G. L. FISHER.

CASEMENT FASTENER.

APPLICATION FILED JUNE 19, 1906.

959,494.

Patented May 31, 1910.

2 SHEETS—SHEET 1.

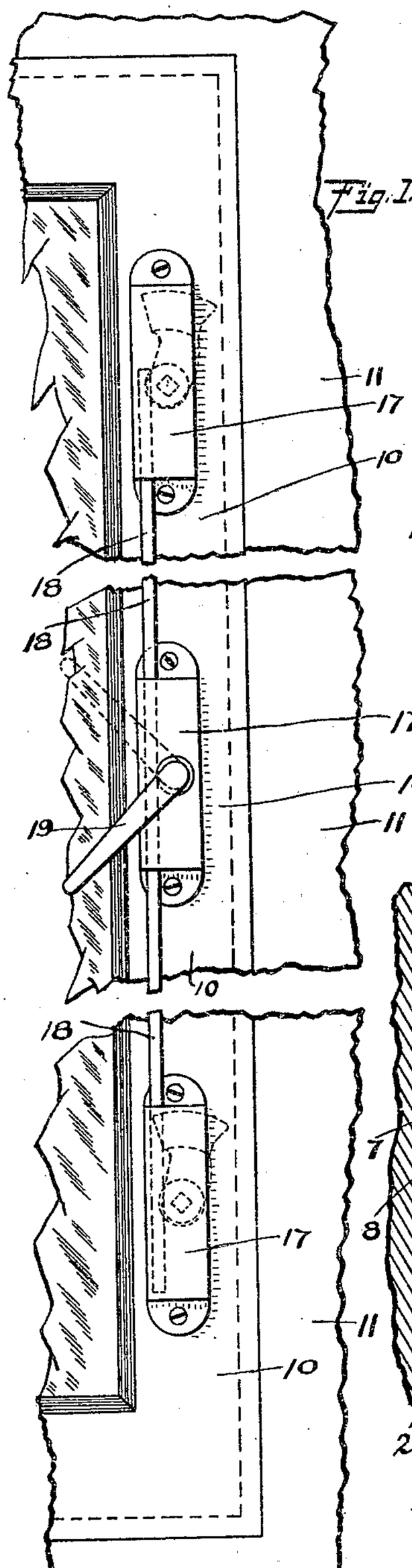

Fig. 1.

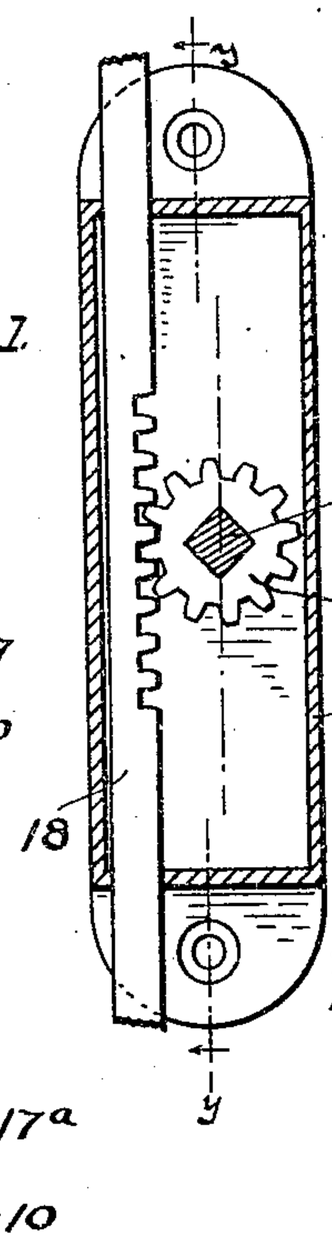

Fig. 2.

