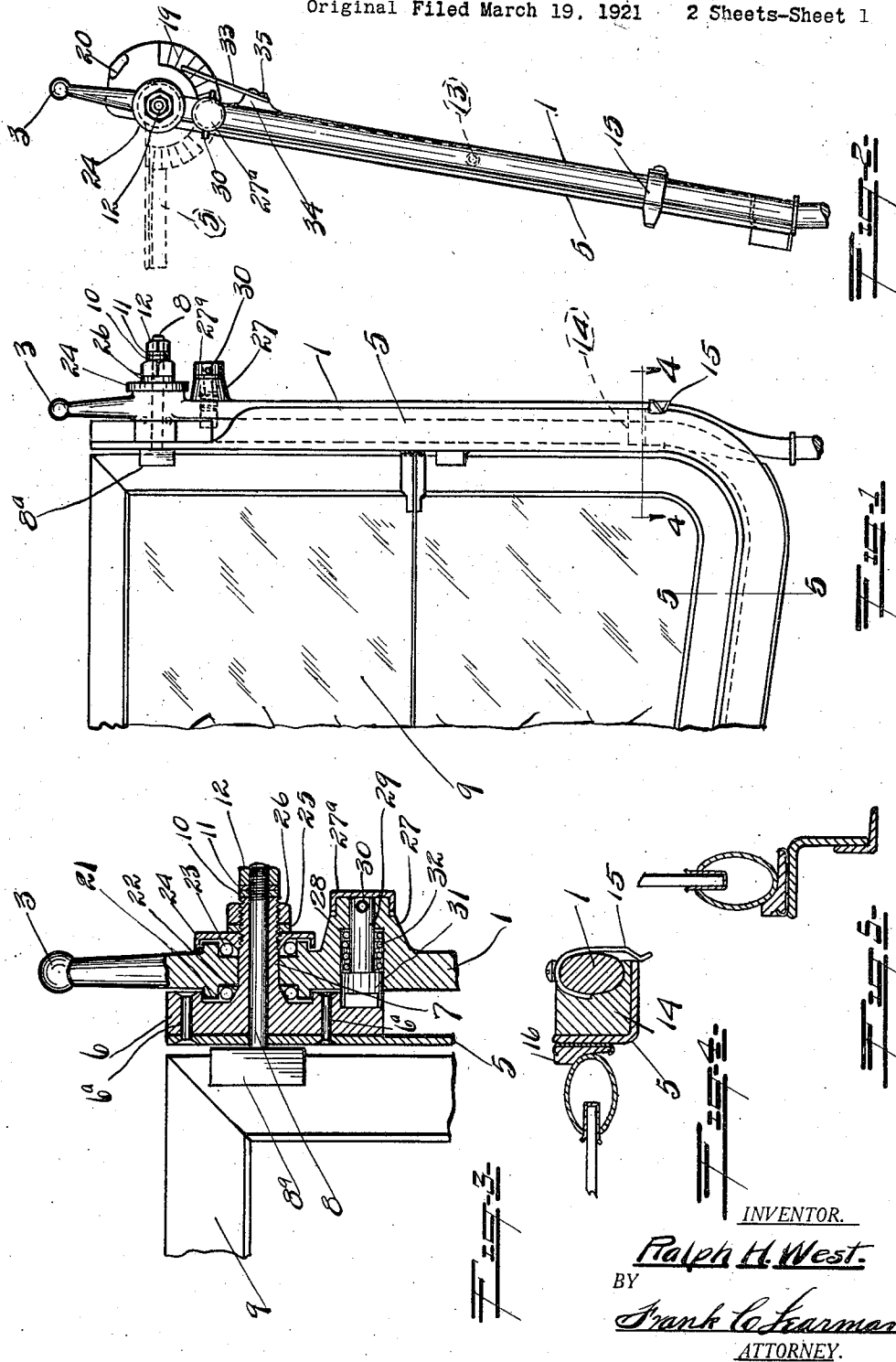


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SAFETY WINDSHIELD

Original Filed March 19, 1921 2 Sheets-Sheet 1



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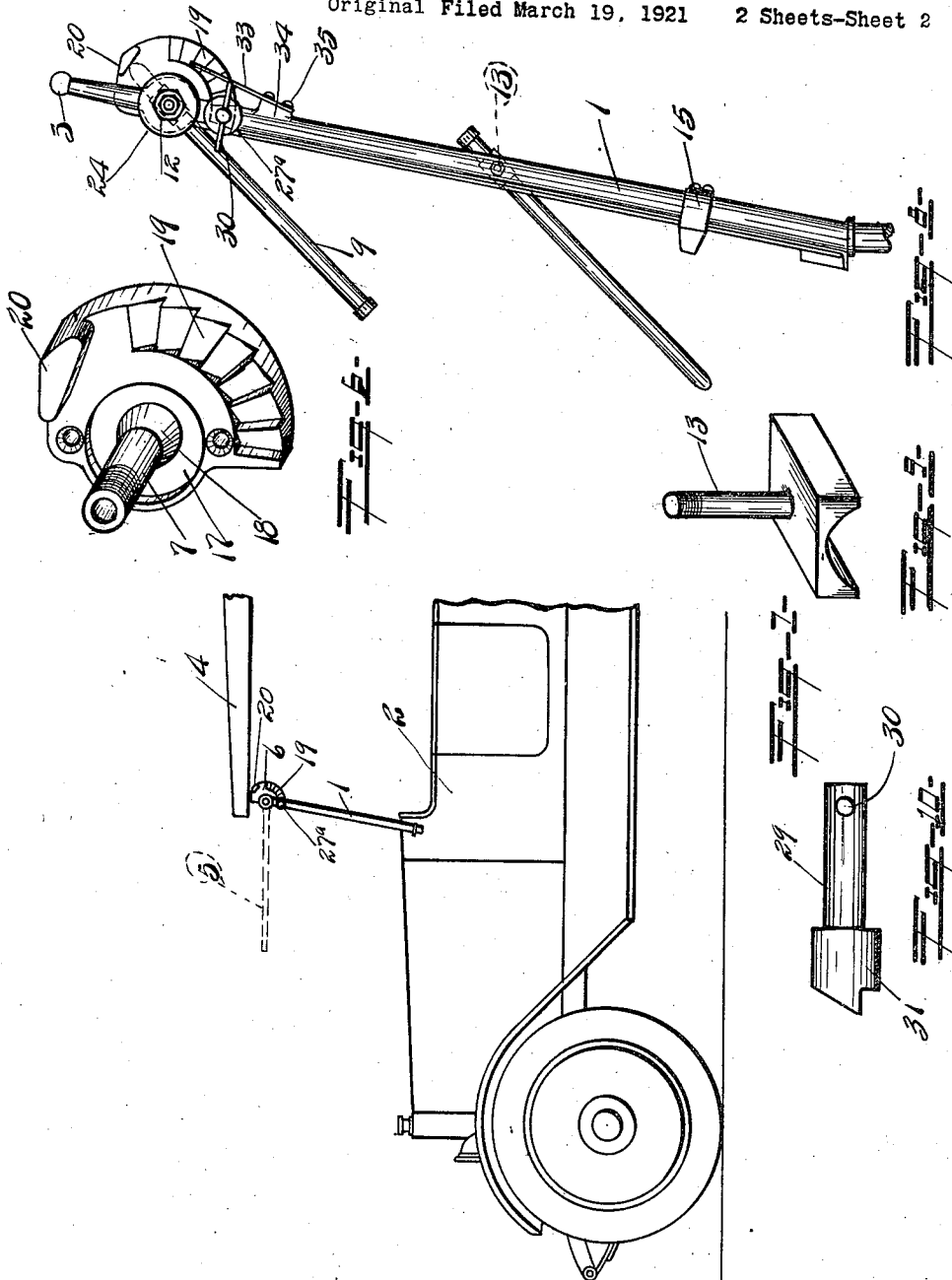
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SAFETY WINDSHIELD

Original Filed March 19, 1921

2 Sheets-Sheet 2



INVENTOR.

Ralph H. West.

BY

Frank C. Harmon

ATTORNEY.

## UNITED STATES PATENT OFFICE.

RALPH H. WEST, OF BAY CITY, MICHIGAN.

## SAFETY WINDSHIELD.

Application filed March 19, 1921, Serial No. 453,562. Renewed May 24, 1923.

*To all whom it may concern:*

Be it known that I, RALPH H. WEST, a citizen of the United States of America, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Safety Windshields, of which the following is a specification.

This invention relates to safety windshields.

