

No. 707,910.

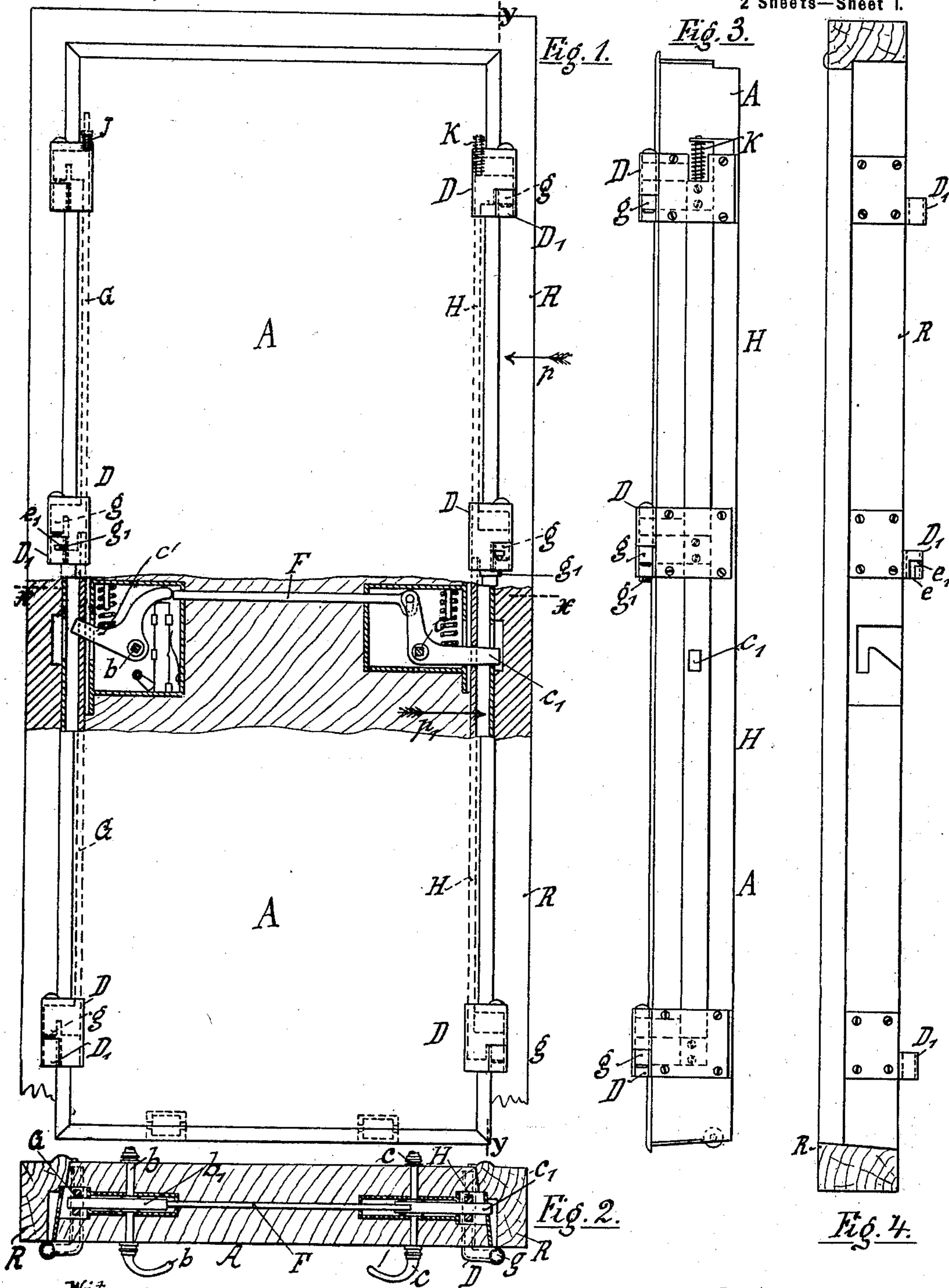
Patented Aug. 26, 1902.

