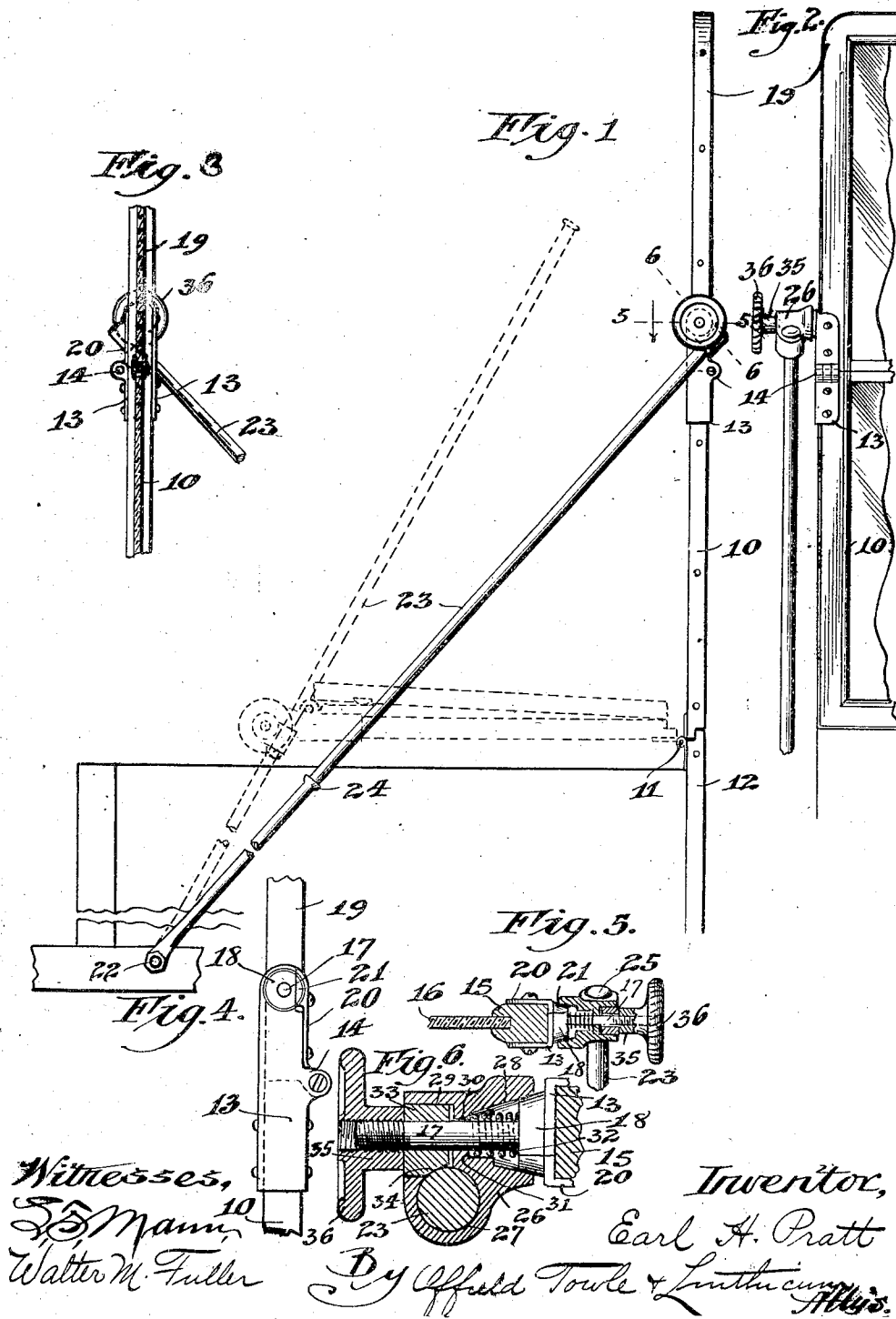


E. H. PRATT.
FOLDING WIND SHIELD.
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UNITED STATES PATENT OFFICE.

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FOLDING WIND-SHIELD.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EARL H. PRATT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Folding Wind-Shields, of which the following is a specification.

