Feb. 10, 1931. W. A. BEAL 1,791,701

PROTECTIVE ARMOR FOR VEHICLES

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Fig. 1.

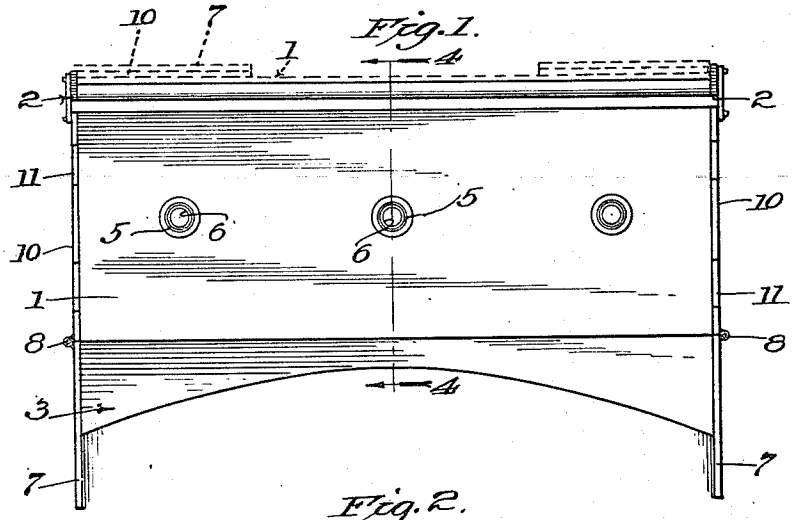



Fig. 2.

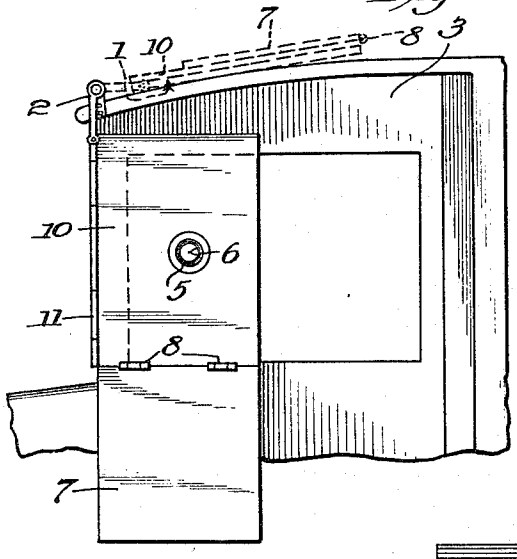



Fig. 3.

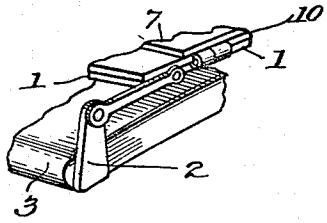



Fig. 5.

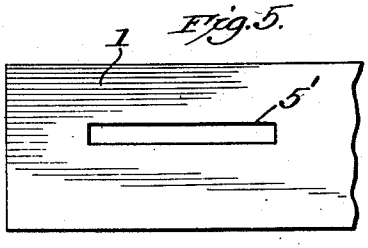
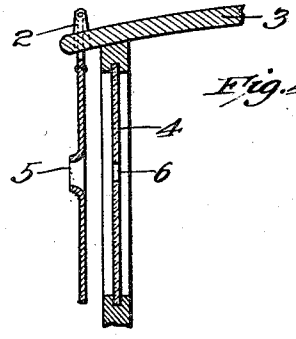



Fig. 4.




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Fig. 6.

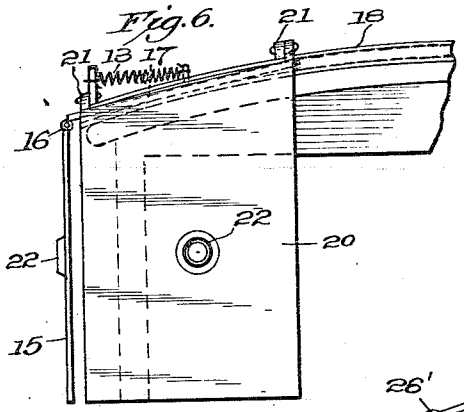



Fig. 7.

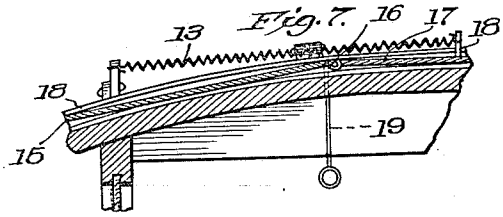



Fig. 8.

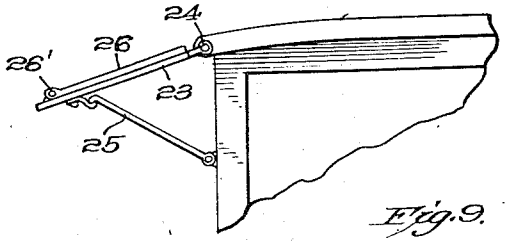
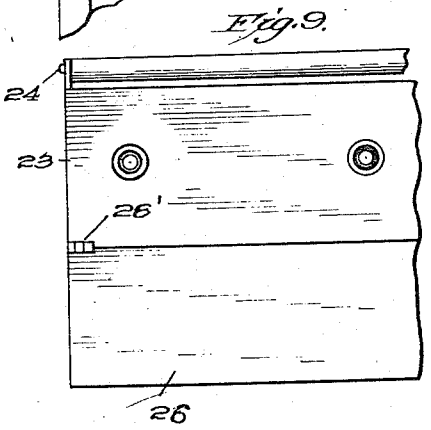



Fig. 9.




