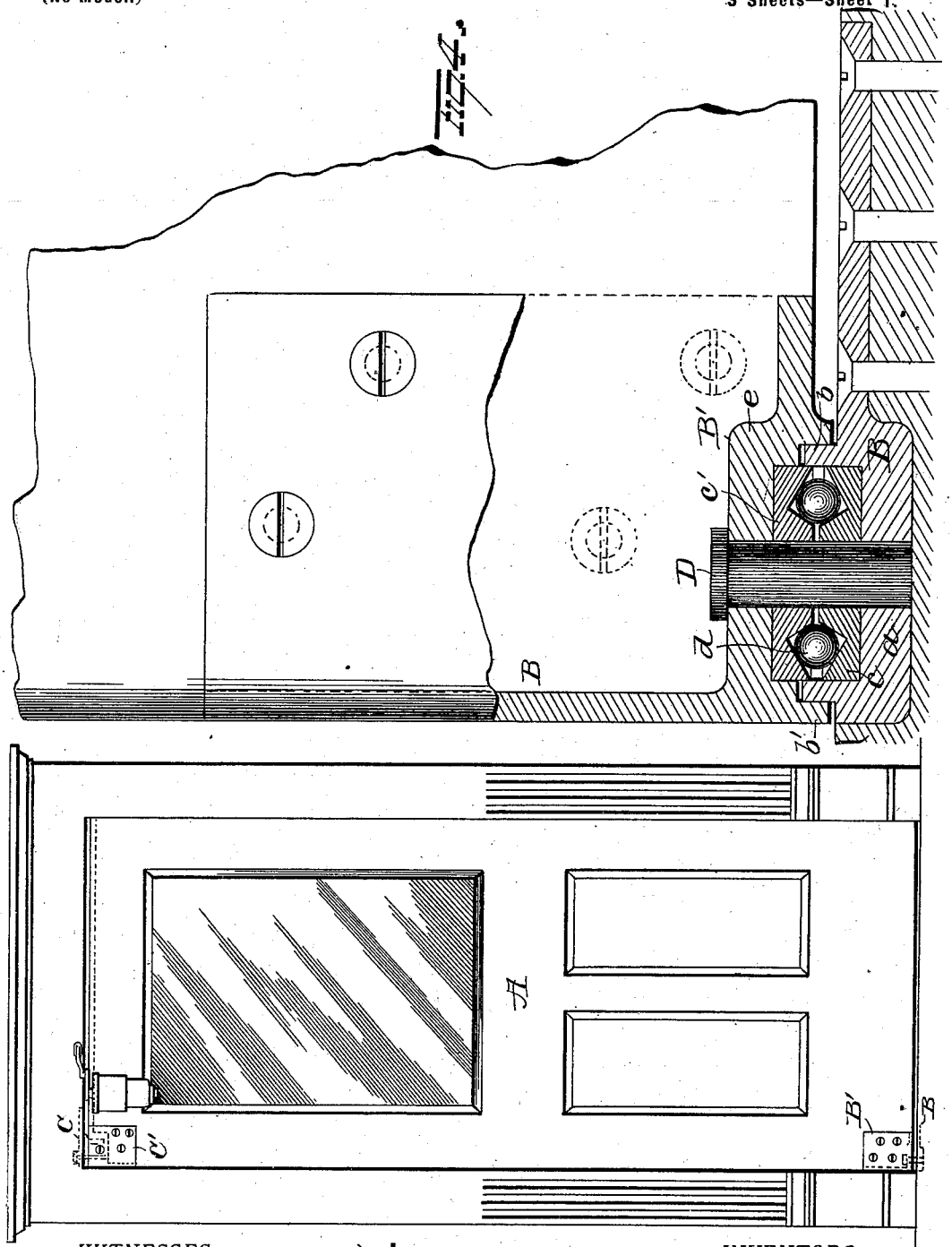
No. 650,036. Patented May 22, 1900.

W. R. CORBIN & W. K. HENRY.

HINGE FOR DOUBLE ACTING DOORS.

(Application filed Oct. 25, 1899.)

(No Model.) 3 Sheets—Sheet 1.



