(No Model.)

W. BARRY.

DOOR HANGER.

No. 418,638. Patented Dec. 31, 1889.

FIG-1-

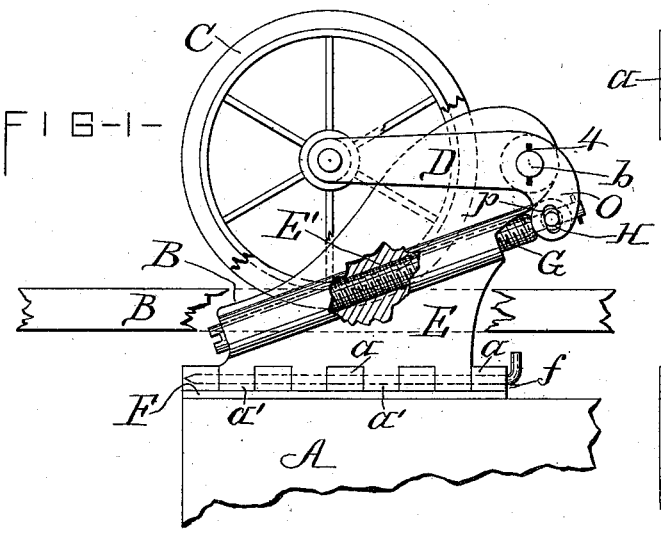


FIG-4-

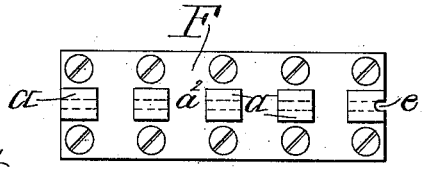


FIG-5-

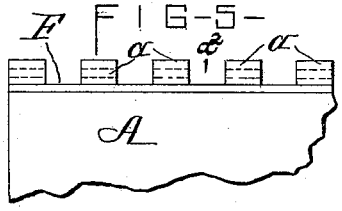


FIG-6-

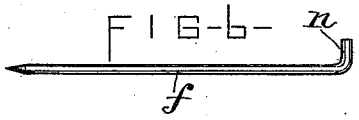


FIG-2-

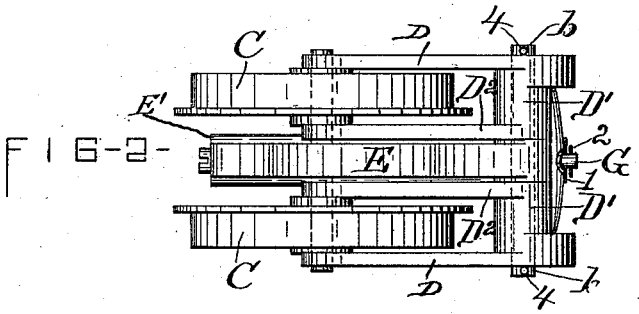


FIG-7-

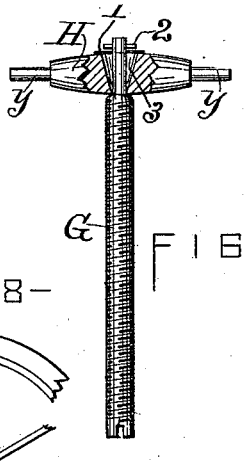


FIG-3-

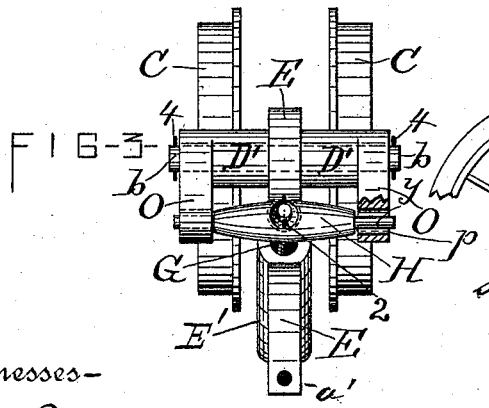
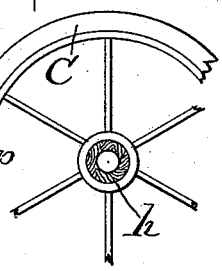


FIG-8-



Witnesses-

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UNITED STATES PATENT OFFICE.

