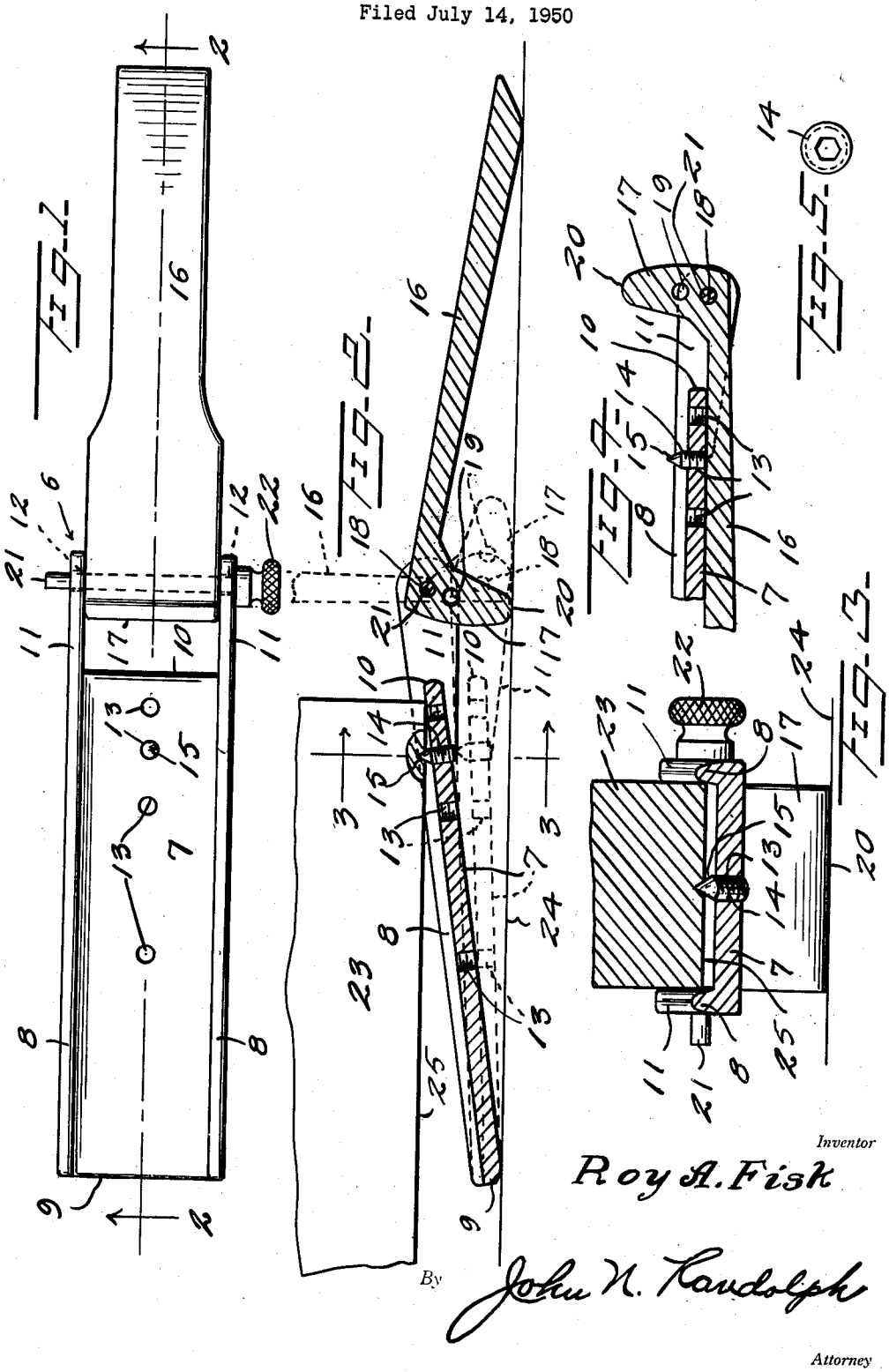
Aug. 4, 1953 R. A. FISK 2,647,782

DOOR HOLDER

Filed July 14, 1950



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Patented Aug. 4, 1953

2,647,782

UNITED STATES PATENT OFFICE

2,647,782

DOOR HOLDER

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Application July 14, 1950, Serial No. 173,844

3 Claims. (Cl. 292—288)

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This invention relates to a novel construction of door holder primarily intended for use with horizontally swinging vertically hinged doors to enable a door to be retained rigidly in an open position while a mortice is being cut therein and a lock assembled in the door.