WITNESSES

E. J. Nottingham

G. F. Downing.

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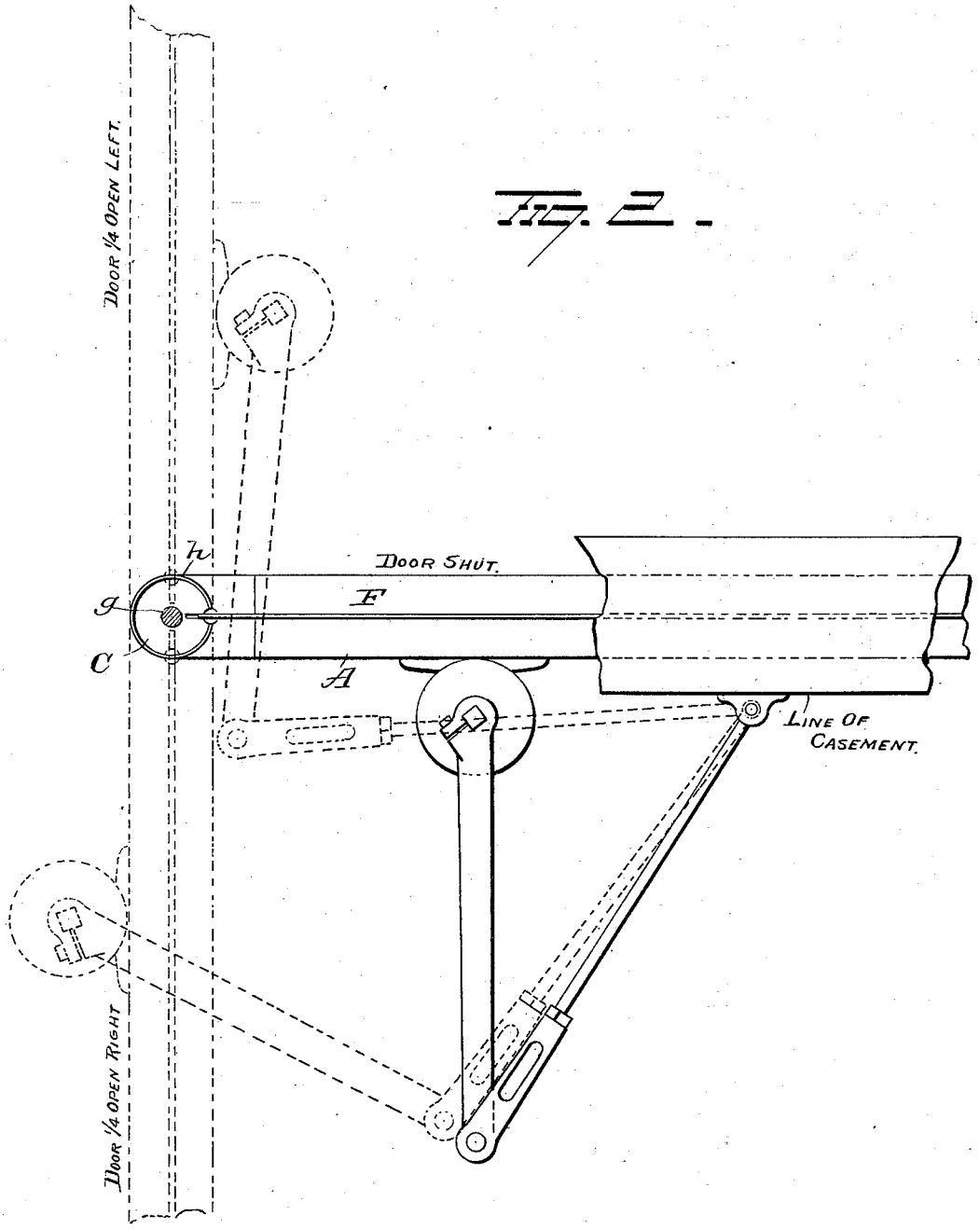
Fig. 2.