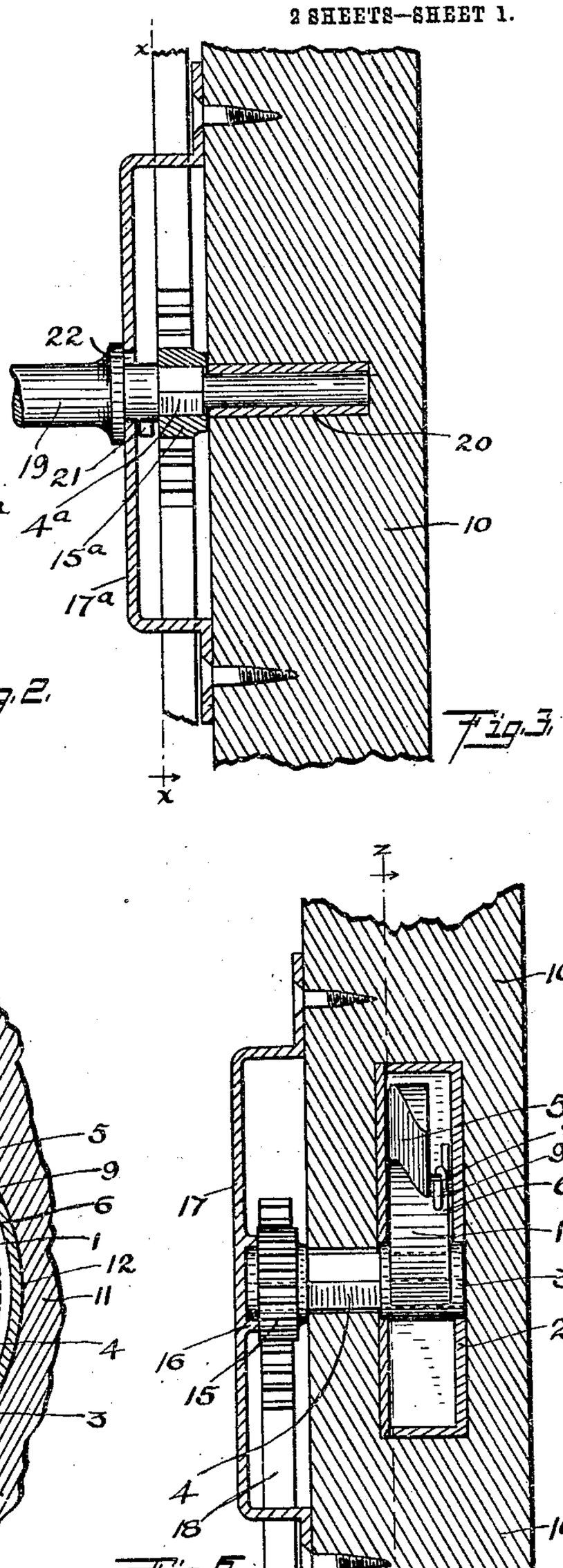

Fig. 3.

