Aug. 12, 1924. 1,505,029

H. R. KELLERMAN

CONSTRUCTION OF HINGES

Filed Aug. 31, 1921

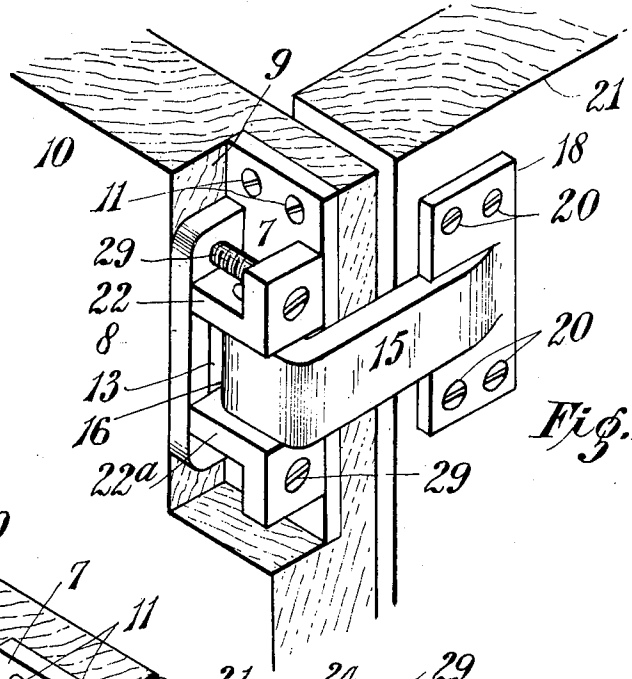

Fig. 1.

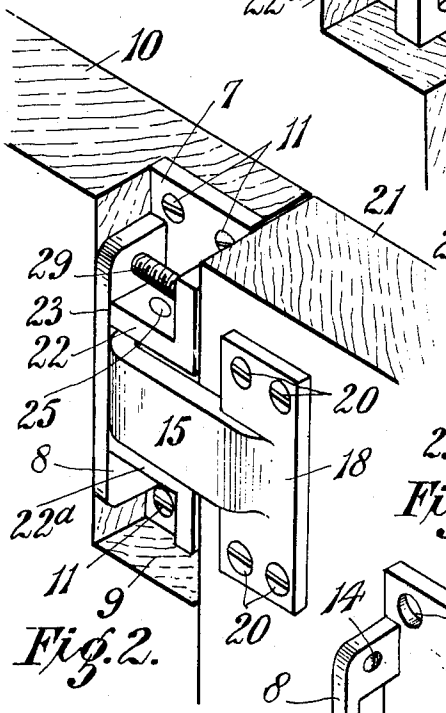

Fig. 2.

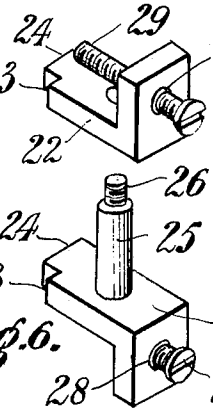

Fig. 6.

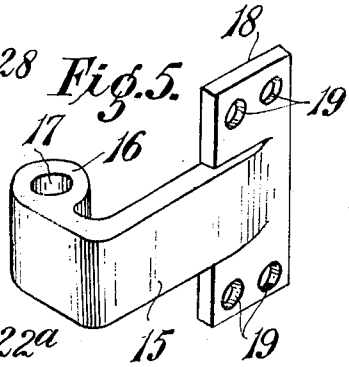

Fig. 5.

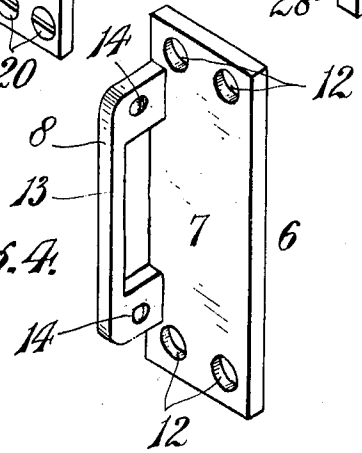

Fig. 4.

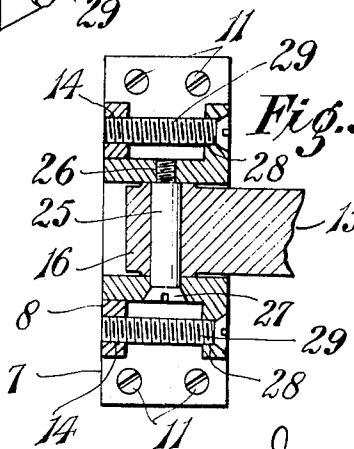

Fig. 3.

Inventor
Henry Ralph Kellerman
By
B. Singer, Atty

Patented Aug. 12, 1924. 1,505,029

UNITED STATES PATENT OFFICE.

HENRY R. KELLERMAN, OF PADDINGTON, NEAR SYDNEY, NEW SOUTH WALES, AUSTRALIA, ASSIGNOR TO HENRY PETRIE FLETCHER, OF SYDNEY, NEW SOUTH WALES, AUSTRALIA.

CONSTRUCTION OF HINGES.

Application filed August 31, 1921. Serial No. 497,132.

To all whom it may concern:

Be it known that I, HENRY RALPH KELLERMAN, a subject of the King of Great Britain, residing at Paddington, near Sydney, in the State of New South Wales, Commonwealth of Australia, have invented new and useful Improvements in the Construction of Hinges, of which the following is a specification.

This invention relates to improvements in hinges, and more particularly to hinges for the doors of motor-cars and other vehicles.

