B. BECKER & H. BARRY.

CARPET CLEANING AND RENOVATING MACHINE.

APPLICATION FILED DEC. 17, 1910.

1,077,867.

Patented Nov. 4, 1913.

2 SHEETS—SHEET 1.

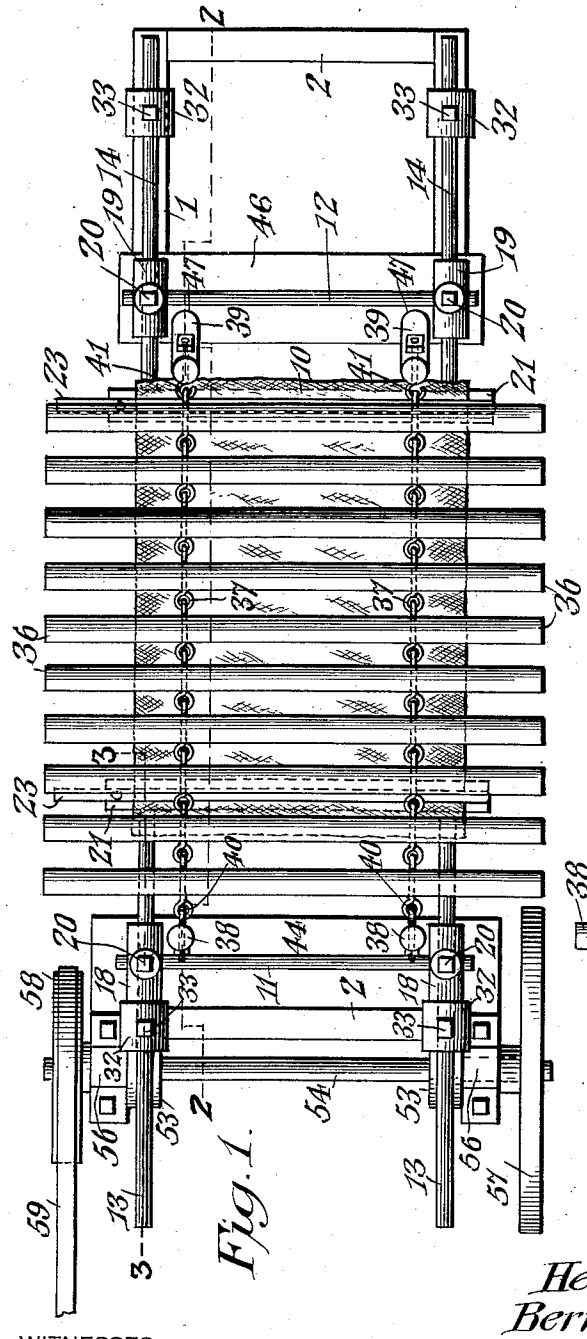


Fig. 1.

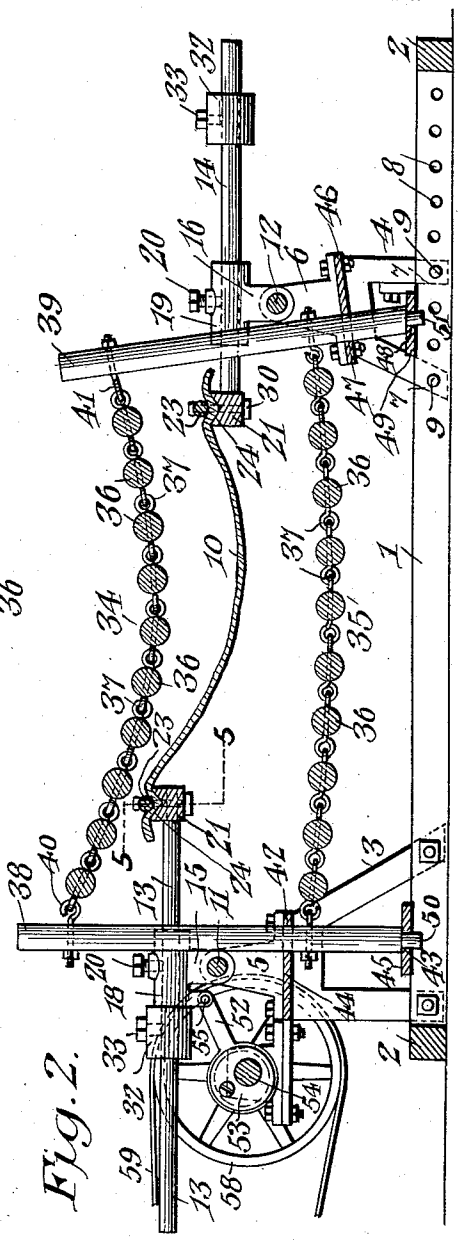


Fig. 2.

Henry Barry
Bernhard Becker INVENTORS

WITNESSES

Jas. K. McCathran

H. T. Riley

BY

E. G. Siggers

ATTORNEY

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 5.