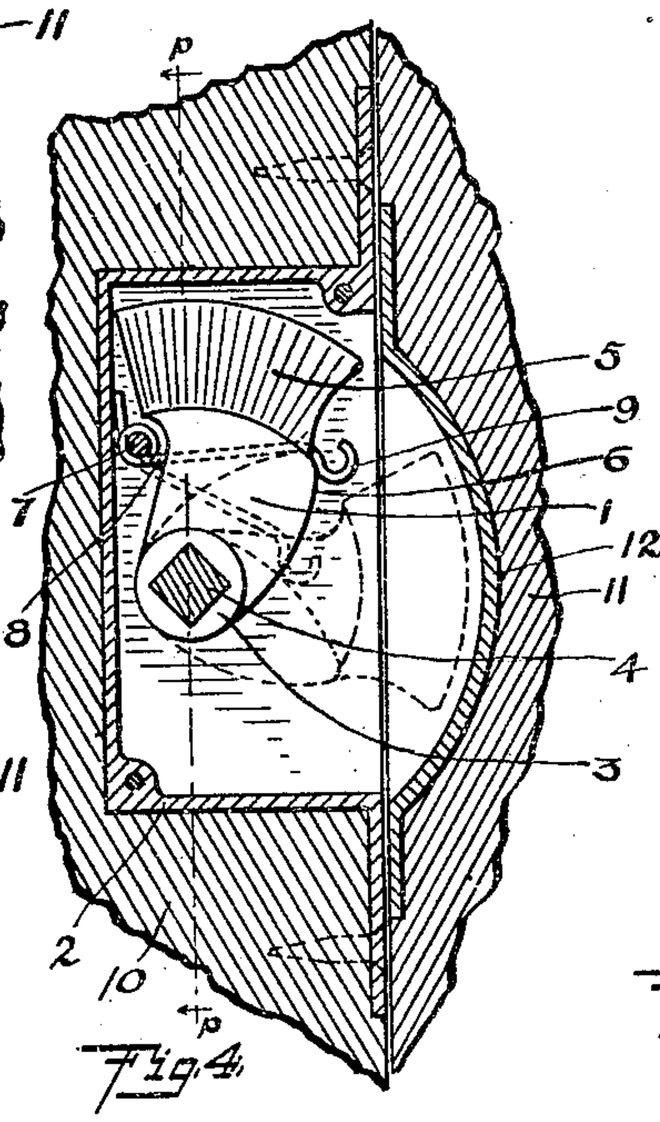

Fig. 4.

Fig. 5.

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2 SHEETS—SHEET 2.

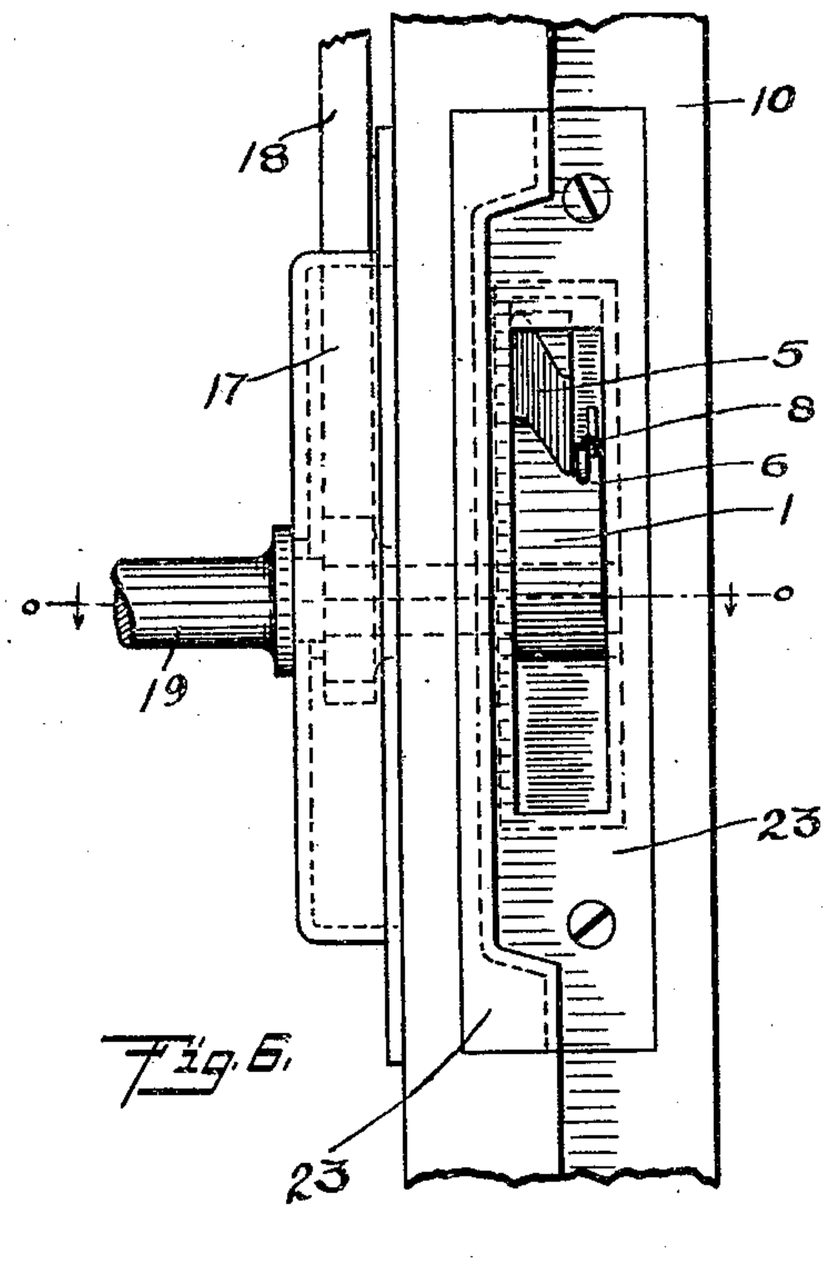

Fig. 6.