It is an object of the invention to provide a hinge which is of a particularly strong construction so as to be capable of resisting severe strains, while its elements can be fitted to a door and door-frame in such manner that the hinged connection is concealed from outside view.

A further object of the invention is to provide a hinge of such construction that a door can be conveniently detached without requiring removal of the hinge pieces either from the door or its frame.

A still further object is to provide a hinge having means whereby the door is prevented from opening too far, without requiring the use of check-straps or equivalent means for the purpose.

A hinge according to the invention consists essentially of a main bracket, bearing plates screwed to the bracket, a hinge pin secured to the bearing plates, and a hinge-piece having an apertured boss mounted on the hinge-pin between the bearing plates, so arranged that by slackening the screws securing said bearing plates to the main bracket the door with its attached hinge-piece is removable from the frame.

Reference is had to the accompanying drawings wherein:—

Figure 1 is a perspective view of the improved hinge as applied to the door of a motor-car—the door being in its opened position.

Figure 2 is a perspective view illustrating the hinge when the door has been closed.

Figure 3 is a sectional view of parts of the hinge.

Figure 4 is a perspective view of a bracket embodied in the hinge.

Figure 5 is a perspective view of a hinge-piece, and

Figure 6 illustrates in perspective bearing plates and the hinge pin.

The invention includes a hinge element 6 of bracket formation having a flat base plate 7 of metal and an integrally formed plate 8 which projects outwardly at right angles to said base at one side thereof as illustrated. Said base and plate are accommodated in a recess 9 made in the door frame 10, and rigidly secured in position by means of screws 11 passing through holes 12 in said base plate into the door frame.

The plate 8 has an elongated vertical slot 13, while tapped holes 14 are formed in the horizontal arms of said plate—one being disposed above and the other below said slot for the purposes hereinafter described.

I provide a hinge-piece 15 which is of substantially L-shape having at its inner end a circular boss 16 apertured at 17, and constructed at its outer end with an enlarged head 18 functioning as an attachment plate. Holes 19 are formed in said attachment plate to receive fastening screws 20 by means of which the hinge-piece is rigidly secured to the inner face of a door 21. A recess may be formed in the door to receive the attachment plate 18 and portion of the stem of the hinge-piece as will be readily understood.

Associated with the bracket element 6 are two bearing plates 22 and 22^a which are of L-shape and are recessed at their inner ends forming shoulders 23. The end members 24 of said bearing plates snugly fit within the slot 13 of the bracket plate 8, and their shoulders 23 act as stops bearing against the outer wall of said slot.

The L-shaped bearing plates 22 and 22^a having their end members 24 fitted in the slot 13 are oppositely arranged, as illustrated, and they support and are connected by a vertical hinge pin 25. This hinge pin is threaded at one end 26 to have a screw engagement with a tapped hole in a horizontal member of one of said bearing plates, while at its opposite end it has a head 27 countersunk into the horizontal member of the oppositely positioned plate. Alternatively, said hinge pin may be riveted or otherwise suitably affixed to said plates.

The vertical members of said L-shaped plates are provided with tapped holes 28

through which are passed screws 29 threading into the holes 14 in said bracket plate 8.

The hinge-piece 15 has its apertured boss 16 mounted on the pin 25 between the L-shaped bearing plates 22 and 22ª, whereby an effective pivotal connection is obtained between the hinge elements 6 and 15.

When it is required to remove the door, this is readily accomplished without detaching either of the hinge elements 6 and 15 from the door frame and the door.

The fastenings 29 are merely unscrewed until they are disengaged from the holes 14 in the bracket plate 8, when the door can be bodily removed, carrying with it the hinge-piece 15, the L-shaped plates 22 and 22ª, and the hinge-pin 25.

To again hingedly mount the door, the ends 24 of the plates 22 and 22ª are first inserted in the slot 13 of the bracket plate 8 when the screws 29 are threaded into the tapped holes 14 of said bracket plate, thereby assembling the hinge elements.

The angular formation of the hinge-piece 15 and its arrangement relatively to the hinge element 6 prevent the door being swung too far outwardly, thereby dispensing with the use of check-straps or the like for this purpose. When the door has been opened to its fullest extent, the outer face of the hinge-piece 15 contacts with the edge of the base plate 6, as illustrated by Figure 1. The amount of outward movement permissible to the hinged door may be governed by variations in the curvature given to the stem of the hinge-piece 15. In practice, it is desirable that the door should be capable of being opened beyond that position when it is at right angles to the door frame, which my construction of hinge fittings provides for.

For neatness of effect, the hinge elements 6 and 15 when recessed into the frame and the door, respectively, are covered by upholstering, as usually practised in the finishing operations of vehicle manufacture.

What I do claim is:—

1. A hinge comprising a bracket element having a base and a plate angular to said base, said plate having a slot, bearing members fitted in said slot in spaced arrangement, screws detachably fastening said bearing members to said slotted plate, a hinge pin carried by said bearing members, a hinge piece of angular formation pivotally mounted at one end on said pin, and an attachment plate at the opposite end of said hinge piece.

2. A hinge comprising, a bracket element having a base and a plate angular to said base, said plate having a slot, L-shaped brackets having their inner ends shouldered and engaging said slot, screws detachably securing said L-shaped brackets to said plate, a hinge-pin fitted to said L-shaped brackets, a hinge-piece of angular formation, an apertured boss on said hinge-piece pivotally mounted on said pin between said L-shaped brackets, an attachment plate on said hinge-piece, and means fastening said base and said attachment plate to a frame and to a door, respectively.

In testimony whereof I affix my signature in the presence of two witnesses.

H. R. KELLERMAN

Witnesses:

M. STARPELD,

P. HANLY.