P. BERDAR.

AUTOMATIC DOOR MAT.

APPLICATION FILED DEC. 2, 1916.

1,277,834.

Patented Sept. 3, 1918.

2 SHEETS—SHEET 1.

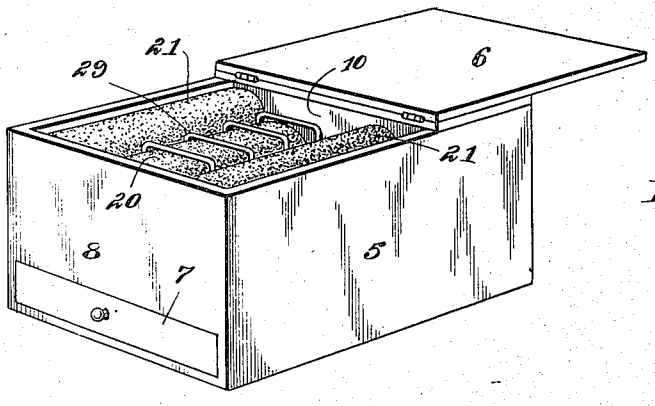


Fig. 1

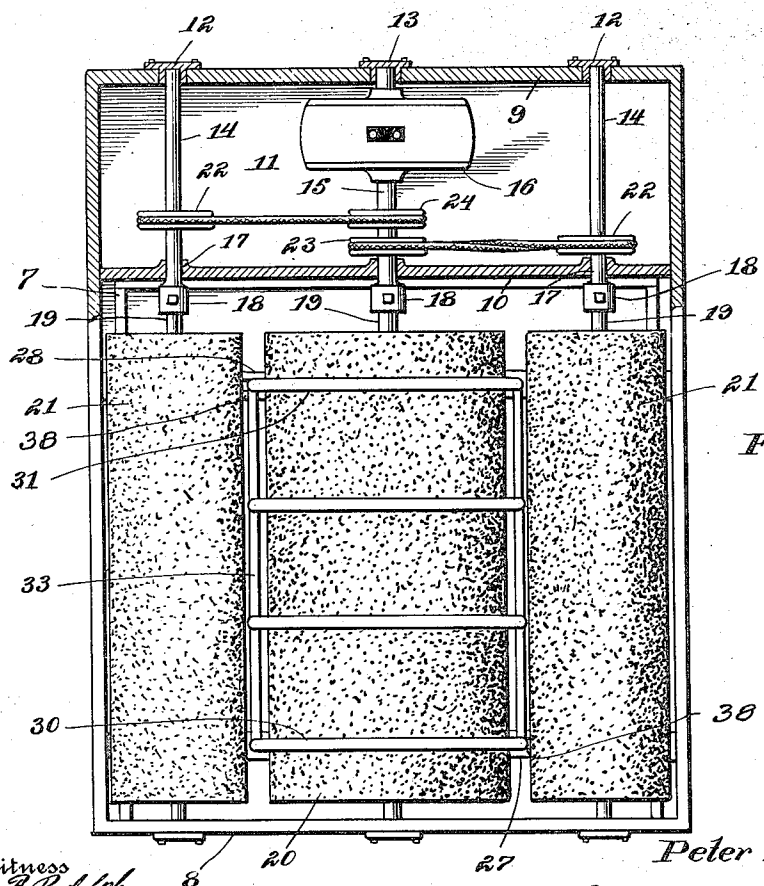


Fig. 2

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Fig. 3

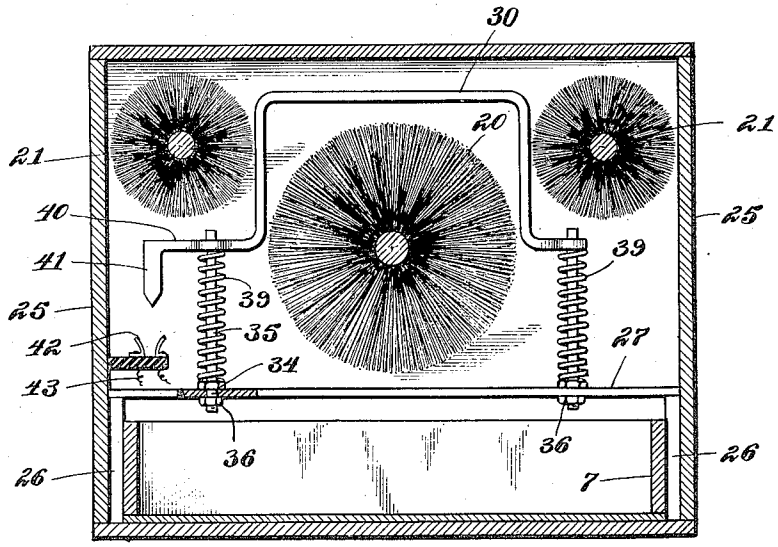
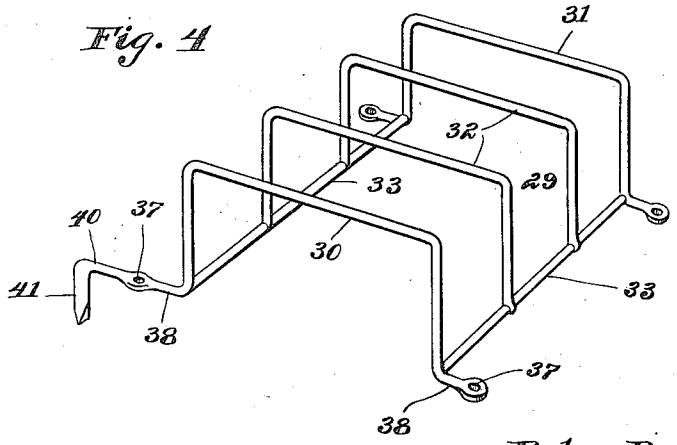


Fig. 4



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UNITED STATES PATENT OFFICE.

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AUTOMATIC DOOR-MAT.

1,277,834. Specification of Letters Patent. Patented Sept. 3, 1918.

Application filed December 2, 1916. Serial No. 134,713.

To all whom it may concern:

Be it known that I, PETER BERDAR, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Automatic Door-Mats, of which the following is a specification.

The present invention contemplates the production of a shoe cleaning device adaptable for removing dust or dirt from a shoe while it is on the wearer's foot, and preferably located at the entrance of doors and public buildings, thus adaptable as a door mat.

An object of the invention is the provision of a device of the above stated character, which shall be simple in construction, durable in use, and wherein the shoe cleaning brushes will be automatically operated by the closing of a circuit when the operator places his foot upon the tread frame of the apparatus.

Another object of the invention is the provision of a shoe cleaning device of the above stated character wherein springs are employed for automatically returning and supporting the tread frame to normal position and which in turn automatically stops the operation of the brushes.

With the above and other objects in view, the invention consists in the novel features, details of construction and combination of parts which will hereinafter be more fully set forth, illustrated in the accompanying drawings and pointed out in the appended claims.

Figure 1 is a perspective view of the apparatus constructed in accordance with my invention;

Fig. 2 is a top plan view with a portion of the casing shown in section and the tread frame removed, clearly illustrating the operating means for the brushes;

