

No. 665,579.

Patented Jan. 8, 1901.

D. E. PAINTER.
CARPET CLEANING MACHINE.

(Application filed Sept. 15, 1900.)

(No Model.)

2 Sheets—Sheet 1.

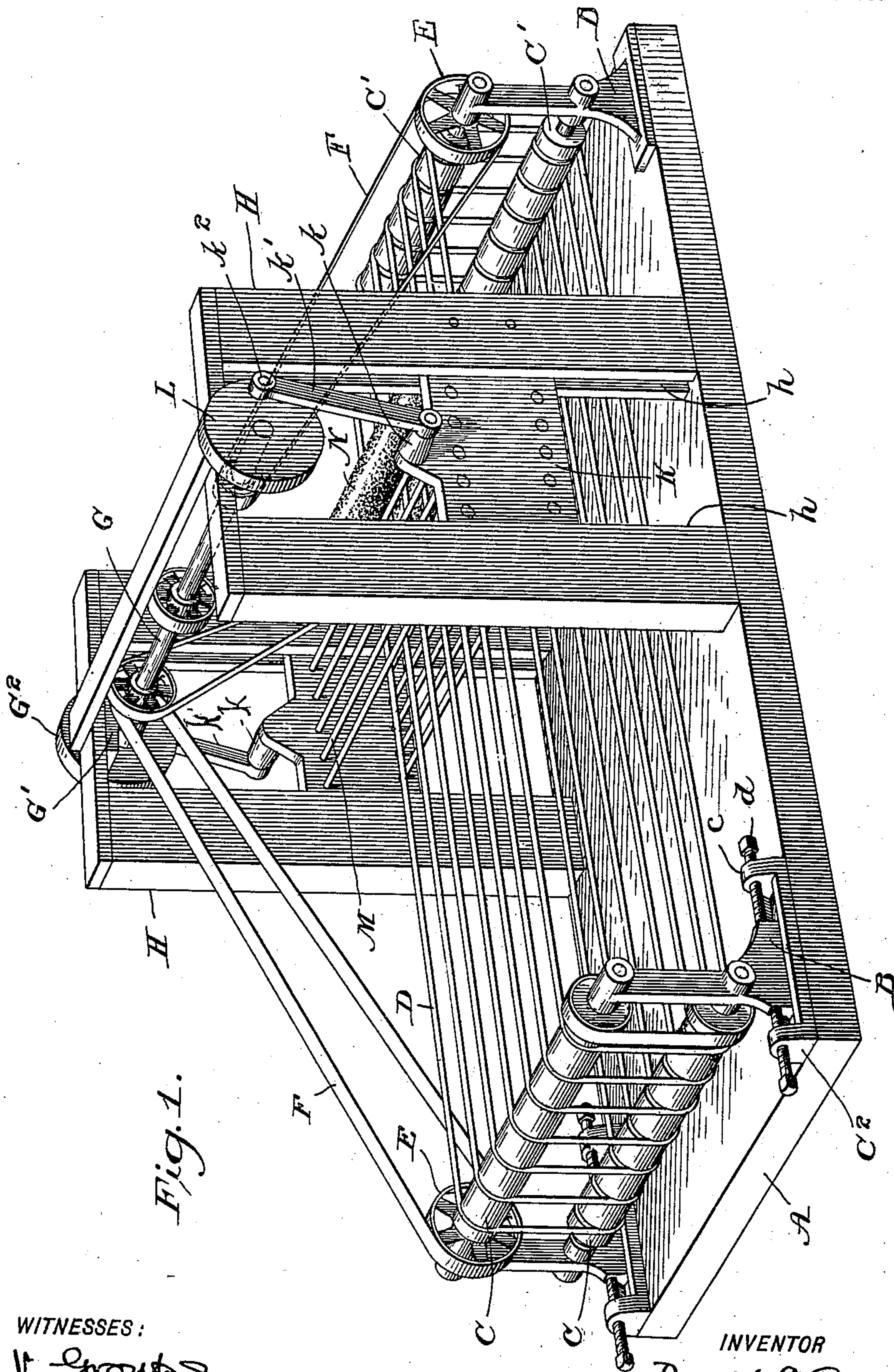


Fig. 1.

WITNESSES:

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No. 665,579.

