

(No Model.)

2 Sheets—Sheet 1.

J. F. STEPHENS & G. M. PARSNEAU.
CLEANER FOR DUST COLLECTORS.

No. 546,944.

Patented Sept. 24, 1895.

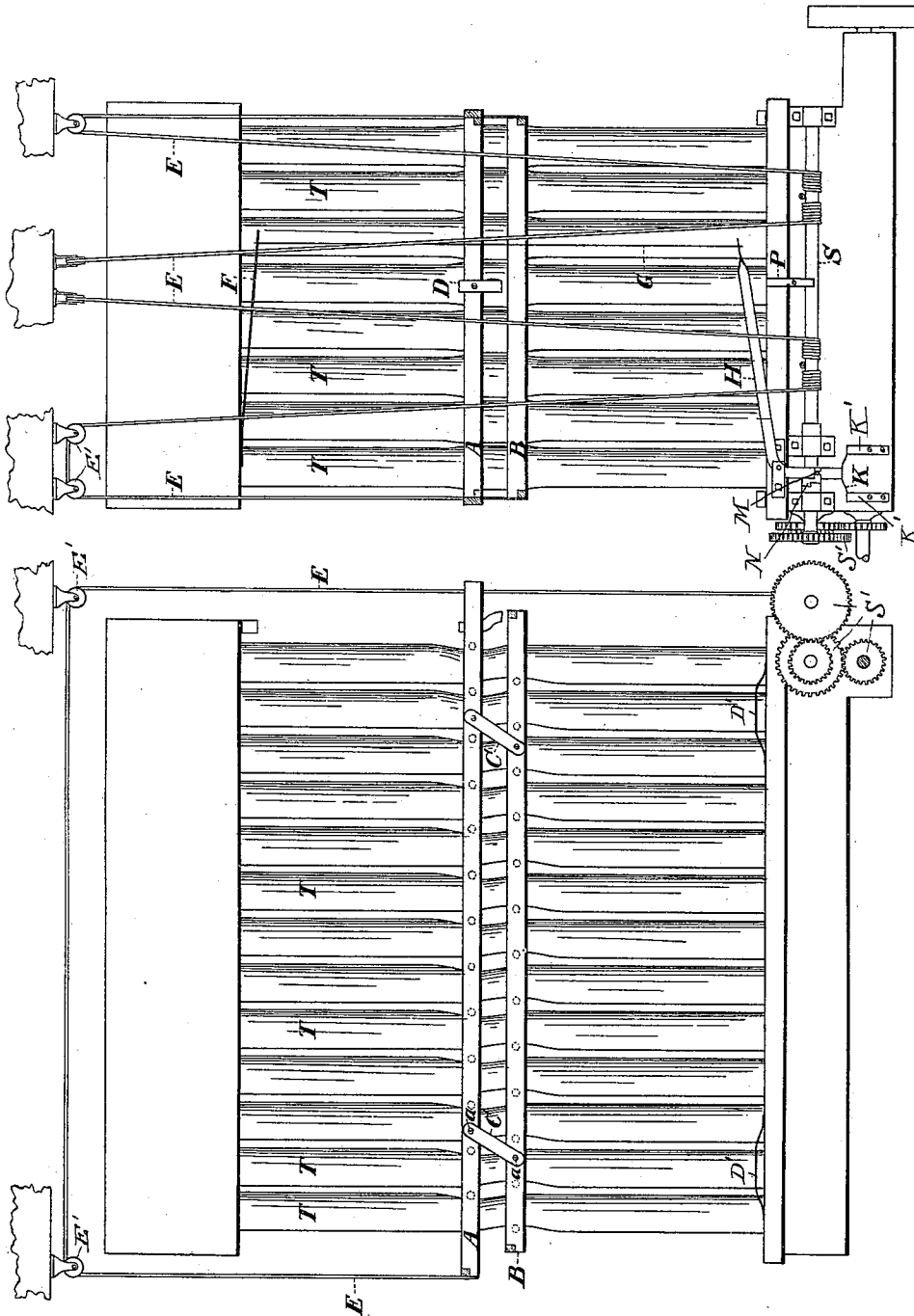


Fig. 2.

