

(No Model.)

F. T. FROST.
CARPET BEATER.

No. 529,682.

Patented Nov. 20, 1894.

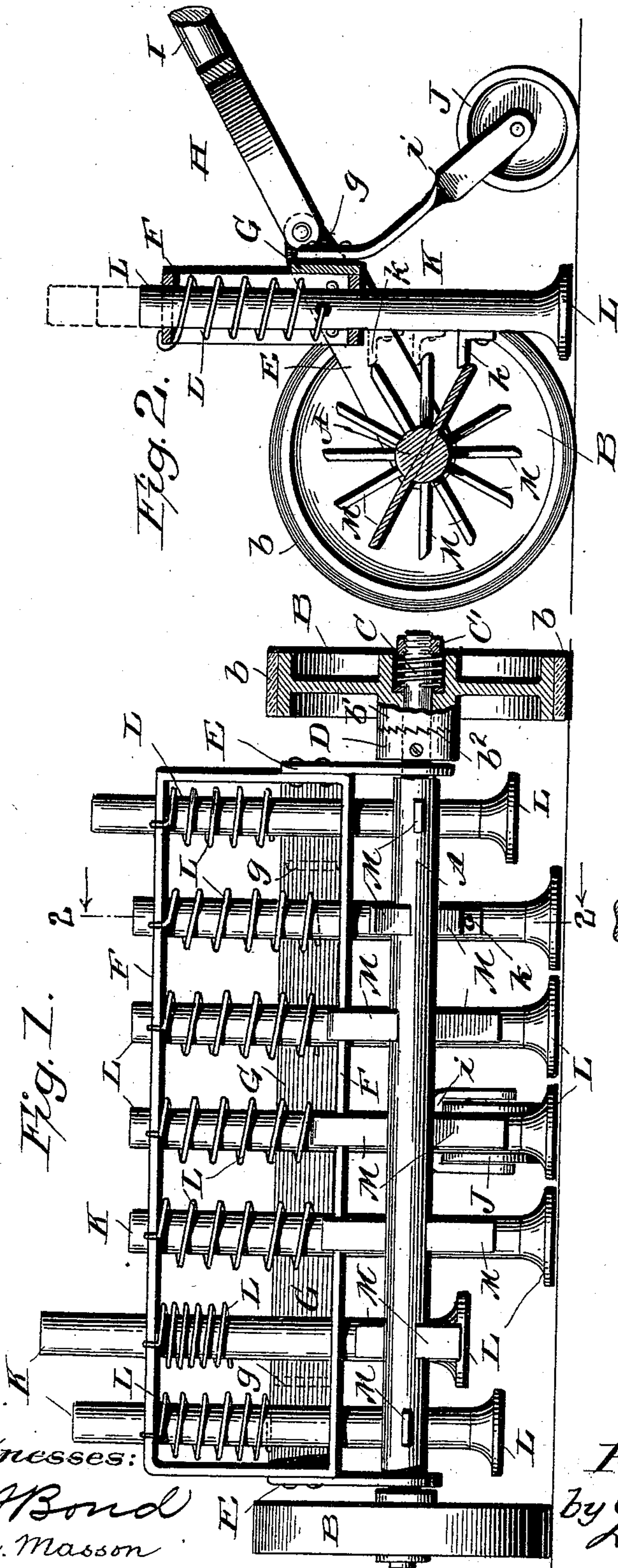


Fig. 1.

Fig. 2.

