Aug. 9, 1927. 1,638,748

W. H. SANTEE

CLOSURE FASTENING

Filed Jan. 27, 1926

Fig. 1.

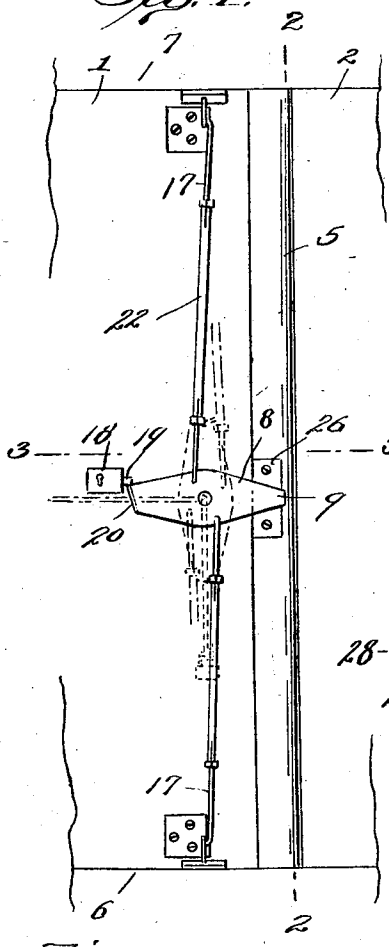

Fig. 2.

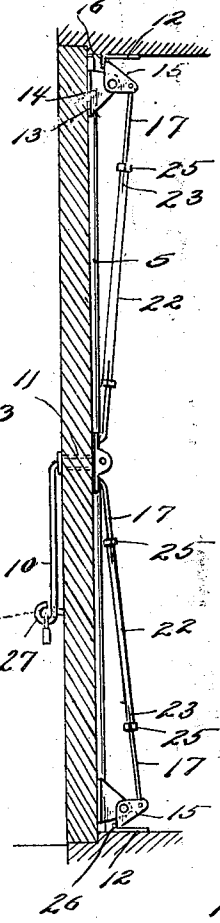

Fig. 6.

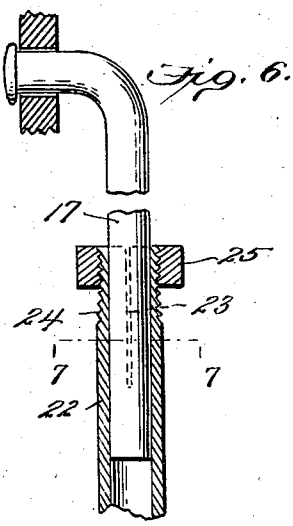

Fig. 7.

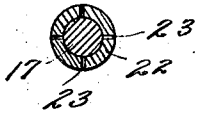

Fig. 4.

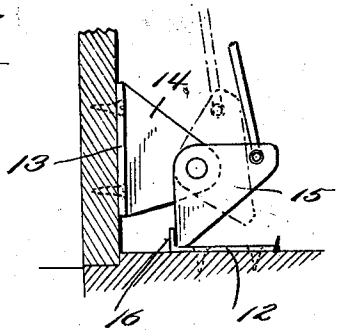

Fig. 3.

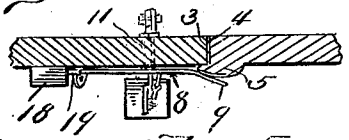

Fig. 5.

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UNITED STATES PATENT OFFICE.

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CLOSURE FASTENING.

Application filed January 27, 1926. Serial No. 84,238.

This invention relates to closure fasteners and particularly to that type of fastener in which a plurality of latching devices are operated at divers points through the instrumentality of a master latch.

One of the objects of the invention is to provide a closure fastener particularly adapted for rigidly and securely latching doors such as the double doors of a garage.

Another object of the invention is the provision of a latching device of the class mentioned embodying adjustable means for altering the operative relation of the several latches from time to time, as necessity may require, to compensate for sagging of the doors.

A further object of the invention is the provision of means cooperably related to the master latch for simultaneously operating all of the latches.

Other objects of the invention will appear as the following description of an illustrative embodiment of the same proceeds.

In the drawings:—

Figure 1 is a front elevation of a closure fastener embodying the principles of my invention applied to double doors.

Figure 2 is a section taken along the line 2—2 of Figure 1.

Figure 3 is a section taken along the line 3—3 of Figure 1.

Figure 4 is a side elevation, partly in section and on an enlarged scale, of one of the auxiliary latches shown in full lines in closed position.

Figure 5 is a perspective view of a slightly modified form of master latch.

Figure 6 is a section through a portion of the connecting rod showing means for adjustably varying the length of the same.

Figure 7 is a cross section taken along the line 7—7 of Figure 6.

Referring now in detail to the several figures, the reference characters 1 and 2 represent the doors of a garage or other closure having the space between their meeting edges 3 and 4 covered by a bead 5 suitably secured to or made integral with one of the doors. As is clearly shown in Figure 3, the door which carries the latches is designed to open away from the bead.

In carrying out my invention it is essential that sills or their equivalent be provided above and below the doors, the same being indicated in the drawings respectively by the reference characters 6 and 7.

My improved latching device comprises a master latch, including the eccentric plate 8, Figure 1, pivotally mounted upon one of the doors and having a nose 9 preferably angularly disposed to its length so as to overlie the bead 5 mounted on the inner side of the other door, said bead when the eccentric plate is in the closed position, as shown in Figure 3, being confined between the edge of the door 1 and the nose 9 of the eccentric plate.

