May 27, 1930. H. P. JOHNSTON 1,760,599

CARPET CLEANING MACHINE

Filed Dec. 2, 1927 2 Sheets-Sheet 1

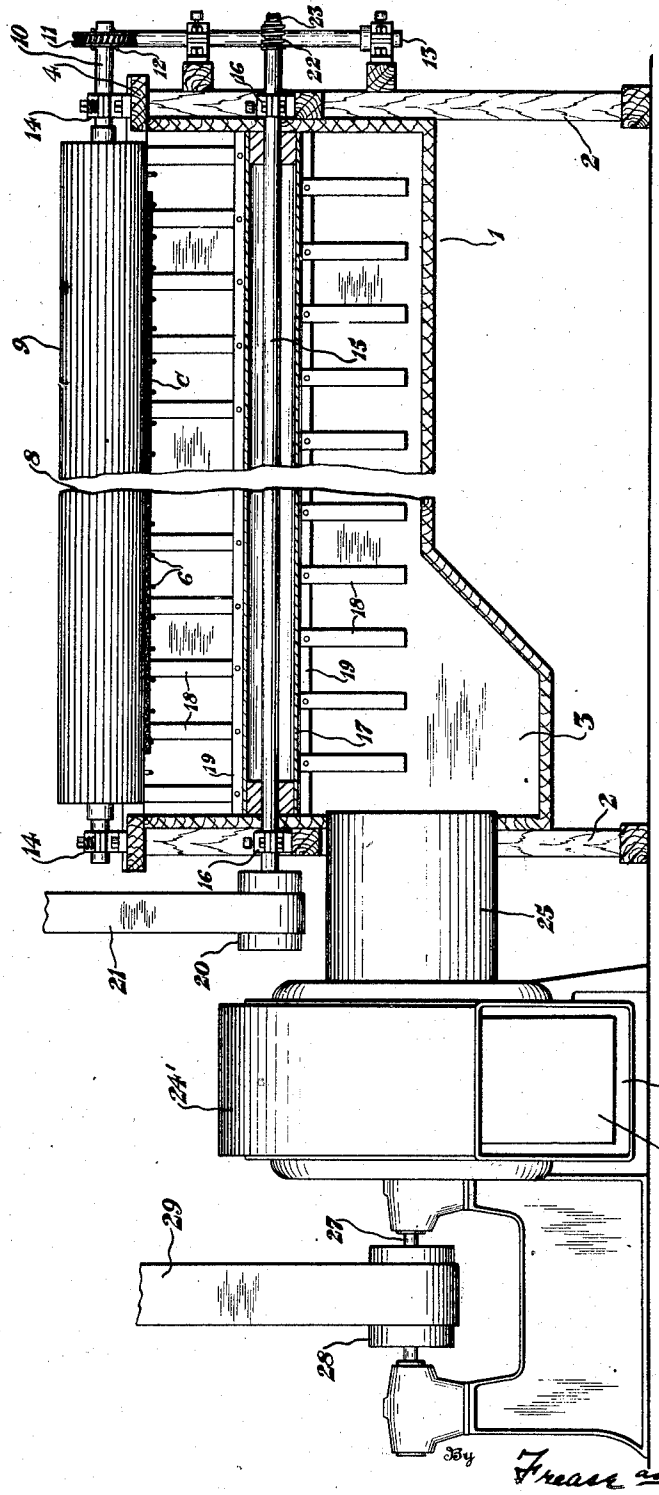


Fig. 1

Inventor

H.P. Johnston

By Frease and Bond Attorneys

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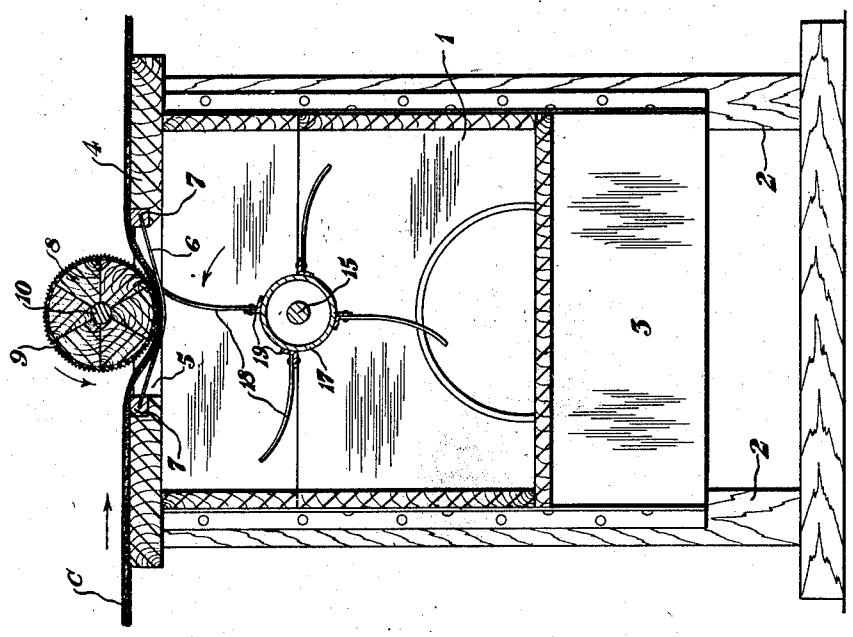


