M. N. STOFFELS.

DOOR FASTENER.

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900,794. Patented Oct. 13, 1908.

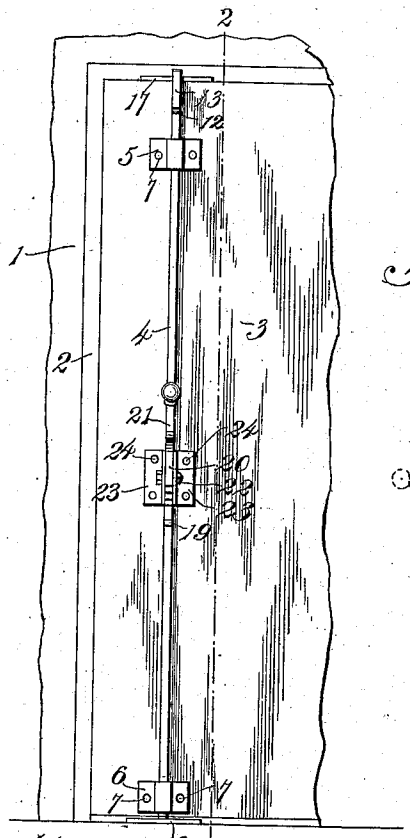

Fig. 1.

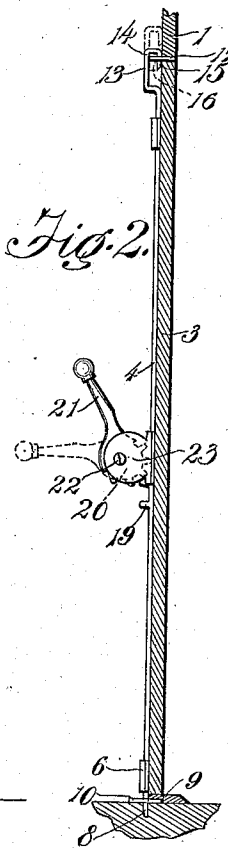

Fig. 2.

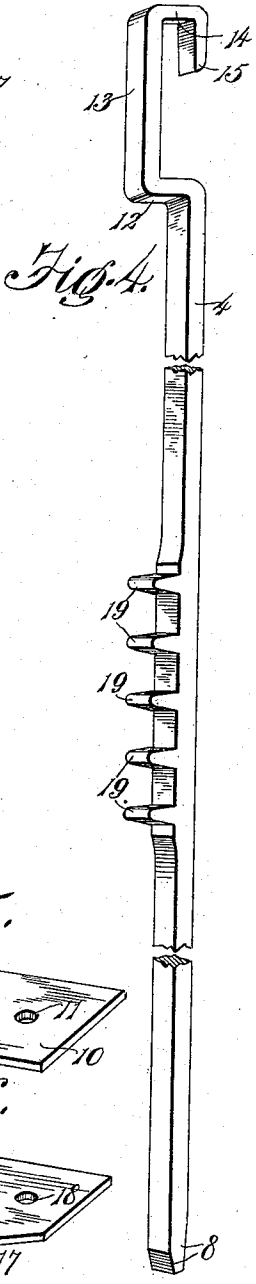

Fig. 4.

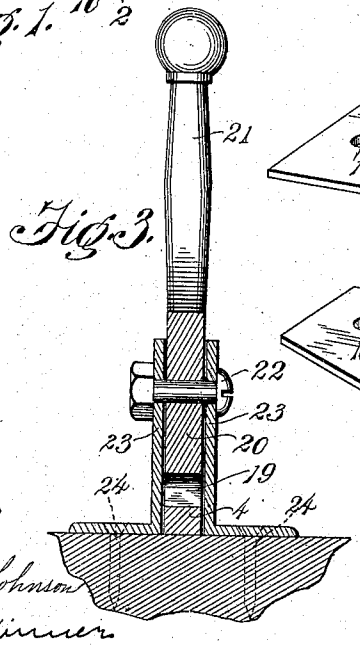

Fig. 3.

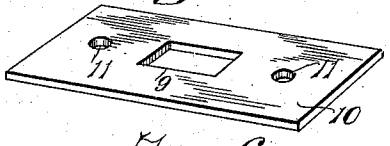

Fig. 5.

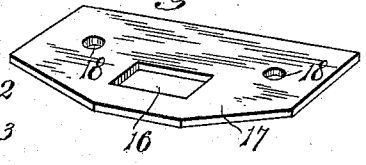

Fig. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

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DOOR-FASTENER.

No. 900,794. Specification of Letters Patent. Patented Oct. 13, 1908.

Application filed June 15, 1908. Serial No. 438,560.

To all whom it may concern:

Be it known that I, MICKUS N. STOFFELS, a citizen of the United States, residing at Medaryville, in the county of Pulaski and State of Indiana, have invented certain new and useful Improvements in Door-Fasteners, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in door fasteners of the sliding bolt type and more particularly to one designed for use upon barn doors and the like.

