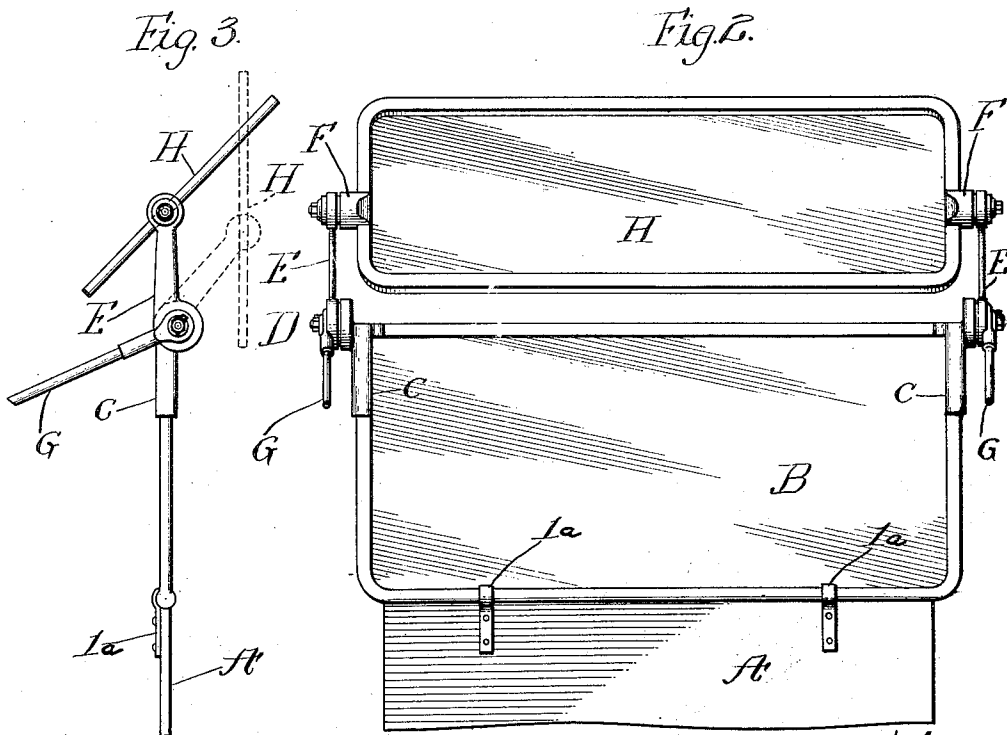
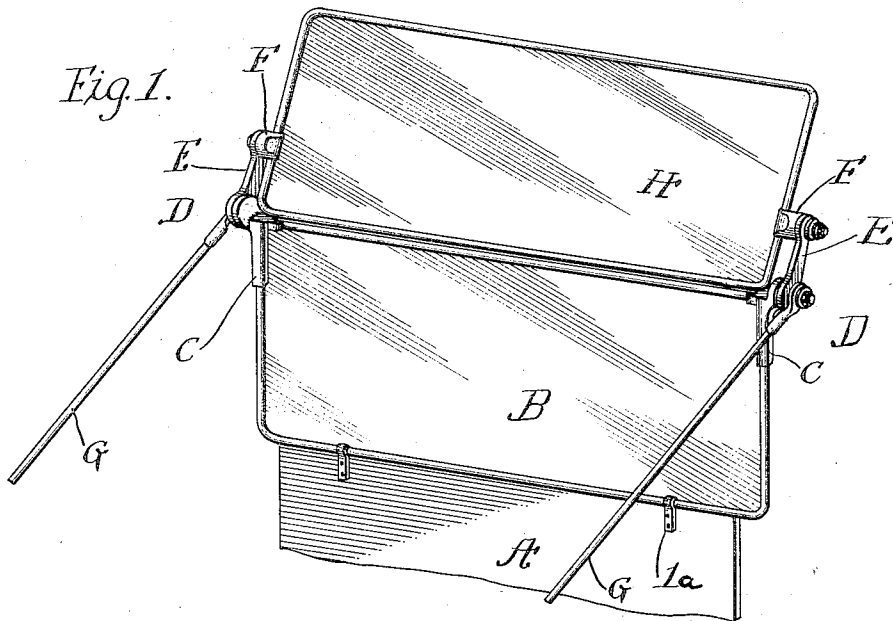


P. T. CEDERSTROM.
LOCKING HINGE.
APPLICATION FILED AUG. 5, 1912.

1,058,842.