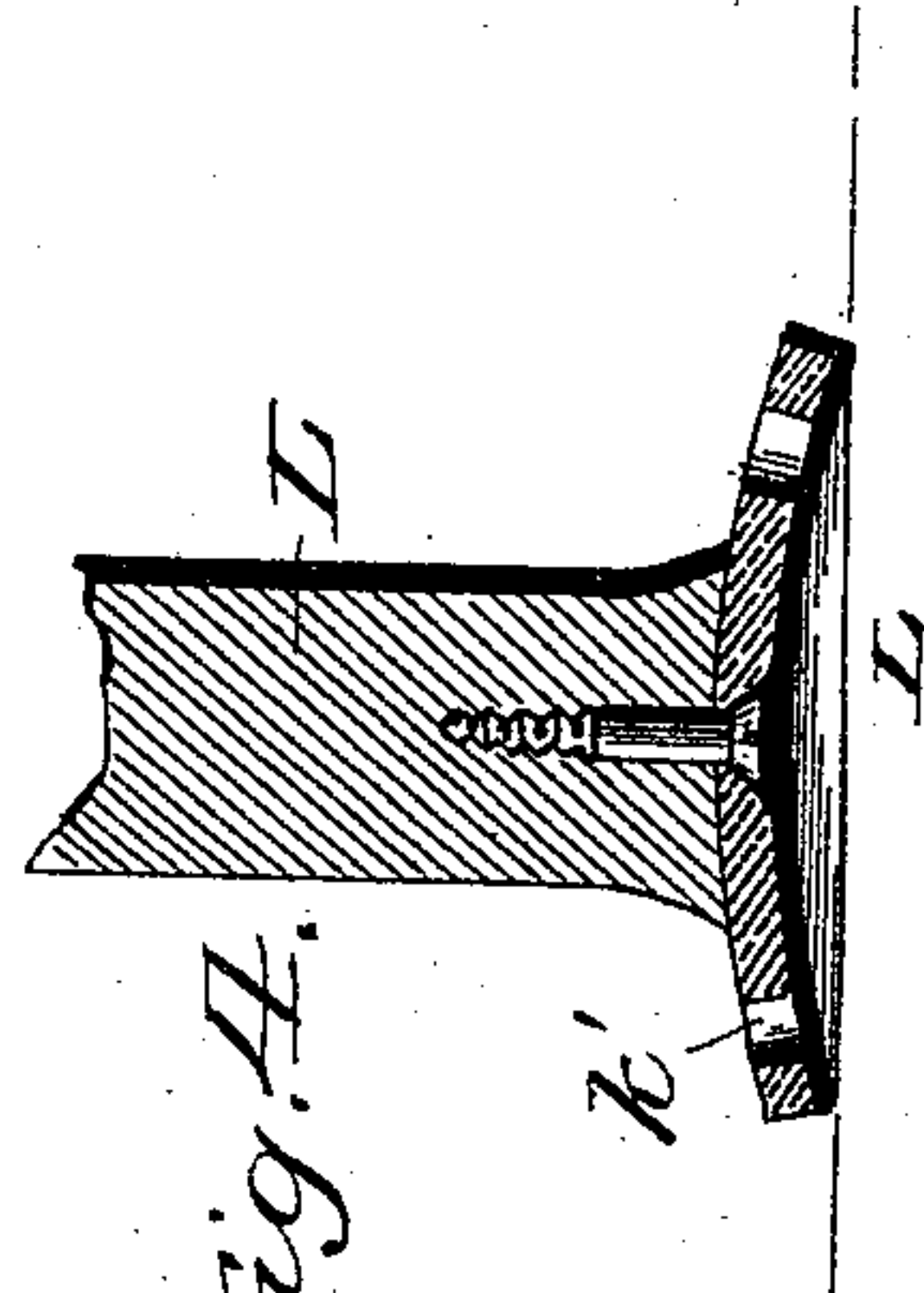


Fig. 4.

