

(No Model.)

C. S. CHAFFEE, A. S. HOFFMAN & F. A. GREEN.
CARPET BEATER.

No. 515,573.

Patented Feb. 27, 1894.

Fig. 1

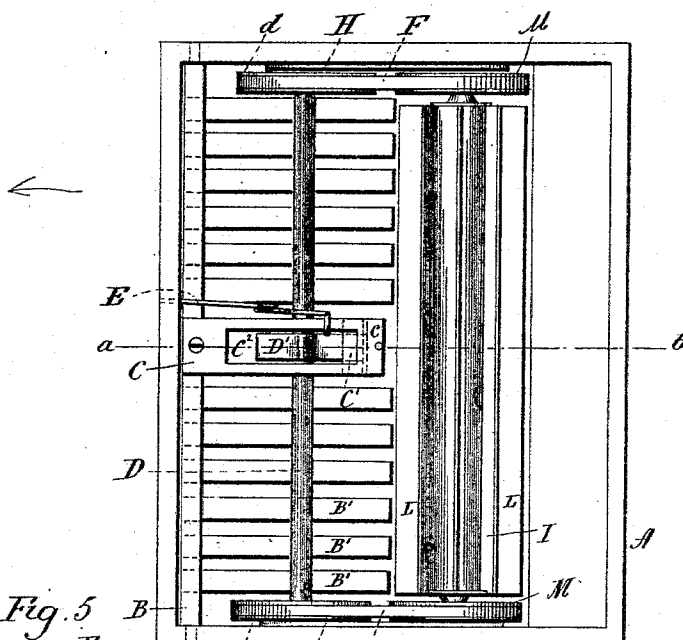


Fig. 5

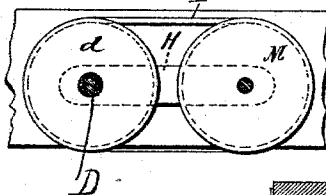


Fig. 6

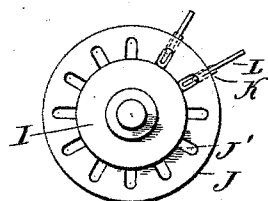


Fig. 2

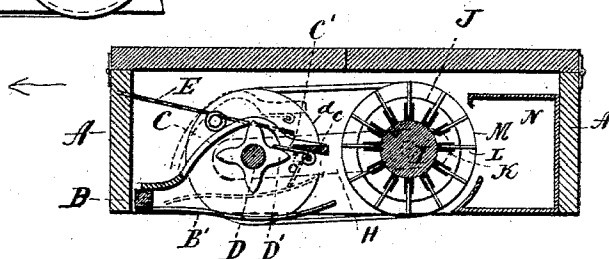


Fig. 3

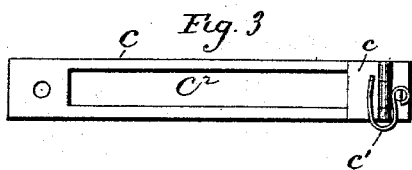
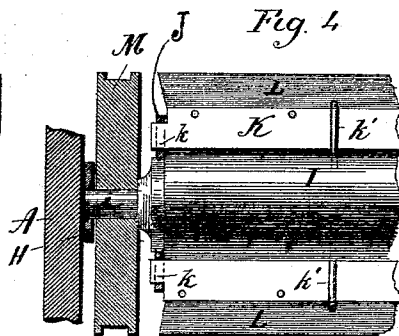


Fig. 4



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UNITED STATES PATENT OFFICE.

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CARPET-BEATER.

SPECIFICATION forming part of Letters Patent No. 515,573, dated February 27, 1894.

Application filed June 26, 1893. Serial No. 478,925. (No model.)

To all whom it may concern:

Be it known that we, CHARLES S. CHAFFEE, ALVIN S. HOFFMAN, and FRANK A. GREEN, of Birmingham, in the county of New Haven and State of Connecticut, have invented a new Improvement in Carpet-Beaters; and we do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view of a carpet-beater constructed in accordance with our invention, with its top removed; Fig. 2, a sectional view on the line *a—b* of Fig. 1, the two-part hinged top of the box or case of the device being, however, shown; Fig. 3, a detached reverse plan view of the operating arm secured to the beater shaft; Fig. 4, a broken view partly in elevation and partly in section and showing one end of the brush; Fig. 5, a broken view showing in particular one of the pivotal arms in which the brush is suspended; Fig. 6, a detached view of the brush in end elevation.

