T. A. NAYLOR.
Carpet-Cleaner.

No. 223,158. Patented Dec. 30, 1879.

Fig 1

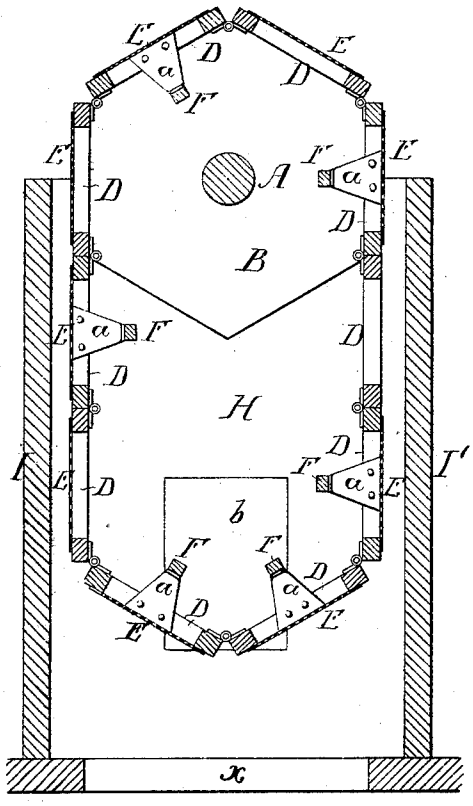


Fig 2

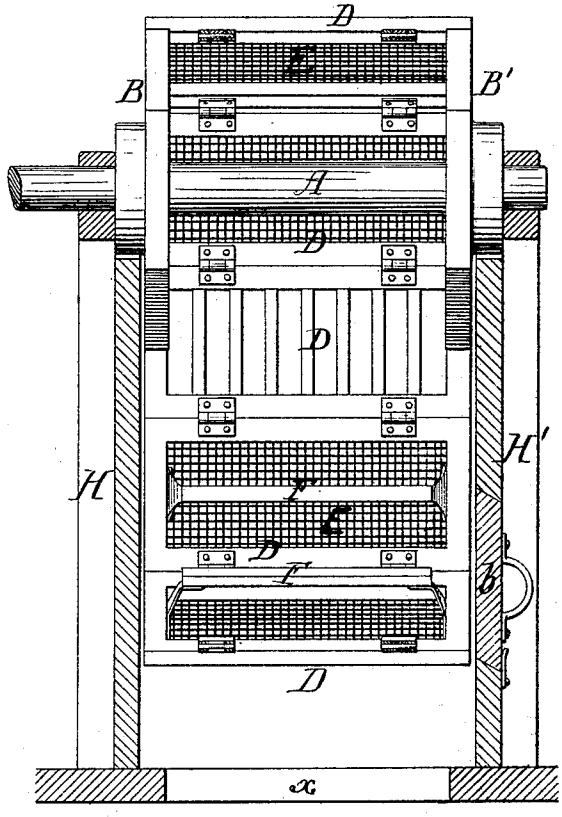
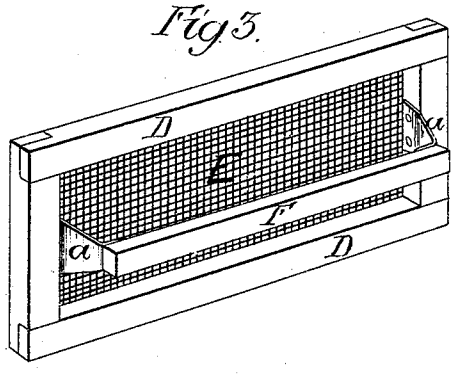


Fig 3



Witnesses
Harry Smith

Inventor
Thomas A. Naylor
by his Attorneys
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UNITED STATES PATENT OFFICE.

THOMAS A. NAYLOR, OF WILMINGTON, DELAWARE.

IMPROVEMENT IN CARPET-CLEANERS.

Specification forming part of Letters Patent No. **223,158**, dated December 30, 1879; application filed October 16, 1879.