One object of the invention is to design a wind-shield which will automatically swing upwardly and remain in open position when the vehicle strikes any obstacle or object with sufficient force to throw the driver or occupants thereof through the wind-shield glass, and this is the prime object of my invention, to prevent the cutting of the occupants when this occurs.

Another object of the invention is to so design the wind-shield that its general appearance will be substantially the same as the conventional wind-shield now in general use.

A further object is to provide a wind-shield embodying the above features which will operate in exactly the same manner as the wind-shields now in general use, the sections being opened or closed as desired in exactly the same manner.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportion and minor details of construction, without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—

Fig. 1 is a fragmentary front view of a windshield embodying the present invention.

Fig. 2 is an edge view thereof.

Fig. 3 is an enlarged sectional view of the pivoting mechanism.

Fig. 4 is a section taken on the line 4—4 of Fig. 1.

Fig. 5 is a section taken on the line 5—5 of Fig. 1.

Fig. 6 is an isometric view of the ratcheting means.

Fig. 7 is a fragmentary side view of an automobile showing in dotted lines the wind-shield in raised position.

Fig. 8 is an enlarged end view of the wind-shield frame illustrating how the sections are partially raised.

Fig. 9 is an isometric detail view of the pivoting bolt, and

Fig. 10 is a side view of the latch.

Referring now particularly to the drawings, in which I have indicated the wind-shield frame or support by the numeral 1, this is of the usual type and is rigidly secured to the body 2 of the car, it is also provided with the knob projection 3 to which the top 4 is secured in the usual manner. An auxiliary frame 5 is pivotally secured to the frame 1 by means of a member 6 having a laterally extending hollow tubular portion 7 extending through a suitable opening provided therein, this member is rigidly secured to the auxiliary frame by means of rivets 6<sup>a</sup>. A bolt member 8 having an enlarged end 8<sup>a</sup> is revolvably mounted in this tubular member 7, said end being secured to the top section of the wind-shield 9 in any approved manner, a lock nut and washer 10 and 11 respectively being carried on the other end of the bolt and a nut 12 being provided to allow for suitable adjustment to provide suitable friction to prevent the section swinging in and out, excepting when forced by the driver.

The lower section of the wind-shield is pivoted to the auxiliary frame by means of a similar bolt 13 extending through a suitable opening in the auxiliary frame, and it will be apparent that both the upper and lower sections of the wind-shield can be swung in and out as desired.

To prevent chucking or lateral vibration I have provided a rubber 14 or the like which I secure to the main frame as shown, and for securing the auxiliary frame in position I have provided spring clips 15 which are secured to the frame 1, and which engage and exert a tension on the auxiliary frame, the lip of these clips being turned outwardly to allow the auxiliary frame to spring in and out of closed position.

Both of these frames can be of any approved cross section and in this instance I have shown the main frame formed of oblong cross section while the auxiliary frame is of angular cross section and is provided

with a rubber strip 16 secured thereto, one surface being rounded for nesting the edge of the wind-shield proper against it.

The member 6 is preferably formed with a circular depressed recess 17 which is adapted to receive the raised portion of the frame 1 in a manner to be hereinafter described, the base of the laterally extending portion 7 being tapered as clearly indicated at 18 in Fig. 6 of the drawings.

A plurality of teeth 19 are formed in the upper face and on the outer edge of this member 6 and a stop portion 20 projects from the upper surface and is also formed integral therewith. The frame 1 is formed with raised portions or bosses 21 which are provided with circular recessed portions 22 adapted to form a ball race for receiving antifriction balls 23, to assure the smooth operation of the device, the inner balls riding on the tapered portion 18 of the member 6 while the outer balls ride on a similarly tapered portion of a cap member 24 which is threaded on the portion 7 of the member 6, a lock nut and washer 25 and 26 respectively being also threaded thereon for adjusting and holding the several parts in proper position.