Patented Apr. 15, 1913.

2 SHEETS—SHEET 1.



Witnesses:
J. W. B. Marus Jr.
R. Bauerle

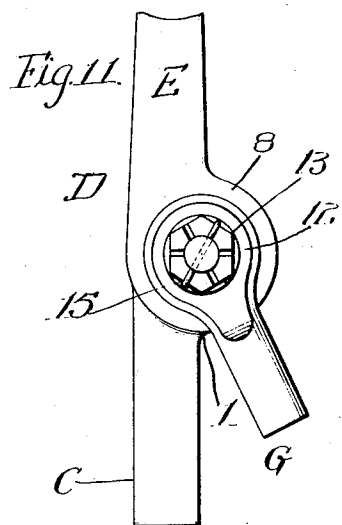
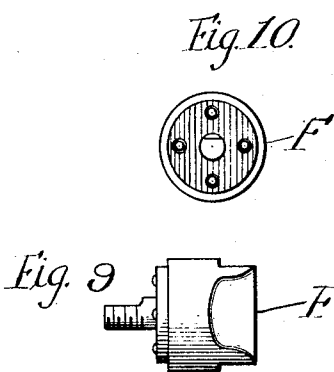
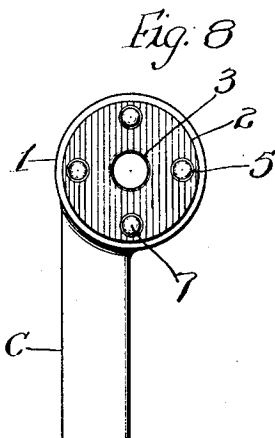
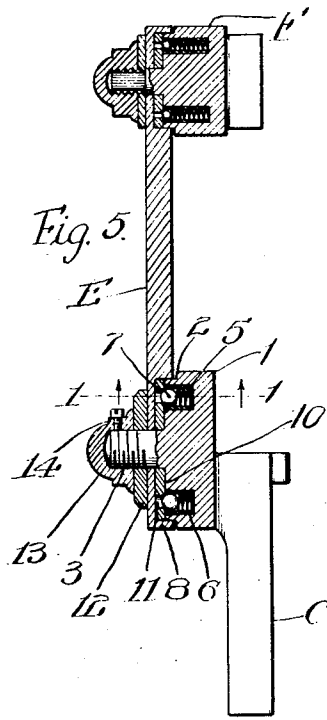
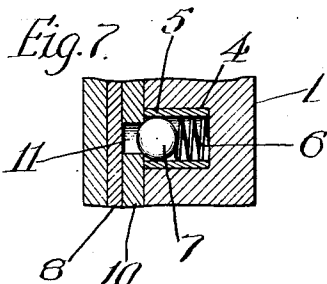
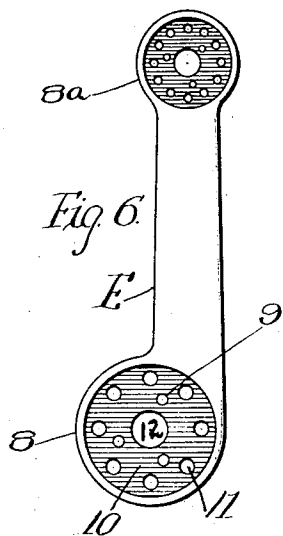
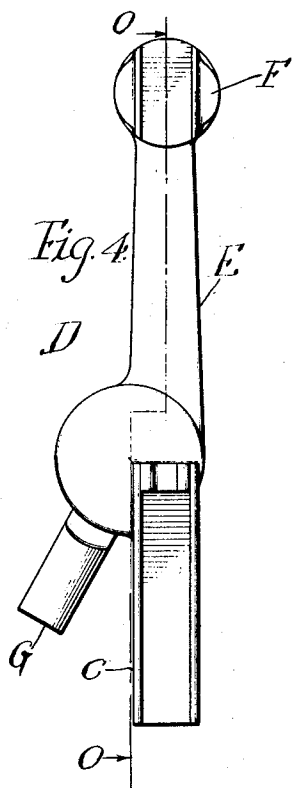
Inventor:
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By: Michael J. Staur & Sons
Att'y's

