

Inventor
E. B. Parkes
By Glascock Downing & Seibold
Attys.

United States Patent Office

2,832,982

Patented May 6, 1958

2,832,982

WINDSHIELD WIPER ARM CONNECTION

Eric Bernard Parkes, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Application May 5, 1953, Serial No. 353,068

1 Claim. (Cl. 15—255)

In a known type of wiper arm for an oscillatory wind screen wiper, one end of the arm is secured to the actuating spindle by an angularly adjustable serrated coupling, an internally serrated socket on the arm being engageable with a complementary externally serrated part on the spindle.

It is desired to arrange in combination with such an arm, means for preventing accidental disconnection of the coupling, and the object of the present invention is to enable this requirement to be met in a simple and convenient manner.

The invention comprises the combination with an end part of the arm, of a pivotally mounted claw adapted to engage one end of the externally serrated part of the coupling on the spindle, and a pair of spring blades one of which serves to carry the wiper blade and also to bear against one end of the claw, the other blade being arranged to bear against one side of a pin or roller on the said arm part, and the arrangement being such that movement of the claw for releasing the coupling can be effected by movement of the spring blades relatively to the part carrying the claw.

In the accompanying drawings:

Figure 1 is a sectional side elevation, Figure 2 a front elevation and Figure 3 a sectional plan illustrating one embodiment of the invention.

In the example shown in the drawings, the arm part adapted for attachment to the actuating spindle *a* comprises a hollow and internally serrated boss *b* from which extends radially a branch *c*. In this branch is pivotally secured a bifurcated claw *d* which at its free end is adapted to abut against one end of an externally serrated collar *e* formed on or secured to the driving spindle *a*, the boss *b* being mounted on the collar with its internal serrations in engagement with the external serrations of the collar so that the boss and collar form complementary parts of a coupling for securing the said arm part and spindle together. It will be seen from the drawing that the hollow boss *b* is closed at one end, and that the claw *d* serves by contact with the opposite end of the collar *e* to prevent accidental detachment of the boss from the collar. At the end adjacent to the pivot *f* the claw has formed on it a head *g*, the claw parts *d* and *g* forming a effect a bell crank lever.

In association with the said arm part are provided a pair of spring blades *h* and *i*. The blade *h* is longer than the other and may serve to carry the wiper blade (not shown). One end of the blade *i* is attached to the first blade by an embracing cover *j* of channel section, and both blades are kinked transversely at a position within the cover to enable them to be mutually engaged and held against relative longitudinal movement, the

blades being secured to the cover by a transverse pin *k* which lies in the kink of the shorter blade. Tensioning of the blades is effected by a screw *m* which is inserted through one end of the shorter blade into contact with the other blade, the screw being situated at the end of the cover remote from the arm part *c* above described.

Across the open end of the branch *c* of the arm part is secured a pin *n*, carrying an abutment in the form of a roller *o* against one side of which bears the short spring blade *i*.

The inner end of the longer spring blade *h* is bent inwardly at right angles, and the head *g* of the claw lies within the angle, with its ends in contact with the main and bent-over parts of the said blade. The engagement of this blade with the head of the claw serves to connect the blade to the arm part *c*, and the pressure exerted by the blade on the claw head serves to hold the claw in its operative position.

To detach the arm from the spindle, the spring blades are jointly swung outwardly relatively to the arm part *c* carrying the claw, as indicated by the dotted lines in Figure 1, and in so doing the bent-over end of the longer blade *h* engages one side of the claw and swings it away from the collar *e* on the spindle.

The purpose of the shorter spring blade above described is to press the wiper blade into contact with the wind screen, and the arrangement is such that over a convenient range of angular movement of the spring blades relatively to the arm part attached to the spindle, a substantially uniform pressure is exerted on the wiper blade. Also over this range of movement the bent-over end of the longer spring blade has no effect on the claw. Only when the spring blades are moved outwardly through a relatively large angle is the claw released.

By this invention the detachable securing of the wiper arm to its spindle is effected in a simple manner, and at the same time a spring loaded arm is provided in a simple form.

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

An oscillatory windscreen wiper arm comprising the combination with a coupling composed of complementary parts in the form of an internally serrated hollow boss and an externally serrated collar on which said boss is mounted with its serrations engaging those of said collar, of a branch extending radially from said boss and having an abutment thereon, a claw pivotally mounted on said branch and engageable with one end of said collar to prevent detachment of said boss therefrom, a first spring blade bearing against one side of said abutment, and a second spring blade attached to said first spring blade and having an end portion bent over to form an angle with the adjacent portion of said second spring blade, one end of said claw being situated within said angle and shaped to abut said second spring blade so that said claw is normally retained in engagement with said collar by said second spring blade, but is disengageable from said collar by the bent over end portion of said second spring blade in response to a predetermined joint angular movement of said first and second spring blades.

References Cited in the file of this patent

UNITED STATES PATENTS

2,320,660	Schall	June 1, 1943
2,365,251	Curtiss	Dec. 19, 1944