

C. O. ALLEN.
Carpet Sweeper.

No. 238,321.

Patented March 1, 1881.

Fig. 1.

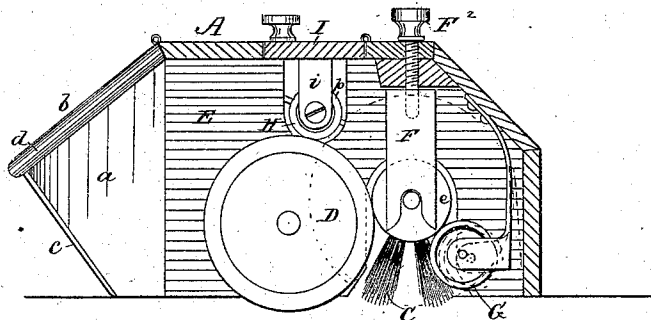


Fig. 2.

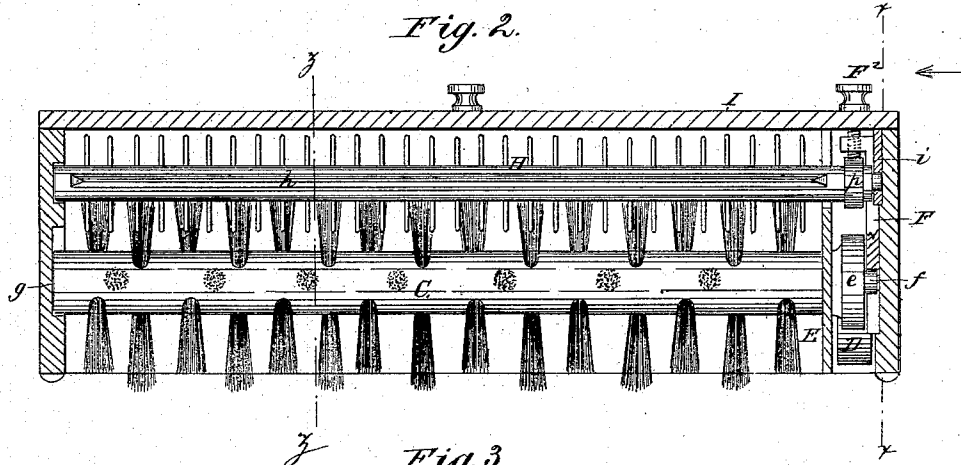
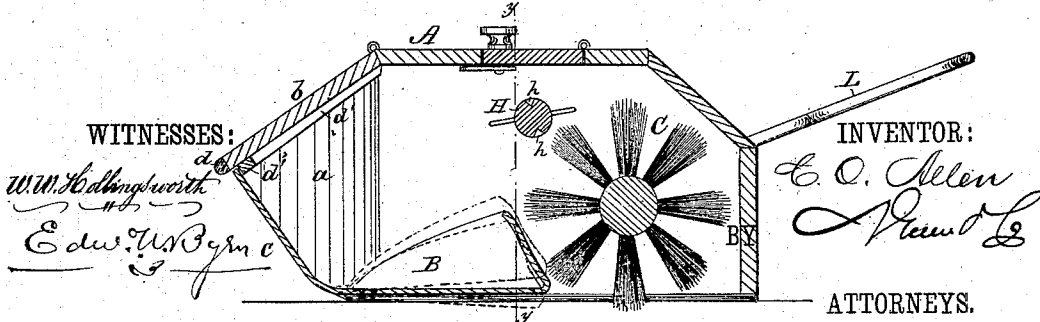