Fig. 3 is a cross sectional view; and

Fig. 4 is a perspective view of the frame.

Referring more particularly to the accompanying drawing, 5 denotes the casing, 6 a hingedly mounted closure therefor and 7 a drawer slidably mounted through the front wall 8 of the casing and serving to collect the dust or dirt deposited within said casing, while extending transversely across the casing in spaced parallelism with the rear end wall 9 thereof, is a partition wall 10 forming at the rear end of the casing a compartment 11. The rear wall 9 is provided with a series of bearings 12 and 13 respectively. The bearings 12 have journaled therein stub shafts 14 and a motor shaft 15 of the motor 16 is journaled in bearings 13. The motor shaft, as well as the stub shafts are loosely journaled within openings 17 of the partition wall 10 and protrude therethrough. The protruding ends of said shafts are each provided with a suitable coupling 18 for coupling to the respective shafts the shafts 19 of the intermediate and end shoe brushes 20 and 21 respectively. These brushes are disposed lengthwise of the casing and in parallelism one to the other and the intermediate brush 20 is arranged below the plane of the pair of end brushes 21, for a purpose which will hereinafter be more fully set forth. Carried by each of the stub shafts 14 is a pulley 22, whereas mounted upon the motor shaft 15 is a pair of pulleys 23 and 24. A suitable belt is trained over the pulleys 22 and 24, while a second crossed belt is trained over the pulleys 23 and 22, thus in starting the motor motion will be imparted to one of the brushes 21 in a clockwise direction, while the opposite end brush will be rotated in the opposite or in an anti-clockwise direction, and it might be well at this time to state that the intermediate brush 20 is adapted for the cleaning of the dirt from the bottom of the sole of the shoe, while the side or end brushes 21 will cleanse the sides of the shoe, when the user of the device is desirous of removing from his shoes any dust or dirt which may have accumulated thereon.