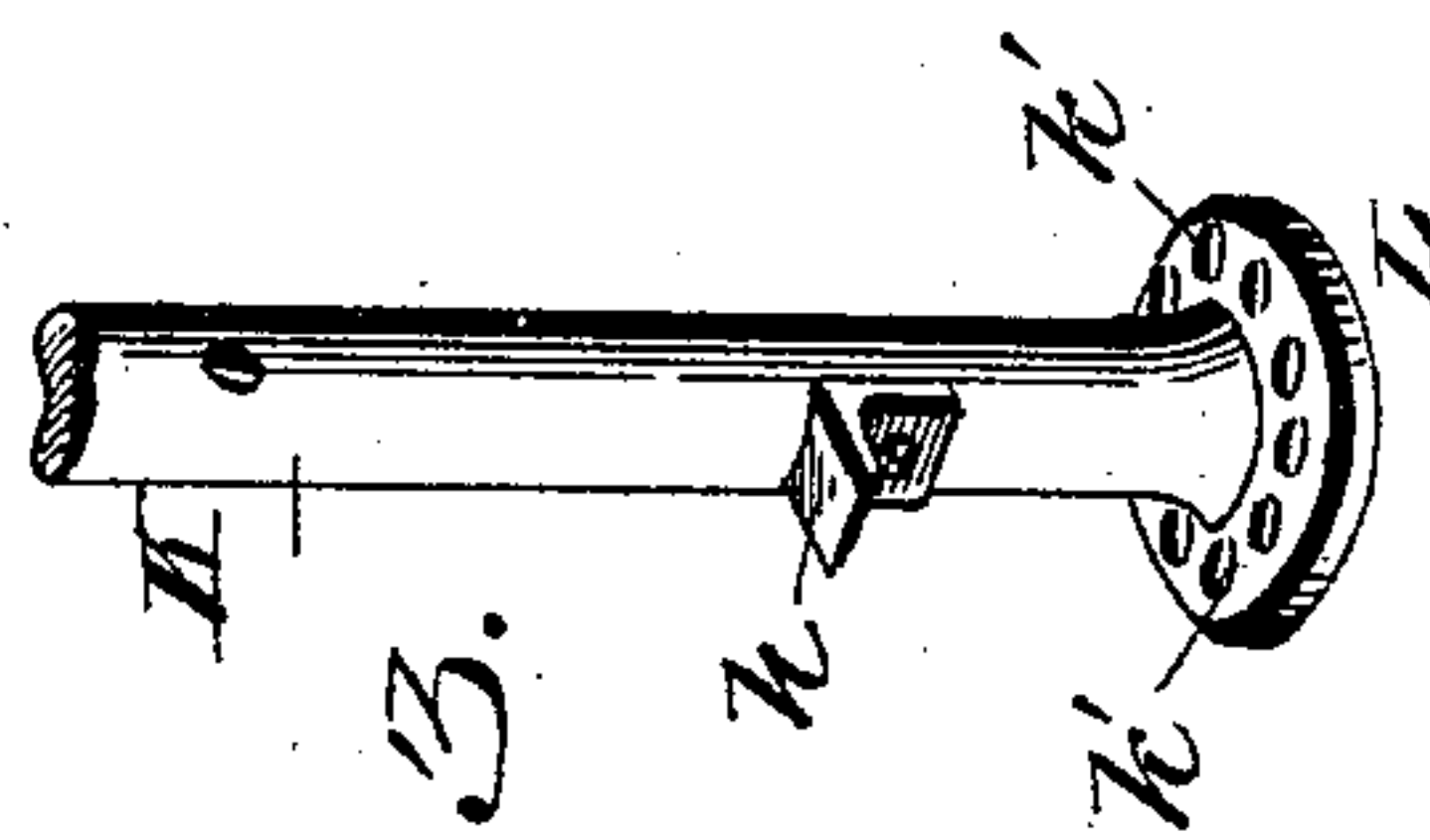


Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

FLOYD T. FROST, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF
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CARPET-BEATER.

SPECIFICATION forming part of Letters Patent No. 529,682, dated November 20, 1894.

Application filed August 16, 1894. Serial No. 520,438. (No model.)

To all whom it may concern:

Be it known that I, FLOYD T. FROST, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Carpet-Beaters; and I do hereby 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.

This invention relates to certain new and useful improvements in that class of devices for cleaning carpets by beating the same to remove the dust, and it has for its objects among others to provide a simple, cheap yet durable and efficient machine adapted to be moved over the carpet while the latter remains upon the floor and by the use of which the dust can be rapidly and easily removed from the carpet to be afterward swept up, say by a carpet sweeper which may follow after the beater if desired or be used afterward as may be deemed most expedient.

The device embodies as its essential feature vertically-reciprocatory beaters which are impelled upward by means on the shaft or axle of the machine and forced downward and upon the carpet by means of springs suitably arranged and the acting faces of the beaters held normally slightly above the floor line so as not to rub against the carpet to wear the latter, the beaters and their operating means being so arranged as to cause the beaters to be brought in contact with the carpet in rapid succession whereby more satisfactory results are attained. The beaters are mounted in a frame supported from the axle, and suitable mechanism is provided to prevent operation of the beaters when the machine is moved backward. The acting faces of the beaters are of an elastic nature and may be perforated to permit of the passage of the dust from beneath the beater.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a face view of my carpet beater with one of the wheels in section and a portion broken away to better disclose other parts. Fig. 2 is a vertical section from front to rear, on the line 2—2 of Fig. 1, looking in the direction of the arrows. Fig. 3 is a perspective view of one of the beaters. Fig. 4 is an enlarged detail showing the manner of attaching the elastic acting face to the beater.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the axle and B the wheels of any suitable form and construction, the wheels being shown in this instance as provided with a broad tread and having a covering *b* of rubber, felt, or some analogous material to increase the frictional contact surface and at the same time deaden the sound. One of these wheels, that upon the right hand side of the machine, is an idler, while the hub *b'* of the other one is formed with a toothed face as seen at *b*², which constitutes one part of a clutch the other half of which is a collar D which is fast upon the axle which at this end is reduced as seen in Fig. 1. The outer end of the hub is recessed as shown in Fig. 1 and within this recess is located a spring C which encircles the axle and has one end secured thereto in any suitable manner, the end of the axle being screw threaded to receive a nut C' as shown clearly in Fig. 1. As the machine is propelled forward the clutch teeth of the hub and collar engage and the axle must revolve with the wheel, but when the machine is moved backward the teeth of the hub will ride over those of the collar and the axle does not revolve, consequently the beaters are not operated as the machine is moved backward.