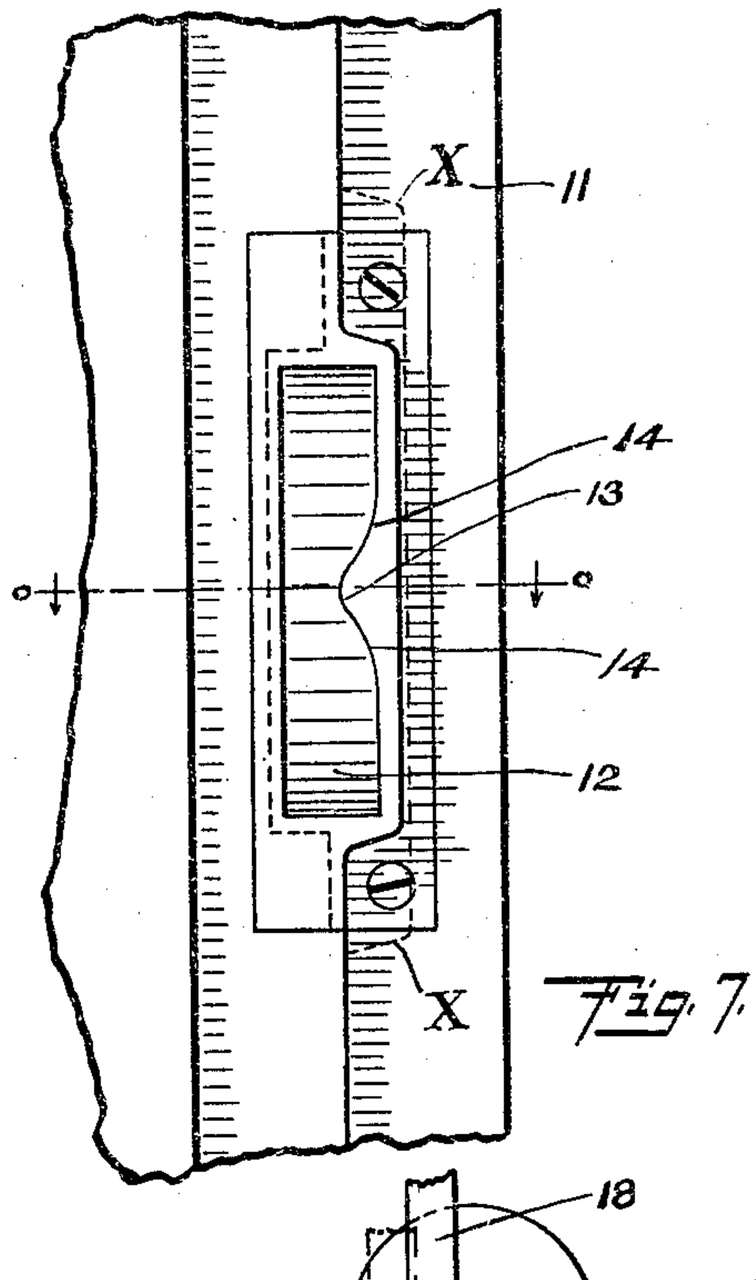

Fig. 7.