To all whom it may concern:

Be it known that I, THOMAS A. NAYLOR, of Wilmington, Delaware, have invented a new and useful Improvement in Tumbling-Machines for Cleaning Carpets, of which the following is a specification.

My invention relates to improvements in machines known as "tumblers," which are used for cleansing various articles and substances, tumblers as heretofore constructed consisting of cylindrical or many-sided vessels having trunnions adapted to bearings, so that after the articles to be cleansed have been deposited in the vessel the latter may be rotated, the contents being thereby agitated, and a cleansing effect produced by abrasion or impact.

The object of my invention is to construct a tumbler for the rapid and effective cleansing of carpets; and this object I attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of my carpet-cleaning tumbler; Fig. 2, a transverse vertical section, and Fig. 3 a perspective view of one of the frames referred to hereinafter.

On the top of a suitable frame a shaft, A, has its bearings, and to this shaft are secured plates B B′, which are in the present instance hexagonal, but which may have a greater or less number of sides. An endless chain of frames, D, hinged together, is suspended from the hexagonal plates B B′, the width of each frame being such as to fit to and rest on the edges of the hexagonal plates in the manner shown in Fig. 1, so that on rotating the shaft A the chain of frames will move in the same manner as an ordinary endless chain suspended from a rotating pulley.

Each frame is made as shown in the perspective view, Fig. 3, and is fitted with wire gauze or netting E, or with a perforated plate; or it may be slotted or otherwise so constructed that the dirt and dust discharged from the interstices of the carpet may have a free outlet through the frames.

A bar, F, is secured to plates *a*, attached to each end of the frame, so that the bar may be at such a distance from the wire gauze, netting, or slots as not to interfere with the free passage of dust and dirt through the same. It is not necessary that each frame should be furnished with a bar, F. The bars, for instance, may be distributed throughout the chain of frames, as shown in Fig. 1.

All excepting the upper portion of the endless chain of frames is contained between the walls H H′, which may be of boards, and may constitute part of the frame, these walls being near the ends of the frames D, but not too close to prevent the latter from moving freely; and one of these walls has a door, *b*, on opening which the carpets can be introduced into the space bounded by the endless chain of perforated or slotted frames and the two walls.

On rotating the shaft A the carpets will be subjected to agitation, the folds being carried upward by the projecting bars F, and falling therefrom onto the folds below, and the fabric being so bent and abraded and subjected to such impact that the dirt and dust will be discharged from the interstices of the fabric and pass through the frames.

In order to prevent the dust discharged through the frames from flying about the room containing the machine, I build two walls, I I′, Fig. 1, at such a distance from the endless chain of frames that if the latter are moved outward to a limited extent by the action of the tumbling folds of carpet they will not come in contact with the said walls, which, in conjunction with the walls H H′, form a quadrangular box-like structure, inclosing all but the upper portion of the endless chain of frames. There is an opening, *x*, at the bottom of this structure, communicating with a cellar or other apartment below that containing the machine, and downward blasts of air through this opening are caused by the falling folds of carpet, so as to induce the dust and dirt dislodged from the interstices of the fabric to pass downward into the cellar.

Should an ordinary cylindrical or many-sided tumbler be used for cleaning carpets, its speed must be restricted, for the faster it is rotated the greater will be the centrifugal force tending to prevent the folds from falling, whereas an extended rising and falling of the folds is assured by the endless chain of frames, no matter what the speed of its movement may be, and the greater the distance of the fall of the folds the more effective and rapid will be the cleansing of the fabric.

I claim as my invention—

1. A carpet-cleaning machine in which an endless chain of perforated or slotted frames, hinged together, is combined with side walls, H H′, and with mechanism to operate the said chain, all substantially as set forth.

2. The combination of the endless chain of perforated or slotted frames and mechanism for operating the chain with a structure composed of the walls H H′ and I I′, the said structure having an outlet, *x*, at the bottom, all substantially as specified.

3. The combination of the perforated or slotted frame D, the plates *a a*, projecting from the same, and the bar F, secured to the plates, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS A. NAYLOR.

Witnesses:
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JAMES M. WATSON.