My invention concerns foldable wind shields or guards such as are in common use at the present time on automobiles to protect the occupants of the vehicle from the effects of wind and dust. These shields are usually made so as to be capable of folding or collapsing, whereby they may occupy but little space when not in use. It becomes necessary in such devices to provide some means for securely locking the shield sections in operative or unfolded condition, and it is to improvements in this part of the device that my invention is directed. Its aim is to provide a locking or clamping mechanism simple in construction, economical to manufacture, easily operated, and effective for the purpose intended.

Whereas my invention is susceptible of a variety of embodiments, yet in order that the invention may be fully understood I have illustrated on the accompanying drawing and described below one preferred and desirable construction containing the improvement.

On the drawing,—Figure 1 is an edge view of the front portion of an automobile illustrating in full lines my improved wind shield in vertical or operative position, the collapsed condition of the same being indicated in dotted lines; Fig. 2 is a fragmentary elevation of one edge portion of the shield illustrating the hinged connection between the two sections, and showing also my improved locking or clamping mechanism; Fig. 3 is a fragmentary vertical section through the central portion of the shield sections; Fig. 4 is an edge elevational view of the hinge connections between the shield sections, showing also those parts of my improved locking or clamping mechanism which are integral therewith; Fig. 5 is a horizontal section on line 5—5 of Fig. 1; and Fig. 6 is an enlarged section on line 6—6 of Fig. 1.

The frame of the lower section 10 of the foldable wind shield or screen is hinged at its bottom edge at 11 to any suitable sup-

port 12 and each of its opposite edges adjacent to its top margin is supplied with a hinge member 13 of channel shape at its lower half and of substantially angle section at its upper half above the hinge pin or pintle 14. As is customary, this hinge member or sheathing 13 receives and accommodates the sash or framing of the lower shield section. The outer face of this hinge member 13 at its upper end is supplied with an outwardly-extended screw-threaded rod or pin 17, and a lug 18 concentric therewith and forming about two-thirds or three-quarters of a truncated cone. The upper section or part 19 of the foldable shield is hinged on the pintle 14 by means of a strap 20 having at its upper end an outwardly-extended lug 21 forming the remainder of the truncated cone, it being understood that the strap or bar 20 takes the place of the portion of the hinge member 13 omitted above the hinge itself, the angle part of the member 13 and the strap or bar 20 constituting a channel-shaped structure in which the sash or frame 15 carrying the glass 16 of the upper section 19 of the shield is accommodated. The member 13 being rigidly fastened to the lower section acts as an abutment or stop to limit the turning of the upper section 19 on the hinge in one direction.

At each side of the vehicle, that is, at each end of the foldable guard, I pivot at 22 a comparatively-long cylindrical brace rod 23 having thereon shoulders or stops 24 and 25, the latter being at the upper end of the brace rod, while the former is near its lower end and limits the downward swinging of the collapsed shield, as will be readily understood from a consideration of the construction and operation of the parts hereinafter described. On each of these brace rods I employ a clamp 26 provided with a cylindrical aperture 27 accommodating the brace rod, the clamp being slidable longitudinally on the latter, as will be obvious. On its inner face this clamp 26 has a conical aperture or recess 28 adapted to receive and accommodate the two lugs 18 and 21 unitedly forming an outwardly-extended truncated cone. The clamp 26 on its outer face has a cylindrical cavity 29 intersecting the aperture 27 so that a portion of the brace rod 23 extends into the recess or cavity 29. The wall between the recesses 28 and 29 is perpendicular to the axis of the brace rod.

forated or apertured at 30 to accommodate the threaded rod or pin 17, the threaded end portion of which projects outwardly beyond the clamp, as is clearly shown in Fig. 6. Encircling this pin or rod 17 and bearing at its opposite ends against the lug 18 and a shoulder 31 in the clamp, I employ a coil expansion spring 32 which by pressing against the face of the lug tends to push the clamp away therefrom, thereby unlocking and freeing the shield sections. Within the recess 29 I use a cylindrical axially-apertured gripping member 33 beveled or rounded off at 34 so as to have an effective bearing on the cylindrical convex surface of the brace rod 23. On the outer end of the threaded pin or rod 17 a nut 35 is supplied, the same being equipped with a knurled handle portion 36 to facilitate its manual turning. The hub of this nut is of slightly less diameter than the recess 29 and bears against the outer face of the gripping member 33. By turning the nut the gripping member is forced into firm contact with the brace rod and the clamp is carried inwardly against the expansive action of the spring 32, so that its conical recess 28 receives both lugs 18 and 21, the wedge action of the clamp on the lugs forcing the same firmly together, whereby the upper and lower hinge sections of the shield are securely locked in straightened or operative vertical position.