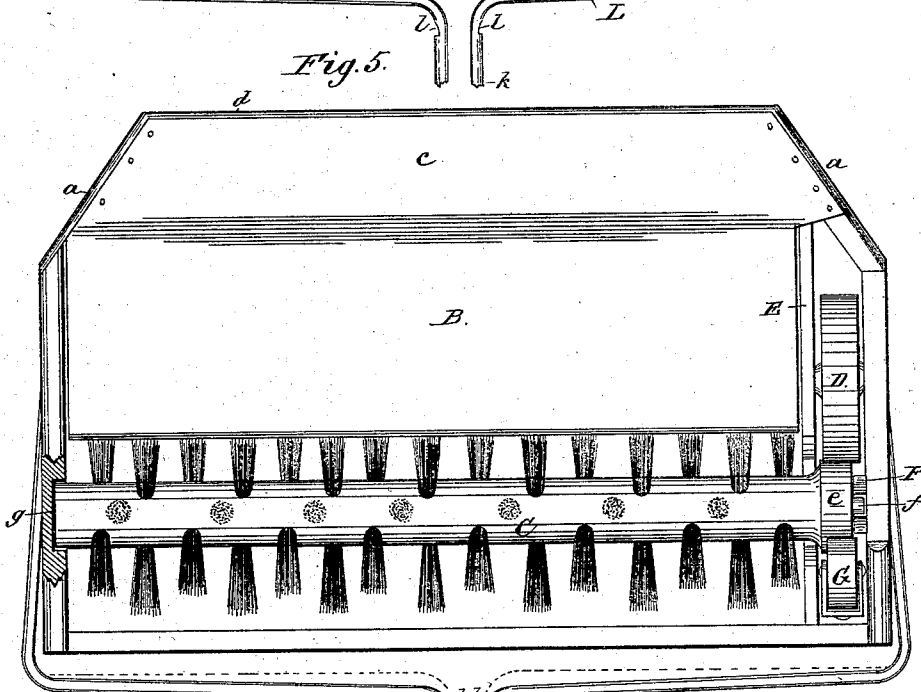
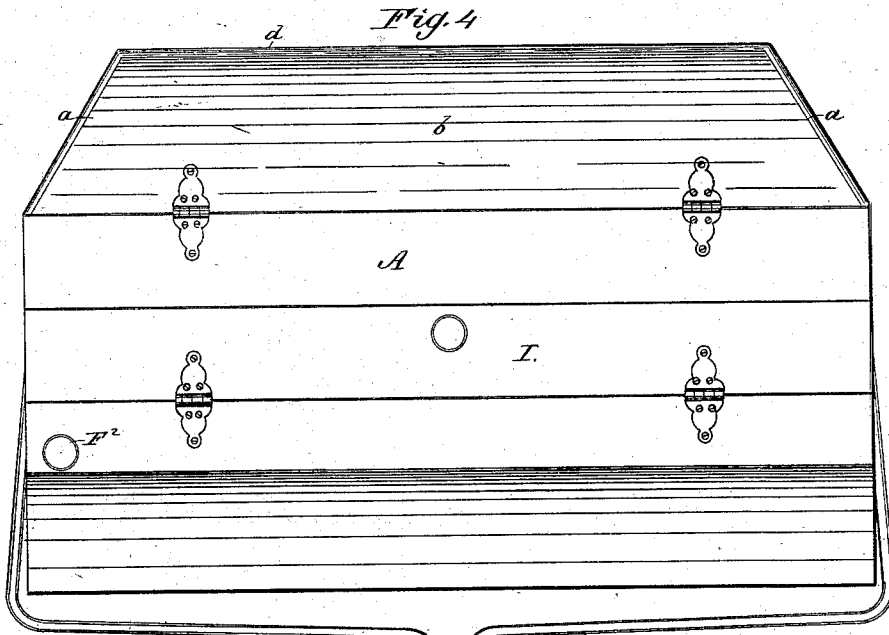
Fig. 3.



C. O. ALLEN. Carpet Sweeper.

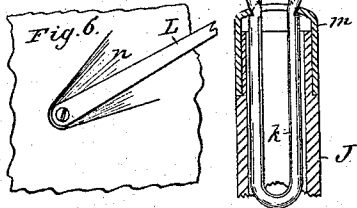
No. 238,321.

Patented March 1, 1881.



WITNESSES:

W. W. Hollingsworth
Edw. W. Byrn



INVENTOR:

C. O. Allen
 BY *Hubert L.*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES O. ALLEN, OF GRAND RAPIDS, MICHIGAN.

CARPET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 238,321, dated March 1, 1881.