A handle 10 extending substantially parallel to the outer face of the door 1 is suitably fixed to the pivot pin of the eccentric plate, said pivot pin passing through the door to the outside thereof, preferably through a bushing 11.

Auxiliary latches are positioned at divers points, for instance adjacent the top and bottom edges of the door which carries the eccentric plate 8. Said latches each comprises a lug or keeper plate 12, a form of which is shown in Figure 4, one of which is fixed to each of the sills, and a hinge plate 13 secured to the door in vertical alignment with said keeper plate and having a lug 14 projecting from its face, on which lug a dog 15 of an auxiliary latch is pivotally mounted. The keeper plates 12 are positioned on the inside of the door, each being provided with an angularly disposed flange 16 engageable with one of the dogs 15 when the door is in closed position, as shown in Figure 4. The auxiliary latches are operated from the master latch by means of connecting rods 17, each of said rods having one end pivotally connected to the plate 8 of the master latch eccentrically of the pivot of said plate and its other end connected to one of the dogs 15, so that, when the plate 8 is swung in a counter-clockwise direction (Figure 1) into latching position, the outer ends of the rods 17 are moved away from one another, thus rocking both the upper and lower dogs 15 into engagement with the flanges 16 of the keeper plates 12 and thereby simultaneously latching the doors not only at their meeting edges but also at their upper and lower edges.

The plate 8 is prevented by suitable stop means from being swung beyond its locking position. Such means may be in the form of

an eye 28 projecting from the outer face of the door 1 and against which the handle 10 abuts when the eccentric plate 8 has been swung far enough in a counter-clockwise direction (Figure 1) to bring its nose 9 over the bead 5.

When the handle 10 is turned to swing the plate 8 in a clockwise direction (Figure 1) and thus cause the nose 9 of said plate to clear the bead 5, the connecting rods are shifted to draw their outer ends toward one another, thus simultaneously rocking the dogs 15 away from the flanges 16 of the keeper plates 12 and unlatching the door.

The handle 10 may be provided with an eye 27, which, when the plate 8 is swung into locking position, aligns with the eye 28 to receive a padlock. The eyes 27 and 28 thus provide means on the exterior of the door 1 for securing the master latch and auxiliary latches in locking position.

The master latch and the several auxiliary latches may be simultaneously locked from either the inside or the outside of the door by means of a lock 18 of ordinary character having a bolt 19, said lock being so positioned that its bolt 19 may engage an angular lug 20 formed at one end of the eccentric plate 8 preventing the latter being turned to unlatching position while the bolt 19 remains extended.

As a slightly alternative construction the lug 20 may be perforated for the reception of the bolt 19 as indicated at 21 in Figure 5.

In order that the auxiliary latches shall remain operative notwithstanding sagging of the doors, the connecting rods 17 are made adjustable in length so as to bring the auxiliary latches into latching relationship with the plates 12 in any position which the necessities of use may require. This adjustment may be brought about in any suitable manner but in the present illustrative embodiment of the invention it is accomplished by forming each of the connecting rods with a central tubular portion 22 into which the ends of the connecting rods may be adjustably telescoped. The ends of the tubular portion are each preferably slotted at 23 as shown in Figures 6 and 7 and provided with a taper thread 24 engaged by a nut 25, the slotted ends being clamped against the rods by tightening the nuts 25. The adjustability of the connecting rods also adapts the device to doors of different heights.

While I have shown the bead 5 as protected by a wear-piece 26, positioned within the range of engagement of the eccentric plate 8, it is equally within the spirit of the invention to substitute for said wear-piece and for the bead if desired, any ordinary form of keeper into which the nose 9 of the eccentric plate may be lodged when said plate is brought into latched position.

Although I have herein described what I believe to be a preferred embodiment of my invention, yet it is within the spirit and scope of the invention to make such changes or alterations in the construction and arrangement of parts, if desired, as may be permitted by the breadth of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. In combination with double doors hinged at their outer sides and meeting at their inner edges, a closure fastener including a master latch pivotally mounted on one of said doors having an end thereof overlapping the adjacent edge of the other door when in latched position, and a plurality of pivotally mounted auxiliary latches operated by said master latch and positioned one at the top and one at the bottom of said door, keeper-means secured to the upper and lower sills for engagement by said auxiliary latches, rods connecting said master latch and auxiliary latches, said rods being pivotally attached to said latches eccentrically thereof, means for independently adjusting the length of said connecting rods and a lock on said door engageable with said master latch when the latter is in latched position for simultaneously locking all said latches.

2. In combination with double doors hinged at their outer sides and meeting at their inner edges, a closure fastener including a master latch pivotally mounted on one of said doors having an end thereof overlapping the adjacent edge of the other door when in latched position, an operating handle on said master latch, a plurality of auxiliary latches operated by said master latch and positioned one at the top and one at the bottom of said door, keeper-means secured to the upper and lower sills for engagement by said auxiliary latches, rods connecting said master latch, and auxiliary latches, said rods being pivotally attached to said latches eccentrically thereof, means for independently adjusting the length of said connecting rods, a lock on said door engageable with said master latch when the latter is in latched position for simultaneously locking all of said latches, and an auxiliary locking means for locking said master latch operating handle when said first-mentioned lock is fastened.

In testimony whereof I have hereunto set my hand.

WALTER H. SANTEE.