Our invention relates to an improvement in carpet-beaters, the object being to produce a simple, compact, convenient and effective device, composed of few parts, and not liable to derangement.

With these ends in view, our invention consists in a carpet-beater having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out our invention, we construct a box or case *A* in substantially the usual form, adapting it for the attachment of a handle, which is not shown. Within the extreme forward end of the said case, and at the lower corner thereof, we journal a beater-shaft *B*, to which is attached a series of beaters *B'*, located at equal distances apart, extending rearward, and each consisting of a thin strip of flexible sheet-metal. A rigid operating arm *C*, firmly secured to the said beater-shaft midway the length thereof, is shaped to extend over and to the rear of a driving-shaft *D*, journaled at its ends over the beaters in the forward portion of the case, at a higher elevation therein than the beater-

shaft before mentioned, the said arm being provided at its extreme rear end with a pivotal or hinged operating finger *C'*, which is engaged by lugs *D'* formed upon the said driving-shaft or which might be furnished with equivalent projections. The said finger is constructed and arranged so that when the lugs are engaged with its lower face in the forward movement of the beater, it will not yield, forcing the lugs to lift the arm *C*, and rock the beater-shaft. When, on the other hand, the beater is moved in the opposite direction, and the lugs engage with the upper face of the finger *C'*, the same will turn on its hinge, and permit the lugs to pass, whereby the beaters are not actuated when the device is moved backward. As herein shown the said finger *C'* is pivoted to the under face of the plate or head *c*, located at the outer end of the operating-arm *C*, in position so that the said head resists its upward movement. A spring *c'* fastened to the under face of the said head *c*, engages with the under face of the finger, and normally holds it in place, but yields to permit it to be displaced as shown by broken lines in Fig. 2 when the lugs *D'* of the driving-shaft are brought into engagement with its upper face. The operating arm *C* is constructed with a long clearance space *C²*, through which the said lugs pass for engagement with the pivotal finger just above described. A spring *E*, secured to the front of the case, extends rearward therefrom for engagement with the upper edge of the arm *C*, and furnishes the power for snapping the beaters against the carpet after they have been lifted therefrom by the engagement of the lugs on the beater-shaft with the under face of the pivotal finger carried by the arm. The said shaft is furnished at its ends with driving-wheels *d*, the peripheries whereof are recessed to receive belts *F F*, as shown. These wheels are arranged to extend sufficiently below the case to support the same just above the surface of the carpet. The brush is located to the rear of the driving-shaft adjacent to the rear ends of the beaters, and as herein shown, is suspended in the rear ends of two arms *H H*, the forward ends of which are hung upon the ends of the said shaft *D*.

As herein shown the brush consists of a shaft I, provided at its respective ends with metal rings J J, each provided with a circular series of radial slots J', closed at their outer ends and receiving fingers k, formed by cutting away the ends of folded sheet-metal holders K, between which strips L, of felt are clamped, the said holders being thus radially arranged around the shaft I, to which they are additionally secured by means of staples k'. Each of the said holders consists of a single strip of sheet-metal, folded longitudinally upon itself so as to virtually form two complementary leaves or members which receive a strip of felt directly between them, the said leaves being brought sufficiently close together to pinch and securely hold the strip. Inasmuch as the outer ends of the radial slots J' are closed, the holders are prevented from outward displacement by the impingement of their fingers against the outer end walls of the slots. By this construction also, the rings at the ends of the shaft prevent the holders from longitudinal displacement. The inward displacement of the holders is prevented by the shaft itself. At each of its ends the shaft I, is provided with a trunnion i, the said trunnions taking into the rear ends of the arms H H before mentioned, and also carrying wheels M M, having their peripheries recessed to receive the driving belts F F, which also pass over as stated, the driving-wheels d d, mounted upon the driving-shaft D. By recessing the peripheries of the wheels M and d, as described, the belts running over them are let down below their treads, so that the belts are not worn.

To the rear of the brush we locate a dust receptacle N, which may be of any suitable description, and which extends under the brush in such a manner that when the device is lifted from the floor, the said receptacle is engaged by the brush and the latter held within the box or case of the device.