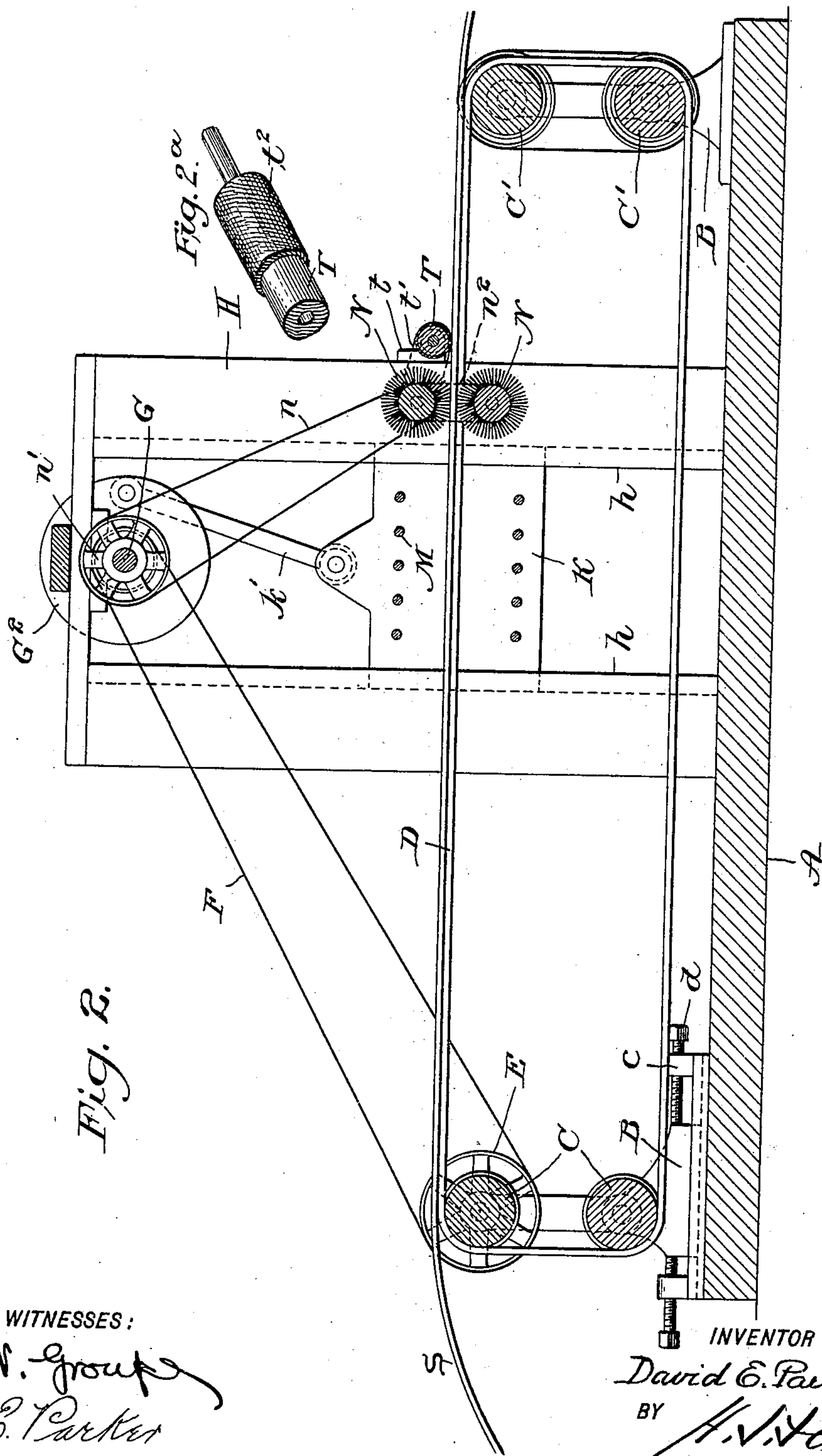
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2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

DAVID E. PAINTER, OF PHILADELPHIA, PENNSYLVANIA.

CARPET-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 665,579, dated January 8, 1901.

Application filed September 15, 1900. Serial No. 30,088. (No model.)

