

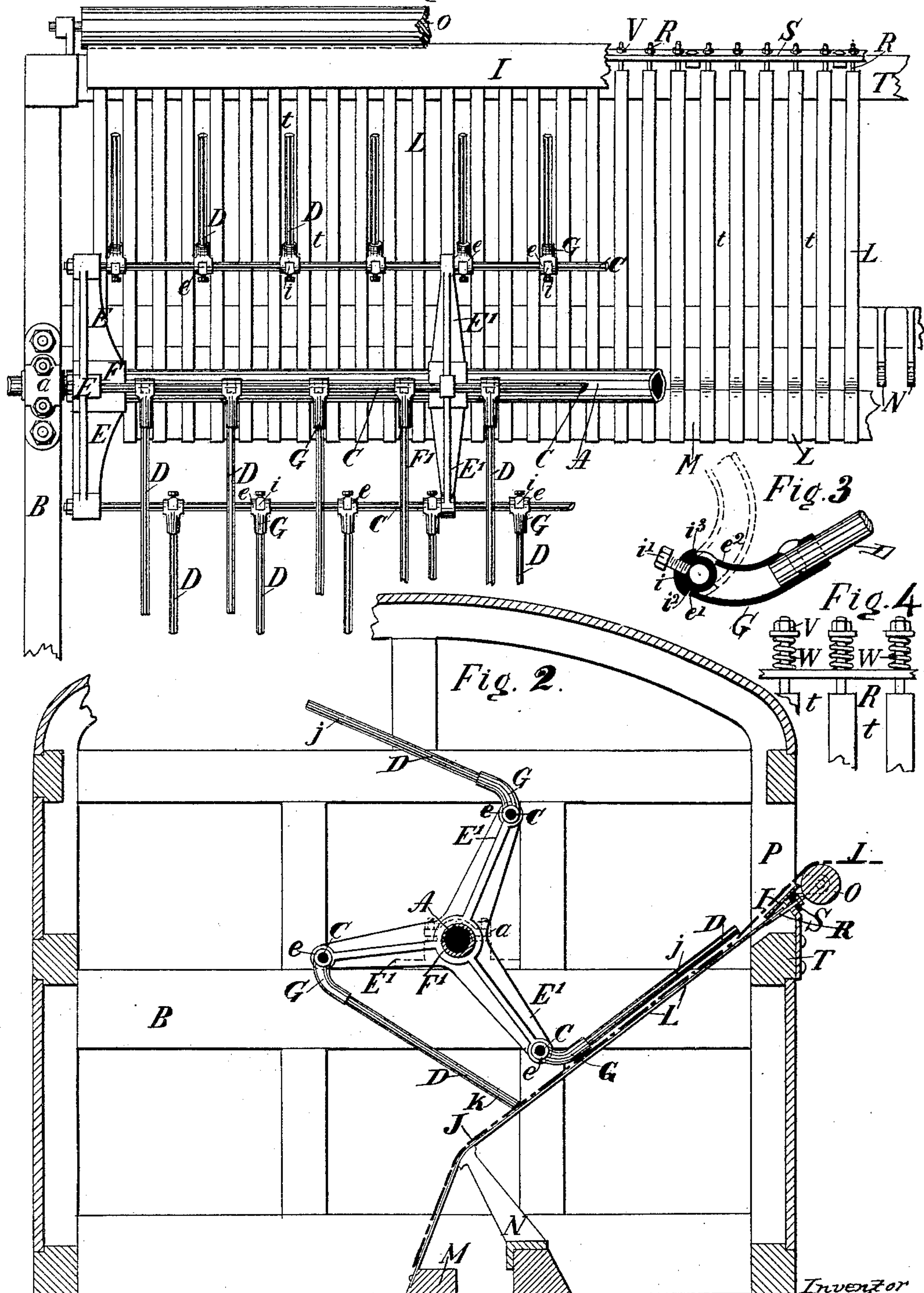
(No Model.)

A. MIDGLEY.

APPARATUS FOR BEATING AND CLEANING CARPETS.

No. 435,850.

Fig. 1. Patented Sept. 2, 1890.



Witnesses
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UNITED STATES PATENT OFFICE.

ALBERT MIDGLEY, OF BRADFORD, ENGLAND, ASSIGNOR OF ONE-HALF TO
MARK LEACH, OF SAME PLACE.

APPARATUS FOR BEATING AND CLEANING CARPETS.

SPECIFICATION forming part of Letters Patent No. 435,850, dated September 2, 1890.

Application filed April 11, 1890. Serial No. 347,480. (No model.)

To all whom it may concern:

Be it known that I, ALBERT MIDGLEY, a subject of the Queen of England, residing at Bradford, England, have invented certain Improvements in Apparatus for Beating and Cleaning Carpets, of which the following is a specification.

This invention relates to improvements in apparatus for beating and cleaning carpets; and such improvements consist in a machine having a series of sub-rigid rotary beaters arranged to strike the carpet approximately with their whole length parallel to it in a similar manner to a beater operated by hand.

The said improvements further consist in the peculiar construction of the bed upon which the carpet is beaten, adapted to allow the whole of the beaters to rotate without striking the bed when no carpet is upon it, and also when narrower carpets than the machine are being beaten only such of the beaters immediately over the carpet are brought into operation and the remainder pass the bed without striking it or its supports; and, further, it consists in certain novel details of construction and combinations and arrangements of parts to be hereinafter described, and pointed out in the claims at the end of this specification.

Reference is made to the accompanying sheet of drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in each of the figures.

Figure 1 is a plan view with the top cover removed of one of my improved machines, certain of the parts being broken away from the right hand to disclose the parts beneath. Fig. 2 is a transverse section of the same. Figs. 3 and 4 are views of details hereinafter referred to.

