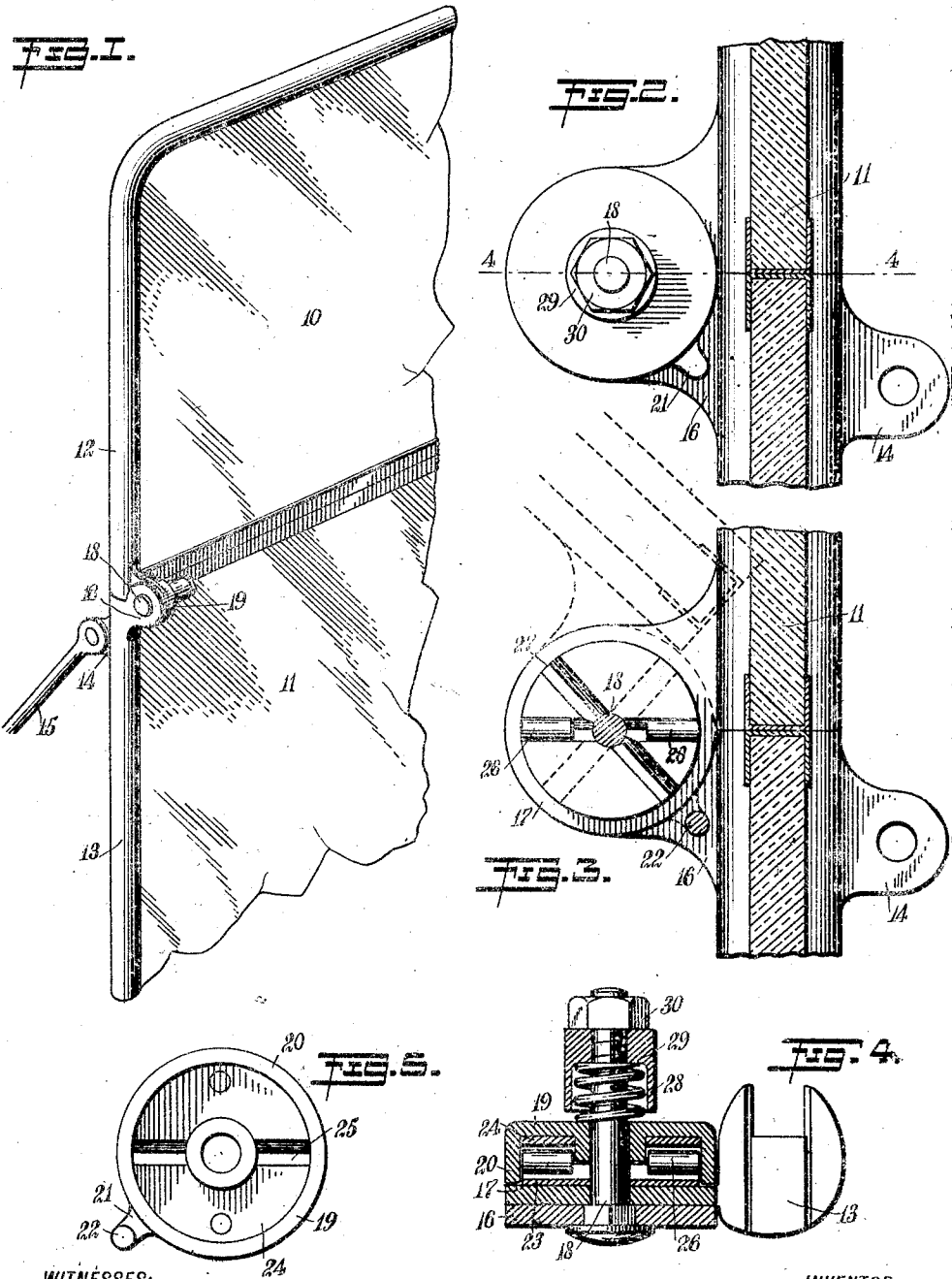


J. H. SPRAGUE.
WIND SHIELD.

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1,002,771.

Patented Sept. 5, 1911.



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JAMES H. SPRAGUE, OF NORWALK, OHIO.

WIND-SHIELD.

1,002,771.

Specification of Letters Patent.

Patented Sept. 5, 1911.

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To all whom it may concern:

Be it known that I, JAMES H. SPRAGUE, a citizen of the United States, and a resident of Norwalk, in the county of Huron and State of Ohio, have invented a certain new and Improved Wind-Shield, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in wind shields adapted for use upon motor vehicles, and more particularly to that type of shield which has a transparent section, movable to operative or inoperative position.

My invention relates to the means for supporting the movable section, and permitting of the desired movement of the latter, the object of the invention being to provide a shield which will be automatically held in the desired position without the use of any fastening or locking members. The parts of the hinge are under tension and frictionally engaged with each other to normally prevent the movement of the shield, but to permit such movement when sufficient pressure is brought to bear.

One important feature of the construction includes the use of rollers within the hinge, and fitting in V-shaped grooves for locking the sections of the shield in predetermined relationship.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of a portion of a wind shield constructed in accordance with my invention; Fig. 2 is a vertical section through the wind shield adjacent the meeting line of the sections, and showing the casing of the hinge; Fig. 3 is a section similar to Fig. 2, but showing the casing removed; Fig. 4 is a transverse section on the line 4-4 of Fig. 2; and Fig. 5 is an inside plan view of the casing.

