G. F. VOIGHT.

DOOR HANGER.

APPLICATION FILED JULY 14, 1916.

1,223,451.

Patented Apr. 24, 1917.

2 SHEETS—SHEET 1.

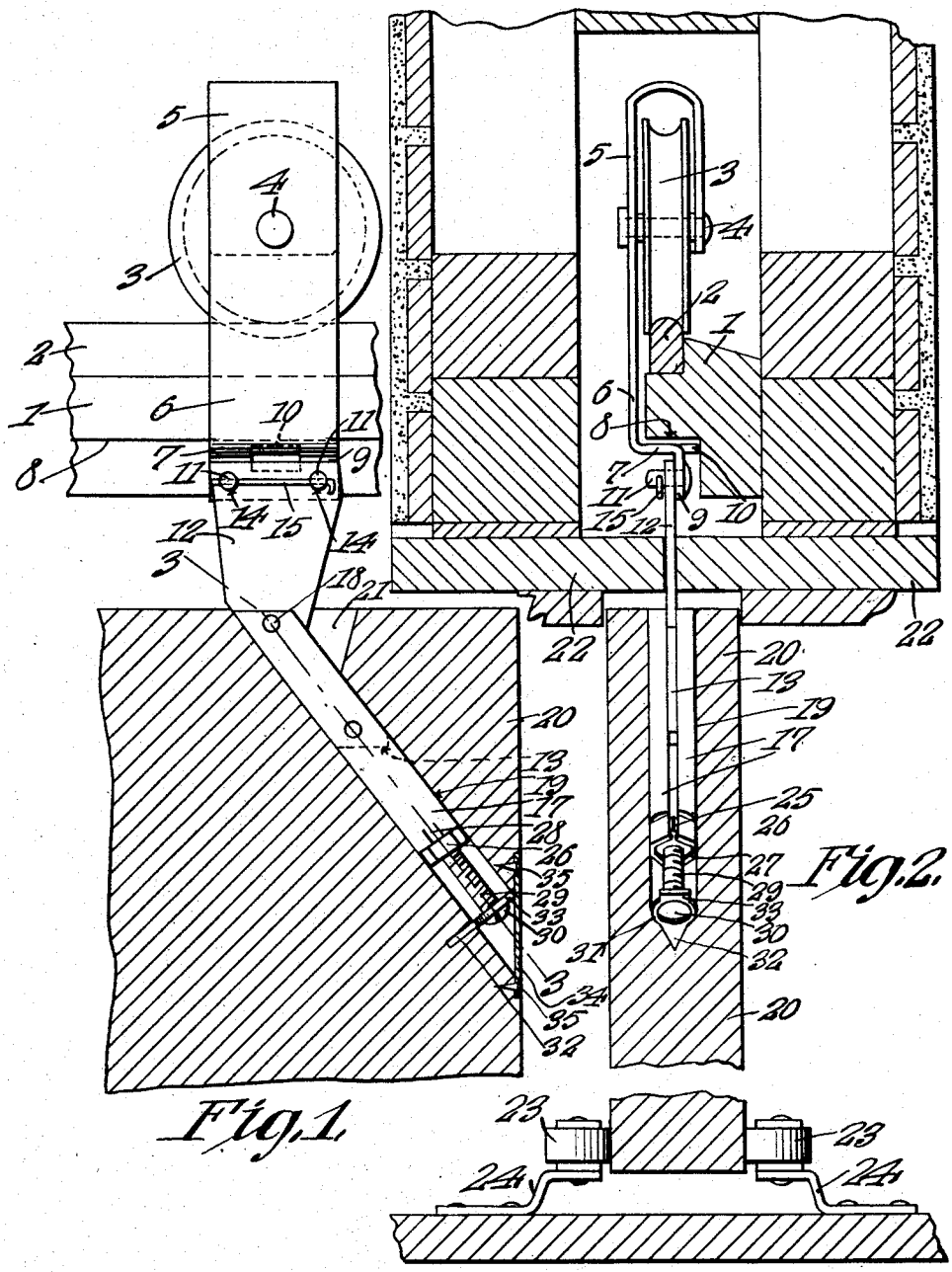


Fig. 1.

Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 6.

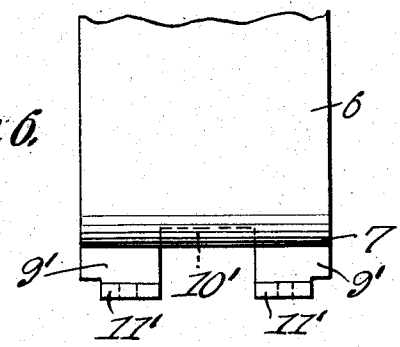


Fig. 7.