The main shaft A, as usual in this class of mechanism, extends the whole length of the machine and is preferably hollow. It is driven in any convenient manner, and is supported at each end in journals *a*, fixed to the ends B of the frame-work or casing. Two, three, or more rods C (three are represented in the drawings) are arranged parallel with

the shaft A, so as to revolve therewith, upon which the beaters or sticks D are hinged or pivoted. Said rods are rigidly connected to the shaft at each end by the stout arms E, radiating from the boss F, keyed to each end of the shaft, and are supported at intermediate points by the lighter arms E', radiating from F', also keyed to the shaft A. The beaters D are formed of ash or other suitable material, and are secured in metal sockets G, having eyes *e*, by which they are loosely mounted upon the rods C, and the stops *i*, rigidly mounted upon said rods between the eyes *e*, limit the motion of the sockets upon said rods, as clearly illustrated in Fig. 3, which represents these parts in section on a larger scale, with the limited movement of the socket defined by the dotted representation thereof. The stop *i* is rigidly fixed to the rod C by the set-screw *i'*, and the shoulder *e'* on the socket engages *i''* on the stop, and thus limits the motion of such socket upon the rod. Shoulders *e''* and *i'''* are preferably provided to prevent the sticks turning too far in the opposite direction.

When the apparatus is put into operation, the shaft A revolves, carrying round with it the rods C and beaters D, which latter, owing to the centrifugal force thus brought to bear upon them, turn on the rods C, so as to extend outward approximately at a tangent, or as far as the stops *i* will permit, in the manner represented at *j j*, Fig. 2, and thus strike the carpet (represented by the broken line J, Fig. 2, supported by the bed L) approximately parallel with their length; but in order to clear the carpet as they continue to revolve past, the beaters turn on the rods C partly by the rebound from striking the carpet, so that their free end moves toward the center and allows them to pass the carpet, as represented at *k*. The bed is formed, preferably, of thin metal strips L, secured at their inner ends to the beam M, extending the whole length of the machine, and pass over struts N up to the opening P in the frame-work, where they are secured to short tension-bolts R, passing through the longitudinal rod S, fixed to the side frame T. The metal strips

L are fixed the same pitch or distance apart as the beaters, and have spaces t between them, arranged to allow the whole of the beaters to pass between them when not covered by the carpet, so as to prevent such beaters being injured by striking the bed. The carpet is passed into the machine in the usual manner over the roller O, through the opening P, and across the plate I, covering the bolts R, and on to the bed. The frame-work is of the usual form, and a revolving fan, such as is common in this class of machine, is employed to remove as much dust as possible from the apparatus. Spiral springs W may be introduced between the nuts V of the tension-bolts R and the rod S in the manner shown in Fig. 4.

From the foregoing description it will be readily seen that the beaters in action deliver a full blow with approximately the entire length of the beater laid on the carpet, and that in rebounding from each blow such beaters turn slightly on the rotary frame to which they are pivoted as they are withdrawn from the carpet, and so pass off without being bent or scraping the carpet. It will also be clearly seen that the whole of the beaters are free to pass through and consequently rotate clear of the bed without striking any part uncovered by the carpet operated upon, for openings t are provided in the plane of rotation of each of the beaters.

I claim—

1. In a carpet-beating machine, the combination, with a rotary frame or apparatus, of beaters hinged thereto by stop-hinges adapted to hold the beaters when revolving approximately at a tangent to said frame and parallel to the bed preparatory to each blow and allow the beaters to rebound inward after each blow to clear the carpet, substantially as herein shown and described.

2. A carpet-beating machine having a bed for supporting the carpet, provided with openings extending way through the same and arranged the same distance apart as the beaters and in the plane of their rotation, so that the beaters are free to pass through and revolve clear of the bed without striking it or any part of its frame-work or supports, substantially as herein shown and described.

3. In a carpet-beating machine, the combination, with the series of slightly-separated flexible rotary beaters, of the bed for supporting the carpet, formed of the strips bent toward the beaters and having the spaces between the same extending way through the

bed and arranged the same distance apart and in the plane of rotation of the beater, forming unobstructed passages for the beaters when no carpet is on the bed, substantially as described.

4. In a carpet-beating machine, the combination, with the series of slightly-separated rotary beaters, of the bed for supporting the carpet, formed of the strips having the intermediate spaces in the planes of rotation of the beaters and having springs interposed between the ends of the strips and their supports, whereby they may yield slightly, substantially as described.

5. In a carpet-beating machine, the combination, with the series of slightly-separated rotary beaters, of the bed for supporting the carpet, formed of the strips having the intermediate spaces in the planes of rotation of the beaters, one end of said strips being attached to a support and the opposite end attached to a support through the medium of interposed springs, and central supporting-struts, one for each strip, for supporting the same in bent position in proximity to the beaters, substantially as described.

6. In a carpet-beating machine, the combination, with the bed and the rotary frame, of the beaters pivoted on said frame and stops on the frame for arresting the outward movement of the beaters when at a tangent substantially equal to that formed by the table with relation to the circle described by the beaters, substantially as described.

7. In a carpet-beating machine, the combination, with the bed and the rotary frame, of the beaters pivoted on said frame and adjustable stops on the frame for arresting the movement of the beaters, substantially as described.

8. In a carpet-beating machine, the combination, with the bed and the rotary frame having the arms and longitudinally-extending rods, of the beaters having the ears through which the rods pass and the stops mounted on the rods between the ears to prevent the longitudinal movement of the beaters and also to arrest their outward swing at the proper point, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of the two subscribing witnesses.

ALBERT MIDGLEY.

Witnesses:

SAMUEL A. DRACUP,
DAVID NOWELL.