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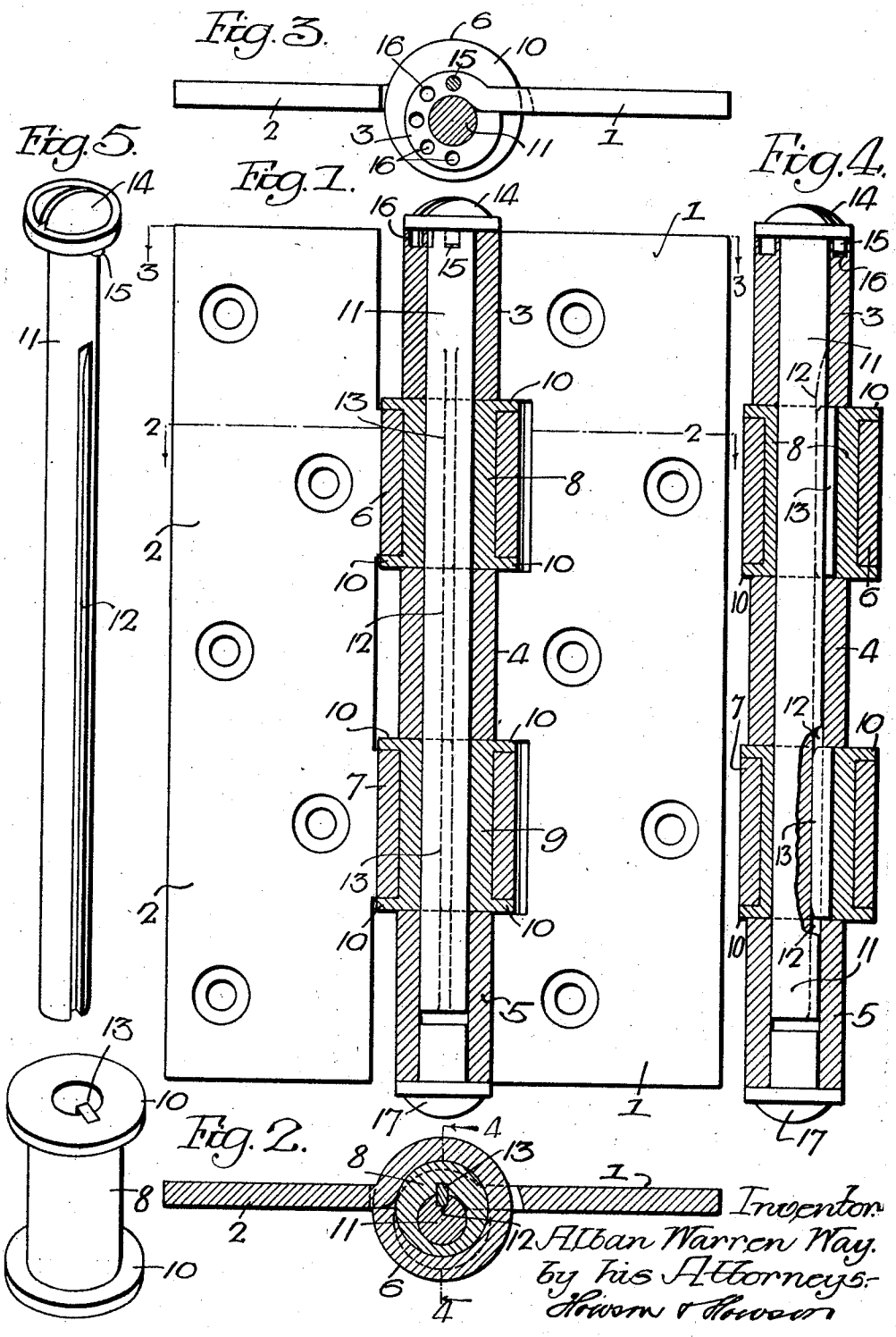
1,540,581

A. W. WAY

HINGE

Filed Feb. 12, 1923

2 Sheets-Sheet 1



Inventor:
Alban Warren Way.
by his Attorneys.
Howson & Howson

June 2, 1925. 1,540,581

A. W. WAY

HINGE

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Fig. 6.

