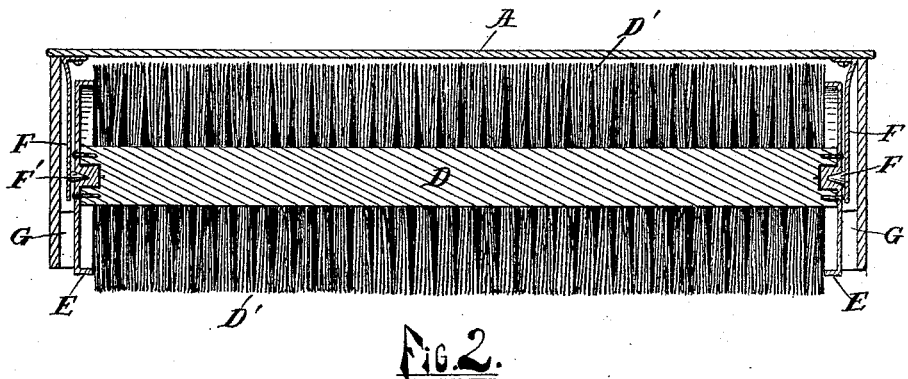
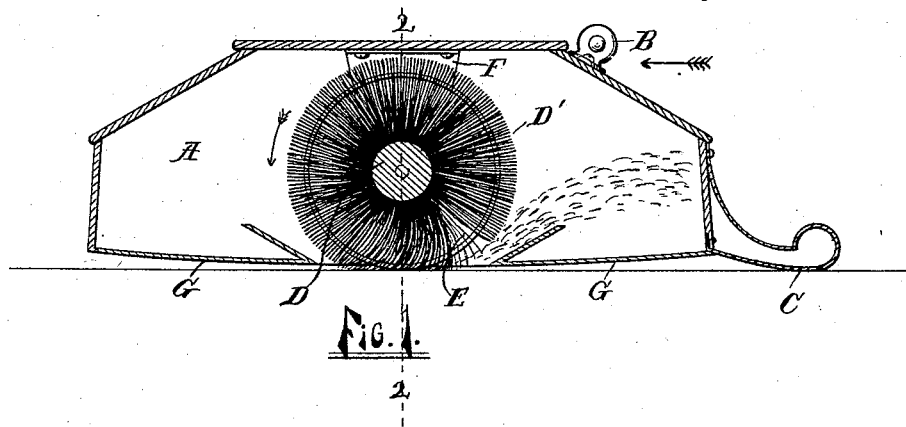


(No Model.)

E. H. RAYMOND.
CARPET SWEEPER.

No. 522,533.

Patented July 3, 1894.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EMMA H. RAYMOND, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO T. STEWART WHITE, THOMAS FRIANT, GAIUS W. PERKINS, AND CHARLES J. REED, OF SAME PLACE.

CARPET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 522,533, dated July 3, 1894.

Application filed February 6, 1893. Serial No. 461,120. (No model.)

To all whom it may concern:

Be it known that I, EMMA H. RAYMOND, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Carpet-Sweepers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in carpet sweepers, having a rotative cylindrical brush, and it consists essentially in the means for the novel operation of said brush, as hereinafter set forth.

Heretofore in carpet sweepers of this class the brush has been rotated rapidly and the ends of the bristles caused to strike the carpet in succession, said bristles being dragged, or drawn over the surface of the carpet a short distance at each revolution of the brush in the direction that the sweeper is moved, thus lifting the dust and other matter by a sort of scraping movement of the ends of the bristles upon the surface of the carpet. The brush has usually been rotated by means of drive wheels supporting the case and engaging pulleys on the brush shaft, said pulleys having considerably less diameter than the brush (usually about one-third). In my improved sweeper the lower side of the brush moves relative to the case, opposite to the direction in which the device is moving, and the ends of the bristles move about its axis, but slightly faster than the sweeper moves over the carpet, and the brush operates to throw the dust and other matter into the pans, solely by the flexibility of the bristles as they recover their normal radial position, after being bent as will more fully appear in what follows: reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section in the line of movement of a device embodying my invention; and Fig. 2 a transverse vertical section on the line 2—2 of Fig. 1.