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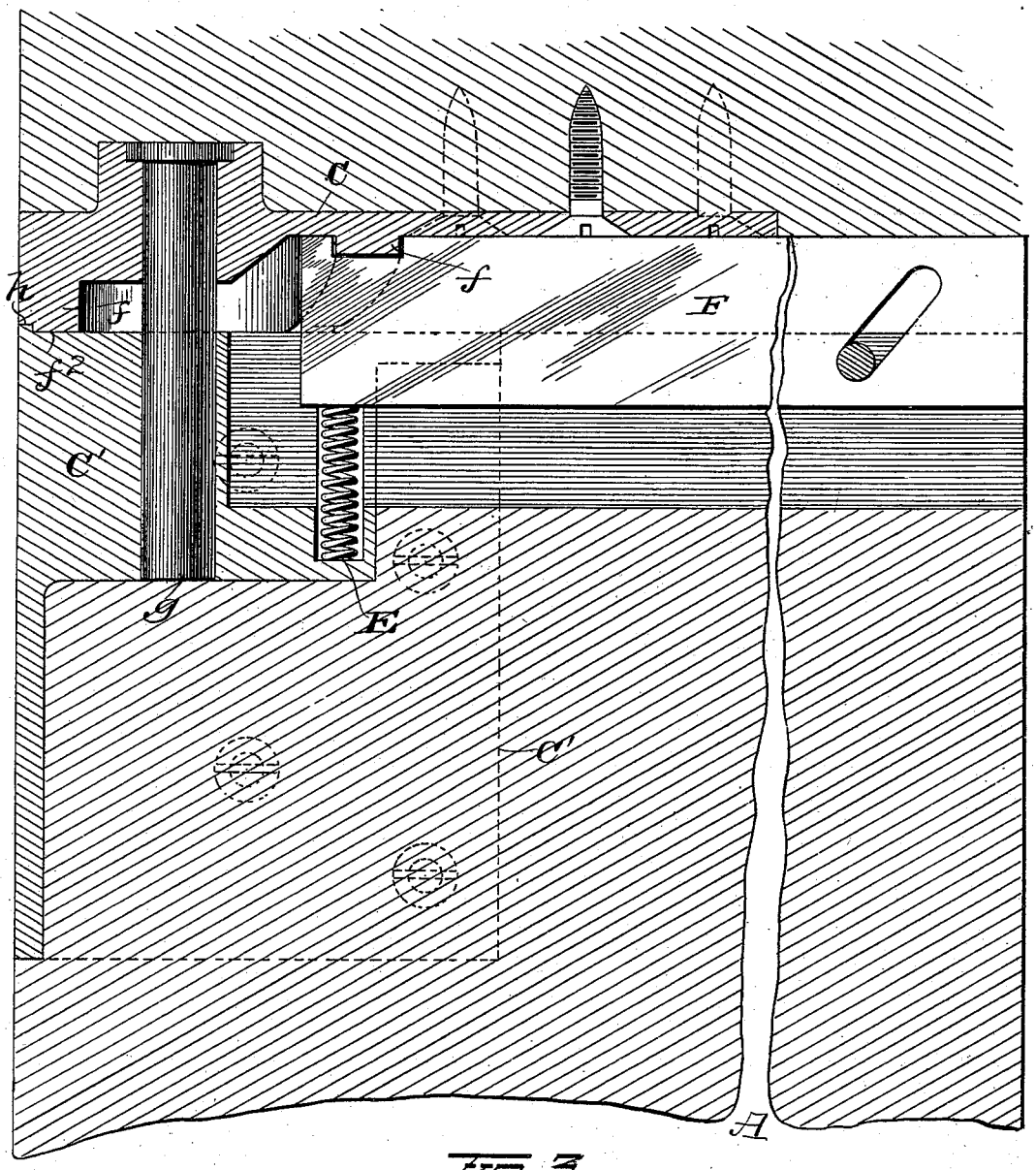

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILBUR R. CORBIN AND WILLIAM K. HENRY, OF NEW BRITAIN, CONNECTICUT, ASSIGNORS TO THE P. & F. CORBIN, OF SAME PLACE.

HINGE FOR DOUBLE-ACTING DOORS.

SPECIFICATION forming part of Letters Patent No. 650,036, dated May 22, 1900.

Original application filed July 29, 1899, Serial No. 725,505. Divided and this application filed October 25, 1899. Serial No. 734,765. (No model.)

To all whom it may concern:

Be it known that we, WILBUR R. CORBIN and WILLIAM K. HENRY, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Hinges for Double-Acting Doors; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in hinges for double-acting doors and is a division of application Serial No. 725,505, filed by us July 29, 1899.

The object of our invention is to provide improved means for pivotally supporting a double-acting door in its frame; and it consists in the details of construction and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation of a door embodying our invention. Fig. 2 is a plan view of the door. Fig. 3 is a view in vertical section through the upper hinge of the door, and Fig. 4 is a similar view through the lower hinge.