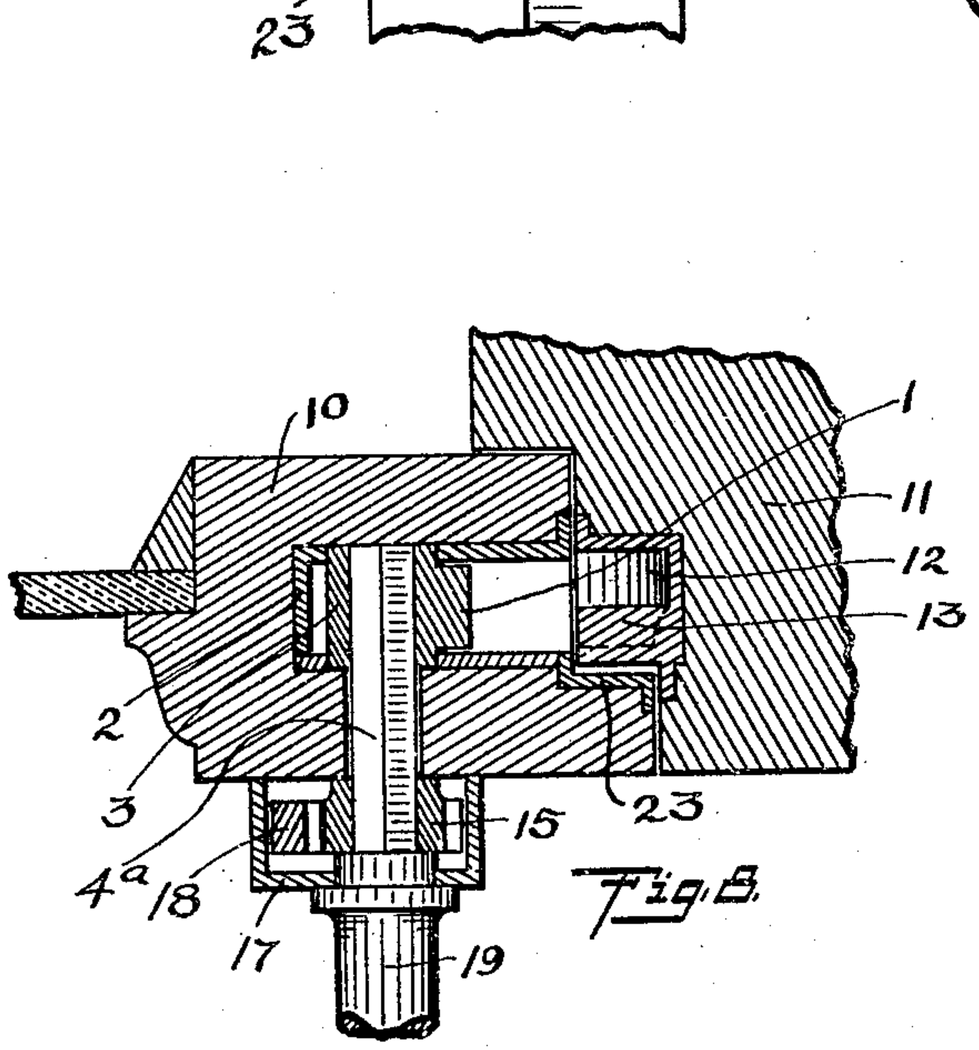

Fig. 8.

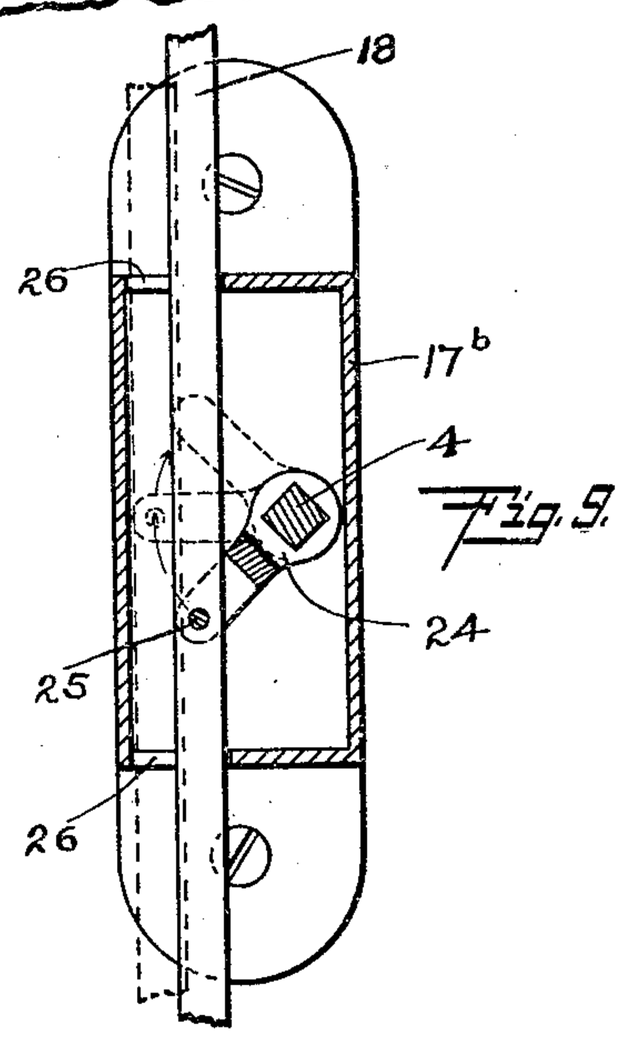

Fig. 9.