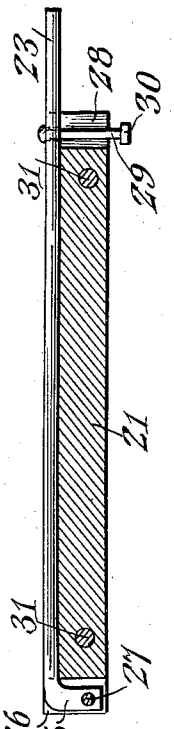


Fig. 4.

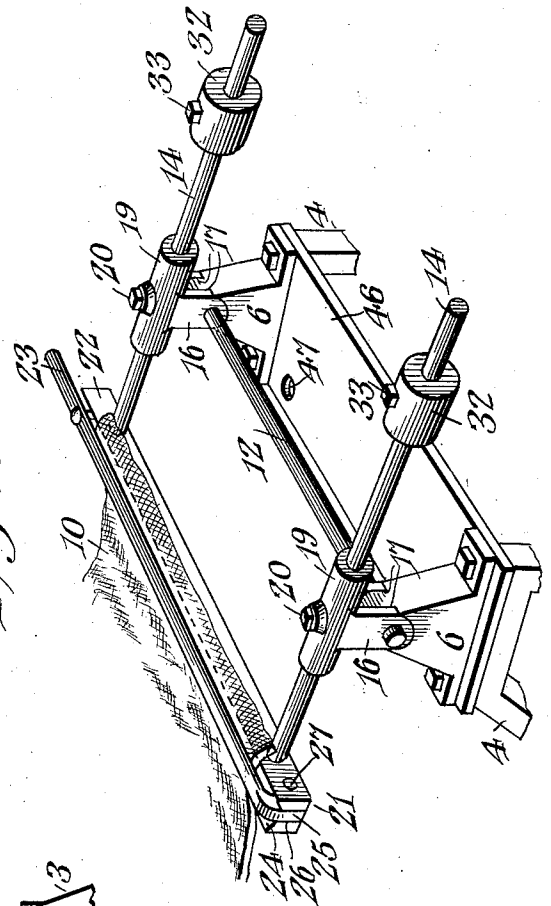


Fig. 3.

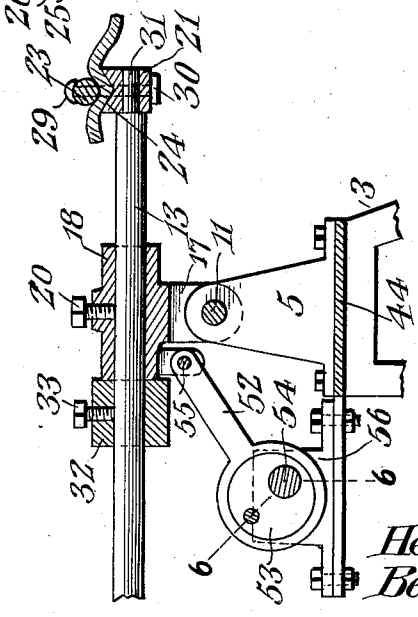
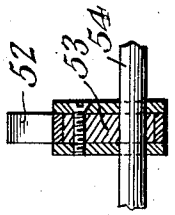


Fig. 6.



Henry Barry
Bernhard Becker, INVENTORS

BY E. G. Siggers

ATTORNEY

WITNESSES

Jas. E. McCathran

H. F. Riley

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

BERNHARD BECKER AND HENRY BARRY, OF CHICAGO, ILLINOIS, ASSIGNORS, BY MESNE ASSIGNMENTS, TO BARRY MANUFACTURING COMPANY, A CORPORATION OF DELAWARE.

CARPET CLEANING AND RENOVATING MACHINE.

1,077,867. Specification of Letters Patent. Patented Nov. 4, 1913.

Application filed December 17, 1910. Serial No. 597,890.

To all whom it may concern:

Be it known that we, BERNHARD BECKER and HENRY BARRY, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Carpet Cleaning and Renovating Machine, of which the following is a specification.

The invention relates to improvements in carpet cleaning machines.

The object of the present invention is to improve the construction of carpet cleaning machines, and to provide a simple, efficient and comparatively inexpensive machine, designed for cleaning carpets, rugs and other floor coverings and analogous material, and adapted to operate separately on each individual carpet or rug, whereby the latter are cleaned in a sanitary manner and without liability of exposing one carpet to the germs of another.