Like letters refer to like parts in both figures.

A represents any suitable case, having the bail attached at B, and a rear shoe C to support the side next the bail, the other side being supported by the brush rolls E, E; said case is also provided with any convenient dust pans G, G.

F, F, are hangers having cone centers F', F', upon which the brush D is journaled. These described parts may be varied as most convenient and are not essentially novel.

D is the brush shaft, in which are inserted flexible radial bristles D', forming a cylindrical brush. These bristles should be somewhat longer than usual, and more evenly and closely arranged, and also of a quite flexible quality. At each end of said brush shaft is attached a roll, or wheel E of somewhat less diameter than the brush, and provided with suitable countersunk centers to receive the centers F', upon which they rotate in unison with the brush shaft D.

When placed upon the carpet the device will be supported upon the lower bristles of the brush and the shoe C. A slight pressure upon the handle at B will bend said bristles as shown in Fig. 1 and bring the rolls E in contact with the carpet. As the device is moved forward the ends of the bristles move slightly faster owing to the difference in diameter of the rolls E and the brush. This serves to determine the direction in which the bristles will bend as they contact the carpet at their ends, which bending brings the ends of the bristles substantially in line with the outer surface of the rolls E. The bristles are thus retarded at their ends in their movement around the axis of the shaft D, and also thrust endwise into the interstices and depressions of the carpet. The brush thus rolls forward over the carpet, and the ends of the bristles being eventually released from the same, suddenly recover their normal radial position, thus by their flexibility throwing any loose particles of dust, sand, lint, or other matter on or in the carpet over the edge of, and into the rear pan. This flexibility of the bristles is found amply sufficient for this purpose, and the vertical penetration of the brush is much greater by virtue of the end-

wise thrust of the bristles as described, being especially effective in removing heavy particles, such as sand, fine gravel, and the like.

- 5 Another desirable result is found to be that the brush and carpet are not worn as rapidly, and also there is but little tendency to wind strings, thread, hair and the like upon the brush; the peculiar movement of
10 the bristles tending to throw such off the brush and into the pan instead. This device is also more effective in picking up bits of paper and the like, the pressure of the bristles, crushes the paper into the carpet,
15 which tends to raise the end of said paper and cause the same to pass above the angle of the advancing pan, and as the brush finally leaves the paper, the bristles engaging its edge will throw it into the same as they
20 spring to their normal radial position. It is evidently unnecessary to connect the rolls E with the brush, for the reason that their function is only to support the case when the sweeper is in actual operation, and deter-
25 mine the distance of the axis of the brush above the floor; journals for said rolls may be provided at any other convenient points. The brush is revolved on its axis, by the bent and shortened bristles in contact with the
30 carpet, the ends of which move slower as they approach the axis of the brush shaft, the only purpose of attaching the rolls E to the brush being to save separate journal bearings. It should be clearly understood that
35 the function of said rolls is not to rotate the brush, but only to support the case, and carry

the same over the carpet when the sweeper is in actual operation.

I do not wish to be understood as claiming broadly a carpet sweeper in which the brush 40 is rotated by contact of its bristles with the carpet and in which said bristles are of such length and flexibility as to be thrust endwise into the carpet, and flexed laterally and will forcibly assume their normal position, since 45 I am aware that such is not broadly new with me and that an application for a patent to cover it has been made by the inventor.

What I claim is—

1. In a carpet sweeper, a cylindrical brush, 50 having radial flexible bristles, rolls of less diameter than said brush attached to the same, said rolls and brush arranged to roll in contact with the carpet, substantially as and for the purpose described. 55

2. In a carpet sweeper, the combination of the case, hangers therein having inwardly extending projections, a brush journaled upon said projections, rolls, secured to the ends of said brush and having countersunk centers 60 receiving said projections, said brush having its bristles flexible and extending considerably below said rolls and rotating the brush by engaging the floor, and a dust-pan located in the case adjacent to said brush, substan- 65 tially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EMMA H. RAYMOND.

Witnesses:

LUTHER V. MOULTON,
LOIS MOULTON.