

(No Model.)

A. D. & A. B. LINN.
CARPET SWEEPER.

No. 554,826.

Patented Feb. 18, 1896.

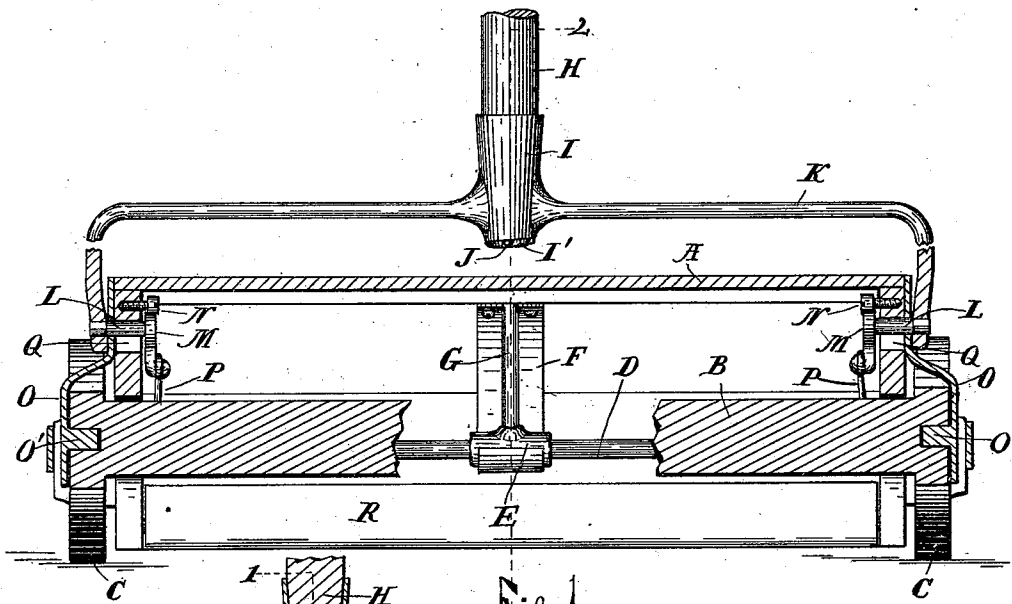


Fig. 1.
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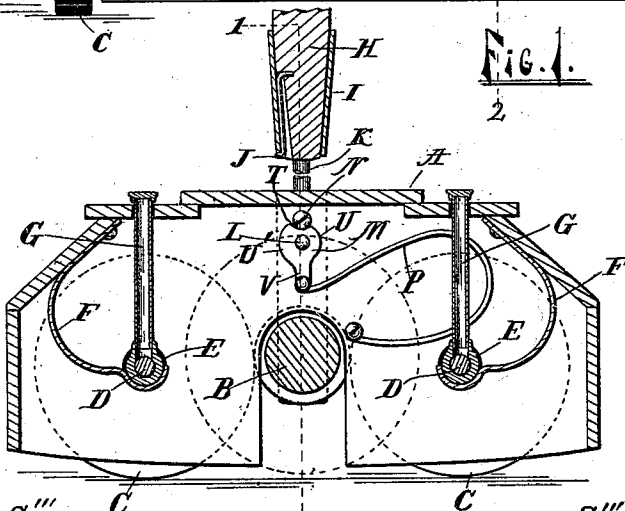


Fig. 2.

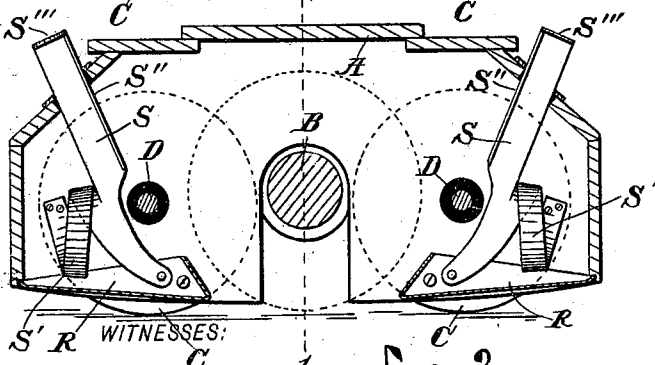


Fig. 3.

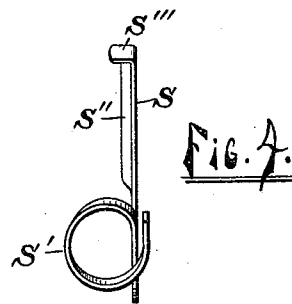


Fig. 4.