F. FISCHER & L. KIEFER.
RIGHT AND LEFT OPENING DOOR.

(Application filed Aug. 4, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

William Miller
Chas E. Kuegel

Inventors:

Ferdinand Fischer
Ludwig Kiefer

Per W. C. Hauff Attorney

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Fig. 5.

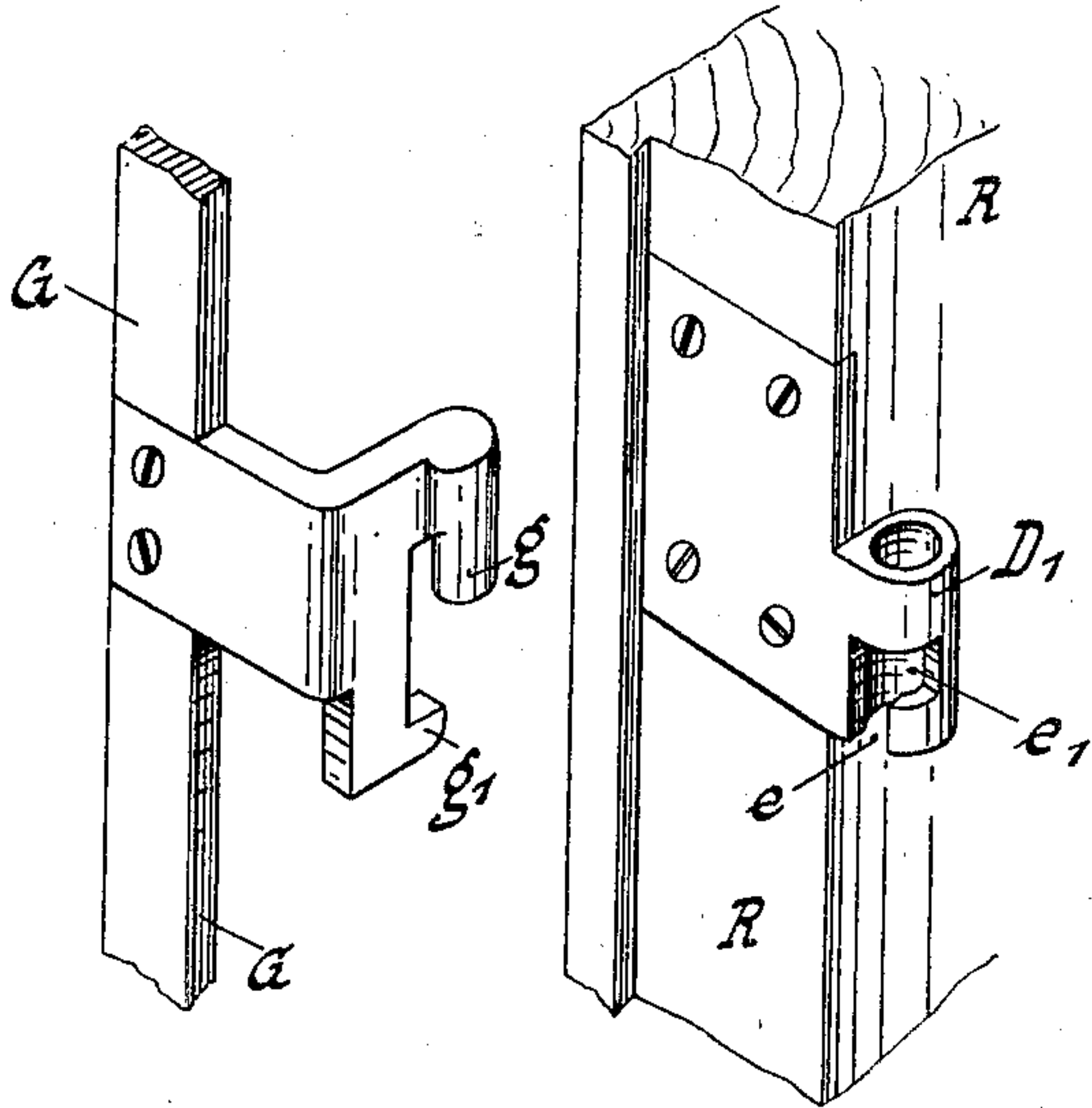
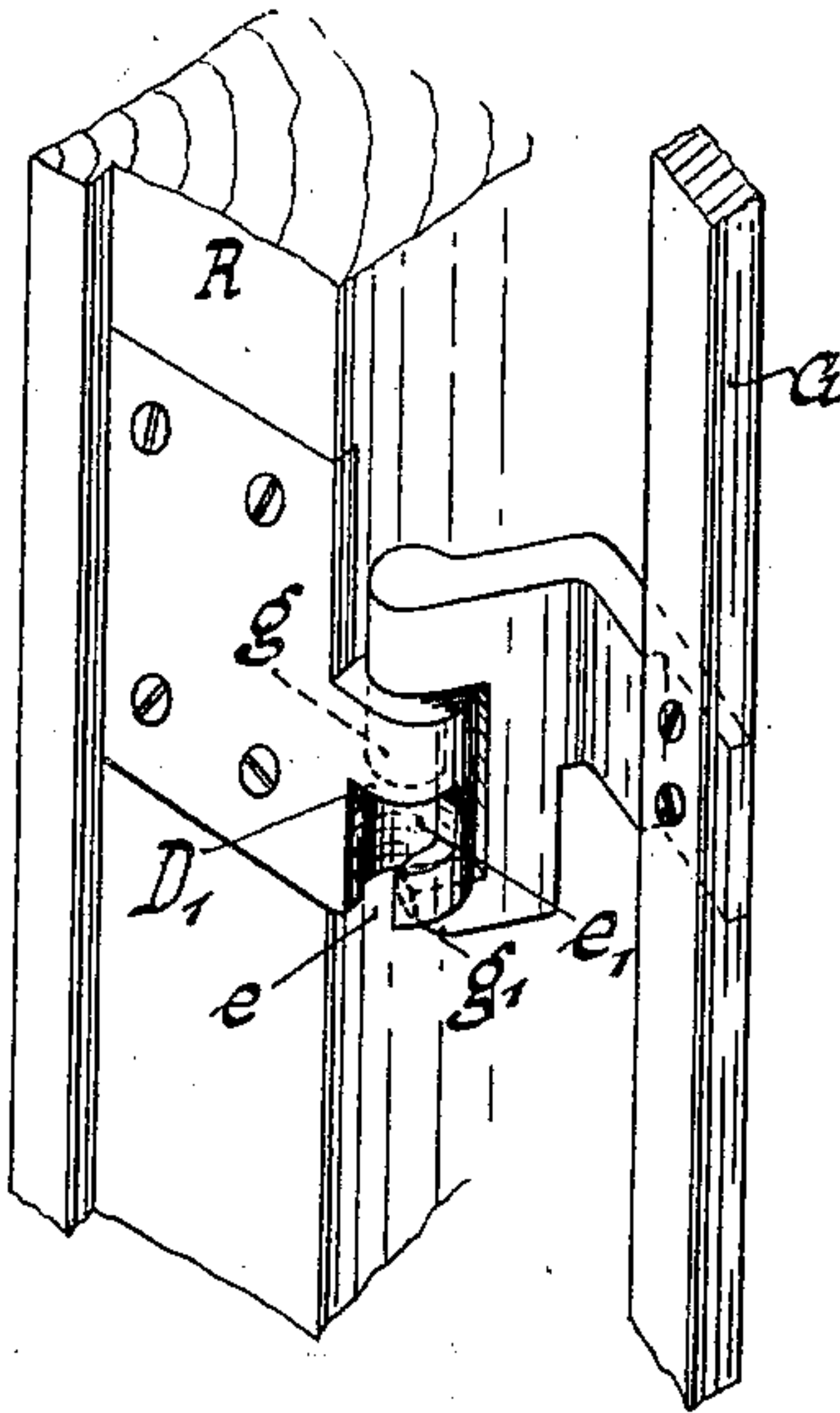


Fig. 6.