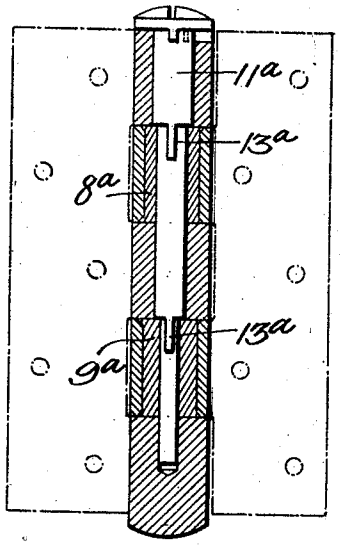
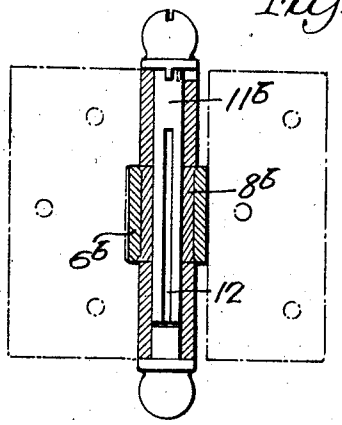


Fig. 7.



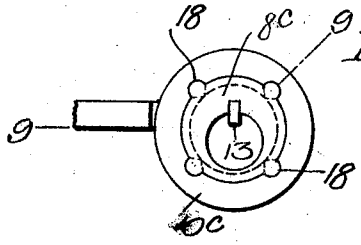
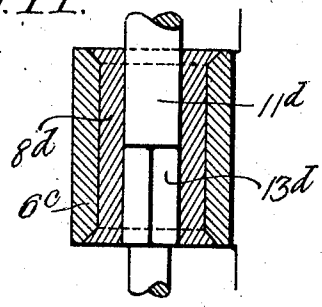


Fig. 8.

Fig. 11.



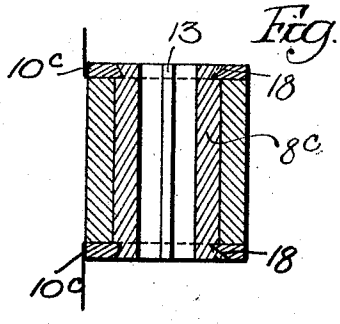
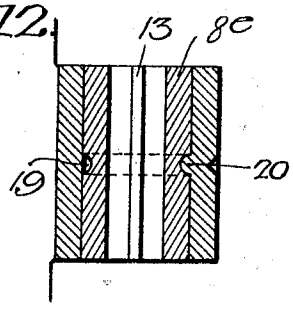


Fig. 9.

Fig. 12.



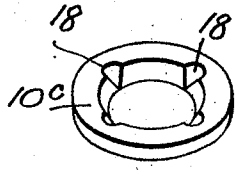


Fig. 10.

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Patented June 2, 1925. 1,540,581

UNITED STATES PATENT OFFICE.

ALBAN WARREN WAY, OF PHILADELPHIA, PENNSYLVANIA.

HINGE.

Application filed February 12, 1923. Serial No. 618,546.

To all whom it may concern:

Be it known that I, ALBAN WARREN WAY, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Hinges, of which the following is a specification.

My invention relates to certain improvements in hinges of the type in which one leaf can be adjusted in respect to the other by turning the pintle so as to locate properly a door in a door frame.

One object of my invention is to improve the construction of a hinge, in which an eccentric is adjustably mounted in a knuckle of a hinge so that, while the eccentric can be adjusted, it cannot be removed from the hinge.

A further object of the invention is to simplify the construction of a hinge of this type and to utilize the construction in a five knuckle hinge.

In the accompanying drawings:

Fig. 1 is a view of a five knuckle hinge, the knuckles being in section, and illustrating my invention;

Fig. 2 is a sectional plan view on the line 2—2, Fig. 1;

Fig. 3 is a sectional plan view on the line 3—3, Fig. 1;

Fig. 4 is a longitudinal sectional view on the line 4—4, Fig. 2;

Fig. 5 is a detached perspective view of the pintle and one of the eccentrics;

Fig. 6 is a sectional view of a modification applied to a five knuckle hinge;

Fig. 7 is a sectional view illustrating my invention applied to a three knuckle hinge;

Figs. 8 and 9 are views illustrating modifications of the means for holding the eccentric in the knuckle;

Fig. 10 is a detached perspective view of the detachable flange shown in Fig. 8; and

Figs. 11 and 12 are sectional views of other modifications of the invention.

Referring to the drawings, 1 and 2 are the leaves of the hinge. The leaf 1 is provided with three knuckles 3, 4 and 5, and the leaf 2 is provided with two knuckles 6 and 7, Fig. 1. In the knuckles 6 and 7 are eccentrics 8 and 9, respectively. Each eccentric has a flange 10 at each end, which prevents the eccentric moving longitudinally in its knuckle, yet allowing it to turn freely.