Fig. 1.

Witnesses:

Joel H. Blackwood
James H. Palk

Inventors:

James F. Stephens
George M. Parsneau
by David A. Lowrick Atty.

(No Model.)

2 Sheets—Sheet 2.

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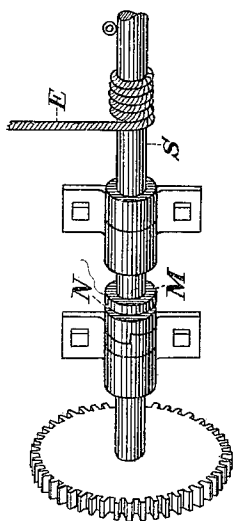


Fig. 4.

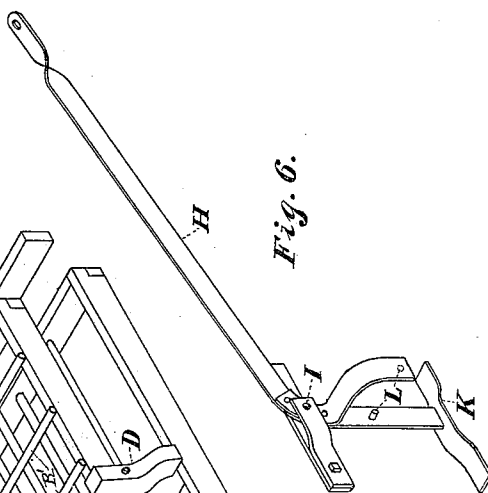


Fig. 6.