Witnesses:

William Miller
Chas. E. P. Kuefer

Inventors:

Ferdinand Fischer
Ludwig Kiefer

Per W. C. Hauff

Attorney

UNITED STATES PATENT OFFICE.

FERDINAND FISCHER AND LUDWIG KIEFER, OF CARLSRUHE, GERMANY.

RIGHT AND LEFT OPENING DOOR.

SPECIFICATION forming part of Letters Patent No. 707,910, dated August 26, 1902.

Application filed August 4, 1899. Serial No. 726,187. (No model.)

To all whom it may concern:

Be it known that we, FERDINAND FISCHER and LUDWIG KIEFER, citizens of the Empire of Germany, residing at Carlsruhe, Germany, have invented certain new and useful Improvements in Right and Left Opening Doors, of which the following is a specification.

This invention relates to a right and left opening door adapted particularly to railroad cars or coaches. In this door a lug connected with its respective hinge-bar and which lug prevents the door from being lifted out of place swings through a lateral cut in the corresponding hinge-knuckle at the opening edge of the door, while the door at the other or hinge edge is supported on the hinge-knuckle and secured against lifting by the under engagement of the lug at such hinge edge. The hinge-knuckles are secured or fixed to the jamb, and the door, or rather its opening edge, remains free from these parts tending to obstruct or endanger traffic or passage.

This invention is set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a face view, partly in section, of a door with the arrangement preventing such door lifting out of place or being dismounted. Fig. 2 is a horizontal section along xx , Fig. 1. Fig. 3 shows an edge of the door looking in the direction of the arrow p , Fig. 1. Fig. 4 is a side elevation along the section-line yy looking in the direction of the arrow p' , Fig. 1. Fig. 5 is a perspective view of the parts for preventing the door lifting out of place, the parts being separated and shown on a larger scale than in the preceding figures. Fig. 6 is a perspective view like Fig. 5, showing said parts assembled.

The door A, Fig. 1, is shown at each edge with a knob or handle b and c , respectively, adapted to lift or free its corresponding latch b' or c' . A link or bar F tends to depress or engage one latch or locking-lever as the other one is lifted or disengaged. At the edge or hinge portions D of the door are sliding rods G and H. As one latch or the other, b' or c' , is lifted it lifts its corresponding rod G or H. These rods carry or are connected to the hinge-pins g , as seen more in detail in the illustration of the hinge-rod G in Fig. 5. As

a rod G or H is lifted the corresponding hinge-pin g is lifted out of the corresponding hinge-knuckle D' at that edge of the door. This edge thus becomes free to open or close in contradistinction to the opposite edge of the door, which may be distinguished as the "hinge edge of the door." The sockets or knuckles D' are secured to the jambs or opposite sides of the passage closed by such door. One of the hinge parts at each side of the door—for example, the central hinge part—has at each hinge-rod G or H, together with pin g , a hook-like projection or nose g' , which when the door is closed lies directly under the hinge-knuckle D'. (See right hand of Fig. 1.) On lifting the slide-rod at one edge of the door the lug g' rises freely along a vertical slot, Figs. 4, 5, and 6, of the knuckle D', and upon the door or that edge of the door then opening said lug g' moves freely through the lateral cut or passage e' out of the stationary knuckle D'. In Fig. 5 are shown a hinge-pin and lug and the corresponding knuckle D', secured to the corresponding jamb, as also a piece of the slide-rod G separate from the door. On the opposite side or edge of the door the other slide-rod H, Figs. 1 and 2, by said known arrangement of cross-link F between latches b' c' is held in lowered or depressed position, so that the door at this edge remains engaged to the hinge-knuckles. At the same time the lugs at this hinge edge as soon as the door opens or swings move under the uncut or broken part of their hinge-knuckles, Fig. 6, so that this hinge edge is prevented from lifting out of place. Manifestly the securing device could also be applied to the upper or lower hinge or to several hinges.

