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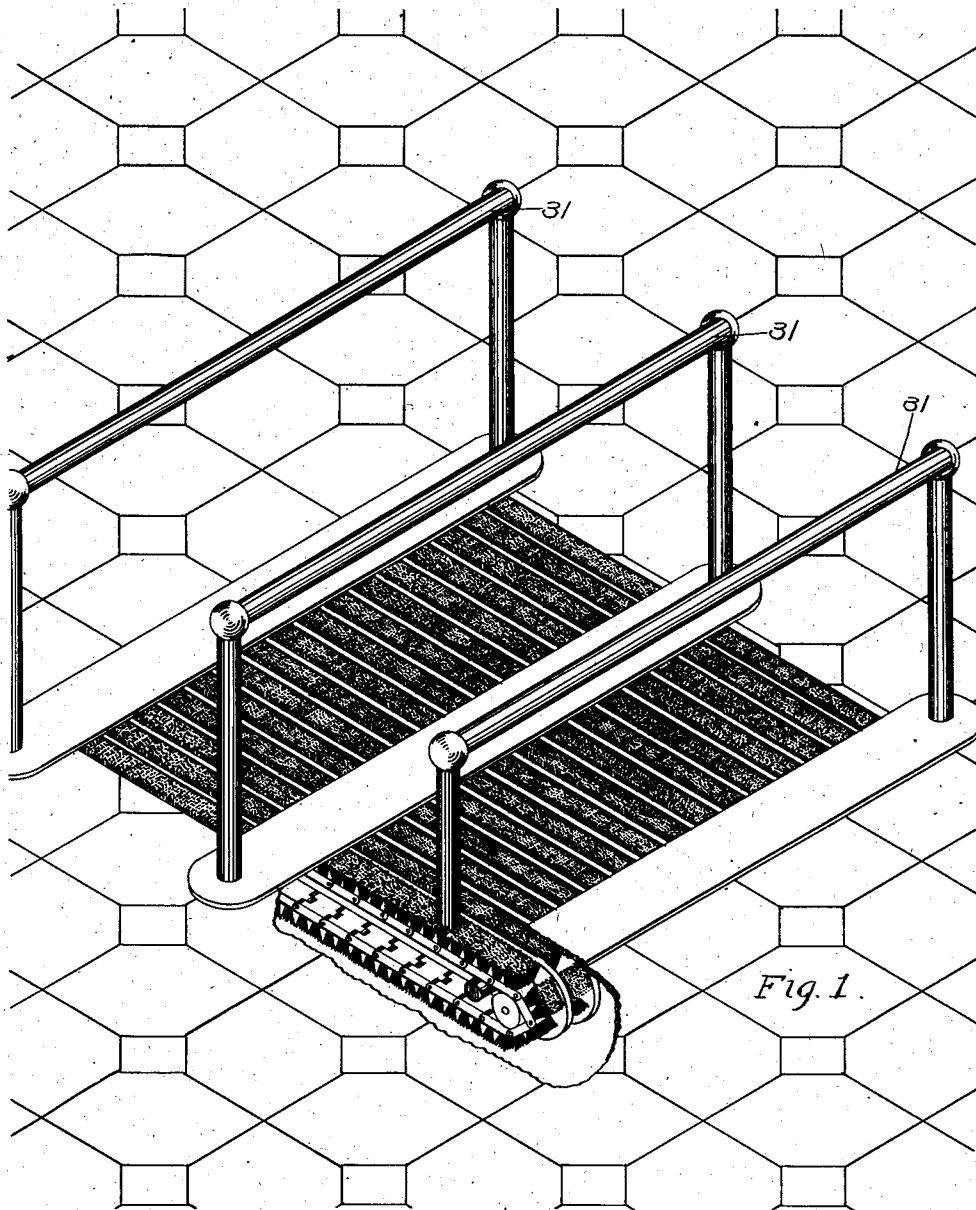
No. 823,972.

PATENTED JUNE 19, 1906.

W. C. RICHARDSON.
DOOR MAT.

APPLICATION FILED MAR. 27, 1905.

2 SHEETS—SHEET 1.



Witnesses,

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H. W. Jelco.

