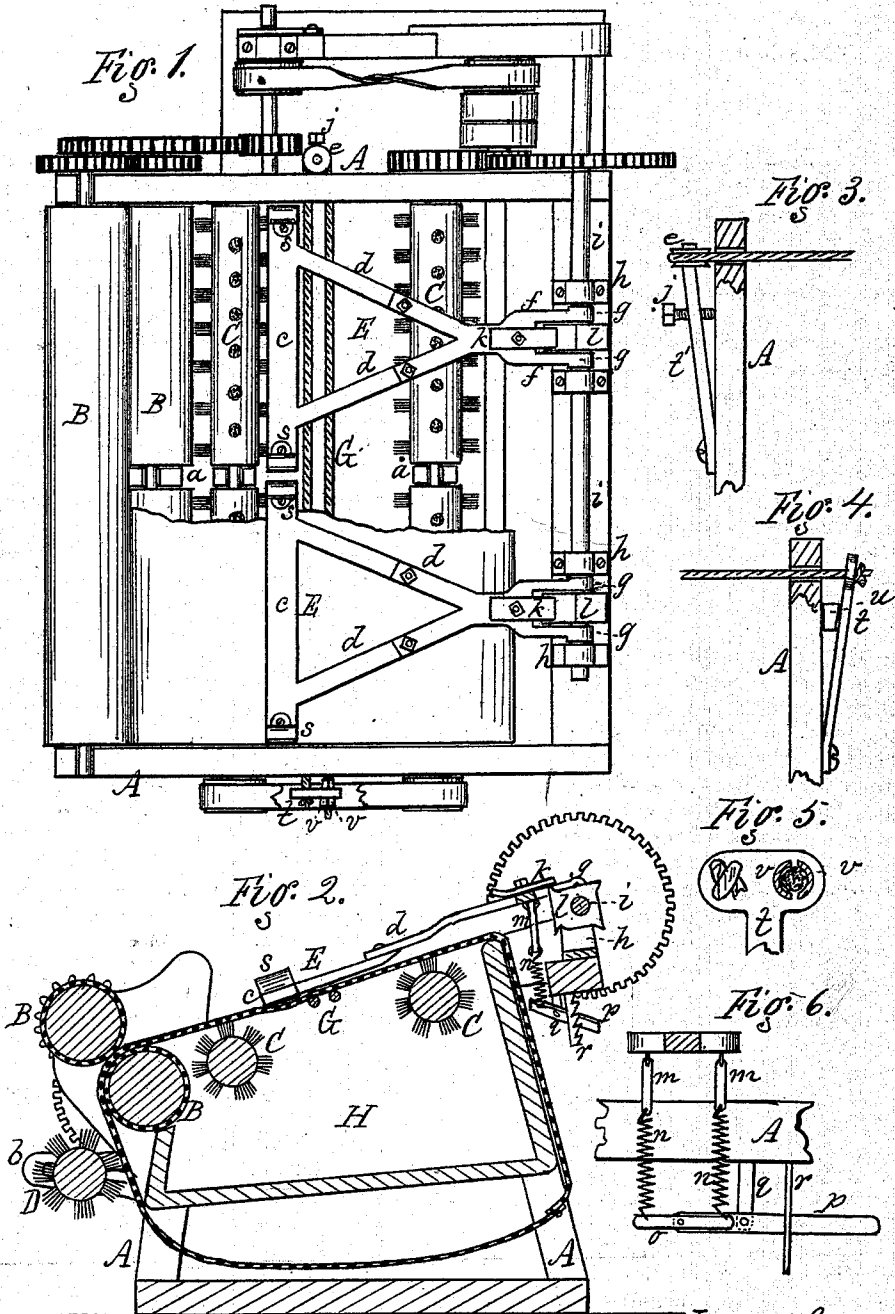


J. HOTHERSALL.
Carpet-Beaters.

No. 146,676.

Patented Jan. 20, 1874.



Witnesses.
E. B. Scott.
Wm. Porter

Inventor:
James Hotheralls,
per R. F. Osgood,
atty.

UNITED STATES PATENT OFFICE.

JAMES HOTHERSALL, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN CARPET-BEATERS.

Specification forming part of Letters Patent No. **146,676**, dated January 20, 1874; application filed November 18, 1873.

To all whom it may concern:

Be it known that I, JAMES HOTHERSALL, of the city of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Carpet-Beaters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

This improvement is similar in general principle to those patented to me July 11, 1871, and December 17, 1872. The invention consists in the construction and arrangement of parts, as hereinafter described.

In the drawings, Figure 1 is a plan. Fig. 2 is a vertical cross-section; Figs. 3, 4, 5, and 6 are detail views.