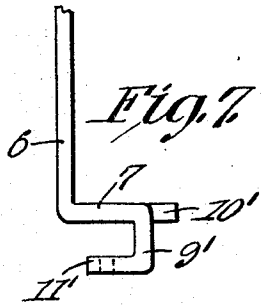


Fig. 8.

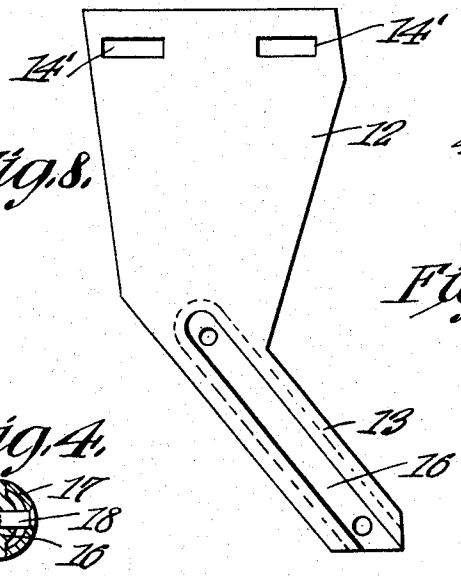


Fig. 4.

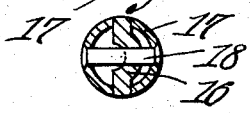


Fig. 5.

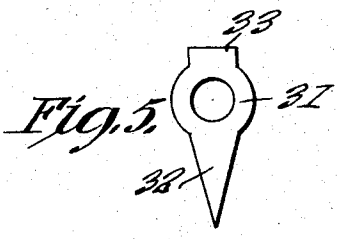
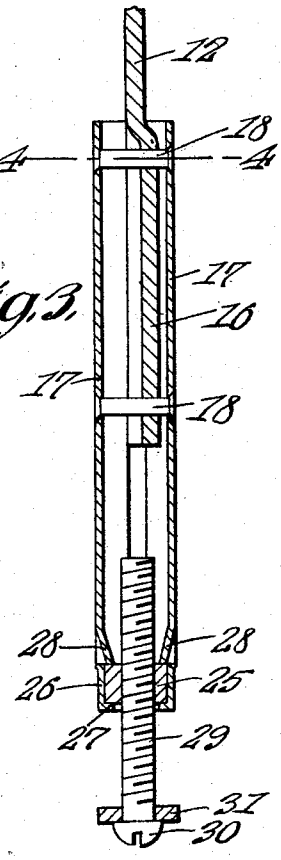


Fig. 3.



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UNITED STATES PATENT OFFICE.

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DOOR-HANGER.

1,223,451. Specification of Letters Patent. Patented Apr. 24, 1917.

Application filed July 14, 1916. Serial No. 109,332.

To all whom it may concern:

Be it known that I, GEORGE F. VOIGHT, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Door-Hanger, of which the following is a specification.

The present invention appertains to door hangers, and is particularly an improvement over the door hanger shown in my Patent No. 1,157,467 granted October 19, 1915.

It is the object of the invention to provide a novel and improved door hanger, composed chiefly of parts which can be readily stamped from sheet metal, the parts being readily and inexpensively manufactured and assembled, and the construction being convenient and practical in use and readily applied to the doors.

It is also the object of the invention to provide a door hanger which is not only simple in construction, but which can also be installed quickly and easily, and which will operate silently and smoothly, the device also being concealed so as to avoid any objectionable or unsightly appearance of the door, especially when the hanger is used upon sliding doors in residences.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation of the improved hanger, illustrating a fragmental portion of the track and one upper corner of the door in section.

Fig. 2 is an edge view of the hanger, showing the door and supporting structure in section.

Fig. 3 is an enlarged section taken on the line 3—3 of Fig. 1.

Fig. 4 is a cross section on the line 4—4 of Fig. 3.

Fig. 5 is a face view of the washer for the adjusting screw,

Fig. 6 is a side elevation of the lower portion of a modified upper hanger section.

Fig. 7 is an edge view of the part shown in Fig. 6.

Fig. 8 is a side elevation of the intermediate hanger section used with the upper hanger section shown in Figs. 6 and 7.

The hanger is illustrated as applied to the sliding door of a residence, but it is to be understood at the outset that the hanger can be used for supporting various sliding doors, and one of the hangers is provided at each of the upper corners of the door, although but a single hanger is illustrated and described.