To all whom it may concern:

Be it known that I, DAVID E. PAINTER, a citizen of the United States, residing in the city of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Carpet-Cleaning Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to machines for beating and cleaning carpets, and has for its object to provide mechanical apparatus which will feed forward the carpet to and between two series of cords or bands arranged transversely to each other and one of which series is then vibrated by suitable mechanism, producing a beating action on the carpet by and between the transverse series of cords, and then by suitable mechanical devices to brush the beaten carpet.

To these ends my invention consists in a machine or apparatus, hereinafter described, having in combination the following identifying features, viz: a suitable frame carrying opposite pairs of rotated rolls or shafts, with means to rotate the same, a series of endless cords or bands mounted thereon, whereby the carpet is fed forward and supported during the beating operation, and another series of cords or bands constituting the beating series arranged transversely to the carrying series, with means, such as a pair of oppositely-arranged reciprocating carrier-plates, between which said transverse series of cords is stretched and by which said series is vibrated; also, in the combination therewith of actuating-arms for said carrier-plates, a shaft with means to rotate it, and crank connection between it and said carrier-plates; also, in the combination, with such beating mechanism, of a pair of rotatable brushes geared or otherwise operatively connected with means to drive said brushes from the main actuating-shaft of the machine, and finally in the combination, with such beating and brushing mechanism, of a cloth-covered roller arranged behind the rotating brushes and driven from the shaft of one of the same or by friction.

In the accompanying drawings, illustrating a machine embodying my invention in

all its parts, Figure 1 is a perspective view from the front corner of the device; Fig. 2, a vertical section through the longitudinal center of the machine, and Fig. 2^a is a perspective view of one end of the cloth-covered roller.

In the views like letters of reference indicate like parts.

The machine may be arranged either vertically or horizontally.

In the drawings, A represents a suitable supporting base or frame stand, at each end of which are mounted standards or bracket-bearings B B' for supporting the oppositely-disposed pairs of rotatable shafts or rollers C C'. These bearings B are fastened to the supporting-frame A; but the bearings B' are shown set in a grooved plate C², having ears c, in which screws d are mounted, so that the bearing B' may be moved in the plate C², and hence the pairs of rollers C C' may be so adjusted relatively to and from each other to take up slack in the series D of cords or belts and keep them always taut. The drawings show and I prefer two rollers C and two rollers C'; but it is obvious that one of each will be sufficient for the purpose of supporting and driving the cords as a series of endless belts. These cords or narrow belts are indicated at D. Preferably the peripheries of the rollers C C' are grooved circumferentially, primarily to keep the cords a proper distance apart and also to create greater frictional contact between cords and rollers. The rollers C C' are shown provided with a pulley E on top roller C, with a like pulley E' and belt F' for roller C', said pulley being driven by a belt F from a main driving-shaft G, set in hangers G', supported by and between a pair of uprights H.

At a point preferably a little beyond the center of the length of the series of cords D from the feeding-in end of the device there is secured to the supporting-frame A a pair of oppositely-arranged guideway-plates H H, and in the drawings showing the machine arranged horizontally these are the uprights H before mentioned. They are longitudinally grooved at h h. In these grooves there is reciprocated a carrier-plate K, which is provided for that purpose with a pin k. An actuating-arm k' connects therewith and also connects with another pin k², eccentrically fixed on the

face of a driving-wheel L, carried on the end of the main driving-shaft G. Between the two carrier-plates K a series of cords M is stretched and secured. These cords are there-
 5 fore transverse of the first series of cords D, which are primarily carrying-cords, and these transverse or second series of cords M, stretched between the opposite carrier-plates K, are arranged relatively to the first series
 10 as to be above or outside of the latter—that is to say, in assembling the parts of the machine the two series of cords are so arranged relatively to each other that the carpet will be carried forward directly between the same.

15 Power may be applied to the main driving-shaft G by any appropriate means. The drawings show a pulley G² on one end of shaft G.