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UNITED STATES PATENT OFFICE.

ALLEN D. LINN AND ALLEN B. LINN, OF GRAND RAPIDS, MICHIGAN, ASSIGNORS TO T. STEWART WHITE, THOMAS FRIANT, GAIUS W. PERKINS, AND CHARLES J. REED, OF SAME PLACE.

CARPET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 554,826, dated February 18, 1896.

Application filed June 18, 1894. Serial No. 514,867. (No model.)

To all whom it may concern:

Be it known that we, ALLEN D. LINN and ALLEN B. LINN, citizens of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Carpet-Sweepers; and we 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.

One object of our invention is to provide a device in which the brush-shaft is adjusted to one height by inclining the bail in one direction and to another height by inclining the bail in the other direction.

Another object of the present invention is to provide the sweeper with means whereby a tendency will be exerted upon the case which will cause the end of the latter remote from the operator to hug the floor during the back stroke in the operation of sweeping and to turn into a plane at right angles with the handle when the sweeper is lifted from the floor.

A further object of the invention is to provide a sweeper in which the drippings of oil from the bearing will be prevented from reaching the floor or carpet without requiring the provision of supplemental means for catching said drippings.

A still further object of our present invention is to provide means for raising and lowering the dust-pans, which will be of simple, cheap, and durable construction.

These several objects are accomplished by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section on the line 1 1 of Figs. 2 and 3 of a device embodying our invention. Fig. 2 is a transverse vertical section of the same on the line 2 2 of Fig. 1 with the dust-pan mechanism omitted; Fig. 3, a similar section of the same with the brush and bail adjusting mechanism omitted, and Fig. 4 a detail of the dump-bar for the pans.

Like letters refer to like parts in all of the figures.

A represents the case, B the brush-shaft, and C the drive-wheels, which latter support

the case and drive the brush in the usual manner and are fixed on the ends of a shaft D, which shaft rotates with the said wheels and is journaled near the middle in a bearing E located within the case and connected to the case by a flexible hanger F, which hanger is rigidly secured to said bearing and serves to press the drive-wheels in contact with the brush-pulleys and also to support the case. A tube G extends upward from the bearing E through the case, whereby any suitable lubricant may be supplied to said bearing. We prefer some suitable solid lubricant that may be placed in said tube and gradually worn away at the lower end by the journal of the shaft. Such lubricant will thus last a long time without renewal.

When the wheels rotate on the shaft they require to be oiled, which oil does not last long and is liable to escape and get upon the carpet. By this construction if any lubricant escapes from the journal-bearing it falls into the contents of the dust-pan R, which is located immediately beneath the bearing and does no harm. So also we can use a practically rigid shaft D. Thus the wheels C are kept in line with the direction of motion and in more accurate contact with the brush-pulleys.

The bail K and the brush-shaft are movable vertically in unison independently of the movement of the case, and to produce such movement automatically by inclining the bail and by raising it to vertical position said bail is provided at each end with an inwardly-projecting journal L passing through a vertically-movable hanger O, having a stud O' on which the brush-shaft B is journaled. Said journal L also passes through a vertically-elongated opening Q in the case and is provided with a head M on its inner end, which head engages a stud N fixed in the case. Said head is also provided with an arm V, to which is pivoted one end of a spring P, which spring acts to press upward and force the head M against the stud N. Said head is also provided with a depression T, which engages the stud N when the bail is vertical and retains said bail in said position and also permits the brush to rise clear of the

floor to prevent putting a permanent bend in its bristles. Said head M is also provided with curved surfaces U U', concentric with its axis and of different radii. When the bail is moved from the vertical in one direction, the surface U, having the shorter radius, contacts the stud N and moves the brush downward but little, thus adjusting said brush high for soft carpets and the like.

By inclining the bail oppositely the surface U' having the longer radius contacts the stud N and adjusts the brush lower than before for use on hard carpets or bare floors. The brush is thus automatically removed from the floor when the bail is vertical, and lowered to a "high" position or to a "low" position as the bail is inclined from the perpendicular in one or the other direction and after such adjustment is not changed by any slight variation in the angle of the bail. Any downward pressure on the bail sufficient to overcome the spring P will temporarily lower the brush still further for any emergency. If the sweeper be lifted from the floor for dumping the pans when the bail is inclined, the spring P will automatically turn the case in the plane of the handle, and when the device is sweeping the tendency to thus turn serves to hold the side of the case most distant from the operator down upon the floor on the back stroke.

