

(No Model.)

A. BURCKARD.
CARPET CLEANING MACHINE.

No. 381,110.

Patented Apr. 17, 1888.

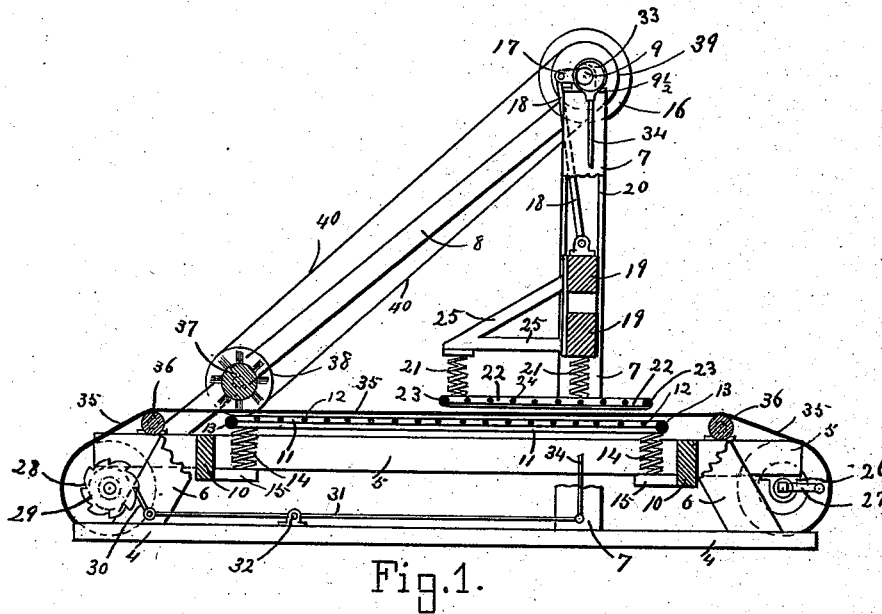


Fig. 1.

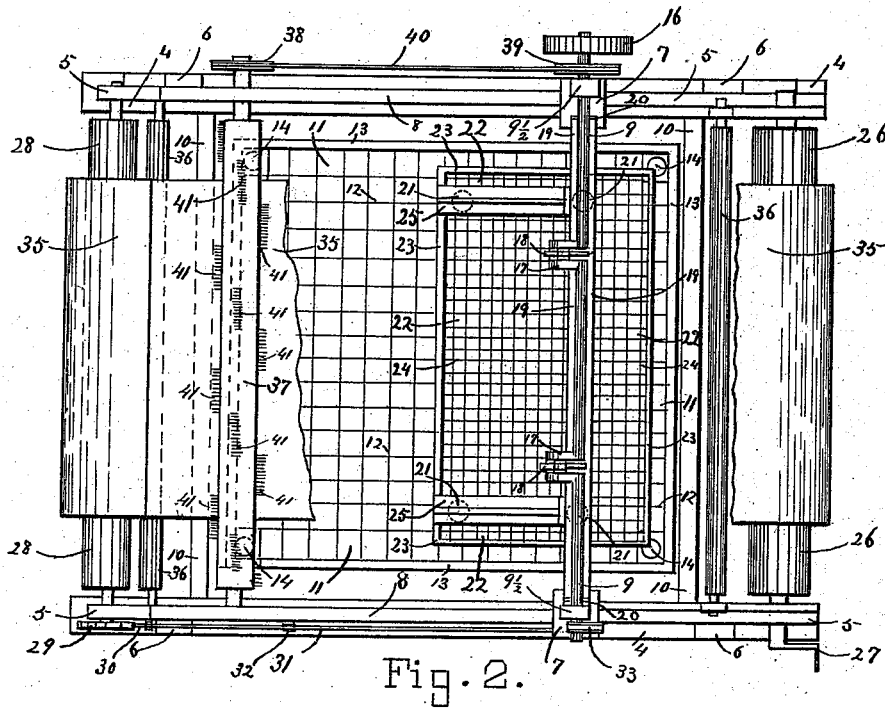


Fig. 2.

Witnesses.

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CARPET-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 381,110, dated April 17, 1888.

Application filed August 2, 1887. Serial No. 245,921. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS BURCKARD, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Carpet-Cleaning Machines; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in carpet-cleaning machinery, wherein provision is made to thoroughly free the carpet of dust by a sufficiently violent but safe impact simultaneously applied on both sides of the carpet, the mechanism to produce this result being so constructed that this force of impact is imparted to the carpet through a yielding medium which eliminates all danger of injury to the carpet and at the same time permits sufficient force to be applied to drive out all particles of dust which may be held between the threads, additional provision being made in the construction of the said mechanism to permit a free escape of the particles of dust as they are driven from the texture. Further provision is made by the employment of a suitable device to continuously feed the carpet through the machine, and a revolving brush provided to impart a finishing cleansing to the carpet after it has left the beater, the entire operation being performed automatically by the device which may be operated by either steam or other power.

In the further description of my invention, reference is had to the accompanying drawings, in which—

Figure 1 is a side elevation of the device with a portion of one side frame removed, showing section through the cross-head, bed, and beater. Fig. 2 is a view looking down upon the device with a portion of the carpet removed.

The same figures refer to the same or similar parts throughout the several views.

The figure 4 denotes the foundation stringers upon which the device is mounted, the side frames, 5, being supported thereon by the legs

6 at a sufficient height to permit the free escape of dust as it is beaten from the under side of the carpet. The uprights 7, which constitute a part of the frame are strengthened by the braces 8 and form a support on the top thereof for the rotating shaft 9, proper journals, 9½, being provided thereon for this purpose.