A represents the door, adapted to swing in either direction and preferably with a convex rear edge, as shown in Fig. 2. This door is supported at its top and bottom by the hinges, the lower of which is composed of two sections B and B′. The section B of the lower hinge comprises a plate having screw-holes therein for its attachment to the sill, at one end of the latter, and is provided at is outer end with an enlarged circular section *a*, the downwardly-projecting portion of which rests within a recess formed in the sill. The upper face of this circular portion of section B of the hinge is recessed, the latter being encircled by the circular rib *b*. Located within the recess is the steel block *c*, having a groove in which the steel balls *d* rest and move. The upper section B′ is U shape in horizontal cross-section, so as to embrace the lower edge of the door, and is closed at its bottom, so as to form a seat for the inner lower edge of the door and thus sustain a portion of the strain which would otherwise fall on the screws employed for securing section B′ to the door. This section B′ of the lower hinge is provided near its rear end with a thickened circular portion *e*, having a recess adapted to receive the steel block *c′*, the latter being grooved and, together with the groove in block *c*, forming a raceway for the balls *d*. The upper section or pivotal butt B′ is also provided on its lower face with the depending circular rib *b′*, which latter overlaps the rib *b* and assists in preventing lateral displacement of the two sections B and B′ of the lower hinge. The two sections are further connected by the pivot-pin D, which latter passes through openings in sections B′ and B and through openings in the intermediate blocks *c′* and *c*. The side of the upper section B′ is provided with screw-holes for securing the section in place.

The upper hinge is composed of two sections, one of which comprises a flat plate C, provided at its rear end with a depending cam-flange *f*, the latter being of an oval shape in plan and having a V-shaped cut-away portion, the apex of the V-shaped cut-away portion being on a line with the longitudinal center of the door when the latter is closed. Depending from the plate C and eccentric to the flange *f* is the pivot-pin *g*, which latter enters an opening formed in the top plate C′ of the upper hinge. The lower edge of the flange *f* is provided with a slight flange f^2, the outer edge of which is concentric with the axis of the pin and rests within a short circular rib *h*, formed on the top plate of the section C′ of the top hinge. The section C′ of the hinge is also U shape in cross-section and closed at its top and is provided on its sides with screw-holes for its attachment to the rear top edge of the door. That portion of the section C′ of the upper hinge immediately below the flange *f* is made solid to form an extended bearing for the pivot-pin *g* and also a seat for the spiral spring E, the upper end of which bears against the inner end of the weather-strip F. This weather-strip is preferably made of thin sheet metal and is seated in a

slot or kerf extending from the outer edge of the top of the door back to a point near the pivot-bolt *g*, the slot or kerf being deep enough to receive and conceal the weather-strip. The inner edge of the weather-strip, as before stated, rests on the spring and is provided near its outer end with an inclined slot through which a pin secured to the door passes. Thus it will be seen that when the weather-strip is moved longitudinally the outer end rises or falls. The upper end of the weather-strip is provided near its inner end with a notch adapted to receive the cam-flange *f*. The apex of the V-shaped cut-away portion of the cam-flange is, as before stated, in line with the weather-strip or center of the door. Hence it will be seen that when the door is in its closed position the weather-strip is projected by the spring E and flange F to its highest position and thus effectually closes the space between the top of the door and the lower face of the casement.

When the door is pushed open, the inclines of the flange *f* operate to depress the inner end of the weather-strip, while the oval shape of the flange *f* moves the weather-strip longitudinally and thus lowers the outer end of the weather-strip. This movement takes place when the door is opened in either direction, and the weather-strip rises as the door comes to its normal position.

We make no claim in this application to the weather-strip or to the manner of supporting or actuating it, as such features form the subject of application Serial No 725,505, filed by us July 29, 1899.

It is evident that numerous slight changes might be resorted to in the relative arrangement of parts herein shown and described without departing from the spirit and scope of our invention. Hence we would have it understood that we do not wish to confine ourselves to the exact construction shown and described; but,

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

1. A hinge composed of two sections one of which is adapted to be secured to the sill and the other to the door, each section having a flange adapted to overlap the flange of the other section and a seat or recess within the space bounded by the flange, a hardened plate having a raceway located in each seat or recess and a pin passing through both sections of the hinge and the hardened plates.

2. The combination with a double-acting door, of hinges each comprising two parts one part of each hinge being secured to the door-frame, while the other part of each is U shape in cross-section and is closed at its outer end, the said parts having overlapping flanges and a pin connecting the two parts of each hinge.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

WILBUR R. CORBIN.
WILLIAM K. HENRY.

Witnesses:
G. E. ROOT,
L. M. BANCROFT.