To insure automatic return or descent of the slide-rods G H and hinge-pins g , springs J and K can be suitably applied. Return-springs can also be applied to the latches b' c' , if desired.

Having fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination with the door and its frame provided with sockets, having an L-shaped opening, of bell-crank latches pivotally connected to said door, springs carried by the door and bearing against one arm of each of the bell-crank latches for normally

retaining them in a latching position, vertically-adjustable rods arranged in the door-frame and operated by the said latches when the latter are operated, pins forming pivots
 5 carried by the rods and adapted to engage in the said sockets when the door is opened in one direction or the other, and hook-like projections carried by the rods and adapted to be passed through the L-shaped openings
 10 when the rods and door are operated.

2. The combination with the door and its frame provided with sockets, provided with a vertically and laterally extending opening, of bell-crank latches pivotally connected to said
 15 door, springs carried by the door and bearing against one arm of each of the bell-crank latches for normally retaining them in a latching position, vertically-adjustable rods arranged in the door-frame and operated by the
 20 said latches when the latter are operated, pins forming pivots carried by the rods and adapted to engage in the said sockets when the door is opened in one direction or the other, and means carried by the rods and adapted to operate in the said openings to permit of the
 25 disengagement of the acting pivots during the opening or closing of the door.

3. The combination with the door and its frame provided with sockets, provided with
 30 L-shaped openings, of bell-crank latches pivotally connected to said door, springs carried by the door and bearing against one arm of each of the bell-crank latches for normally retaining them in a latching position, vertically-adjustable rods arranged in the door-frame and operated by the said latches when the latter are operated, pins forming pivots carried by the rods and adapted to engage in the said sockets when the door is opened in
 35 one direction or the other, hook-like projections carried by the rods and adapted to operate in said opening to permit the disengagement of the acting pivots during the opening or closing of the door, a rod pivotally connected to one end of one arm of one of the bell-
 40 crank latches and adapted to bear against

one arm of the other of the said bell-crank latches to prevent the simultaneous operation of the said latches, and means for operating said latches. 50

4. The combination with the door and its frame provided with sockets, of bell-crank latches pivotally connected to said door, springs carried by the door and bearing against one arm of each of the bell-crank
 55 latches for normally retaining them in a latching position, vertically-adjustable rods arranged in the door-frame and operated by the said latches when the latter are operated, lugs forming pivots carried by the rods and
 60 adapted to engage in the said sockets when the door is opened in one direction or the other, means carried by the rods and adapted to permit the disengagement of the acting pivots during the opening or closing of the
 65 door, a rod pivotally connected to one end of one arm of one of the bell-crank latches and adapted to bear against one arm of the other of the said bell-crank latches to permit the simultaneous operation of the said latches,
 70 means for operating said latches, and means carried by the rods to permit of closing the door independently of the operating means for the latches.

5. A right and left opening door having
 75 slide-rods G and H, hinge-pins and lugs carried by the rods, and hinge-knuckles having longitudinal and lateral cuts, said pins when lifted by the rods clearing the knuckles and said lugs when lifted passing through the lon-
 80 gitudinal to the lateral or clearing cut so as to leave the adjacent edge of the door free to open, and said lugs when the hinge-pins are not lifted being made to swing or move under the knuckles to prevent the adjacent edge of the
 85 door lifting out of place.

FERDINAND FISCHER.
 LUDWIG KIEFER.

Witnesses:

MAX ADLER,
 MAX J. BAEHR.