In the rectangular space which is formed by the side frames, 5, and the end frames, 10, and free to vibrate therein is placed the yielding bed 11, which is of rectangular form and made of fairly stout wire-netting 12, its periphery being formed of stout wire 13, to which is secured the said wire-netting 12. This bed 11 is supported in position upon the springs 14, four of them being represented in the drawings, one placed at each corner, suitable supports being provided therefor by the pieces 15, which are secured to the frames 5 and 10. Any number of these springs may be employed, however, and proper supports provided by the said frames.

The shaft 9, which is supported on top of the uprights 7, is caused to rotate by means of the driving-pulley 16, which may be driven by steam or other power. This shaft 9 is provided with two or more cranks, 17, which are placed in line for coincidental movement on the said shaft 9, and are connected by the connecting-rods 18 to the cross-head 19, whereby a vertical reciprocating motion is imparted thereto, proper guides, 20, being formed in the uprights 7, in which the ends of the said cross-head 19 moves. Suspended under the said cross-head 19 by means of the springs 21, and thereby caused to move in unison therewith, is the beater 22, which is of rectangular form and of like construction of the bed 11, its periphery being formed of the stout wire 23, to which is secured the wire-netting 24. The springs 21 which support this beater are placed as represented in the drawings, Fig. 2, two of them being secured directly to the bottom of the cross-head 19, and the two others are supported by the arms 25, which are secured to the said cross-head 19 for this purpose.

At one end of the device is placed a roller, 26, which has its bearing in some part of the frame, and serves to roll the carpet upon preparatory to cleaning, a crank, 27, being placed

on the projecting spindle thereof for convenience of rolling the carpet thereon. At the other end of the device is similarly placed a like roller, 28, which is caused to rotate by some moving part of the machine. As represented in the drawings, a ratchet-wheel, 29, is provided on the projecting spindle of the roller 28, which is operated in the usual manner by a pawl, 30, which is placed on one end of the vibrating lever 31, the said vibrating lever 31 being fulcrumed at 32, and receives its motion through the eccentric-rod 34 from the eccentric 33, which is secured to the shaft 9, whereby when the shaft 9 is caused to rotate a feeding movement will be imparted to the roller 28, and the carpet 35, which has its free end secured thereto, will be drawn off the roller 26 and wound on the roller 28, the small rollers 36 being provided and placed in proper positions between the said rollers 26 and 28 to lessen the friction and properly stretch the carpet 35 between the bed 11 and the beater 22 as it moves from the one roller to the other.

To impart a final touch in the cleansing and remove any particles of dust which may be remaining on the upper surface of the carpet 35 after it has passed from under the beater 22, a revolving brush, 37, is provided, which is supported by suitable bearings on some part of the frame, a pulley, 38, being fixed on one end thereof, which is driven by a belt, 40, from a like pulley, 39, secured to the shaft 9, the bristles of the said brush 37 being placed in clusters 41, as represented in Fig. 2.

The manner of operating is as follows: The machine may be constructed to accommodate any width of carpet, which is first wound upon the roller 26, the crank 27 serving to aid in this operation. When the carpet 35 is all upon the roller 26, its free end is passed over the roller 36, between the beater 22 and the bed 11, after which it is passed under the brush 37, over the roller 36 at this end, and then secured to the feed-roller 28. The driving-pulley 16 is now thrown in gear and the shaft 9 caused to rotate, the cranks 17 imparting a vertical reciprocating movement to the cross-head 19 and beater 22 in the manner described. The vertical movement of the cross head 19 is so adjusted that the beater 22 will strike the bed 11 with the desired force, the springs 14 of the bed and the springs 21 of the beater yielding sufficiently to the impact to prevent injury to the carpet, at the same time giving sufficient shock, and the vibrations of the bed 11 and beater 22 causing sufficient shaking to dislodge any particles of dust which may be

held in the threads of the texture, and thus imparting a like shock on both sides of the carpet insures a complete dislodgment of the dust throughout, the dust escaping through the meshes of the net 12 in the bed 11, and from thence to the floor, or a draft of air or other provision might be made to dispose of them. In like manner the meshes of the net 24, which forms the beater 22, permit the dust to escape from the upper surface and may be disposed of by an air-current or other means. The roller 28, which was caused to rotate when the driving-pulley 16 was thrown in gear in the manner described, causes a gradual passage of the carpet 35 through the device, first subjecting it to the action of the beater 22, and from thence carrying it under the revolving brush 37, which removes any particles of dust which may be remaining on the surface thereof, the rollers 36 serving to lessen the friction and maintain a proper position of the carpet 35 as it passes through the machine. The operation is continued until all the carpet has been wound upon the roller 28, when the roller may be removed and the roll of carpet taken therefrom.

Having described my invention and the manner of operation, what I claim, and desire to secure by United States Letters Patent, is—

1. In a carpet-cleaning machine, the combination of the bed 11, the rotating shaft 9, the cranks 17, the connecting-rods 18, the cross-head 19, the guides 20, the beater 22, constructed of wire-netting and secured to the cross-head 19, and mechanism to feed the carpet between the said beater 22 and bed 11, consisting of the eccentric 33, eccentric-rod 34, lever 31, pawl 30, ratchet-wheel 29, and roller 28, for the purpose set forth.

2. In a carpet-cleaning machine, the combination of the bed 11, the rotating shaft 9, the cranks 17, the connecting-rods 18, the cross-head 19, the guides 20, the beater 22, constructed of wire-netting, the springs 21, by which the beater 22 is suspended from the cross head 19, and mechanism for feeding the carpet between the said beater 22 and bed 11, consisting of the eccentric 33, eccentric-rod 34, lever 31, pawl 30, ratchet-wheel 29, and roller 28, for the purpose set forth.

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

AUGUSTUS BURCKARD.

Witnesses:

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