WILLIAM BARRY, OF SYRACUSE, NEW YORK.

DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 418,638, dated December 31, 1889.

Application filed August 6, 1888. Serial No. 282,023. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BARRY, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented a certain new and useful Improvement in Door-Hangers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

My invention relates to that class of double-track door-hangers having jointed connection between the wheel frame or support and the door, and which jointed connection is intended to facilitate the passage of the door-hanger over an uneven trackway, and to enable the tread of the wheels, in a measure, to adjust themselves thereto.

The object of my invention, primarily, is to provide a door-hanger which shall obviate the tendency to skew or run from the track, or to rock onto the edges of the treads of the wheels and climb the track and pull the door sidewise against the casing or adjacent parts, which causes the door to bind, and which is one of the defects of hangers having each pair of wheels mounted upon one and the same axle in laterally-rocking bearings; and the object of the invention is, secondly, to provide means for conveniently and expeditiously attaching the hanger to the door without cutting the latter, and which shall be simple and inexpensive in construction, noiseless, and with the least possible amount of friction in operation; and to that end my invention consists in the improved construction and combination of parts hereinafter fully described, and specifically set forth in the claims.

In the drawings, Figure 1 is a side elevation with parts broken away to show the construction of hanger attached to door A. Fig. 2 is a top plan view of hanger. Fig. 3 is an inner end view of Figs. 1 and 2. Fig. 4 is a top view of suspending-plate F; and Fig. 5 is a side elevation of the same, showing it attached to the door. Fig. 6 shows the form of the key which retains the hanger-bracket in the suspending-plate shown in dotted lines in Fig. 1. Fig. 7 is a top plan view of the adjusting-screw, washer, pin, and evener, with parts of evener broken away, showing their position in relation to each other and the form of opening through evener. Fig. 8 is a side elevation of wheel, partly broken away, showing construction of hub.

A represents the door suspended from the hangers, and B B denote the double track on which the hangers are mounted.

F is an elongated metal plate, which is rigidly secured to the top of the door by screws passing vertically through said plate and into the door or by any other suitable means, and formed with a series of upward-projecting lugs *a a*, which are provided with coinciding perforations on a line parallel with the top edge of the door, and which are located a suitable distance apart so as to leave equal spaces or recesses a^2 between the several lugs of the series, the inner lug being provided with a notch *e*, for the purpose hereinafter described.

E represents a bracket which is formed with a series of downwardly-projecting lugs *a' a'* on its base, formed similar to and corresponding with the series of lugs of the plate F, which lugs enter between the lugs *a a* of the plate F, and are perforated correspondingly, and through the said two sets of lugs passes the coupling pin or key *f*. (Shown in Fig. 6 of the drawings.) It should be observed that these intermeshing lugs *a* and *a'* and the spaces between the same are formed with square bearings, so that a rigid non-flexible connection is formed, as is clearly evident, between the door and hanger. The said bracket has a screw-threaded socket E' extending diagonally through it from the front to the rear edge thereof, and in said socket is seated the adjusting-screw G, as shown in Fig. 1 of the drawings. The upper or inner end of the bracket has projecting from opposite sides thereof the journals *b b*, which serve as the axial supports or fulcrums of the two rock-arms or double wheel-frames D D^2. In the outer end of each of these journals is a hole for the reception of the pin 4 for retaining the rock-arm on its fulcrum, as shown in Figs. 1, 2, and 3 of the drawings. The key *f* (shown in Fig. 6 of the drawings) has a prolonged body, pointed at one end, and has the opposite end *n* bent at a right angle to form

a head thereon. The pointed end facilitates its insertion in the holes of the lugs *a a'*, as hereinbefore stated. The notch *e* in the inner lug of the plate F retains the bent end or head of the key *f* in a vertical position, and by this head the key can be withdrawn from its seat when desired. The two rock-arms D D are each formed with a socket or tubular bearing D' extending from one side thereof, and having integral with it an auxiliary arm D^2, which stands by the side of and parallel with the arm D, the two pairs of arms D and D^2 being mounted on the hereinbefore-described journals *b b* by the socket D'. Between the free ends of each pair or set of arms, and pivoted thereto, is one of the wheels C, by which the hanger is mounted on one of the tracks. The opposite end of the arm D is formed with a downward crank-arm O, having elongated bearing *p* in the end thereof. Said bearings of the said two crank-arms are for the reception of the journals *y y* on the ends of the evener H.

