No. 673,635. Patented May 7, 1901.

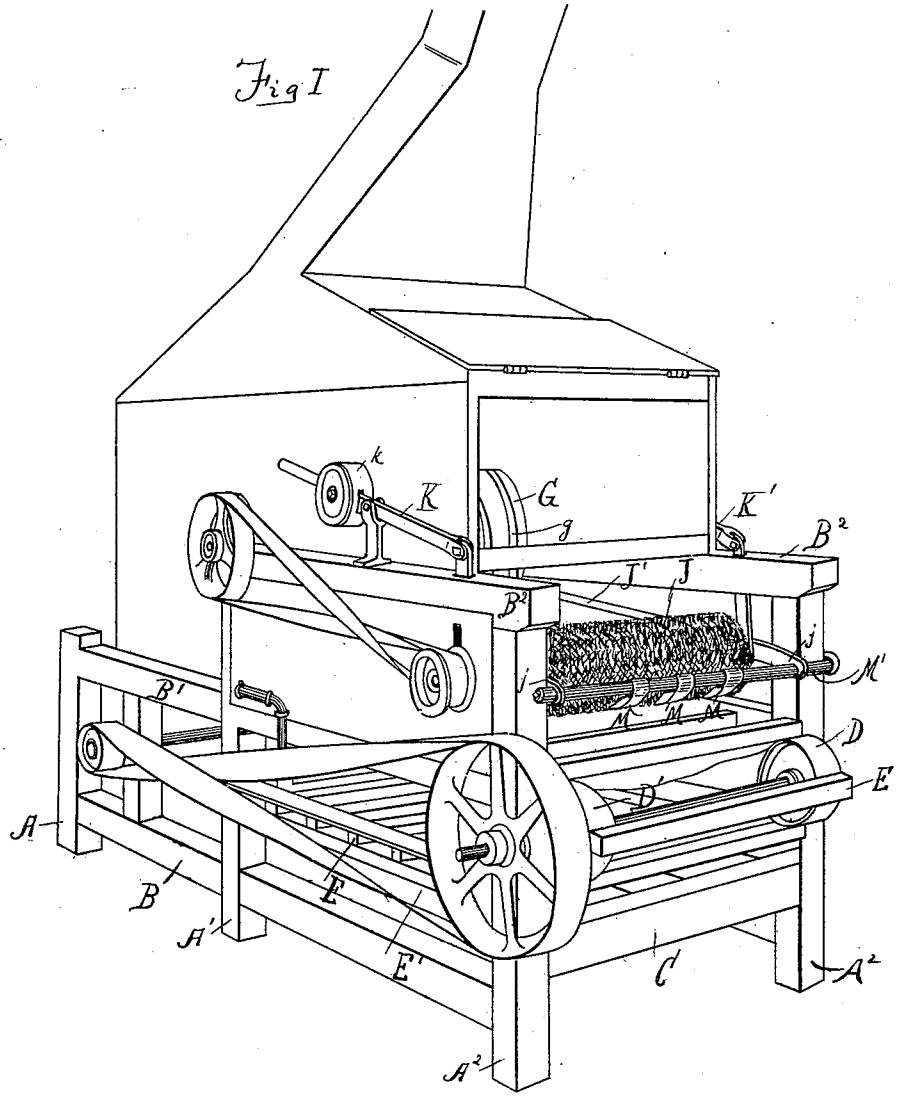
F. W. CHAFFEE.

CUSHION BEATING MACHINE.

(Application filed Nov. 17, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig I



WITNESSES:

A. L. Lord.

E. B. Donnelly.

INVENTOR

Frank W. Chaffee

BY

W. E. Donnelly

His ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 673,635. Patented May 7, 1901.

F. W. CHAFFEE.

CUSHION BEATING MACHINE.

(Application filed Nov. 17, 1900.)

(No Model.) 2 Sheets—Sheet 2.

Fig II.