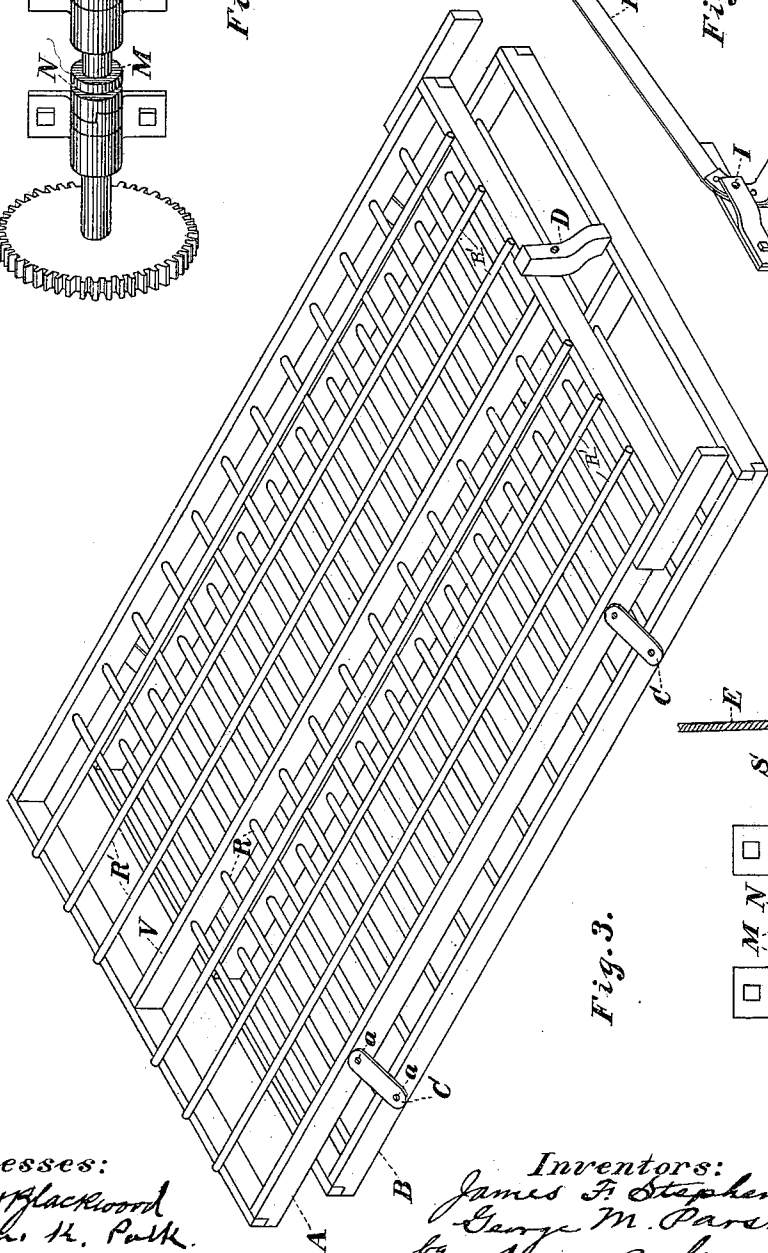


Fig. 3.

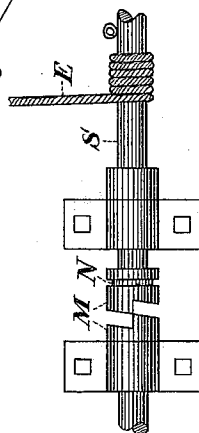


Fig. 5.

Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES F. STEPHENS AND GEORGE M. PARSNEAU, OF ST. CLOUD, MINNESOTA,
ASSIGNORS OF ONE-THIRD TO GEORGE TILESTON, OF SAME PLACE.

CLEANER FOR DUST-COLLECTORS.

SPECIFICATION forming part of Letters Patent No. 546,944, dated September 24, 1895.

Application filed December 14, 1894. Serial No. 631,833. (No model.)

To all whom it may concern:

Be it known that we, JAMES F. STEPHENS and GEORGE M. PARSNEAU, citizens of the United States, residing at St. Cloud, in the county of Stearns and State of Minnesota, have invented a new and useful Cleaner for Dust-Collectors, of which the following is a specification.

Our invention relates to new and useful improvements in cleaners for dust-collectors, and more particularly to the cleaning of that class of dust-collectors in which is employed a series of vertical flexible tubes between a dust-chamber proper at the top thereof and a hopper at the bottom, whereby a periodical thorough cleaning of said tubes may be obtained when desired. This object we accomplish by employing a vertically-movable framework carrying a series of horizontal rods or rollers adapted to press against or roll along the sides of the dust-collecting tubes, thereby dislodging any particles of dust which may have collected therein. This object we attain in the manner and by the means more particularly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a dust-collector of the character described having our improved device applied thereto. Fig. 2 is an end elevation of the same. Fig. 3 is a perspective view of the dust-removing frame detached. Figs. 4, 5, and 6 are detail views of the mechanism for operating said frame.

Similar letters of reference denote corresponding parts in the several views.

In the said drawings the letters A and B indicate an upper and lower framework, respectively, formed of any suitable material and, if desired, braced longitudinally by one or more braces V, as shown in Fig. 3. These frames are connected together at their sides by the links C, pivoted to the frames by pivot-pins *a a*. Located transversely in the said frames is a series of transverse rods or rollers R, and there may be, if desired, a series of longitudinal rods or rollers R'. These frames are located on the dust-collector, with the rods or rollers R R' embracing the flexible tubes T thereof, as shown in Figs. 1 and 2.

D is a stop on frame A to limit the approach

of the frames A and B toward each other. The frames are normally in their lowermost position resting on the springs or supports D', at which time the stop D will be in contact with the lower frame B and the rods or rollers of the frame A will assume a position vertically above those of frame B between the flexible tubes T.

Attached to the four corners of the frame A are the cords E, running over pulleys E' and from thence to a shaft S, located, preferably, on the end of the dust-hopper. This shaft is adapted to be rotated by means of any suitable gearing S', operated from a suitable source of power. It will thus be seen that when the shaft S is rotated the cords E will be wound thereon and the frames A and B raised.

Located on the shaft S is a clutch mechanism M N, of a well-known construction, and connected with the movable member N thereof is the lever H, pivoted to the dust-hopper at I and having pins L, Fig. 6, in its bifurcated arms adapted to engage the movable member N. The other end of this lever H is connected to a spring-arm F, attached to the under side of the dust-chamber by means of an intermediate cord G. The lower end of one of the bifurcated arms of the lever has a plate K thereon engaged by springs K' on the dust-hopper, as shown in Fig. 2.