Fig. 3

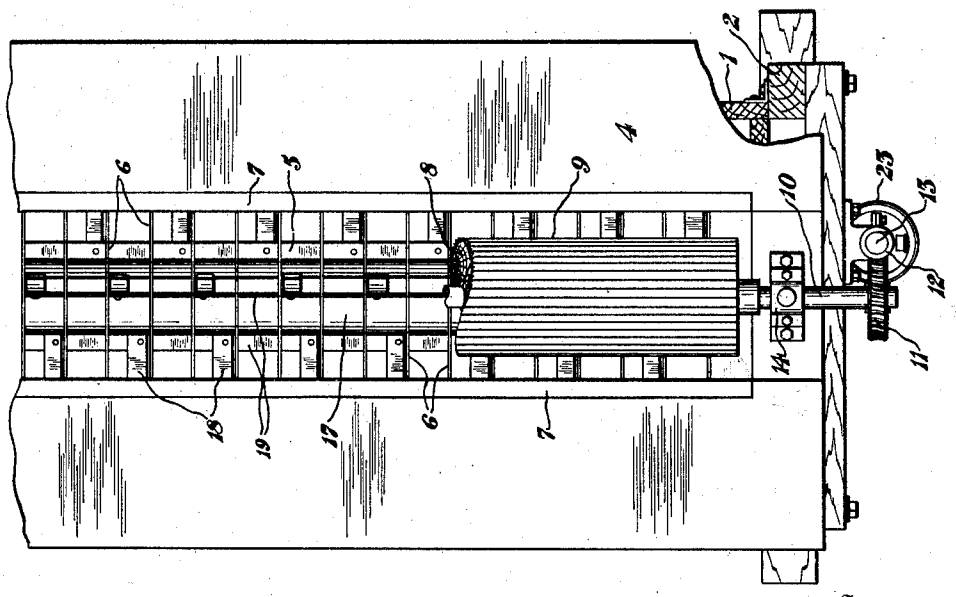


Fig. 2

Inventor

H. P. Johnston

By Frease and Bond Attorneys

Patented May 27, 1930 1,760,599

UNITED STATES PATENT OFFICE

HENRY P. JOHNSTON, OF CANTON, OHIO, ASSIGNOR TO THE AMERICAN LAUNDRY MACHINERY COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO

CARPET-CLEANING MACHINE

Application filed December 2, 1927. Serial No. 237,222.

The invention relates to apparatus for cleaning carpets and the like and more particularly to a rotary beater for cleaning the carpet and suction means for carrying away the dust and dirt dislodged from the carpet by the beater.

Machines now in use for cleaning carpets and the like frequently employ a rotary beater or brush for loosening and dislodging the dust and dirt and an exhaust apparatus for removing the dust thus dislodged from the carpet.

The object of the present improvement is to provide an apparatus including a housing provided with a table having a slot over which the carpet to be cleaned is arranged to be passed, a roller being located adjacent to the slot for feeding the carpet over the same; transverse wires or rods being preferably located at spaced intervals across the slot to support the carpet; a rotary beater being located within the housing and provided with flexible straps or the like for contact with the carpet, through said slot; an exhaust fan being connected to the housing for creating a suction therein and removing the dust and dirt as the same is loosened and dislodged from the carpet by the rotary beater.

An embodiment of the invention is illustrated in the accompanying drawings, in which

Figure 1 is a vertical, longitudinal, sectional view through the improved carpet cleaning machine;

Fig. 2, a fragmentary top plan view of the machine with parts broken away for the purpose of illustration, and

Fig. 3, a transverse, sectional view through the machine.

Similar numerals refer to similar parts throughout the drawings.

The apparatus may comprise the housing indicated generally at 1, which may be of any desired length, depending upon the size of the carpet or fabric to be cleaned thereon.

This housing may be supported at its ends as by the uprights 2 and may have the enlarged portion 3 at one end for a purpose to be hereinafter described.

A table 4 is provided upon the top of the housing and has the central longitudinal slot 5 of some considerable width as best illustrated in Figs. 2 and 3. The carpet to be cleaned, as illustrated at C, is passed across the table 4 and over the slot 5 and for the purpose of supporting the carpet, across the slot, a plurality of spaced curved wires or rods 6 may be located transversely across the slot, forming a concave support for the carpet.

These wires or rods may be carried in a frame 7 which is connected to the edge portions of the slot in any suitable and well known manner.