P. T. CEDERSTROM.
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2 SHEETS—SHEET 2.

1,058,842.



Witnesses:
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UNITED STATES PATENT OFFICE.

PETER T. CEDERSTROM, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO ALBERT BERNHARDT GROSKOPF, OF CHICAGO, ILLINOIS.

LOCKING-HINGE.

1,058,842.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed August 5, 1912. Serial No. 713,461.

To all whom it may concern:

Be it known that I, PETER TOBIAS CEDERSTROM, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Locking-Hinges; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheets of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has general reference to improvements in locking hinges, and it consists, essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings already referred to, which serve to illustrate my said invention more fully, Figure 1 is a perspective view of an automobile wind shield equipped with my locking hinge; Fig. 2 is a front elevation of the same, and Fig. 3 an end elevation thereof. Fig. 4 is a side elevation of my device detached, and Fig. 5 a longitudinal section of the same, taken in the direction of the arrow pointers in line O O of Fig. 4. Fig. 6 is a side elevation of one of the leaves of the hinge detached, and Fig. 7 a transverse section looking in the direction of the arrow pointers in line 1 1 of Fig. 5. Fig. 8 is a side elevation of the leaf opposed to that shown in Fig. 6, and Figs. 9 and 10, are an elevation and plan, respectively, of details of construction. Fig. 11 is a side elevation of a fragment of my hinge as applied to an automobile wind shield.

The object of my invention is the production of a locking hinge which may be applied to the usual type of wind shields used on automobiles; to horizontally or vertically pivoted windows in office buildings, to cellar windows, and, in fact to any place where a hinge is desired wherein the portion hinged will remain in the position it was last placed until removed therefrom by manual pressure.

It is a further aim of my invention to arrange in the carrying out thereof, certain means whereby the effort required to operate the hinge may be increased or reduced to meet the various requirements.

I will first describe my invention as applied to the regulation automobile wind shield.

A, in Figs. 1, 2, and 3, indicates an upward extension of the foot board or dash board of an automobile. B is a rectangular sheet of plate glass affixed to said extension by suitable clips 1*, which glass forms the lower or stationary shield.

C are the lower leaves of my locking hinge D, which leaves are affixed to the upper corners of glass B in any suitable manner and connected with the body of the automobile by diagonal braces G for stiffening purposes.

E are the upper leaves of the hinge, at the free ends of which are rotatably attached heads F, which heads are attached to the opposite edges of a rotatable glass H, which, as seen in Fig. 3, is adapted to be oscillated independently about the free ends of the upper leaves E, so that any desired pitch or position within the limits of the hinge, may be imparted to the glass H.

The lower leaf C, Figs. 4, 5, 8, has formed at one end a disk-like hub or boss 1, which boss may be formed tangentially to the edge of the leaf, as shown, or centrally therewith, as the particular demands may require. It may be offset to said leaf C, as shown in Fig. 5, or a direct continuation thereof, as may be most desirable for the use to which the hinge is to be put. The face of this boss has a concentric projection 2 of slightly smaller diameter, and an axial, upstanding, screw threaded shank or stud 3. In the face of the projection 2 is drilled a plurality of concentrically arranged, equally spaced holes 4, Fig. 7, into which are tightly pressed cylindrical, steel tubes, preferably hardened, which tubes 5 are adapted to receive helical springs 6, the upper ends of which support balls 7, which balls are just a nice fit in said tubes and project beyond the face of the projection 2 practically one-half of their diameter. Fitting over said projection is an internally bored boss 8 of the upper leaf E. This latter boss may also be tangent to the edge of the leaf E and offset therefrom, or it may be centrally arranged in the same plane. In the bottom of the internally bored portion of boss 8, there is fastened by rivets 9 or otherwise, a carbonized steel plate 10, which plate is drilled with a plurality of concentrically arranged,