11 designates a pintle of an even diameter throughout. This pintle extends through the knuckles 3, 4 and 5, and through the eccentrics 8 and 9. The pintle has a keyway 12, extending substantially the full length thereof, as shown in Fig. 5, and secured to the eccentrics are keys 13, which extend into the keyway 12 of the pintle, as shown in Figs. 2 and 4. The pintle has a slotted head 14, in the present instance. A lug 15 at the head engages one of the slots 16 in the upper end of the knuckle 3. Other means of adjustably securing the pintle to the knuckle may be used without departing from the essential features of the invention.

In the lower knuckle 5 is a plug 17. This plug may be dispensed with in some cases. When it is necessary to adjust the hinge to prevent a door from binding in the frame, the pintle is withdrawn sufficiently to allow the lug 15 to clear the slots 16 in the knuckles 3. Then the pintle is turned. The eccentrics 8 and 9 turn with the pintle, drawing the two leaves together until the door hangs free. In the event of the door drawing away from the frame, the leaves are separated by turning the pintle in the opposite direction.

The hinge can be secured to the door and frame by the present method of large building construction, as the pintle can be withdrawn and the two leaves separated. Then one leaf can be secured to the door and the other leaf can be secured to the frame, as the eccentrics are attached to the knuckles of one of the leaves of the hinge.

When a door is in place in a frame and adjusted, the door will swing free of the frame.

In Fig. 6, a modification is illustrated, in which the pintle 11^a is stepped. At each end of the step is a short key 13^a. In each eccentric 8^a and 9^a is a short keyway to receive the key. The eccentrics, in this instance, are flanged, as shown in Fig. 11 so that, while the knuckles can turn on the eccentrics, the eccentrics are held against longitudinal movement in the knuckles.

In Fig. 7, the invention is illustrated as applied to a three knuckle hinge. In this instance, an eccentric 8^b is located in the intermediate knuckle 6^b and is provided with a key extending into the slot in the pintle 11^b.

In Figs. 8, 9 and 10, a means of securing separate flanges to the eccentrics is illus-

trated. The flanges 10^e are recessed at 18, Fig. 10, to receive metal forced from the ends of the eccentric 8^e.

In Fig. 11, the pintle 11^d is shown provided with a rectangular portion 13^d and the eccentric 8^d is shaped to receive this portion. The eccentric is held against longitudinal movement in the knuckle 6^e.

In Fig. 12, the eccentric 8^e has an annular groove 19 and the bottom 20 is pressed into the groove from the knuckle. Other means of securing the eccentric from moving longitudinally in the knuckle may be used without departing from the spirit of the invention.

I claim:

1. The combination in a hinge, of two leaves, each having knuckles; an eccentric in one of said knuckles held therein against longitudinal movement independent of the other knuckles; a pintle extending through the other knuckles and through the eccentric; and means for slidably connecting the pintle to the eccentric so that the eccentric can be turned with the pintle, said pintle being capable of being withdrawn from the hinge.

2. The combination in a hinge, of two leaves, each having knuckles; a flanged eccentric in one of said knuckles; a removable pintle extending through the knuckles of one leaf and through the eccentric mounted in the knuckle of the other leaf; and a sliding connection between the pintle and the eccentric.

3. The combination in a hinge, of two leaves, one leaf having three knuckles and the other leaf having two knuckles; an eccentric in each of the last mentioned knuckles; means for preventing the removal of the eccentrics from their knuckles; a pintle extending through the knuckles of the hinge; and a sliding connection between the pintle and the two eccentrics.

4. The combination in a hinge, of two leaves, one leaf having three knuckles and the other leaf having two knuckles; a flanged eccentric in each of the last mentioned knuckles; a key in each eccentric; a pintle extending through the knuckles of the hinge and having a keyway to receive the keys of the eccentrics; and means for adjustably securing the pintle to one of the first mentioned knuckles.

5. The combination in a five knuckle hinge, of two leaves, one leaf having three knuckles and the other leaf having two knuckles located in the spaces between the three knuckles; flanged eccentrics in the knuckles of the two knuckle leaf; a longitudinal key in each of said eccentric; a pintle having a keyway therein; and means at one end of the pintle for adjustably securing the pintle to the three knuckle leaf.

ALBAN WARREN WAY.