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UNITED STATES PATENT OFFICE.

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CASEMENT-FASTENER.

959,494. Specification of Letters Patent. Patented May 31, 1910.

Application filed June 19, 1906. Serial No. 322,468.

To all whom it may concern:

Be it known that I, GEORGE L. FISHER, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Casement-Fasteners, of which the following is a specification.

My invention relates to the general class of builders' hardware and more particularly to fasteners or securing devices for casement windows, doors and other similar hinged swinging members closing against jambs and in which it is desirable that the fastener be able to compensate for the variation caused by shrinkage or expansion of the hinged member or its casement, or by warping thereof.

It is the object of my invention to provide fastening devices of this character and means for operating the same in multiple so that the hinged swinging member on which the fasteners are used may be secured at more than one point and all the fasteners be operated together from a single convenient point.

A further object of my invention is to provide in a fastener of this class a mortised cam casing and a jamb socket adapted for use with rabbeted sash and in which metallic contact between the front of the mortised cam casing and the jamb socket is avoided for the purpose hereinafter specified.

Constructions embodying my invention are shown in the accompanying drawings, in which—

Figure 1 is an interior elevation of a casement window provided with two fasteners connected in multiple and operated by an intermediate handle; Fig. 2 is a vertical section through the intermediate box escutcheon, on the line *x—x* of Fig. 3; Fig. 3 is an axial section of the same on the line *y—y* of Fig. 2; Fig. 4 is a transverse section through one of the mortised cam casings and jamb sockets, on the line *z—z* of Fig. 5; Fig. 5 is an axial section through one of the box escutcheons and accompanying stem and mortised cam casing, the section being on the line *p—p* of Fig. 4; Fig. 6 is an edge elevation of one of the fasteners as applied on a rabbeted sash; Fig. 7 is a similar view of a jamb socket as applied on the rabbeted jamb; Fig. 8 is a sectional plan on the lines *o—o* of Figs. 6 and 7; and Fig. 9 is a section similar to Fig. 2 but showing a modified means for connecting the cam body stem and the operating rod.

In the preferred embodiment of my invention I provide a suitable number of cam bodies 1, each of the same being of the general form shown in Figs. 4 and 5, and being inclosed in a casing 2 which is preferably mortised, as shown, into the edge of the sash 10 or other swinging member which the fastener is used to secure. The cam body 1 has a cylindrical hub 3 which extends into and has a bearing in the sides of the casing 2, a square axial hole extending through the hub to permit the insertion of a stem 4 for turning the body. On one side of the body near the outer edge thereof is a helically inclined surface 5 forming one side of a wedge-shaped portion, there being on the opposite side of the cam body an elliptical portion 6 disposed eccentrically to the hub, as shown. The stud 7 carries a spring 8 of which one end is formed into a hook 9 which, when the cam body is in the position shown in Fig. 4, engages the point of the elliptical portion 6 and retains the body in said position. As soon, however, as the cam body is turned outward sufficiently to raise the hooked end of the spring over the point of the elliptical portion 6 the end of the spring then rests on a spirally inclined surface and tends to turn the cam body farther outward, as will be apparent by reference to the dotted lines in Fig. 4.

In the jamb 11 opposite the cam casing is placed the jamb socket 12 having a curved recess therein into which the cam body swings when turned outward. At one side of the curved recess in the jamb socket is a rounded projection 13 having inclined approaches 14, as shown in Fig. 7. When the cam body is turned into the jamb socket the helical surface 5 of the wedge shaped portion of the body engages the projection 13 on the jamb socket, continued turning of the cam body drawing the members together as tightly as desired, and the spring 8 tending to hold the parts in engagement.