Application filed October 16, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. ALLEN, of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and Improved Carpet-Sweeper; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a vertical transverse section through the line $x x$ of Fig. 2, looking in the direction of the arrow, showing the driving mechanism in the end compartment for actuating the brush and comb. Fig. 2 is a vertical longitudinal section through the line $y y$ of Fig. 3, looking in the direction of the arrow. Fig. 3 is a vertical transverse section through the line $z z$ of Fig. 2. Fig. 4 is a top or plan view with a part of the bail broken away. Fig. 5 is an underneath or inverted plan view, showing, in section, the connection of the handle to the bail. Fig. 6 is a detail of the end of the case, showing the connection of the bail thereto.

My invention relates to certain improvements in carpet-sweepers; and it consists in the peculiar construction of the case, in a revolving-comb combined with the brush and drive-wheel, in the peculiar construction of the comb, and in the peculiar construction of an elastic spring-bail combined with the handle and the carpet-sweeper case, all as herein-after fully described.

In the drawings, A represents the outer case of the carpet-sweeper, which is made of light thin wood or other suitable material. This case tapers at its front edge with a bevel, $a a$, at its ends, a bevel, b , on its upper front side, and a bevel, c , on its lower front side, the upper bevel, b , being in the form of a hinged lid, and the lower bevel, c , being the forward edge of the sheet-metal dust-pan B, which two bevels converge to a line of coincidence. The object of this construction is as follows: The end bevels, $a a$, avoid sharp corners, which might scar the furniture, and co-operate with the bevels b and c to form a comparatively narrow converging mouth, by which the dust and dirt in the dust-pan are concentrated while being discharged, which discharge may be effected by simply turning the case partially over, so that the hinged lid forming the top bevel will open slightly. Upon the outer edges of this

hinged lid is arranged a beading of leather, d , or other material, which, by projecting beyond the edge of the case, serves as a guard-strip to break the force of any impact against the furniture and prevents scarring the latter. A similar leather strip, d' , Fig. 3, is arranged upon the inside of the hinged cover; but this latter strip serves simply to make a moderately tight joint to hold the lid down and prevent the escape of dust while the device is in operation, the frictional engagement of the strip being, however, sufficiently slight so as not to interfere with the automatic opening of the lid when the sweeper is turned over for dumping the dirt.

The dust-pan B extends back close to the brush C, and turns up to form a lid to hold the dust. This pan is firmly attached to the case at its front or upwardly-inclined edge; but its horizontal portion is entirely disconnected from the sides of the case, so that it is flexible or self-adjusting, as shown in dotted lines, Fig. 3, to permit articles of considerable size—such as a thimble, a pair of scissors, or coin—to be picked up and deposited in the pan.

The brush C, I make in the form known as the "penetrating brush"—*i. e.*, the bristles of each bunch of bristles are made of different lengths, so as to secure a better penetration of the interstices in the surface of the carpet or floor. This brush has a rubber-faced friction-wheel, e , on its end, which is driven by contact with a larger rubber-faced wheel, D, Figs. 1 and 5, which is journaled in a separate compartment in the end of the case, and projects sufficiently below the lower edge of the case to come in contact with the floor and receive rotary motion when the case is pushed over the floor. To permit the ready removability of the brush the partition E, through which the axle of the brush extends, is slotted with a downwardly-opening slot, Fig. 1, and the journal f of the brush is also contained in an open slot of a bar, F, while the brush is held from dropping down and its wheel pressed into forcible contact with the drive-wheel D by means of a spring-seated-roller, G, Figs. 1 and 5. Now, when the brush is to be removed, it is only necessary to pull this end of the brush forcibly down, when the rubber wheel e of the brush passes down between the drive-wheel D and the spring-seated roller G, forc-

ing the latter back and allowing the brush to come out. The other end of the brush has no special journal; but the entire end of the axle or core is seated in a corresponding recess in the side wall of the case, as shown at *g*, Figs. 2 and 5. This serves to prevent this end of the brush from becoming obstructed by threads or cords, which are liable to get wound around a smaller journal. To permit the brush to be forced down more strongly against the carpet or floor, its journal-bar *F* is adjusted downwardly by a set-screw, *F*², which extends up through the case, and this downward adjustment of the bar *F* causes the friction-wheel of the brush to be more tightly jammed between the spring-seated roller and the drive-wheel, to give a more positive revolution in proportion to the increased friction which the brush has with the carpet when thus adjusted down.