The operation of the device is as follows: When it is desired to clean the dust-tubes T, power is applied to the gearing S', and through it the shaft S is rotated, winding the cords E thereon and raising the frames A and B. As soon as the latter are lifted from the springs or rests D', the weight of frame B, by reason of the eccentric-links C, will shift it longitudinally with respect to the frame A, thus throwing the rods or rollers R in the two frames out of alignment and into rubbing or rolling contact with the tubes T, thereby dislodging any dust that may have collected on the inner surfaces thereof. As the frame A approaches the dust-chamber above it comes in contact with the spring-arm F, thereby raising one end of the lever H through the intermediate cord G and throwing the clutch mechanism M N out of engagement, thus stopping the further rotation of the shaft S.

The weight of the frames A and B will now operate to unwind the cords E from said shaft S and permit the return of the frames to their bottommost position; but in order to prevent this from being done too rapidly a spring P is employed, pressing against the shaft S and retarding its rotation to the speed desired. The springs K', engaging the plate K on the lower end of the lever H, retain said lever in position, disengaging the clutch mechanism until it is again engaged by manual power.

It will be understood that the dust-collecting tubes T may be arranged in square, oblong, circular, or other groups, as desired, the frames A and B being shaped and located to correspond therewith. It will also be understood that we may either employ fixed rods R R' or they may be capable of rotation, as may be desired; also that the longitudinal rods or rollers R' may be dispensed with, if desired.

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

1. A dust collector consisting of a series of flexible tubes, in combination with a series of rods, adapted to impart a rubbing action to the flexible tubes, substantially as shown and described.

2. The combination with a dust collector composed of a series of flexible tubes, of a series of movable rods adapted to rub against the sides of the flexible tubes, substantially as shown and described.

3. A device for removing dust from the flexible tubes of a dust collector, consisting of a frame-work, a series of rods carried thereby and adapted to rub against the flexible tubes, and means for moving said frame-work and its rods, substantially as shown and described.

4. The combination with the vertical flexible tubes of a dust collector, of a frame work, a series of rods carried thereby and adapted to rub against the flexible tubes, a power driven shaft, and cords connecting the frame-work with the shaft and adapted to be wound upon the latter thereby raising the frame-work and its rods, substantially as shown and described.

5. The combination with the vertical flexible tubes of a dust collector, a frame-work, a series of rods carried thereby and adapted to

rub against the flexible tubes, and a rotating shaft and intermediate connections for raising the frame-work and its rods, of a tripping mechanism for automatically stopping the rotation of the shaft when the frame-work reaches its uppermost position, substantially as shown and described.

6. The combination with the vertical flexible tubes of a dust collector, a frame-work, a series of rods carried thereby and adapted to rub against the flexible tubes, a rotating shaft and intermediate connections for raising the frame-work and its rods from the shaft, and a clutch mechanism on said shaft for throwing it into or out of connection with the power mechanism, of a lever for operating the clutch mechanism, an arm in the path of the frame-work as it reaches its uppermost position, and an intermediate connection between the lever and arm whereby the movement of the arm by the frame-work will rock the lever and disengage the clutch mechanism, substantially as shown and described.

7. The combination of a vertically movable frame-work carrying rods for cleaning the flexible tubes of a dust collector, a rotating shaft and intermediate connections between it and the frame-work for raising the latter, a clutch mechanism on said shaft, a lever for operating said clutch mechanism, a trip for automatically operating said lever to disengage the clutch when the frame-work reaches its uppermost position, and springs engaging the lever to retain it in its tripped position, substantially as shown and described.

8. A device for removing dust from the flexible tubes of a dust collector, consisting of a frame-work formed of two sections, links hinging the two sections together, a series of rods carried by said sections and adapted to rub against the flexible tubes, and a stop on one of said sections adapted to engage the other section and limit the approach of one section to the other, substantially for the purpose described.

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Witnesses:

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