Inventor,

William C. Richardson
by
Richard C. Elliott
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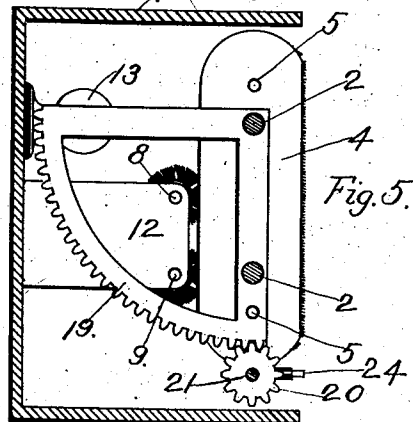
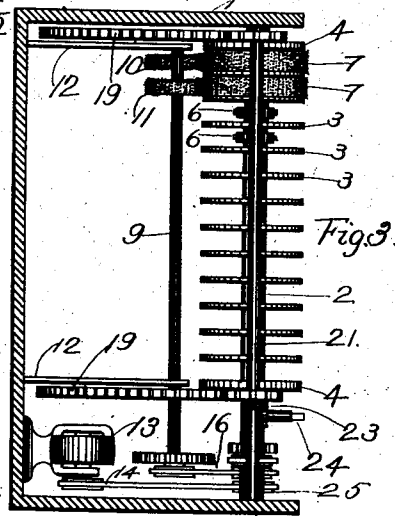
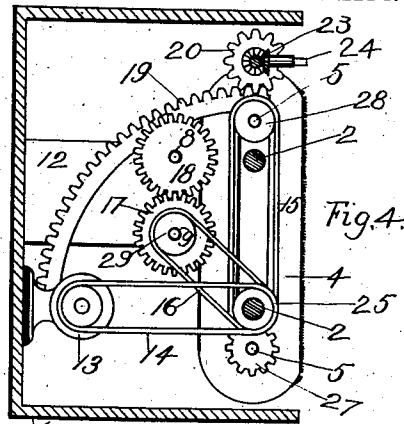
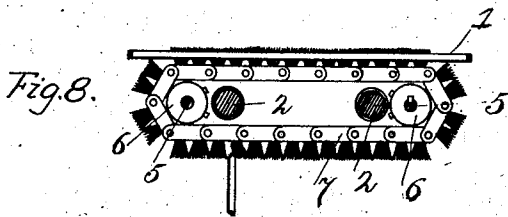
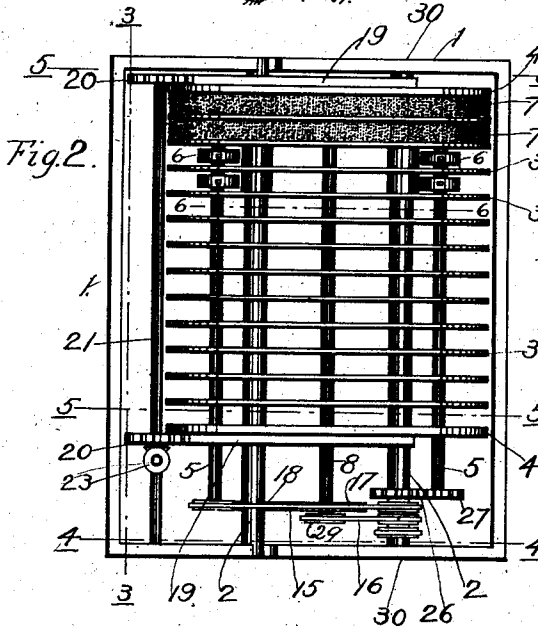
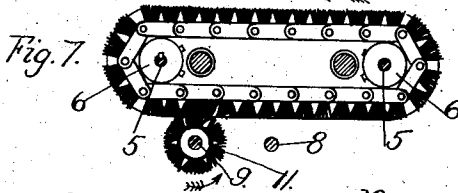
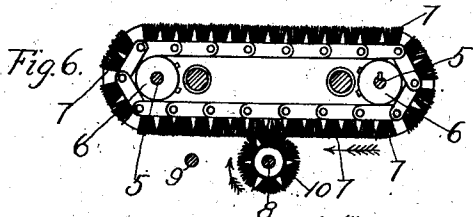
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2 SHEETS—SHEET 2.



Witnesses,

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UNITED STATES PATENT OFFICE.

WILLIAM C. RICHARDSON, OF MYSTIC, CONNECTICUT.

DOOR-MAT.

No. 823,972.

Specification of Letters Patent.

Patented June 19, 1906.

Application filed March 27, 1905. Serial No. 252,180.

To all whom it may concern:

Be it known that I, WILLIAM C. RICHARDSON, a citizen of the United States, residing at Mystic, county of New London, and State of Connecticut, have invented certain new and useful Improvements in Door-Mats, of which the following is a specification, reference being had to the drawings accompanying the same.

My invention relates to a door-mat composed of a series of moving brushes arranged and adapted to automatically remove the dirt from the shoes or boots of persons as they walk upon said series of movable brushes.

The objects of my invention are to provide means located near the entrance of a building whereby the boots or shoes of persons walking upon the device will be automatically cleaned of the refuse of the street to prevent its being tracked into the halls and corridors of the building.

Another object of my device is to so construct a door-mat that the brushes thereon will be cleaned of the dirt removed from the boots and shoes and deposited in a receptacle underneath same, where it can be readily disinfected and removed.

In the drawings accompanying this specification, Figure 1 is an isometric plan view of my device as applied to and secured in the floor of a building. Fig. 2 is a plan of my device with a portion of the brushes removed. Fig. 3 is a sectional elevation through line 3 3 of Fig. 2. Fig. 4 is a sectional elevation through line 4 4 of Fig. 2. Fig. 5 is a sectional elevation through line 5 5 of Fig. 2. Fig. 6 is an end elevation of one set of brushes, showing the shafts and sprockets upon which they are mounted, together with one of the set of cleaning-brushes. Fig. 7 is a view similar to that shown in Fig. 6, showing another set of cleaning-brushes. Fig. 8 is a sectional view of a modified form of my device.