It will be understood from the foregoing that by arranging the beaters to extend rearward from the extreme forward end of the case, they are caused to beat directly into the brush, which is obviously a very advantageous arrangement. This construction also causes the beating to be done in about the middle of the device, which is advantageous. Furthermore by this arrangement, economy of space is secured, for it permits the location of the driving-shaft between the beater-shaft and the brush.

By the employment of a pivotal finger arranged to resist the lugs on the driving-shaft when they are moving in one direction, but yielding and allowing them to pass when they are moving in the other direction, we avoid the actuation of the beaters when the machine is being moved backward, whereby we prevent any dirt from being beaten up and left on the floor, as would result if the beaters responded to rearward movement of the device, for when the device is moving rear-

ward, the brush precedes the beaters, and will not take up the dirt they raise. By journaling the brush as set forth, in the outer ends of pivotal arms, free to move up and down on their pivots—it rests upon the floor under a pressure represented by its weight, instead of being held in a fixed position with relation to the floor. In this way we secure a more intimate connection between the floor and the brush, and compensate for inequalities in both. It is apparent, however, that the particular arrangement of beaters, driving-shaft and brush, does not call for the exact construction shown and described, and equally apparent that all the devices set forth are not necessarily used with each other.

We would therefore have it understood that we do not limit ourselves to the exact construction herein shown and described, but hold ourselves at liberty to make such changes and alterations as fairly fall within the spirit and scope of our invention. We are aware that it is not new, however, to journal a rotary brush in arms pivotally mounted within the box or case of a carpet-beater, and we are also aware that a brush having radially arranged holders for bristles is old. We do not therefore claim either of those constructions broadly.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a carpet-beater, the combination with the case thereof, of a beater-shaft located in the forward end of the said case, beaters attached to the said shaft, and extending rearward therefrom, a brush located adjacent to the rear ends of the beaters, a driving-shaft located between the brush and the beater-shaft, and connection between the driving-shaft and the beater-shaft, whereby the latter is actuated, and connection between the driving-shaft and the brush, whereby the same is rotated, substantially as described.

2. In a carpet-beater, the combination with the case thereof, of a beater-shaft located in the forward end of the said case, beaters attached to the said shaft and extending rearward therefrom, a brush located adjacent to the rear ends of the beaters, a driving-shaft located above the beaters, and between the brush and the beater-shaft, an operating-arm rigidly connected with the beater-shaft, lugs or projections located upon the driving-shaft and engaging with the said arm to oscillate the beater-shaft, and connection between the driving-shaft and the brush, whereby the latter is rotated, substantially as described.

3. In a carpet-beater, the combination with the case thereof, of a beater-shaft located in the forward end of the said case, beaters attached to the said shaft and extending rearward in the case, a brush located adjacent to the rear ends of the beaters, a driving-shaft located above the beaters between the brush and beater-shaft, and provided with lugs or

projections, a pivotal finger connected with the beater-shaft, and constructed and arranged to resist the said lugs or projections when they impinge on one of its faces, but yielding to let them pass it when they strike its other face, and connection between the driving-shaft and the brush, for rotating the latter, substantially as described, and whereby the beaters are only operated when the device is being moved forward.

4. In a carpet-beater, the combination with the case thereof, of a beater-shaft journaled in the forward end of the said case, beaters attached to the said shaft, and extending rearwardly in the case, a driving-shaft located above the beaters, means whereby the beater-shaft is oscillated by the driving-shaft, two arms pivotally hung on the driving-shaft, and extending rearward therefrom, a brush journaled at its ends in the rear ends of the said arms, and means for rotating the brush substantially as described.

5. In a carpet-beater, the combination with

the other instrumentalities thereof, of a brush, comprising a shaft, rings or heads applied to the ends thereof, and constructed with radial slots closed at their outer ends, folded sheet-metal holders interposed between the said heads which prevent them from longitudinal displacement, and having their ends cut away to form fingers adapted to be inserted into the slots in the said heads, and each holder consisting of a single strip of sheet-metal longitudinally folded upon itself to form two leaves or members, and strips of felt clamped in the said holders directly between the leaves thereof, substantially as described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

CHARLES S. CHAFFEE.
ALVIN S. HOFFMAN.
FRANK A. GREEN.

Witnesses:

S. H. LESSEY,
WM. S. BROWNE.