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# UNITED STATES PATENT OFFICE

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## PROTECTIVE ARMOR FOR VEHICLES

Application filed September 24, 1928. Serial No. 307,912.

This invention relates to improvements in protective armor means for vehicles, and the main object of the invention is to provide means attached to or carried by a vehicle, such as a police car, motorcycle, etc., which is normally so mounted as not to impede the vision or interfere with the usual operation of the vehicle, but which can be quickly and readily brought into position to intercept bullets and protect the occupants of the vehicle from gunfire by bandits.

Another object of the invention is to provide vehicles such as above referred to, with bullet-proof protective armor at less cost than is required for the armored cars or bullet-proof windshields now in use, and which is permanently effective. So-called bullet-proof glass windshields have been used, but have been found to deteriorate, so that after a few months use they are no longer sufficiently transparent or sufficiently bullet-proof to be satisfactory, and have to be renewed at considerable expense.

A further object of the invention is to provide armor means which can be readily changed from one car to another at small expense.

The accompanying drawings illustrate embodiments of my invention, and referring thereto:

Fig. 1 is a front elevation of position of a motor-car with one form of my protective armor attached thereon.

Fig. 2 is a side elevation of the construction shown in Fig. 1.

Fig. 3 is a perspective of a hinge joint for the armor device.

Fig. 4 is a section on line 4—4 in Fig. 1.

Fig. 5 is a front elevation showing a modification of the sight and firing holes in the armor.

Fig. 6 is a side elevation showing a modified form of the invention, the protective shield being in operative position.

Fig. 7 is a longitudinal section of the forepart of a motor-car, showing the device illustrated in Fig. 6, in withdrawn or inoperative position.

Fig. 8 is a side elevation of a form of the armor device adapted to serve normally as a visor for the car.

Fig. 9 is a front elevation of the device shown in Fig. 8, in lowered position, to serve as protective armor.

The form of my invention shown in Figs. 1 to 4 comprises a main shield or armor member 1, hinged or pivoted on brackets 2 on the top of a motor car, indicated at 3, so as to swing back to rest on top of the car as shown in dotted lines in Figs. 1 and 2, or to swing down in front of the windshield 4, as shown in full lines in Figs. 1 and 4. Said member 1 may consist of a plate of steel of suitable hardness and thickness to prevent penetration by bullets such as are liable to be used by bandits or other criminals, and is provided with any desired number of port-holes or firing holes 5 through which the barrel of a firearm such as a shotgun or pistol may be directed, the glass windshield 4 having one or more openings 6 registering with the openings 5 in the member 1 when the latter is in lowered position, so that the barrel of the weapon may be passed through both openings 6 and 5. Port-holes 5 may be made sufficiently large to also serve as sighting openings, or peep-holes, through which the officer using the weapon may sight in aiming the weapon.

Side wings 10 may be hinged at 11 to the member 1 so as to swing alongside the fore part of the driver's compartment of the motor-car to give additional protection, these wings 10 being of similar material and construction to number 1 and being, preferably, also provided with firing openings or port-holes 5. Supplementary flap members 7 may be hinged at 8 to the wings 10, in such manner as to fall to position shown in Fig. 2 when the device is lowered, so as to furnish full protection to the fore part of the driver's compartment. The port-holes may be circular as shown in Fig. 1, or they may be of any suitable shape, for example in the form of slots as shown at 5′ in Fig. 5.

In the form of my invention shown in Figures 6 and 7, the shield or armor member 15 is hinged at 16 on a slide member 17 which is mounted to slide in guideways or tracks 18

attached to the top of the car, so as to permit the member 15 to be slid back over the top of the car, as shown in Fig. 7, or to be slid forward and swung down in front of the windshield, as shown in Fig. 6. Side armor wings 20 may be hinged at 21 on suitable supports, for example on track members 18, so as to be swung back over the top of the car or to be swung down alongside the fore part of the driver's compartment. The armor members 15 and 20 may be provided with portholes 22 for firing and sighting.

The protective devices may be moved to operative position either manually or mechanically. For example, as shown in Figs. 6 and 7, a spring 13 may be connected to the movable member 17 and to a fixed support, to draw the members 16 and 17 forward to position to cause the member 15 to fall by gravity when member 17 is released from a catch 19 which may be operated from within the car.

Figs. 8 and 9 illustrate an application of my invention in which the shield or armor member 23 is mounted so as to normally serve as a visor for the car, the member 23 being hinged at 24 to the front edge of the car top and being held up by hooks 25 in position shown in Fig. 8 to act as a sunshade over the windshield. When it is to be used as an armor member or shield, the hooks 25 are released and the member 23 falls to vertical position, as shown in Fig. 9. If desired, a flap 26 may be hinged at 26′ to member 23 so as to drop down when the latter is covered giving additional protection without making the member 23 wider than is desirable for use as a visor.

I claim:

Armor means for vehicles comprising, in combination with a car frame and a glass windshield having one or more firing openings therethrough, a shield member movably mounted on the car frame and having one or more sighting and firing openings adapted to register with the said opening or openings in the glass windshield, said shield member being adapted to be moved into position to bring the opening or openings therein into registration with the opening or openings in the glass windshield.

In testimony whereof I have hereunto subscribed my name this 15th day of September, 1928.

WILLIAM A. BEAL.