In this, as in my former inventions, I employ a system of feed-rollers, brushes, and beaters, arranged as follows: A is the frame, which may be of any ordinary construction. B B are the feed-rollers, situated one over the other, the upper one being placed a little in advance, so as to give to the carpet, which runs between, a downward direction after passing through. The upper roller is removable from its bearings, and the contact upon the carpet is produced by the weight of the roller itself. Both rollers are covered with carpeting, or other soft material, to produce the necessary adhesion, and, to prevent injury to the fabric in passing through. C C are two brushes, located at the top of the machine, on a line with the lower feed-roller, and at some distance apart. The carpet passes over these brushes, which thus brush the under side. The lower feed-roller and the two brushes above described are divided in the middle, and are provided with separate bearings *a a a*, to prevent them from springing or bending. D is another brush, below the feed-rollers, and so located as to brush the outside of the carpet as it passes down. This brush is in addition to those formerly used by me, and constitutes one of the novel features of my invention, since both sides of the carpet are thus brushed. Its journals rest in long slots of bearings *b b*, so that it may be adjusted in or out to brush harder or lighter, and when it is desired not to use it, it may be moved out so far as not to come in contact with the carpet at all. E E are the beaters, of which any desired number may be

used. I prefer two, however, as shown in the drawing. They consist each of a head, *c*, with two angular arms, *d d*, and at the opposite end a bearing, *f*, in the form of a fork, which is jointed at *g g* to the standards *h h* that support the shaft *i*. On top the fork is bolted or otherwise attached a steel jar-plate, *k*. On the shaft, between the sides of the fork, is rigidly attached a four-sided cam, *l*, the corners of which are of steel or other hard metal. The revolutions of the cam cause the corners to strike under the jar-plate, thus raising the beater and allowing it to fall to produce the beating action on the carpet beneath. Four vibrations are thus given to the beaters at each revolution of shaft *i*. On the under side of each fork are attached two thongs, *m m*, of leather or other material. To the lower ends of these are connected two springs, *n n*, Fig. 6, attached at the bottom to a link, *o*. This link is centrally pivoted to a lever, *p*, which, in turn, is pivoted to a fulcrum, *q*. The outer end of the lever rides over a ratchet-arm, *r*, attached to the frame. The arrangement above described produces the necessary tension to give an impetus to the beaters in striking, and this tension can be increased or diminished by raising or lowering the lever in the ratchet-bar. Such adjustment is necessary in beating heavy or light carpets. Furthermore, the pivoted link *o* compensates for any inequality in the stretch of the springs, and produces an equilibrium of the same at all times. This spring arrangement gives a greater elasticity and more uniform action than any other I have employed, and is therefore more effective in use. To do good work, the beaters require to be raised comparatively high, and then a sharp quick stroke must be given. The spring attachment I have above described accomplishes this perfectly. *s s* are guards upon the ends of the beater-heads to prevent the carpet from catching and interfering with the action of the beaters. G is a flexible platform, made of rope or cord, and similar to that shown in my patent of July 11, 1871. It extends across the frame, just in the rear of the beater-heads, and is attached as follows: *t* is a standard, made fast at its lower end to the side of the frame, and its upper end standing outward from the frame, and having a rubber or other spring, *u*,

interposed, as shown in Fig. 4. One end of the cord is knotted or made fast to the head of this standard, and is then carried across the machine, thus forming the first length of the platform. On the opposite side of the machine is another standard, *t'*, attached in a similar way, but having a pressure-screw, *j*, for throwing the standard off, instead of an interposed spring, as in the first, and having at the top also a friction-roller, *c*. The length of cord is passed around this roller, and is then carried back across the machine parallel with the first. At the opposite end it is carried through a hollow cone, consisting of two or more segments, *v v*, Fig. 5, which fit in a hole in the head of the standard *t*. The strain of the cord draws the cone into the hole, which tightens upon the cord, and thereby retains it in place. To tighten the cord it is only necessary to draw the end through the cone.

By the above-described arrangement the cord can be always retained taut, and a perfectly elastic and flexible platform is produced. More strain naturally comes upon the front length of the cord, owing to its proximity to head of the beater; but this is compensated for by the passage of the cord around the pulley *e*, which turns to equalize the length. The spring *u* allows the necessary elasticity under the concussion, and the screw *j* allows the straightening of the cord at any time.

The parts may be driven by any desired arrangement of gearing or belting, one form of which is shown in the drawing.

H is the dust-receptacle, located below the brushes C C.

The carpet to be beaten is placed face downward over the two brushes C C, passed between the feed-rollers, and is thence carried around the dust-receptacle till the two ends meet, when they are pinned or otherwise fastened together, as shown in Fig. 2. The beating action may then be made continuous as long as desired.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The beaters E, composed of the angular arms *d d*, heads *c*, and forked arms *f*, in combination with the jar-plate *k*, standards *h*, shaft *i*, and cams *l*, all constructed to operate in the manner and for the purpose described.

2. In combination with the beaters E, composed of the angular arms *d*, head *c*, and forked arms *f*, the duplex springs *n*, pivoted link *o*, lever *p*, and ratchet-bar *r*, all constructed to operate substantially as described, for the purpose specified.

3. In combination with the flexible platform G, made of rope, the compensating standards *t t'*, and roller *e*, as and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES HOTHERSALL.

Witnesses:

R. F. OSGOOD,

E. B. SCOTT.