More particularly, it is an aim of the present invention to provide a device which will not mar a door while holding it rigidly in an open position and to replace a chisel or block which is ordinarily driven under a door for this purpose and which frequently results in chipping and otherwise damaging the veneer and other parts of the door.

Still a further object of the invention is to provide a door holder which will effectively prevent the door from swinging out of engagement therewith while the holder is in an operative position and which will likewise prevent the holder from slipping outwardly of the door.

Still a further object of the invention is to provide a door holder capable of being quickly and easily applied to or removed from a door without damage to the door or floor surface disposed therebeneath yet which will effectively function to retain a swinging door rigidly in an open position.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a top plan view showing the door holder as it will appear in an operative position;

Figure 2 is a longitudinal vertical sectional view thereof taken substantially along a plane as indicated by the line 2—2 of Figure 1 and showing the holder engaging a corner of a door;

Figure 3 is a cross sectional view of the holder in an operative position taken substantially along a plane as indicated by the line 3—3 of Figure 2;

Figure 4 is a fragmentary longitudinal sectional view showing the holder in a folded, inoperative position, and

Figure 5 is an end elevational view on an enlarged scale of one element of the holder.

Referring more specifically to the drawing, the novel door holder in its entirety is designated generally 6 and includes an elongated bar 7 which is provided with integral upstanding side walls 8 which rise from its side edges and which extend from the end 9 of the bar 7 beyond its opposite end 10. Said side walls 8 are enlarged adjacent the end 10 of the bar 7 to provide portions which are disposed below the bottom surface of the bar

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and which form integral extensions of the walls 8 which extend beyond said bar end 10 to form laterally spaced arms or furcations 11 which are provided adjacent their free ends with aligned openings 12. The bar 7 is provided with a plurality of longitudinally spaced threaded openings 13 for selectively receiving a setscrew 14, preferably of the Allen type, which is adapted to be threaded upwardly into any one of the openings 13 and which is provided with a pointed end 15 which projects upwardly from the upper surface of the bar 7 and the opposite end of the setscrew 14 is disposed substantially flush with the underside of the bar 7.

An elongated lever 16 is provided at one end thereof with an integral extension 17 which projects at substantially a right angle from the plane of the lever 16 and which has a rounded, convexly arced outer side and a rounded free end so that said portion 17 forms a cam element. The lever 16 is provided with an opening 18 which is disposed substantially centrally of the junction of said lever and the cam element 17 and the cam element is provided with a second opening 19 disposed between the opening 18 and its rounded free end 20 and preferably closer to the opening 18 than to the end 20. The length of the cam element 17 and the width of the lever 16 at the end thereof which joins with said cam element is less than the distance between the furcations 11 so that said end of the lever and cam element may be disposed between the furcations and with either the opening 18 or the opening 19 in alignment with the furcation openings 12 to receive the shank of a pin 21 which extends loosely through said openings and which is provided at one end with a head 22. It will thus be readily apparent that the lever 16 may be detachably connected to the furcations 11 by the pin 21 and pivotally supported thereby relatively to the bar 7 and so that when the lever 16 and bar 7 are disposed in substantially the same plane and in extended positions relatively to one another, the cam element 17 will extend downwardly from the lever and from the furcations 11. Likewise, the lever 16 may be swung upwardly in a counterclockwise direction to substantially an upright position and at approximately a right angle to the plane of the bar 7, as illustrated in dotted lines in Figure 2, to thereby position the arcuate, outer edge of the cam element 17 in substantially the same plane as the bottom edges of the furcations 11, as seen in dotted lines in Figure 2. With the parts thus disposed, the end 9 of the bar 7 as the leading