A boss 27 is also formed integral with the member 1 and is provided with an opening 28 therethrough, in which a latch member 29 is seated, this latch member is provided with a pin 30 extending through a transversely disposed opening therein, the inner end having an enlarged shank 31 cut as shown, one side being tapered and the opposite side being straight to form a jaw, the inner end of this opening 28 is recessed to accommodate a spring member 32 which is adapted to surround the pin or latch member 29, one end butting against the shoulder in the opening and the opposite end bearing against the shank of the latch normally tending to force the member 29 against the teeth formed in the member 6, the tapered edge extending in substantially the same plane as the teeth, being prevented from rotation by the pin 30 resting in slots formed in the boss to accommodate it, and in practice I turn the end of the boss 27 and fit a metal cap 27<sup>a</sup> thereto, the pin 30 extending through suitable openings in the cap and a washer may be inserted as shown, and when the auxiliary frame is swung upwardly by striking any obstacle with sufficient force, the latch will ratchet over the teeth 20 and the straight edge thereof will engage the straight edge of the teeth and prevent its swinging back to original position.

It will of course be obvious that the auxiliary frame will swing up with considerable force and I therefore provide a cushioning element which consists of flat steel resilient strip 33 secured to the raised boss 34 of the frame 1 by means of screws 35 or the like,

and when the frames swing upwardly the free end of the strip 33 engages the stop 20 cushioning and limiting the upward movement of the frame.

The mechanism is released pulling outwardly on the cap and pin 30, releasing it from the slots in the boss 27 compressing the spring 32 and disengaging the jaw from the teeth 19, the pin 30 being rotated until it rests on the outer surface of the boss 27 and the frame is then free to swing back to its original closed position. While I have shown but one edge of the windshield it will be understood that both edges are equipped identically alike.

From the foregoing description it will be obvious that I have perfected a very simple and effective safety wind-shield, which will automatically swing upwardly and be held in raised position when the vehicle strikes any obstacle with sufficient force to throw the occupants through the wind-shield.

What I claim is:—

1. A safety wind-shield comprising a frame, an auxiliary frame pivotally connected thereto, frictional means for normally holding the said frame in closed position, and a ratcheting element for holding the said frame in raised position when swung outwardly by inertia.
2. A safety wind-shield comprising a main frame, an auxiliary frame pivotally connected thereto, resilient means mounted on the main frame and frictionally engaging the said auxiliary frame for holding it in closed position, a ratchet element rigid on the auxiliary frame, and a spring actuated dog adapted to engage said ratchet element for holding said frame in raised position when swung outwardly by inertia.
3. A safety wind-shield comprising a main frame, an auxiliary frame pivotally connected thereto, means for normally holding said frame against movement with relation to the main frame, a ratchet rigid on the auxiliary frame and a stop integral therewith, a spring actuated dog mounted on the main frame and adapted to engage the teeth of the ratchet for holding the said frame in raised position, and a resilient member rigid on the main frame and adapted to engage the stop for limiting the upward movement of the said auxiliary frame.
4. A safety wind-shield comprising a main frame, an auxiliary frame pivotally connected thereto, wind-shield sections frictionally and pivotally mounted in the auxiliary frame, spring clips rigid on the main frame and detachably engaging the auxiliary frame for holding it in closed position, a ratchet having a stop integral therewith rigid on the auxiliary frame, and a spring actuated dog mounted on the main frame for holding the said frame in adjusted positions, a resilient member rigid on

the main frame and adapted to engage the stop for cushioning and limiting the movement of the auxiliary frame when swung upwardly by inertia.

5 5. A safety wind-shield comprising a main frame, an auxiliary frame pivotally connected thereto, a ratchet element rigid on the auxiliary frame, and having a later-  
10 ally extending tubular portion integral therewith, the upper wind-shield section being pivotally and frictionally mounted therein, a stop integral with the said ratchet element and a spring actuated dog mounted  
15 ratchet, a resilient member extending from the main frame for cushioning and limiting the upward movement of the said frame when swung upwardly by inertia, and means for releasing the said mechanism.

20 6. A safety wind-shield comprising a frame having an auxiliary frame mounted

therein and spaced from the edges a distance sufficient to receive the usual storm curtains, spring clips on the main frame for engaging the auxiliary frame for holding it in 25 normal position, a ratchet element mounted on the auxiliary frame and having a hollow laterally extending tubular member pivotally mounted in the main frame, a bolt seated in this tubular portion for pivotally 30 mounting the upper wind-shield section, and a spring actuated latch mounted in the main frame and adapted to engage the ratchet teeth, a stop integral with the ratchet element for limiting the upward movement of 35 the frame, and means for releasing the said latch to allow the auxiliary frame to swing to its original position.

In testimony whereof, I affix my signature.

RALPH H. WEST.