

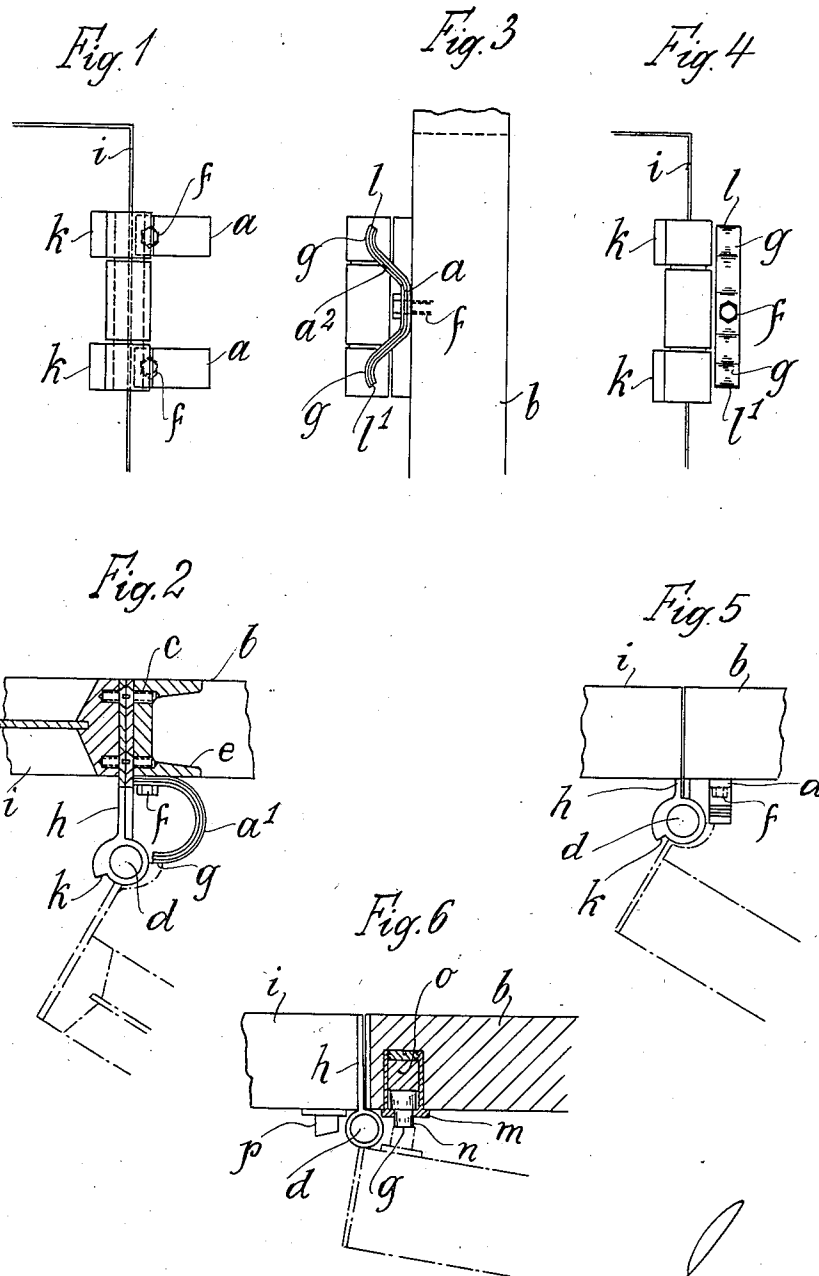
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ARRANGEMENT OF DOOR BUFFERS ON THE DOORS OF MOTOR CARS

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ARRANGEMENT OF DOOR BUFFERS ON THE
DOORS OF MOTOR CARS

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Buffers have sometimes been arranged on the inner side of the door frame of motor vehicles to prevent banging of the doors.

It is likewise known to provide stops on the wall or floor for arresting the movement of the door in the case of street and room doors.

This arrangement is not suitable for the doors of motor vehicles and moreover is open to the objection that, as the buffer effect acts on the outer end of the door, the door is subjected to heavy shocks which are transmitted to the hinges with the result that the means, such as screws, for securing the hinges in position easily work loose.