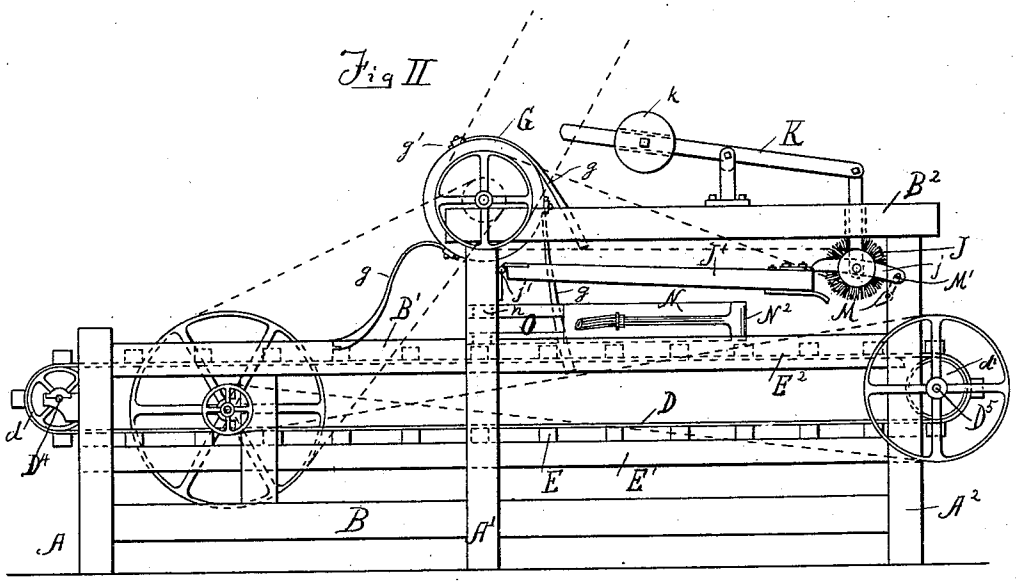
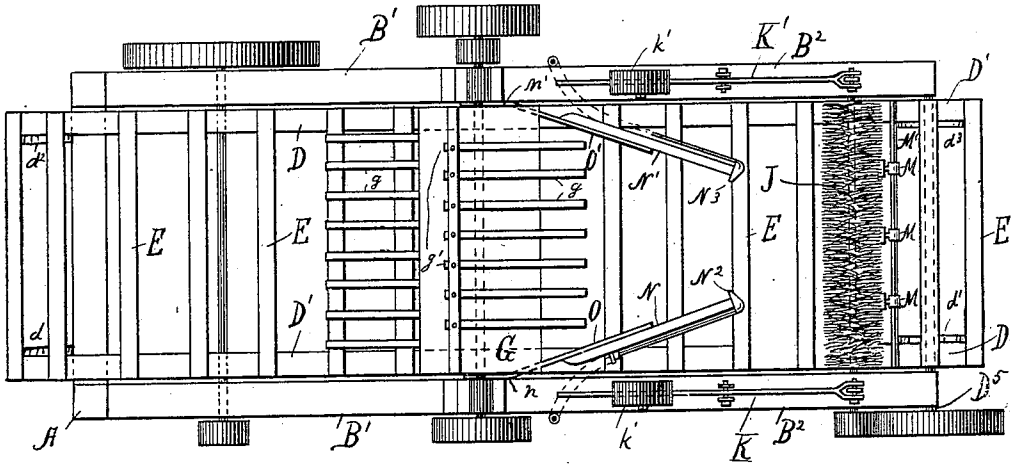


Fig III.



WITNESSES:

A. L. Lord

E. B. Donnelly.

INVENTOR

Frank W. Chaffee

BY

W. E. Donnelly

his ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK W. CHAFFEE, OF ALBANY, NEW YORK, ASSIGNOR TO HERMAN STERN, OF CLEVELAND, OHIO.

CUSHION-BEATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 673,635, dated May 7, 1901.