For the purpose of moving the carpet across the table, the roll 8 may be provided adjacent to the slot 5 and this roll preferably has a corrugated surface of rubber or the like as shown at 9 in order to cooperate with the wires 6 to frictionally engage the carpet and cause the same to move across the table. The lowermost curved portions of the wires 6 are substantially tangential to the roll 8, there being only sufficient clearance between the wires and roll to permit the passage of carpet therebetween.

The shaft 10 of this feed roll may be provided with a worm gear 11 operatively engaged by the worm 12 upon the vertical shaft 13, for the purpose of driving the feed roll.

Suitable bearings 14 may be provided for the shaft 10, at opposite end portions of the table.

The rotary beater may comprise the shaft 15 extending longitudinally through the housing and journaled in the bearings 16 at opposite ends thereof, a cylinder 17 being fixed upon said shaft throughout the length of the housing. Flexible beaters or straps 18 may be connected to the cylinder 17 as by the angle irons 19.

This rotary beater is located directly beneath the slot 5 and the roll 8 so that the axes of rotation of the roll 8 and rotary beater shaft 15 are in the same vertical plane and in such position that the flexible beater straps 18 will engage the carpet, through the slot 5, as best shown in Fig. 3. It will be seen that the straps are arranged to pass between

the curved wires 6 to contact with the carpet.

The shaft 15 of the rotary beater may be provided at one end with a pulley 20 which may be operatively associated with a belt 21 leading from any suitable source of power whereby the rotary beater may be driven at a suitable speed.

A worm 22 may be fixed upon the other end of the shaft 15 and arranged to cooperate with the worm gear 23 upon the vertical shaft 13 whereby the feed roll 8 will be driven through the rotary beater. The feed roll is preferably driven at a much slower speed than the rotary beater and preferably in the opposite peripheral direction thereto adjacent the carpet as shown by the arrows in Fig. 3.

For the purpose of exhausting the dust and dirt from the housing 1, as the same is loosened and dislodged, by means of the rotary beater, an exhaust fan 24 located in the fan housing 24' may communicate with the enlarged end 3 of the housing, as by the tube 25, the fan being provided with the outlet or discharge neck 26 which may communicate with any suitable receptacle to receive the dust and dirt as it is drawn from the housing.

The shaft 27 of the fan may be provided with a pulley 28 connected, as by the belt 29, with any suitable source of power, whereby the fan may be rotated at the desired speed to operate as above described.

From the above, it will be seen that no dirt or dust will be released in the room in which the machine is operating, all of the dirt being loosened and dislodged from the under side of the carpet or fabric being cleaned, within the housing, being immediately drawn away from the suction.

After one side of the carpet is cleaned, the same may be inverted and again run through the machine to thoroughly clean the other side thereof.

It will also be seen that as the wires or rods 6 are curved downward into the slot 5, and the feed roll extends down into said slot to bend the carpet around the under side of the feed roll and against the curved wires or rods, the pile or nap of the carpet or fabric being cleaned will thus be opened up at the time the straps upon the rotary beater engage the same, thus facilitating the cleaning of the carpet.

I claim:

1. A fabric cleaning machine including a table over which the fabric is passed, a housing, the table being provided with a slot communicating with the interior of the housing, a feed roller provided with a corrugated, resilient surface, adjacent to the slot for feeding the fabric across the table, a rotary beater within the housing for beating the fabric through said slot, means for driving the beater and feed roller, and suction means communicating with the housing.

2. A fabric cleaning machine including a table over which the fabric is passed, a housing, the table being provided with a slot communicating with the interior of the housing, spaced wires curved downwardly from their ends across the slot for supporting the fabric, a rotary beater within the housing for beating the fabric through said slot, means for driving the beater, and suction means communicating with the housing.

3. A fabric cleaning machine including a table over which the fabric is passed, a housing, the table being provided with a slot communicating with the interior of the housing, a feed roller adjacent to the slot for feeding the fabric across the slot, spaced wires curved downwardly from their ends across the slot for supporting the fabric the lowermost curved portions of the wires being substantially tangent to the feed roller, a rotary beater within the housing for beating the fabric through said slot, means for driving the rotary beater and feed roller and suction means communicating with the housing.

4. A fabric cleaning machine including a table over which the fabric is passed, a housing, the table being provided with a slot communicating with the interior of the housing, spaced wires curved downwardly from their ends across the slot for supporting the fabric, a feed roller cooperating with the wires for feeding the fabric across the slot along the wires, a rotary beater within the housing for beating the fabric through said slot, means for driving the beater, and suction means communicating with the housing.

5. A fabric cleaning machine including a table over which the fabric is passed, a housing, the table being provided with a slot communicating with the interior of the housing, spaced, downwardly curved wires across the slot for supporting the fabric, a feed roller adjacent to the slot for feeding the fabric across the table, a rotary beater within the housing for beating the fabric through said slot, the axes of the feed roller and rotary beater being in the same vertical plane, means for driving the said roller and beater, and suction means communicating with the housing.

In testimony that I claim the above, I have hereunto subscribed my name.

HENRY P. JOHNSTON.