My improved supporting means is illustrated as being applied to a shield having an upper transparent section 10, and a lower transparent section 11, but it is evident that the character or form of the lower section is immaterial, for the device operates only to support the upper section, and permit of the proper adjustment of the latter. The two sections have frames 12 and 13, encircling and supporting the transpar-

ent portions of the sections, and the lower section is illustrated as being provided with a forwardly extending lug 14, adjacent the upper edge thereof, and at each end having attachment to a brace rod 15. The lower end of this brace rod may be secured to the body of the vehicle in any manner common in the art.

Directly opposite to each lug 14 the lower section carries upwardly and rearwardly extending circular plates 16, constituting hinge leaves, which lie closely adjacent to downwardly and rearwardly extending circular plates 17, carried by the upper section adjacent the lower edge of the latter. These two plates overlap and are secured together by a bolt 18, which extends through the centers of the two plates, and constitutes the pintle or hinge pin of the hinge. The bolt is preferably held against rotation in respect to the hinge plate 16, by being non-circular in cross section, as is indicated in Fig. 4. Upon the side of the plate or leaf 17 opposite to the plate or leaf 16, I provide a casing 19, formed from cast or stamped metal, and having a chamber or recess therein. The marginal flange 20 of the casing normally lies closely adjacent the periphery of the plate 17, so as to hold the latter between the plate 16 and the casing.

The casing 19 is provided with an outwardly extending projection or flange 21, at one side thereof, and this flange has a projection or pin 22, extending into a recess in a portion of the plate 16. This positively prevents any rotation of the casing in respect to the plate 16, or the lower section of the wind shield. Between the plate 17 and the casing 19 I insert my improved friction means, which consists of two wear plates 23 and 24, opposed to each other within the chamber of the casing. One of these plates 23 is rigidly and permanently secured to the plate 17, while the other wear plate 24 is rigidly and permanently secured within the casing 19. The surface of the plate 24 within the casing is provided with a groove 25, extending diametrically thereacross, and within this groove are mounted two rollers 26, 26, in alignment with each other. The groove may be semi-circular or V-shaped in cross section, and is of sufficient depth to retain the rollers in position.

In the surface of the plate 23 there are a plurality of grooves 27, extending diametrically thereacross, and each substantially

V-shaped in cross section. These grooves 27 are so disposed that as the upper section of the shield is moved the different grooves may be brought opposite to the groove 25 of the casing and may receive the rollers. The bolt 18 extends through the casing 19, and upon its end has a spring 28 and two nuts 29 and 30. The nut 29 preferably has a flange which may inclose the larger portion of the spring so as to conceal and protect the latter, while the nut 30 serves merely as a jam nut to prevent the rotation of the nut 29.

With the upper section in vertical position, the rollers 26, will lie not only in the grooves 25, but will also lie in opposed grooves 27 of the plate carried by the upper section. Any rotary movement of the plate 17 in respect to the casing, will tend to move the rollers out of the grooves 27 and on to the surface of the wear plates. This presses the casing and the plate 17 apart against the tension of the spring, and as the spring resists the spreading movement it is evident that the sections will remain in alignment, unless sufficient pressure is brought to bear to force the upper section over toward the position shown in dotted lines in Fig. 3. When the upper section leaves the predetermined angle, the rollers 26 will enter a second groove in the plate 23, and the upper section will again be frictionally locked in position. As many of these grooves may be provided as desired, so as to hold the upper section in any one of a large number of different positions. The same grooves which lock the upper section in its upper position, will also lock the upper section in its lower position, as the latter will have rotated through one hundred and eighty degrees.

By forming the grooves V-shaped, any wear will merely cause the rollers to drop deeper into the grooves, but will not interfere with the firm holding of the parts. The tension of the spring may be increased to take up for this wear and in fact, it may be increased or decreased at any time to give the desired tension on the spring. The nuts 29 and 30 extend substantially parallel to the surface of the plate, and substantially on the same level as the meeting line of the two sections; they are thus very inconspicuous, and the shield presents a neat and at-

tractive appearance. The rollers may be removed and replaced whenever desired, as may also the wear plates. Thus, the only parts of the shield which are subject to wear are readily removable, and the length of life of the shield is greatly increased.

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

1. A hinge adapted for use with a wind shield having a lower section and an upper section, said hinge connecting said sections, said sections having projecting plates arranged in juxtaposition, a recessed casing having a marginal, laterally disposed flange and located adjacent to one of said plates, means for holding said casing against rotation with respect to said last-mentioned plate, wear plates provided with radial grooves, and arranged respectively within said casing and against said plate adjacent to said casing, radially disposed rollers within said casing and engaging said grooves, a pivot bolt passing through said plates and said casing, and a spring normally pressing said casing toward said plates.

2. A hinge adapted for use with a wind shield having a lower section and an upper section, said hinge serving to connect said sections, said lower section having an upwardly and outwardly extending plate, a casing, means for holding said casing against rotation in respect to said plate but spaced therefrom, a plate carried by the upper section and disposed intermediate said first-mentioned plate and said casing, wear plates provided with radial grooves and located upon the outer surface of the second-mentioned plate and the inner surface of the casing, radially disposed rollers within said casing and engaging within said grooves, a pivot bolt extending through said plates and said casing, and a coiled spring upon said bolt and normally pressing said casing toward the said second-mentioned plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES H. SPRAGUE.

Witnesses:

F. G. LUFFEY,
JOHN P. DAVIS.