E are arms mounted upon the axle near the ends thereof, just inside the hubs of the wheels as shown in Fig. 1, and to these arms is secured in any suitable manner the rectangular frame F in which the beaters are mounted. The frame F has a front plate G provided with ears *g*, to which is pivoted the yoke H carrying the handle I. A guide wheel J may be employed if deemed necessary. I have shown such. It is mounted to revolve in the lower end of the arm *i* which is attached to the front plate G as shown in Fig. 2.

The upper and lower parallel portions of the rectangular frame F are provided with coincident openings through which are designed to work the beaters K, each of which comprises a shank of sufficient length to extend through the upper opening and its acting face to be normally just above the floor line as seen in Fig. 2, and to the shank of each beater is secured a horizontally-projecting lug *k* as seen in Figs. 2 and 3. The lower end of the shank of the beater may be provided with any suitable form of acting surface or face. In Fig. 3 I have shown it as composed of a disk of rubber which disk is secured thereto as seen in Fig. 4 where the lower end of the shank is shown as slightly concave and the disk L is held thereto by means of a screw passed through the disk and into the end of the shank, being sunk sufficiently within the disk as to prevent any liability of contact of the head of the screw with the carpet.

The drawing in of the disk at the center as shown throws its edge down so that it forms a sort of arched face which, when the beater is thrown in contact with the carpet, acts first about its edge and then is forced flat against the carpet, by which means I obtain the best results. If desired, the disk may be perforated as shown at *k'* in Fig. 3 to facilitate the escape of the dust from beneath the beater as it strikes the carpet.

L is a coiled spring around the upper portion of the shank of each beater, one end of the spring being secured in any suitable manner to the shank and its other end to the upper cross portion of the frame F as seen best in Fig. 2. The under face of the lug *k* is beveled as seen in Figs. 2 and 3 to facilitate the disengagement of the arm which operates thereagainst at the proper time.

On the axle or shaft A are radially-disposed arms M which are arranged so that no two project in the same plane in order that they may come into action otherwise than simultaneously, although I should consider it within the scope of my invention if these arms were so arranged as to actuate all of the beaters simultaneously.

With the parts constructed and arranged substantially as above set forth the operation is as follows:—The machine is propelled over the carpet and as the wheels revolve the arms

on the axle come in contact with the lugs on the shanks of the beaters as illustrated in Fig. 2 and raise the same until they reach the position in which the one is shown uppermost in said Fig. 2. Now a further revolution of the axle will move the end of the arm which is in engagement with the said lug away from the same when the spring L will force the beater down and its face L will strike the carpet knocking out the dust. The beaters are forced downward in rapid succession and it need take but a short time to remove all of the dust from a carpet without the necessity of removing it from the floor. The dust and dirt may be gathered up in any suitable manner, as by an ordinary carpet sweeper, which may, if desired, be connected with the beater apparatus so as to follow the same and gather the dust as fast as it is beaten from the carpet.

The number of beaters may be varied. One only may sometimes be used, but a larger number is preferred.

Other modifications in the details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

Having thus described what I at present consider the preferable way of carrying out my invention, what I claim as new is—

1. In a carpet beater, the combination with the frame, of a plurality of reciprocatory beaters mounted therein for independent movement, and having convex elastic faces as set forth.

2. In a carpet beater, the combination with the frame and the axle, of the arms on the axle arranged to be brought into active position successively, and the reciprocatory beaters mounted for independent vertical reciprocatory movement having projections adapted to be engaged by said arms in rapid succession and having convex yielding perforated acting faces, substantially as specified.

3. In a carpet beater, a beater comprising a shank and a convex yielding perforated acting face secured thereto, as set forth.

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

FLOYD T. FROST.

Witnesses:

L. C. HILLS,
E. E. MASSON.