Hinges have already been employed which limit the opening movement of the door. However, the hinge must then take up the whole impetus of the door, so that leverage acts on the hinge leaf which likewise tends to tear out the fixing means, for example screws.

The invention overcomes these objections and consists in that the buffer is arranged on the outer side of the motor car door near the hinge leaves and is yieldable perpendicularly to the axis of the hinge fixing means, for example screws, so that the fixing means mounted in the door frame perpendicularly to the stressing forces cannot be torn out when the door is energetically thrown open.

Another feature of the invention is, that laterally adjacent the hinge axis blade springs or a forked spring are or is provided, yieldable transversely to the longitudinal axis of the fixing means and bearing against a plurality of projections on the hinge.

Several embodiments of the invention are illustrated by way of example in the accompanying drawing, in which:—

Fig. 1 shows a hinge with buffer arrangement in front elevation.

Fig. 2 is a top plan view of Fig. 1 partly in section.

Fig. 3 shows in side elevation a modified form of construction.

Fig. 4 is a front elevation of Fig. 3.

Fig. 5 is a top plan view of Fig. 3.

Fig. 6 shows a third form of construction in top plan view partly in section.

According to the invention a door buffer *a* is arranged close behind the hinge pin axis, for example on the wall *b*, so that it is movable transversely to the hinge fixing means, such as screw *c*.

In Figs. 1 and 2 the arrangement is shown for example on a motor-car door in which the hinge pins *d* are at a relatively great distance from the wall. In this construction, as can be seen from the drawing, one or several superposed semi-cir-

cular blade springs *a*₁ are employed as buffer and are fixed by means of screws *f* on the channel iron forming the door frame.

The hinge half *h* of the door *i* has extensions *k* which act on the door buffer *a* to arrest the outward movement of the door. The door buffer *a* is arranged in such a manner that its movement is directed transversely to the fixing means, so that, when arresting the door, the action takes place transversely to the fixing means, for example screws *c*, so that working loose of the screws is prevented. For this purpose the engaging surfaces *g* of the buffer are substantially at the height of the hinge pin axis. A leverage can consequently not act on the fixing means. Moreover, owing to the fact that the door buffer is arranged near or at a short distance behind the hinge the door is arrested very gently and all shocks are avoided.

In Figs. 3 to 5 the arrangement of the door buffer is shown by way of example on a hinge in which the hinge pin *d* is situated at a short distance from the wall. The door buffer *a* is likewise formed by one or several blade springs *a*₂ which are preferably fixed to the wall by means of a screw *f* and are constructed as arms *l*, *l*₁ bent up on both ends and extending towards the outer hinge sleeves, which arms form the engaging surfaces *g*.

Fig. 6 shows a form of construction with an ordinary hinge, the hinge pin axis being situated approximately flush with the wall. A pin *n* shiftable in a sleeve *m* and subjected to spring action serves as door buffer. The sleeve *m* is let into the wall *b*, so that the engaging surface *g* of the buffer is in alignment with the hinge pin axis. The spring action on the pin *n* may be attained with the aid of a spiral spring, or as shown in the drawing, by a rubber pad *o*.

As can be seen, the abutment *p* for the buffer may be arranged on the door *i*. This construction is particularly advantageous when it is not possible to bring the buffer sufficiently close to the hinge, or when the buffer arrangement is to be employed with existing hinges having small extensions.

The position of the abutment *p* depends upon the position in which the door is to be arrested. It is important that the engaging surface of the abutment extends radially to the hinge pin axis.

The door buffers can evidently be constructed in various ways, and known rubber pads already on the market may be employed.

I claim:—

1. Buffer means for hinge provided doors comprising blade springs mounted near the hinge axis

and yieldable transversely to the longitudinal axis of the fixing means, and abutments on the hinge adapted to contact with said springs when the door is swung open.

- 5 2. Buffer means for hinge provided doors comprising a forked spring mounted near the hinge

axis and yieldable transversely to the longitudinal axis of the fixing means, and abutments on the hinge adapted to contact with said spring when the door is swung open.

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