Application filed November 17, 1900. Serial No. 36,896. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. CHAFFEE, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Cushion-Beating Machines; and I hereby declare the following to be a clear, full, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to dusting and cleaning machines for cleaning and renovating cushions and backs of seats, and the same is more especially adapted to cleaning car-seats and backs by passing the said cushions through under a beater and revolving brush and in proximity to air-blasts.

My invention includes the combination and arrangement of the features hereinafter described, and fully pointed out in the claims.

In the drawings, Figure I is an isometric view of a machine embodying my invention and presenting to the front the rear of the machine, or that end from whence the articles are delivered from the machine after they have been cleaned. Fig. II is a view in side elevation of the machine, showing more clearly the operation of the different parts and their construction. Fig. III is a plan view looking down on the machine and showing the air-blast arms for cleaning the cushion edges and also showing my preferred arrangement of the whipper or beater straps.

When the machine is constructed as illustrated in the drawings, the following letters refer to the parts: A, A′, and A^2 represent uprights which at their lower ends form the legs of one side of the machine, said legs being duplicated at the opposite side. The legs A, A′, and A^2 also form standards for the bearings of the shafts of the carrier and of the beater drums or head. Extending from end to end of the machine at both sides are longitudinal beams B and B′, which are supported by the uprights A, A′, and A^2 and form in conjunction therewith the main frames of the sides of the machine, which are tied together by cross-bars, such as C, and thus form the frame for supporting the operative mechanism of the said machine. The uprights A′ and A^2 at both sides extend upward and are spanned by longitudinal beams B^2 B^2.

The carrier of my machine comprises two endless belts D D′, which are mounted on pulleys d d' and d^2 d^3, respectively, the pulleys d and d^2 being in turn mounted on a shaft D^4, journaled in bearings secured to uprights A, and the pulleys d' and d^3 being mounted upon driven shaft D^5, which is journaled in bearings secured to uprights A^2. The shaft D^5 is driven by means of a suitable belt or gear connection with the moving mechanism of the machine, and thus the carrier is moved at a predetermined speed from end to end of the machine.

E represents slats which are secured to the belts D and D′ and form a moving carrier. The slats are placed a suitable distance apart, so as to properly support the cushions and feed them through the machine, under the beater-head and revolving brush.

E′ represents a rail or track upon which the ends of the slats E rest to prevent the carrier from sagging. A similar rail or track may be arranged to support the upper part of the carrier; but I have not thought necessary to illustrate this in the drawings.

Mounted above and about central of the carrier is a revolving beater-head G, which is mounted high enough to give plenty of sweep to the flexible beaters g. The head G may be formed cylindrical in cross-section. I, however, prefer to secure the beaters g to the head, as illustrated in Figs. II and III, which is by securing the inner end g' of said beater flat to the head in contradistinction to inserting said beaters in holes or slots in said head. I also prefer to form said beater thinner at the inner or fastened end and thicker at their free or outer end. It will also be noticed that beaters are arranged so that the beaters of each row are out of line with the beaters of the preceding and following row. By the above construction and arrangement I attain several important results, such as by giving a good sweep to the beaters a whipping action is the result and the dirt is loosened more readily from the fabric pile or nap than when the beater-arms are short and stiff. By securing the beaters to the head G in the manner above set forth the whipping action is facilitated and the beaters are not broken at their fastened ends, and by forming the free ends of the beater thicker than the fastened ends the beaters are more

flexible, and the whipping action is more forcible on account of the thick or heavy free ends. The under side of the beater-head is moved in the same direction as the article being operated upon, and every portion of the upper surface of the article is whipped, owing to said movement and the arrangement of the beaters *g* on the beater-head G. The beaters are formed of any suitable flexible material, such as leather or the like.