Assuming that the shield or guard is in the folded position indicated in dotted lines in Fig. 1, and that the nut 36 is screwed on to the pin or rod 17 so that the member 33 is in firm engagement with the brace rod and the clamp is forced over the lug 18, this condition of the parts holding the folded screen or shield firmly and securely in substantially horizontal position and against objectionable vibration and movement, and it is desired to erect or unfold the shield into vertical operative position, the operator loosens the nut 36 by turning the same manually, thereby permitting the spring 32 to expand and shift the clamp 26 away from the larger lug 18, the pressure of the gripping member 33 on the brace rod 23 at the same time being removed, the screen or shield is then brought to vertical position, the lower section 10 turning on the hinge 11, the upper section 19 turning on the hinge pin 14, it being understood that the clamp 26 slides on the brace rod 23 from the stop shoulder 24 up to the end abutment 25. The two lugs 18 and 21 are now in matching position forming a complete truncated cone, and the operator by turning the nut 35 forces the beveled surface 34 of the gripping member 33 into firm and gripping contact with the brace rod, the clamp at the same time being pushed inwardly over the two lugs and wedged thereover, due to

the action of the inclined or beveled surfaces of the lugs and the recess of the clamp in which they are accommodated. The shield is now rigidly held in vertical operative position without likelihood of becoming accidentally or unintentionally unlocked or unclamped. The reverse of the above-described operations take place in the folding or collapsing of the shield into inoperative position and need no further description.

Whereas I have described in detail the preferred embodiment of the invention, the latter is not limited strictly to the precise structural features shown and described, and these may be modified within comparatively wide limits without departure from the spirit and essence of my invention.

I claim:

1. In a wind shield, the combination of a pair of shield sections hinged together, and means to lock said sections in unfolded or operative position, including a lug on each of said sections, said lugs unitedly forming a truncated cone when the shield is unfolded, and an adjustable clamp having a conical recess adapted to accommodate both of said lugs and lock the shield sections in operative position, substantially as described.

2. In a wind shield, the combination of a pair of shield sections hinged together, a lug on each of said sections, said lugs unitedly forming a truncated cone when the shield is unfolded, a pivoted brace-rod, an adjustable clamp slidable on said brace-rod and having a cone-shaped recess adapted to receive within it both of said lugs and lock the shield sections in operative position, a spring tending to move said clamp away from said lugs, and means to force said clamp over the lugs in opposition to the action of said spring, substantially as described.

3. In a wind shield, the combination of a pair of shield sections hinged together, a lug on each of said sections, said lugs unitedly forming a truncated cone when the shield is unfolded or in operative position, a pivoted brace-rod, an adjustable clamp slidable on said brace-rod and having a conical recess adapted to accommodate both of said lugs and lock the shield sections in operative position, a threaded-rod rigid with one of said lugs and sections and extended through said clamp, a spring encircling said rod and bearing at its opposite ends against one of the lugs and a shoulder of said clamp, said spring tending to press the clamp away from the lugs, a gripping member mounted on said screw-threaded rod in said clamp, and an adjustable nut co-acting with the threads of said screw-threaded rod and acting to simultaneously force said gripping member against said brace-rod and said clamp over the pair of lugs, whereby the shield sections are locked together and are held in operative

position by the brace-rod, substantially as described.

4. A folding shield of the class described comprising upper and lower shield parts, 5 each consisting of a frame and a transparent plate mounted therein, hinge members connecting said shield parts, each of said hinge members consisting of upper and lower castings having off-set hinge lugs, a hinge pin 10 extending through said lugs, projections extending laterally from each of said hinge castings, and those upon the adjacent castings together forming a frusto-conical mem-

ber, an elongated projection extending from the lower projection of said frusto-conical 15 member and in axial alinement therewith, a cup member slidably mounted on said elongated projection and adapted to fit snugly over the first said projections, and means for engaging or disengaging said cup mem- 20 ber and the first said projections.

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