Secured interiorly of the casing 5 to the opposite side walls 25 thereof at points adjacent to the respective front and rear walls 8 and 9 thereof, are strips 26 having secured to their upper ends cross bars 27 and 28, thus arranging the cross bars transversely of the casing and slightly elevated from the bottom thereof, and these cross bars are so designed that a vertical movable tread frame 29 will be supported thereon and within the casing 5 of my device.

The said tread frame 29 is of the skeleton type, consisting of a front arm 30, a rear arm 31, and a pair of intermediate arms 32. Each of said arms is connected at the lower ends of their legs through the medium of a link 33. Fastened in the openings 34 of each of the cross bars 27 and 28 is a pair of uprights in the form of rods, denoted by the character 35, and these rods are permanently connected to each of the cross bars 27 and 28

in spaced vertical relation one to the other through the medium of nuts 36. The upper ends or headed extremities of each of the said uprights 35 is loosely mounted in the eyes 37 terminally provided on the outward laterally extending portions 38 formed contiguous with the lower ends of the legs of the respective front and rear arms of the tread frame 29. Encircling each of the uprights 35 is a strong helical spring 39 reposing at one end on the cross bars 27 and 28, while the opposite or upper free end of the spring contacts with the bearing eye 37 of the laterally extending portions 38, thus it will be seen by a construction of this character, will yieldably support the frame on the cross bars and adapt the frame to be depressed within the casing 5, upon the engagement of the foot of the wearer upon the horizontal connecting portions of each of said frames. Said laterally extending portions 38 arrange the frame above the intermediate cleaning brush 20 and positions the side or end brushes 21 exteriorly of the limbs or legs of each of the arms, thus when the frame is depressed against the tension of the springs 39, will afford sufficient clearance of the side brushes in order that the cleaning operation of the shoe will be satisfactorily perfected. One of the bearing eyes 37 of the laterally extending portions 38 provided on the front arm 30 is further provided with an angularly extending shank 40 having connected to the outer extremity thereof a depending movable contact 41. The character 42 denotes a fixed contact laterally secured to one of the side walls 25 of the casing at a point below and in vertical alinement with the movable contact 41, and a suitable wiring 43 leads off from the fixed contact to the motor 16. Consequently, when the frame is depressed the movable contact 41 will be moved into engagement with the fixed contact 42, thereby closing the circuit and operating the motor 16, which in turn will drive the two cleaning brushes and cause the brushes to thoroughly cleanse the shoes of the wearer. After the brushes have performed a satisfactory cleansing of the shoes, the helical spring 39 through the action of lifting the tread frame 29, will at the same time elevate the movable contact 41, breaking the circuit and stopping the motor.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of construction and the method of operation will be readily apparent to those skilled in the art to which the invention relates, and while I have described the principles of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the appended claims.

What is claimed as new, is:

1. A shoe cleaning device embodying a casing, an intermediate and end motor driven brushes journaled in and lengthwise of said casing, spaced cross bars in said casing, a tread frame having eyes and overlying the intermediate brush, upright bolts fixedly secured at one end to said cross bars, the upper ends of said bolts loosely extending through the eyes of said frame for mounting the frame within the casing for vertical sliding movement, and a spring embracing each of said bolts and confined between the bottom of said frame and the top of said cross bars.

2. A shoe cleaning device embodying a casing, spaced cross bars in said casing, a fixed contact within and extending laterally from said casing, an intermediate and end motor driven brushes journaled in said casing, an inverted skeleton tread frame formed integral at one end with a depending movable contact, said frame being provided with eyes and overlying the intermediate brush, bolts fixedly connected at one end thereof to said cross bars, the opposite end of the bolts loosely projecting through the eyes of the tread frame and adapting the frame to be moved for bringing the movable contact into engagement with the fixed contact, and a spring embracing each of said bolts for releasing the movable contact from said fixed contact.

In testimony whereof I affix my signature.

PETER BERDAR.