end of the door holder 6 may be inserted under a bottom edge of the outer lower corner of a door, a portion of which is illustrated in Figures 2 and 3 at 23. The outer end 9 of the bar 7, which is rounded on its under side, will rest upon the floor or other surface 24 which is disposed beneath the bottom edge 25 of the door 23 and the outer, free end portion of the bottom edge 25 of the door will then be disposed above the bar 7, which bar is of sufficient width to accommodate a door of maximum thickness between its upstanding side walls 8, such door being illustrated at 23. Assuming that the pin 21 engages the opening 18 and that the lever 16 and cam 17 are disposed in their dotted line positions of Figure 2 and that the bar 7 is disposed under the bottom edge 25, so that the outer edge of the door 23 is disposed adjacent end 10 of the bar 7, with the parts thus disposed, the lever 16 may then be swung downwardly and outwardly of the door 23 in a clockwise direction as seen in Figure 2 on the pivot pin 21 and in so moving, the convexly rounded outer surface of the cam element 17 will slide and fulcrum on the floor surface 24 and elevate the furcations 11 and the adjacent end of the bar 7 with said bar fulcruming on the floor surface 24 on its rounded end 9. As the lever 16 continues to swing downwardly and outwardly of the door 23 the rounded outer end or edge 20 of the cam element 17 will move into contact with the floor 24 and as the lever 16 approaches its full line position of Figure 2 said rounded end 20 will pass across a vertical line extending downwardly from the axis of the pin 21 or across the vertical, dead center position of the cam element 17 to lock the door holder in its operative full line position of Figure 2. During this swinging movement of the lever 16, the bar 7 and the parts formed integral therewith will swing upwardly on the bar end 9 which will fulcrum on the floor surface 24 so that when the lever 16 has reached its full line position of Figure 2 a portion of the bottom edge of the door 23, adjacent the free edge of said door, will be disposed between the walls 8 and the pointed end 15 of the setscrew 14 will have penetrated a part of the bottom edge 25 so that said setscrew will prevent the door holder 6 from sliding outwardly of the door 23 in a direction from left to right of Figure 2 while the parts thereof are moving from their dotted line to their full line positions and after the parts are in their full line positions of Figure 2, the walls 8 will effectively prevent the door 23 from swinging in either direction relatively to the bar 7. With the door 23 thus wedged in an open position by the door holder 6, it will be readily apparent that it will be held rigidly so that a mortice may be cut in the door and a lock assembled thereon without the door moving while this work is being accomplished and any other operation may be performed on the door without removing it from its hinges.

With the pin 21 engaging the opening 18 the door holder 6 will effectively function for rigidly retaining the door in an open position, the bottom edge of which is disposed as much as an inch and one-half above the floor surface 24. By applying the pin 21 to the openings 12 and the opening 19 of the cam element 17, it will be readily apparent that the bar 7 will be nearer the floor 24 at its end 10 when the cam element 17 is in its full line position of Figure 2, so that the door holder 6 will then more readily function for accommodating a door, the bottom edge of which is disposed nearer the floor surface 24. Likewise, for doors which are disposed nearer the floor surface 24 the anchoring screw 14 is preferably positioned in one of the other openings 13 located nearer the lower end 9 of the bar 7.