S is the device for operating the pan, which is made of a single piece of sheet metal, having the form shown and pivoted to the pan R at its lower end and extended upward through the case, being partially divided longitudinally, one part being coiled as at S' and secured to the case to act as a spring to close and hold the pan, and the other part provided with a longitudinal fold S'' to stiffen the same, and a transverse bend S''' to form a thumb-piece at its outer end.

The bail K is provided with a socket I, having a smooth tapered axial opening and the smaller end of said socket is spirally inclined to its axis, as at I'.

The handle H has a tapered end to fit within said opening and is secured by a wire hook J, having oppositely-bent ends, one of which enters the handle and the other of which extends outward and engages the inclined end of said socket. Beneath said hook J the handle is channeled to permit said hook to spring inward as it passes within the opening of the socket I. Passing through, it springs outward to engage the end of the socket. By rotating the handle H the hook J traverses the incline I' and forces the handle firmly into the opening of the socket and secures it in place.

What we claim is—

1. In a carpet-sweeper, the combination of the casing; the drive-wheels; the shaft upon the ends of which said drive-wheels are fixed, said shaft being rotated by said drive-wheels; a dust-pan; and a journal-bearing for said shaft, located within the interior of the cas-

ing and immediately over the dust-pan, substantially as described.

2. In a carpet-sweeper, the combination with the casing, and the rotative shaft having drive-wheels fixed on its ends, of the dust-pan, the journal-bearing for the shaft, located within the case and immediately over the dust-pan, and the lubricant-conductor extending from said bearing through the case, substantially as described.

3. In a carpet-sweeper, the combination with the case, the vertically-movable brush-shaft, and the bail having connection with said brush-shaft, of the journals for said bail, having curved heads provided with depressions and also having arms extending from said heads, studs engaged by the curved surfaces of said heads during the movement of the bail upon its journals and received by said depressions when the bail is vertical, and springs secured to the case and to the ends of said arms, substantially as described.

4. In a carpet-sweeper, drive-wheels engaging the brush-pulleys, a shaft fixed in said drive-wheels and rotating therewith, a central bearing for said shaft, a flexible hanger connecting said bearing with the case, and pressing said shaft toward the brush-shaft, and a tube extending from said bearing through the case, substantially as described.

5. In a carpet-sweeper, a case having vertically-elongated openings, a bail journaled in said openings, hangers connecting the brush-shaft and said bail, springs pressing the journals of said bail upward, studs in said case, and heads on said bail having curved surfaces of different radii engaging said studs to depress said bail and brush, substantially as described.

6. In a carpet-sweeper, a case having vertically-elongated openings, a bail journaled in said openings and vertically movable therewith, a brush-shaft connected to said bail and vertically movable therewith, springs pressing said bail upward, studs fixed in said case, heads attached to said bail, and engaging said studs and having two curved surfaces concentric with its axis and of different radii, and an intermediate depression engaging said studs when the bail is in vertical position, substantially as described.

7. In a carpet-sweeper, a vertically-movable and pivoted bail, a brush-shaft connected to said bail and vertically movable therewith, fixed studs in the case, heads attached to the bail-pivots and engaging said studs, said heads having depressions and curved surfaces of different radii engaging said studs and arms extending from said heads and springs attached to said arms and pressing said bail and brush-shaft upward and turning the bail on its pivots, substantially as described.

8. In a carpet-sweeper, a bail having a socket having a smooth tapered opening and a spirally-inclined end, a handle having a tapered end to fit within said opening, and a

spring-hook in said handle to engage the spiral end of said socket, substantially as described.

5 9. In a carpet-sweeper, the case having vertically-elongated openings and fixed studs, in combination with a bail having journals in said openings, said journals having heads and depressions receiving said studs when
10 the bail is vertical, arms projecting from said heads, and springs secured to the case and to the ends of said arms, all arranged and operating substantially as described.

10. As an improved article of manufacture, the herein-described device for raising and

lowering dust-pans, made of a single piece of 15 sheet metal divided through a part of its length, one side of said sheet constituting a push-rod and being formed with a head and a stiffening-flange, and the other side thereof being coiled and constituting a spring, sub- 20
stantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

ALLEN D. LINN.

ALLEN B. LINN.

Witnesses:

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LUTHER V. MOULTON.