The square stems 4 passing through the hubs of the cam bodies extend through the sash 10 to the inside thereof, the gear pinions 15 being placed thereon and said pinions being provided with hubs which have a bearing in the bosses 16 on the inside of the

box escutcheons 17. The said box escutcheons are screwed to the sash, as shown, concealing the pinions and forming a retainer and guide for the operating rod 18 which is provided with rack teeth engaging the pinions, as indicated.

In the arrangement shown in Fig. 1 the operating rod is actuated by means of the handle 19 of which the stem 4^a passes through an intermediate pinion 15^a disposed within the box escutcheon 17^a, the said pinion engaging the operating rod as shown in Figs. 2 and 3. The inner end of the handle stem is made cylindrical and finds a bearing in the sleeve 20 inserted in the sash 10 as shown in Fig. 3. When the parts are assembled removal of the handle from the escutcheon 17^a is prevented by the lug 21 on the outer cylindrical portion of the stem 4^a, said lug being normally turned opposite the recess 22 in the escutcheon, through which the lug is passed in assembling the parts.

The handle 19 for actuating the operating rod may be placed directly over one of the fasteners instead of at an intermedate position between the same. In this case the stem 4^a is made square throughout its entire length and extends through both the pinion and the hub of the cam body as shown in Fig. 8 and by dotted lines in Fig. 6.

It will be obvious that by variously combining the devices illustrated any number of the fasteners may be placed at any desired positions on the swinging member and all operated by a single handle which may be located at any convenient position, or a single fastener may be operated by a handle remote therefrom by means of the operating rod connection extending from the operating pinion of the fastener to a pinion connected with the handle in the manner shown at the intermediate box escutcheon 17^a.

For use with rabbeted sash the jamb socket and the front 23 of the cam casing are made with an offset or shoulder therein as shown in Figs. 6, 7 and 8. The recess in the shouldered portion of the casing front 23, for receiving the projecting portion of the jamb socket, is made slightly deeper than the projection of the jamb socket and longer than the entire height of the jamb socket, so that when the sash and jamb are drawn together by the fasteners the said front 23 will not engage the jamb socket to form a metal to metal contact but will engage the wood of the jamb rabbet above and below the socket. The outline of the recess in the front 23 when thus engaged with the jamb rabbet is shown by the dotted line X in Fig. 7. By this construction, in operating the fasteners to draw together the jamb and sash, the casing front may compress the wood of the jamb instead of striking the jamb socket, and the parts thus drawn together more tightly than would be possible were the casing front and jamb socket in metallic contact so that no compression of the wood fiber would be possible.

In Fig. 9 is shown an alternative means for connecting the operating rod and cam body stems which may be used instead of the rack and pinion arrangement shown in the other figures of the drawings. In this arrangement a small crank 24 is placed on the stem 4 inside the box escutcheon in the same manner as the pinions 18. The said crank has a slotted end which fits over the operating rod and is connected thereto by means of a pin 25, as shown. The movement of the crank and rod in operating the fasteners is shown by the dotted lines and arrows in said Fig. 9. In order to permit the transverse movement of the rod in following the arc described by the end of the crank, the openings 26 through the escutcheon 17^b are made elongated, as indicated, the extremes of movement of the rod being shown by the dotted lines before mentioned.

Now, having described my invention, what I claim and desire to secure by Letters Patent of the United States is:—

1. In a casement fastener, a casing, a cam-body rotatably held in said casing, there being on said cam-body a helical surface adapted to engage a socket, an elliptical portion carried by the cam-body and disposed eccentrically to the axis thereof, a spring having a hooked end adapted to engage the point of the elliptical portion when the cam-body is at one extreme of movement and when disengaged from said point to press the cam-body toward its other extreme of movement, a stem connected with the cam-body, and means for turning said stem.

2. In a fastener of the class described, a casing having an offset or shouldered front, a socket of which the front is similarly offset or shouldered, there being on the shoulder of the socket a projecting portion extending into a recess in the shoulder of the casing front, and the recess in the casing front being of a length greater than the height of the entire socket, for the purpose set forth.

In testimony whereof I have hereunto subscribed my name in the presence of two witnesses.

GEORGE L. FISHER.

Witnesses:
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Sidney C. Singer.