After the brush of a carpet-sweeper acts for a certain time it becomes more or less filled with lint, strings, &c., which prevent it from effectively brushing up the dirt. To remedy this I provide a revolving comb, *H*, which acts constantly with the brush and derives movement from the same drive-wheel *D* by its friction-wheel *p* located above the drive-wheel.

I am aware that the edge of the dust-pan has been notched with teeth, so as to have to some extent this function; but this acts passively, and is not sufficiently effective, and I therefore employ a rotary comb having a positive action. Rotary combs have heretofore been employed for cleaning the brush of a cotton-gin; but I do not know that a rotary comb has ever before been combined with the brush and drive-wheel of a carpet-sweeper, and I claim the same as my invention. This comb *H*, I preferably make with points or tines projecting radially from a central core, which core is grooved longitudinally at *h*, Figs. 2 and 3, to permit the blade of a knife or a pair of scissors to be inserted to cut the ravelings and strings which may be taken from the brush and become tightly wrapped around the comb. One end of the core or axle of this comb I locate in a circular recess in the side of the case, so as to dispense with a special journal, (see Fig. 2,) in the same manner and for the same reason that the brush is thus journaled, while the other end is loosely pivoted in a metal block, *i*, Figs. 1 and 2, that drops down into a recess in the end of the case. On this end of the comb is located rubber-faced wheel *p*, which is forced into contact with the drive-wheel *D* by the action of the hinged door *I* in the top of the case, which bears upon the top of the journal-block *i*. This hinged door and the detachable character of the block *i* carrying that end of the comb furnishes means for readily removing the comb when it is to be cleared by simply opening the door and lifting out the comb, one end at a time.

In connecting the handle *J*, Fig. 5, to the case of the sweeper, I employ a bail, *L*, which, near its middle, is bent double to form a loop, *k*, with parallel branches, which loop is received into a hole in the end of the handle, and which is held in its place by notches *l* on the side of the loop, which spring outwardly behind the edge of the ferrule *m* on the handle. The whole of the bail-wire *L* is made in the nature of an elastic spring, and this serves an important function of assisting in preventing the furniture from being scarred, for if a piece of furniture be struck by the case while being pushed by the handle the blow is not a positive blow, but the spring-bail gives, as shown in dotted lines, Fig. 5. For connecting this bail to the case its ends are pivoted to the ends of the case in tapering recesses *n*, Fig. 6, so that the ends of the bail do not project to scar furniture, and which recesses have shoulders on each side, which allow a slight play to the bail about the pivotal point, but prevent the case from turning upside down.

Having thus described my invention, what I claim as new is—

1. A carpet-sweeper having beveled ends *a* *a*, a beveled upper side, *b*, made in the form of a hinged door, and a beveled lower side, *c*, the said bevels *b* and *c* converging to a line of coincidence to form a mouth for automatic dumping by a partial turn of the case, as described.
2. The combination, with a carpet-sweeper case and its brush, of a revolving comb for cleaning the brush, and a drive-wheel arranged to rotate both the brush and its rotary comb, as described.
3. The combination, with the brush and its friction drive-wheel, of a revolving comb, applied to the top of the brush and having a friction-wheel applied to the top of the drive-wheel, and the sweeper-case having a door in its top adapted to force the comb-wheel against the drive-wheel and allow it to be removed, as described.
4. The comb for a carpet-sweeper, consisting of a central core with radial teeth or tines, and a longitudinal groove in said core to permit the ravelings to be removed, as described.
5. The combination, with a carpet-sweeper case and its handle, of an interposed elastic spring-bail, having its forward ends pivoted to the opposite ends of said case and its middle portion connected to the handle, as and for the purpose described.
6. A spring-bail having a bent loop, *k*, with notches or catches *l* *l*, in combination with a carpet-sweeper case, and a handle having a ferrule for catching in the notches, as and for the purpose described.

C. O. ALLEN.

Witnesses:

EDWD. W. BYRN,
 SOLON C. KEMON.