J represents a revolving brush, which is mounted in bearings *j j*, located at the outer ends of hinged arms J'. Said arms J' are hinged at *j'* to uprights A' and allow the brush J to adjust itself to any thickness of cushion. In order to balance the brush J, I have devised pivoted weighted levers K and K', which are secured at one end to the arms J' J' of brush J and are provided with adjustable weights *k k'*, which are so adjusted as to properly counterbalance the brush J and its bearings *j j* and arms J' J'. The brush J is revolved in a direction so that its brushing-surface is traveling in a direction opposite to the direction in which the article operated upon is traveling, and thus the nap or pile of the fabric is brushed up and cleaned at the same time. Inasmuch as it is impossible for the brush J to remove all of the loosened dirt or dust, I have provided a series of air-jets M M M, which project air under pressure upon the surface of the article being cleaned. I locate these air-jets at suitable intervals along a feed-pipe M' and project them downward and toward the under side of the brush J and in the same direction in which the said brush is revolving, thus throwing the dirt or dust in the same direction as the brush and acting as an auxiliary to said brush J and moving with it.

In assembling the parts of the machine together I have shown the jets M M M as being distributed along a pipe, this pipe in turn being connected by means of a flexible connection to the air-supply and being also connected to the bearing portion *j j* on the end of the hinged arms J', and thus made to move with said bearings and with a revolving brush J. The adjustable weights *k k'* are moved along the levers K and K' so as to just about balance the brush J and the pipe and air-jets connected near the brush J.

It will be noticed that as the cushions pass through under the beaters and brush J their upper surfaces only are acted upon by said beaters and brush, and in order to provide means for cleaning the sides or edges of the cushion I have devised the following: N N' represent two arms which are secured to the frame of the machine at both sides and just above the upper face of the carrier. The arms N N' are secured to the frame at *n n'* by means of flat springs O O', so as to converge in the line of travel of the cushions, and thus press against the edges of said cushions as they are fed through the machine. The outer or free ends of the arms N and N' are provided with jet-heads N^2 and N^3, with openings directed toward the edges of the cushions, and thus as the cushions are fed forward through the machine the edges are cleaned by the air-jets from jet-heads N^2 and N^3. The springs O and O' adjust the jet-heads N^2 and N^3 to any width of cushion. The springs O and O' are of just sufficient elasticity or resiliency to bear lightly against the edges of the cushion and not exert sufficient force to stop the progress of the cushion in its line of travel.

Air under pressure is fed to the several air-jets by suitable hose or pipe conveyers or feed-pipes connected thereto and communicating therewith.

As illustrated in Fig. I of the drawings, the machine is inclosed in an outer casing which is provided with or connected to an exhaust-section for the purpose of carrying off the accumulated dust.

What I claim is—

1. A dusting and cleaning machine of the type set forth, comprising an endless carrier, a rotating beater-head located above said carrier, a revolving brush located at one end of the machine and also above said carrier, air-jets located in proximity to said brush, said brush and air-jets being provided with means whereby they automatically adjust themselves to the thickness of the cushion substantially as set forth.

2. A dusting and cleaning machine of the type set forth, comprising an endless carrier, a rotating beater-head located above said carrier, flexible arms secured to said beater-head a rotating brush located at the delivery end of the machine and above the endless carrier, air-jets located in proximity to the revolving brush, and means for automatically adjusting the elevation of the brush and the air-jets for the purpose set forth.

3. The combination in a dusting and cleaning machine of an endless carrier, a revolving beater-head said beater-head being provided with beater-arms gradually increasing in thickness toward their outer or free ends, a revolving brush, air-jet devices, and means for adjusting said air-jet devices horizontally across the carrier, substantially as described.

4. In combination, the carrier, means for loosening the dust on the cushion, and means for cleaning the sides of the cushion comprising the spring-pressed arms having yielding movement toward and from each other in a direction transversely of the carrier and in the path of the side edges of the cushion and the air-blast devices on the ends of the said arms, substantially as described.

Signed by me at Albany, county of Albany, and State of New York this 13th day of November, 1900.

FRANK W. CHAFFEE.

Witnesses:
WALTER E. WARD,
LOTTIE PRIOR.