In carrying out the invention, a horizontal track 1 composed of a wooden bar, or the like, at one side is secured to the supporting structure above the door way, and is preferably provided with an upper longitudinal rail 2 composed of a separate bar or strip, although this is not compulsory. The hanger has an upper grooved wheel 3 running upon the rail 2 and rotatable upon an axle 4 which carries a yoke 5 that straddles the wheel. Said yoke constitutes the upper section of the hanger, and is readily bent from a plate or strip of sheet metal. One limb of the yoke 5 projects downwardly beyond the other, as at 6, and depends partially across that side of the track 1 opposite the support for said track. The lower end of the limb or hanger section 6 has a portion 7 bent at right angles to underlie the wheel 3 and yoke 5 and to work snugly adjacent the downwardly facing wall of a longitudinal rabbet 8 with which the track 1 is provided below the rail 2. The portion 7 is provided with a depending lip or flange 9 constituting the lower end of the plate or strip, while the short limb of the yoke 5 constitutes the other end of said plate or strip. Projecting from the portion 7 flush therewith is an ear 10 struck from the lip 9 and forming an opening in said lip, the ear 10 projecting close adjacent to the vertical wall of the rabbet, as seen in Fig. 2. Secured to and carried by the depending lip 9 is a pair of outstanding pins or studs 11 below the portion 7 for supporting the intermediate hanger section.

The intermediate hanger section is composed of a plate of sheet metal having the

upper relatively wide web 12 and the oblique or inclined tongue 13 projecting downwardly from said web. The web 12 is provided adjacent its upper end with apertures 14 for receiving the studs 11, whereby the upper end of the intermediate section can be readily applied to and removed from the lower end of the upper hanger section. When the upper end of the web 12 is applied to the studs 11, the intermediate hanger section will lie in the median vertical plane of the hanger and wheel 3 below the rail 2. The web 12 is held upon the studs 11 against the lip 9 by a retaining pin 15 inserted through apertures in the studs 11 at that side of the web 12 opposite the lip 9, although individual retaining elements can be used for the studs. In order to stiffen the tongue 13 it may be provided with a longitudinal corrugation 16 struck toward one side.

A lower oblique or inclined hanger section is attached to the tongue 13, and is composed of opposite complementing sheet metal members 17 parallel with one another and of arcuate cross section, to jointly provide a sleeve or tubular part, the edges of the members 17 being spaced apart to provide longitudinal slots. The members 17 can be formed of lighter or thinner stock than the intermediate and upper hanger sections. The upper portions of the members 17 rest against the opposite sides of the tongue 13 of the intermediate hanger section in alinement with said tongue, and the members 17 are secured to said tongue by means of rivets 18 or other suitable securing means engaged through said members and tongue, the tongue terminating between the ends of said members. The members 17 are adapted to fit snugly in an oblique or inclined bore 19 drilled through the corner portion of the door 20 in the median plane of the door from the upper edge of the door to the corresponding vertical edge thereof, as clearly seen in Fig. 1. This bore can be readily drilled in the door, and the members 17 can be readily inserted into the bore from the upper end thereof to attach the hanger to the door. It is preferable to provide the upper edge of the door with a slot 21 extending from the upper end of the bore 19 for receiving the web 12 when the door is raised sufficiently.

With this arrangement, the web 12 projects upwardly from the door in the median plane thereof, and the head jambs 22 can be arranged relatively close together to provide a narrow slot therebetween for accommodating the web 12. In this manner, the slot is of minimum width, to prevent "pocket" draft therethrough which is common with most door hangers.

The lower edge of the door can be guided in any suitable manner, to prevent the sidewise swaying or swinging movement of the door. Thus, guide rollers 23 can bear against the opposite sides of the door adjacent the lower edge thereof, and can be mounted for rotation upon suitable supporting brackets 24 attached to the floor.

As a means for adjusting the door vertically, a hexagonal or non-circular nut 25 is fitted between the lower ends of the members 17, which are contracted to provide the hexagonal or non-circular portion 26 embracing the nut and preventing the rotation of said nut. The lower ends of the members 17 have inturned lips or flanges 27 supporting the nut, and said members are provided immediately above the portion 26 with instruck downwardly projecting tongues 28 extending over the nut and holding it upon the flanges 27, to prevent the longitudinal movement of the nut relative to the members 17. An adjusting screw 29 is threaded through the nut and is provided with a head 30 at its lower end adapted for the engagement of a screw driver or other implement for rotating the screw, and an abutment washer 31 is disposable in the lower end portion of the bore 19. The screw 29 extends through the aperture of said washer and the head of the screw bears against the lower surface of said washer. The washer 31 is provided with a pointed spur or prong 32 which can be readily driven into the wood adjacent the lower end of the bore 19, so that the washer is disposed within the bore at right angles therewith, as seen in Fig. 1. The washer 31 is provided diametrically opposite the prong 32 with a squared driving portion 33 to receive the blows of a hammer or other driving implement whereby the washer can be readily driven into place obliquely downward.