equally spaced holes 11, which holes 11 are in register with the balls 7 when the parts are assembled. Said boss 8 and plate 10 have a central, axial, circular opening 12, which is adapted to fit over the shank or stud 3 on the boss 1. It will now be observed that when the boss 8 is slipped into place upon boss 1, the balls 7 will project into the holes 11, and that if revolution of either leaf be attempted, the said bosses will either be forced apart, or the balls 7 will be compelled to retreat into the tubes 5, thereby compressing the springs 6. To prevent said bosses from being so forced apart, I place over the threaded stud 3 a washer 12 and a nut 13, which latter, when screwed up, will effectually prevent any spreading tendency. Revolution of this nut is prevented by a set screw 14, bearing upon said shank or stud, or I may employ a castellated nut, as seen in Fig. 11, with a cotter pin 15. Attention is now called to the fact that the effort necessary to oscillate either of the leaves will be directly proportionate to how tightly nut 13 is screwed up, and it is obvious that as the balls 7 are entered in holes 11, effort is required to dislodge them by an enforced retreat into the tubes 5, before either leaf may be moved. While the balls are so retreated, the oscillation or revolution of the leaf or leaves is an easy matter until the next succeeding holes 11 register with the balls 7, whereupon said balls, acted upon by the compressed springs 6, engage said holes.

When this device is used as a hinge for automobile wind shields, the washers 12 become the terminals for the braces G, hereinbefore referred to. When so employed, I form on the free ends of the leaves E, bosses 8^a, which are constructed precisely as are bosses 8, and which co-act with heads F to permit the independent oscillation of top shield H. These heads F are made with the same elements as boss 1, and operate in exactly the same manner.

Locking hinges of the type described are generally made from bronze for the more expensive hinges, or from malleable iron for the cheaper grades. As is well known, both of these metals are very ductile and not of dense grain, so that a hinge operated with the balls bearing directly upon the bare

metals, would not only have the holes 4 quickly enlarged, but would also have a 55 pathway cut between the holes 11, as a result of which the device would become useless in a very short time, because of inability to retain the leaves in positive position. In my invention, however, I have corrected these serious faults by forcing a hardened steel tube 5 into each one of the holes 4, effectually preventing any enlargement of said holes. In addition, I securely fasten a hard, carbonized steel plate 10, containing the registering holes 11, to the opposite boss 8 of the leaf member E, so that it will be impossible for the balls 7 to cut a sufficient groove or pathway between the holes 11 to effect the proper operation of the 70 hinge.

Having thus fully described my invention, I claim as new and desire to secure to myself by Letters Patent of the United States:—

1. In a hinge, a leaf with a boss, said boss having a series of concentric holes in the face thereof, hardened steel tubes forced into said holes, balls fitting the interior of said tubes, means within said tubes to force said balls outwardly, a second leaf possessing a boss, a hardened steel disk fixed to the face thereof, there being a series of concentrically arranged pockets in the face of said disk, which pockets are in register with said balls, and adjustable means for retaining said bosses in juxtaposition to each other.

2. In a hinge, a leaf with a boss, said boss having a series of circular holes in the face thereof, hardened steel tubes forced into said holes, balls fitting the interior of said tubes, helical springs in said tubes tending to force said balls outwardly, a second leaf possessing a boss, a hardened steel disk fixed to the face thereof, there being a series of concentrically arranged pockets in the face of said disk, which pockets are in register with said balls, and adjustable means for retaining said bosses in juxtaposition to each other.

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

PETER T. CEDERSTROM.

In the presence of—

W. I. LORCLURG,
WILLIAM O. STARK.