The object of the invention is to provide a simple and practical device of this character which may be conveniently operated and which will effectively fasten the door at both its top and bottom.

With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which

Figure 1 is a front elevation of a portion of a barn door illustrating the application of my invention thereto; Fig. 2 is a vertical section taken on the plane indicated by the line 2—2 in Fig. 1; Fig. 3 is a detail horizontal section taken on the plane of the pivot 22; and Figs. 4, 5, 6 are perspective views of the sliding bolt and its two keeper plates.

In the drawings 1 denotes a portion of a wall or other structure having a door opening 2 closed by a door 3 which may be mounted either to swing or to slide horizontally.

My improved fastener comprises a vertically disposed sliding bolt 4 arranged to extend the full height of the door and mounted for vertical movement in upper and lower bearing plates 5, 6. The bolt or fastener 4 is of rectangular shape in cross section and the bearing plates 5, 6 have centrally disposed U-shaped portions to receive it and oppositely projecting apertured ears or ends to receive fastening screws 7. The lower end of the bolt 4 has its inner and outer faces slightly beveled or tapered, as shown at 8, to enter an opening 9 in a keeper plate 10 which is arranged upon the door sill and secured by screws or similar fastenings passed through apertures 11 formed in it.

The upper end of the bolt 4 is provided with an offset portion in the form of a substantially rectangular loop formed by bending said end outwardly, as shown at 12, then upwardly, as at 13, then inwardly, as at 14, and finally downwardly to provide the slightly tapered and downwardly projecting tongue 15 which is adapted to enter an opening 16 formed in a keeper plate 17 which is arranged at the top of the door opening 2 and is secured to the wall or frame of the door by screws or similar fastenings passed through apertures 18 formed in it. The locking tongue or projection 15 is disposed close to the outer face of the wall 1 and the outer edge of the keeper plate 17 projects so that said tongue may enter the opening 16 when the bolt 4 moves downwardly. It will thus be seen that when said bolt is moved downwardly its lower end 8 will enter the keeper plate 10 and its upper end or tongue 15 will simultaneously enter the keeper plate 17, thereby locking the door at both its bottom and top.

In order to actuate the bolt 4 I preferably form upon it, at a point suitably distant from its bottom, a longitudinal series of rack teeth 19 which project outwardly and are adapted to engage the teeth of a segment 20 formed upon one end of a hand lever 21 and pivoted by a bolt or the like 22 between bearing plates 23. The latter are angular in shape and are disposed on opposite sides of the bolt 4 so as to assist the plates 5 and 6 in guiding said bolt. The short base flanges of said bearing plates are apertured to receive fastening screws 24 and their parallel outwardly projecting flanges are of substantially circular form so as to cover and protect the teeth of the rack 19 and segment 20. It will be seen that when the lever 21 is swung upwardly the bolt will be projected downwardly to its locked position and that when said lever is swung downwardly the bolt will be lifted or retracted.

It will be understood that the invention may be used upon either single or double doors or gates and that it is well adapted for use upon the doors of warehouses and business houses.

From the foregoing it will be seen that my invention provides an exceedingly effective fastener for a barn door or the like, and one which is simple and comparatively inexpensive in construction and at the same time easy and convenient to operate and strong and durable in use.

Having thus described my invention what I claim is:

1. The combination with a wall having a

door opening and a door to close said opening, of keepers upon the wall, a bolt slidably mounted upon the door and provided at one end with an offset loop having a locking tongue to engage one of said keepers, the other end of the bolt being adapted to simultaneously engage the other keeper, a rack upon the intermediate portion of the bolt and a lever fulcrumed upon the door and having a segment in mesh with said rack.

2. The combination with a wall having a door opening and a door to close said opening, of keeper plates arranged at the top and bottom of the opening, guides upon the door, a vertically disposed bolt slidably mounted in said guides, the lower end of the bolt being adapted to enter the lower keeper plate and its upper end being shaped to provide an offset loop having a depending locking tongue to drop into the keeper plate at the top of the door opening, a series of rack teeth formed upon the intermediate portion of the bolt, a bearing upon the door, and a lever having a segment in mesh with the rack teeth and pivoted to said bearing.

3. The combination with a wall having a door opening and a door for the latter, of upper and lower apertured keeper plates secured in the door opening, upper and lower guide plates upon the door, a vertically disposed bolt slidably mounted in said guide plates, the lower end of the bolt being adapted to enter the lower keeper plate and the upper end of the bolt being bent outwardly, then upwardly, then inwardly, and then downwardly to provide a depending locking tongue to drop into the upper keeper plate, rack teeth formed upon the outer face of the bolt intermediate its ends, angular bearing plates secured to the door on opposite sides of the bolt and adapted to guide the same, a lever formed at one end with a gear segment to engage said rack teeth and pivoted between the outwardly projecting flanges of the bearing plates, said outwardly projecting flanges being enlarged to protect the teeth of the segment and rack, substantially as described.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

MICKUS N. STOFFELS.

Witnesses:

HENRY C. SCHOTT,

SETH W. FLEMING.