The wheels C are preferably constructed with flanges on their treads, in the usual way, for the purpose of stiffening and guiding the same on the track. The interior of the hub of each wheel is lined or bushed with boxwood or similar material, as shown at *h* in Fig. 8 of the drawings, to avoid the friction and noise incident to the rubbing of two metal surfaces against each other when running dry.

The evener H is formed with journals *y y* at opposite ends and with a conical opening 3 in the center for the reception of the circumferentially-reduced end of the adjusting-screw G, as shown in Fig. 7 of the drawings. This opening allows a rocking movement of the evener and a pivotal movement of the adjusting-crew. The construction and operation of this evener, which controls the movement of the rock-arms, will be readily understood by reference to the drawings. (See Figs. 1, 2, 3, and 7.) The adjusting-screw G has a plain, straight, and threaded body, slotted at one end for the application of a screw-driver, and having the opposite end reduced in diameter, so as to form a shoulder, by which it abuts against the side of the evener H. A pin 2 passes transversely through the reduced end of the adjusting-screw and completes the coupling thereof with the evener.

The hanger is applied to the door and operated as follows: The tracks having been erected in the usual manner, the upper wheels and brackets are inserted through the usual pocket between the tracks, with the slotted ends of the adjusting-screw facing outward or toward the edge of the door on each side. Then the door is connected to the hanger by inserting the lugs *a' a'* between the lugs *a a* and inserting the coupling-pin *f* into said lugs. The adjusting-screws are next turned until the door hangs plumb and at the desired height from the floor, when it will always move freely into or out of the opening in the partition at opposite sides of the door, the vertical play of the wheels allowing them to pass over any unevenness of the track, while maintaining the tread of the wheels flat upon the same without causing any lateral movement of the door. It will be observed that such accurate and automatic adjustment or conformation of the hanger to the track is due mainly to the features of the rollers being pivoted separately and independently of each other on the supporting-frames, which latter are also oscillatory independently of each other.

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

1. A double-track door-hanger comprising a bracket secured to the top of the door, two sets of rock-arms pivoted to said bracket and adapted to oscillate vertically and independently of each other, wheels pivoted separate from each other to the said rock-arms, a vertically-oscillating evener connected to the two rock-arms, and a longitudinally-adjustable coupling connecting the evener with the door, substantially as set forth.

2. In a door-hanger, the combination of a bracket or support from which the door is suspended, two sets of rock-arms pivoted to the bracket, two rollers journaled on the rock-arms and fitted to run on tracks, an evener connecting the rock-arms, and an adjusting-screw for raising and lowering the door, substantially as specified.

3. In a door-hanger, the combination of a bracket supporting the door, two sets of rock-arms pivoted thereto, two track-wheels journaled in said rock-arms to rest on separate tracks, an evener connecting said sets of rock-arms and allowing independent play of the same, and having a conical central bearing-opening and an adjusting-screw on which said evener is fulcrumed to allow oscillating movement of the same, whereby when one wheel is thrown up the other is thrown down, thereby keeping the heads of both wheels in flat contact with their respective tracks, substantially as described.

4 In a door-hanger, the combination of the bracket to support the door and having the two opposite journals, two sets of rock-arms mounted on said journals and each provided with a downwardly-extending crank-arm, a pair of track-wheels mounted in said rock-arms, an oscillating evener loosely connecting said crank-arms, so that when one wheel is thrown up the other wheel will be correspondingly lowered, and a fulcrum for said evener, upon which the same is centrally mounted, substantially as described.

5. In a door-hanger, the combination of the bracket supporting the door and carrying the track-wheels and provided on its base with a series of downwardly-projecting lugs having spaces between the same, the plate secured

to the top edge of the door having a corresponding series of lugs and spaces intermeshing with the lugs and spaces of the hanger-bracket, said lugs forming square bearings, and forming a rigid and non-flexible connection between the door and hanger, and a key passing through said lugs and thereby locking the same together, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM BARRY.

Witnesses:
CHAS. C. WHEELER,
H. S. WALRATH.