With the threaded end of the setscrew 14 disposed substantially flush with the under side of the bar 7, after the lever 16 has been swung back to its dotted line position of Figure 2 so that the door holder 6 may be readily detached from engagement with the door 23, the lever 16 may then be swung clockwise until it is disposed against the under side of the bar 7, as illustrated in Figure 4, and the door holder 6 as thus folded may readily be stored in a tool box while not in use.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A door holder comprising an elongated bar adapted to be positioned beneath the bottom edge of a door and disposed longitudinally thereof and adapted to rest on a supporting surface disposed below the door, furcations projecting from one end of said bar and adapted to extend outwardly from the free edge of said door and having aligned openings adjacent their terminals, a lever having an opening adjacent one end thereof, said end being disposed between the furcations and with the lever opening aligned with the furcation openings, a pin detachably engaging said aligned openings and pivotally connecting the lever to the furcations, an elongated cam element projecting at an angle from said pivoted end of the lever having a smooth convexly rounded outer side and a rounded outer end, said outer side of the cam element and bottom edges of the furcations being adapted to rest upon the surface disposed beneath the door when the lever is in substantially an upright position, and said lever being swingable downwardly and outwardly relatively to the door whereby the outer side of the cam element will slide and fulcrum on the supporting surface to swing the furcations and the adjacent end of the bar upwardly and to cause the end of the bar disposed remote from the furcations to fulcrum on the supporting surface as the rounded outer end of the cam element moves slidably into engagement with said surface and beneath the pin for displacing a portion of the upper surface of the bar into wedging engagement with the bottom edge of the door, said rounded outer end of the bar passing directly under the pivot pin as the lever swings downwardly beyond a horizontal position to releasably lock the door holder in an operative position, and a piercing member adjustably mounted in said bar and rising from its upper surface and adapted to penetrate a portion of the bottom edge of the door to prevent the bar from sliding longitudinally thereof while the lever and cam element are swinging to operative positions for elevating the bar.

2. A door holder comprising an elongated bar adapted to be positioned beneath the bottom edge of a door and disposed longitudinally thereof and adapted to rest on a supporting surface disposed below the door, furcations projecting from one end of said bar and adapted to extend outwardly from the free edge of said door and having aligned openings adjacent their terminals, a lever having an opening adjacent one end thereof, said

end being disposed between the furcations and with the lever opening aligned with the furcation openings, a pin detachably engaging said aligned openings and pivotally connecting the lever to the furcations, an elongated cam element projecting at an angle from said pivoted end of the lever having a smooth convexly rounded outer side and a rounded outer end, said outer side of the cam element and bottom edges of the furcations being adapted to rest upon the surface disposed beneath the door when the lever is in substantially an upright position, and said lever being swingable downwardly and outwardly relatively to the door whereby the outer side of the cam element will slide and fulcrum on the supporting surface to swing the furcations and the adjacent end of the bar upwardly and to cause the end of the bar disposed remote from the furcations to fulcrum on the supporting surface as the rounded outer end of the cam element moves slidably into engagement with said surface and beneath the pin for displacing a portion of the upper surface of the bar into wedging engagement with the bottom edge of the door, said rounded outer end of the bar passing directly under the pivot pin as the lever swings downwardly beyond a horizontal position to releasably lock the door holder in an operative position, said bar having upstanding side walls rising from its side edges between which a portion of the door is disposed when a part of the bar is in wedging engagement with the bottom edge of the door, and a piercing member adjustably mounted in said bar and rising from its upper surface and adapted to penetrate a portion of the bottom of the door to prevent the bar from sliding longitudinally thereof while the lever and cam element are swinging to operative positions for elevating the bar.

3. A door holder comprising an elongated bar adapted to be disposed between the bottom edge of a door and a supporting surface disposed therebeneath and longitudinally of said bottom edge, furcations fixed to and projecting from one end of said bar and laterally spaced relatively to one another and adapted to extend outwardly from the free end of the door, and a cam and lever means pivotally mounted between said furcations and swingable relatively thereto whereby a smooth eccentric portion of the cam will slide and fulcrum on the supporting surface for elevating the furcations and the end of the bar adjacent thereto for moving said bar end into wedging engagement with a portion of the bottom edge of the door for rigidly retaining the door in an open position when the cam and lever means is swung in one direction, the opposite end of said bar being adapted to fulcrum on said surface when the furcations and first mentioned end of the bar are elevated by said cam means, the cam of said cam and lever means being disposed with its eccentric portion substantially coplanar with undersides of the furcations when the lever is in substantially an upright position whereby the furcations and eccentric cam portion are adapted to rest on the supporting surface.

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