Arranged in suitable bearings in the rearward of the two guideway-plates H H is
 20 mounted a rotatable brush or, preferably, a pair of rotatable brushes N N. The upper one of these is connected by a driving-belt *n* to a pulley *n'* on the main driving-shaft G of the machine. The other brush is driven, as
 25 shown in the drawings, by a pulley-belt *n*², (see Fig. 2;) but this is not essential, as such contacting brushes are commonly driven by friction. Slightly rearward of the pair of rotating brushes a bracket-bearing *t* is secured
 30 to the same guideway-plate H, and this bracket supports a freely-rotatable cloth-covered roller T, which is composed of a roller of wood or other like substance covered with cloth or other water-absorbent material, as indicated
 35 at *t*², Fig. 2^a, which cloth covering is saturated with water or other cleaning liquid, which said roller T, if desired, may be allowed to rotate by friction of the carpet against it, but is shown as driven by a pulley-belt *t'* from the driven brush-roller N, as indicated in the drawings, though this driving connection is not essential, Fig. 2.

The operation of the device is as follows: The carpet to be cleaned is indicated at S in
 45 the drawings. It is placed at the forward or feed end of the machine on the moving endless cords D and by them carried forward to and under the series of transverse cords M. The rotation of the several rollers and driv-
 50 ing-shaft is so timed that a quick reciprocating action of the carrier-plates K forces down upon every part of the carpet the series of transverse cords M with a whip-like or beating action, and the consequent rebound gives a
 55 like action, in a lesser degree perhaps, to the under series of carrying-cords D. From these the beaten carpet passes between the rotating brushes N N, and from these the upper or pile face of the carpet passes in contact with the
 60 periphery of the cloth-covered roller T, which is kept wet with water and tends to brighten the colors and otherwise freshen the pile-surface of the carpet.

Having thus described my invention, what
 65 I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for cleaning carpets, the

combination of mechanism for feeding forward the carpet and beating it by and between two sets or series of cords arranged
 70 transversely to each other, the same consisting of a series of longitudinally-arranged endless cords with rotatable supporting-rollers and means to drive the same, of another series of cords arranged transversely to the first
 75 series, a pair of oppositely-arranged carrier-plates by and between which said transverse cords are mounted and vibrated, supporting devices in which said carrier-plates are recip-
 80 roated, and means to reciprocate the same from the main shaft of the machine; substantially as described.

2. In a carpet-cleaning machine, the combination with a suitable frame, of oppositely-arranged rotatable rollers C, C' with means to
 85 drive one of said rollers from the main shaft of the device, a series of longitudinally-arranged cords stretched over said rollers C, C' and adapted to have a longitudinal forward movement, a series of endless belts, a pair of
 90 carrier-plates K, a series of cords stretched between the same and arranged transversely to the first series of cords, guideways in which said carrier-plates K may be reciprocated, with mechanism to reciprocate the same, a main
 95 shaft, with pulleys and connecting-beltting operating to actuate the said parts in the manner recited; substantially as described.

3. In a carpet-cleaning machine, the combination with a suitable supporting-frame, of
 100 standards B and adjustable standards B with means for adjusting the same on the frame, peripherally-grooved rotatable rollers C, C', mounted in said standards, driving-pulleys, with belting therefor, a longitudinally-
 105 arranged series of endless cords D stretched over said rollers C, C', a second series of cords M arranged transversely to the first or carrying series, supporting mechanism in which said transverse cords M are mounted as a series, and means to vibrate said series of cords
 110 M relatively to the first series; substantially as described.

4. In a carpet-cleaning machine, the combination with a suitable supporting-frame,
 115 standards B thereon, rotatable rollers C, C' journaled in said standards, a series of endless cords D stretched over said rollers, oppositely-disposed carrier-plates with a series of cords stretched between the same, and
 120 transversely to the first series of cords, and with means to support and guide and means to reciprocate said carrier-plates, a rotatable brush mounted rearward of the series of transverse cords with means to support said brush
 125 rotatably; substantially as described.

5. In a carpet-cleaning machine, the combination with a suitable supporting-frame, standards B thereon, rotatable rollers C, C' journaled in said standards, a series of end-
 130 less cords D stretched over said rollers, oppositely-disposed carrier-plates with a series of cords stretched between the same and transversely to the first series of cords, and

with means to support and guide and means
to reciprocate said carrier-plates, a rotatable
brush mounted rearward of the series of trans-
verse cords with means to support said brush
5 rotatably, and a cloth-covered roller mounted
rearward of the rotatable brush, with means
to support the same operatively; substantially
as described.

In testimony whereof I have hereunto af-
fixed my signature this 4th day of September, 10
A. D. 1900.

DAVID E. PAINTER.

Witnesses:

GEO. W. REED,
H. T. FENTON.