It is preferable to cover the lower end of the bore 19 by a cover plate 34, to hide the washer, bore and screw head, and the cover plate 34 is secured to the vertical edge of the door by means of screws 35 or the like. This cover plate is applied after the adjustments have been made, and can be readily removed for purpose of removing or adjusting the parts.

In order to adjust the door vertically, the screw 29 is rotated in the proper direction, and in rotating within the nut 25 will either move upwardly or downwardly relative to the nut, to correspondingly move the door.

In the construction illustrated in Figs. 6, 7 and 8, the portion 7 of the upper hanger section 6 has the depending lips 9′ and the ear or lip 10′ flush with the portion 7 between the lips 9′, and the portions or lips 9′ have outstanding lugs 11′ below the portion 7 and insertible through elongated slots 14′ with which the web 12 is provided. The lugs 11′ are apertured for the reception of retaining elements.

Various changes and alterations can be made within the scope of what is hereinafter

claimed, without departing from the spirit of the invention. Thus, any suitable track can be used, and more than one wheel 3 can be used for each hanger. The nut 25 can be held in place by any suitable means instead of the inwardly pressed portion 26, flanges 27 and tongues 28. The closure or finish plate 34 can either bear against the edge of the door, or can be embedded or mortised in the edge of the door, as seen in Fig. 1.

Having thus described the invention, what is claimed as new is:

1. A door hanger embodying a hanger section having an oblique tongue, a pair of complementing members secured to the opposite sides of said tongue to fit slidably in an oblique bore drilled in a door, said members projecting beyond the end of said tongue, the projecting portions of said members having means for receiving and holding a nut, a nut disposed between said members and held by said means, and an adjusting screw extending between said members and threaded through the nut.

2. A door hanger embodying a hanger section having an oblique downwardly projecting tongue, a pair of members of arcuate cross section resting against the opposite sides of said tongue, said tongue having a longitudinal corrugation struck to one side, securing means engaged through said members and corrugation to clamp the parts together, and adjusting means connected to and partially located between said members adjacent the lower ends thereof.

3. A door hanger embodying a hanger section having an oblique tongue, a pair of obliquely arranged members of arcuate cross section secured to the opposite sides of said tongue, a nut between the lower ends of said members, the lower ends of said members being pressed inwardly to engage the nut and prevent the rotation thereof, the lower ends of said members having inturned lips upon which the nut seats, said members having instruck portions above the nut to hold it seated on said lips, and an adjusting screw engaging the nut.

4. The combination with a door having an oblique bore drilled therethrough from one upright edge to its upper end and a slot in its upper end extending from the upper end of said bore, an oblique hanger section slidable in said bore and comprising a pair of parallel longitudinal members, a second hanger section comprising a plate disposed in a vertical plane and having a lower portion extending between and secured to said members, the plate being movable into said slot, and means within the lower portion of said bore connected to and extending between the lower ends of said members for adjusting said members in the bore.

5. The combination with a door having an oblique bore drilled therethrough from one upright edge to its upper end, an oblique hanger section slidable in said bore and comprising a pair of spaced longitudinal members, a second hanger section comprising a plate disposed in a vertical plane and having a lower portion extending between and secured to the upper portions of said members, said door having a slot in its upper end extending from the upper end of said bore to receive said plate, a nut member between the lower ends of the aforesaid members, a washer member within the lower end of said bore, and a screw extending through the washer member and threaded into the nut member between the lower ends of the first mentioned members.

6. The combination with a door having an oblique bore drilled therethrough from one upright edge to its upper end, an oblique hanger section adjustable in said bore, a vertical plate connected to the upper end of said hanger section, an upper hanger section, a wheel assembled with the upper section, the lower end of the upper hanger section having a portion extending angularly under said wheel, said portion having a depending lip and an ear struck therefrom flush with said portion at the opposite side of said lip, said lip having outstanding studs below said portion opposite said ear, and the upper end of said plate having apertures for receiving said studs.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

GEORGE F. VOIGHT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."