In the drawings illustrating my invention, 1 represents the frame or casing, to which my device is attached, said casing 1 having bearings in its side walls, in which the shafts 2 2 have a bearing. Upon said shafts 2 2 are mounted the treads 3 3. The treads 4 4 are made thicker in order to furnish bearings for the shafts 5 5. Mounted on shafts 5 5 are the sprocket-wheels 6 6, which guide and move the sections 7 7 7, &c., of the brushes.

It will be noted in Figs. 6 and 7 that the first, third, fifth, &c., of the series of brushes 7 7 revolve in one direction and the remaining of the series in the opposite direction. The right hand of said sprockets 6, as shown in Fig. 6, is keyed to the shaft 5. The other of said sprockets shown in said figure is loose upon said shaft, so that it may revolve thereon. In Fig. 7 is shown the next brush to that of Fig. 6, in which the left-hand sprocket 6 is secured to the shaft 5, the other of said sprockets 6 being loose thereon. Upon the shaft 8 is mounted a series of cleaning-brushes 10, secured thereto in such manner that they revolve therewith, the brush 10 being so placed that the bristles contact with the series of brushes 7 underneath the framework in order to clear the brushes 7 7, &c., of any dirt lodged thereon in the operation of cleaning boots or shoes. The shaft 9 has mounted thereon the brush 11, rotating in an opposite direction from the series of brushes 10, which series of brushes 11 clean the brushes 7, moving in an opposite direction from the series shown in Fig. 6.

12 is an upright provided with bearings in which are mounted the shafts 8 and 9 in such manner as to freely revolve therein.

13 represents an electric motor or other suitable means for moving the brushes 7 7, &c., and for revolving the cleaning-brushes 10 and 11. In case an electric motor is used a belt, as 14, runs over a pulley on said motor and over a sleeve 25 on one of the shafts 2, which sleeve has two other pulleys formed thereon, and the gear 26, which meshes with the gear 27 to drive the brushes 7. The belt 15 runs from one of said pulleys to a pulley 28, mounted on one of the shafts 5, to drive one of the series of brushes 7. Another belt 16 runs from one of the pulleys 25 to a pulley 29, secured to the shaft 9, to revolve same and to revolve the shaft 9 through the medium of the gears 17 and 18, secured upon said shafts 9 and 8.

19 19 represent segments of a gear which is a part of the treads 4 4, which segments have teeth thereon adapted to enmesh with the gears 20 20. Said gears 20 20 are mounted upon the shaft 21. Said shaft 21 has a bearing at each of its ends in the frame 1. The shaft 21 is revolved, by means of the bevel-gears 23, through the medium of the shaft 24, which has a square end thereon

adapted to receive a wrench. The purpose of the segments 19 and the gears 20 is to revolve the whole framework supporting the brushes around the bearing 30 of one of the shafts 2 to swing it upwardly in order to get into the bottom of the framework 2 to clean out the dirt accumulated there or to enable repairs or adjustment to be made to the different portions of the mechanism.

31 31 31 represent hand-rails so placed that persons coming into the entrance of a building will be obliged to walk upon the moving brushes in order that their shoes may be cleaned.

The operation of my device is as follows: The door-mat is designed to be placed in front of the entrance-door of a building and the rails 31 31 set in such position that persons entering at the door will be obliged to walk across the moving brushes. The brushes may all be moved in one direction or the first in one direction and the second in the other direction, and so on. A person walking across the brush steps upon and is borne up by the treads 3 3, above which the bristles of the brush project slightly, as is shown in Fig. 3, above the treads in order to reach the hollow of the foot and the edges of the soles of a boot or shoe. The said movable brushes and the cleaning-brushes may be revolved or operated through any suitable source of power, such as a steam-engine, water-motor, electric motor, &c., the source of power not being a part of my invention.

Having described my invention, what I claim is—

1. A door-mat, comprising a series of flat brushes pivoted end to end to form an endless belt; means for moving said brushes parallel to the surface of supports for supporting the feet of a person walking upon said brushes; and said supports.

2. A door-mat comprising a series of endless chains having brush-surfaces on their outer faces; means for moving said brushes; means for supporting the feet of a person walking upon said brushes; and means for automatically cleaning said brushes.

3. A door-mat comprising a series of endless chains having flat brush-surfaces on their outer faces; means for supporting and moving said brushes in a vertical plane; and means for automatically cleaning said movable brushes mounted to contact therewith.

4. In a door-mat having movable cleaning-surfaces comprised of a series of movable brushes; a series of supports adjacent each series of brushes; two series of revolving brushes for cleaning said movable brushes; means for moving all said brushes; and a receptacle for holding the dirt.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses, this the 24th day of March, 1905.

WILLIAM C. RICHARDSON.

Witnesses:

R. P. ELLIOTT,
H. M. KELSO.