A further object of the invention is to provide a carpet cleaning machine, adapted to rapidly remove the dust and dirt from a carpet, rug or the like without liability of injuring the material operated on, and capable of adjustment to suit the length of the carpet or size of the rug to be cleaned.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a plan view of a carpet cleaning machine, constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 1. Fig. 3 is a detail sectional view on the line 3—3 of Fig 1. Fig. 4 is a detail perspective view of one of the oscillatory carpet carrying lever frames. Fig. 5 is a detail sectional view on the line 5—5 of Fig. 2. Fig. 6 is a detail sectional view on the line 6—6 of Fig. 3.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

In the accompanying drawings illustrating the preferred embodiment of the invention, 1—1 designate spaced longitudinal sills of the frame of the machine. The longitudinal bars or sills are connected at their terminals by transverse bars or beams 2, which with the longitudinal bars or sills, form a rectangular base. Mounted upon the base are fixed and adjustable stands 3 and 4, which support spaced bearing brackets 5 and 6. The stands, which may be constructed of any suitable material, preferably consist of spaced legs or standards and a connecting top plate to the upper face of which the bearing brackets are secured. The legs or standards of the fixed stand 3 are bolted or otherwise secured to the base of the frame of the machine, and the legs or standards of the adjustable stand have bifurcated lower terminals 7, which straddle the side sills or bars 1. The side sills or bars 1 are provided at one end of the base with perforations 8, arranged at intervals and adapted to receive pins 9, which pierce the bifurcated ends 7 of the standards or legs of the adjustable stand and secure the latter in its adjustment. The stand 4 is adjustable along the base of the frame to arrange the machine to suit the size of a rug, or the length of a piece 10 of carpet, or other material operated on by the machine.

The bearing brackets 5 and 6, which are in the form of pedestals, extend upwardly from the stands and receive transverse pivots 11 and 12, consisting of rods and fulcruming longitudinally disposed oscillatory levers 13 and 14 on the bearing brackets. The rods 11 and 12 extend across the spaces between the bearing brackets, which are located at opposite sides of the frame of the machine, and the levers, which preferably consist of round bars, are provided intermediate of their ends with depending arms 15 and 16, which are bifurcated to straddle the bearing brackets 5 and 6, and the upper ends of the bearing brackets are recessed at opposite sides at 17 to receive the sides of the arms 15 and 16 and to form reduced upper portions, which fit between the side portions of the said arms. The side portions of the arms 15 and 16 are round, and the recesses are provided with curved lower end walls, which form

bearings for the arms and thereby relieve the pivoted rods 11 and 12 of strain. The levers extend inwardly and outwardly beyond the bearing brackets, and the intermediate depending arms are provided at their upper ends with sleeves 18 and 19, which embrace and slightly receive the bars or body portions of the levers, and the latter, which are adjustable inwardly and outwardly to arrange the machine to accommodate carpets and rugs of different lengths, are secured in their adjustment by clamping screws 20, mounted in threaded perforations of the sleeves 18 and 19 and engaging the bars or body portions of the levers 13 and 14. The inner ends of the oscillatory levers are connected by transverse clamps 21, coöperating with the spaced longitudinal levers to form oscillatory carpet carrying frames, and each consisting of a relatively fixed transverse bar 22, and a pivoted clamping rod or bar 23. The bar 22 is fixed to the inner ends of the oscillatory levers and projects laterally therefrom and is provided in its upper edge or face with a longitudinal groove 24 in which the carpet is clamped. The clamping rod or member 23 is provided at one end with an angularly related arm 25, extending downwardly in a slot or recess 26 of the adjacent end of the bar 22, and pivoted to the same by a transverse pin or rivet 27. The other end of the bar 22 is provided with a recess 28 to receive a locking device 29, consisting of a pin pivoted at its upper end in a perforation of the clamping rod or member 23 and provided at its lower end with an engaging head 30 of a length greater than the width of the recess 28 and adapted to be turned transversely thereof to connect the clamping rod with the relatively fixed bar 22 and lock the former in engagement with the carpet. By turning the head 30 longitudinally of the recess 28 it will pass through the same and thereby release the clamping rod or member. The inner ends 31 of the oscillatory levers are preferably reduced and secured in perforations of the relatively fixed bars of the clamps. The oscillatory levers, which have inner and outer arms, are equipped at their outer arms with adjustable counter-weights 32, secured in their adjustment by clamping screws 33 and adapted to counter-balance the weight of the carpet.

The piece or strip 10 of carpet, or other floor covering extends from one oscillatory lever frame to the other, as clearly illustrated in Fig. 2 of the drawings, and the frames are oscillated to vibrate and produce a wave like motion in the strip or piece of carpet or other floor covering connected to them. The carpet is arranged between upper and lower flexible beaters 34 and 35, spaced apart a sufficient distance to permit the oscillation of the lever frames, and arranged to be engaged by the carpet to effect a beating of the same and also to relieve the carpet of strain. The vibratory or wave like motion imparted to the carpet, or other floor covering shakes the same in a relatively gentle manner without jerking or snapping the carpet, which is caused to alternately engage the upper and lower flexible beaters. The flexible beaters check the up and down movements of the carpet and thereby prevent the strain, which would otherwise result were the carpet permitted an up and down movement limited only by the oscillation of the carpet carrying frames. The flexible beaters preferably consist of spaced transverse slats 36, connected by links 37 and secured at their terminals to uprights or standards 38 and 39 by hook bolts 40 and 41, or other suitable fastening devices. The hook bolts 40 and 41 are linked into the terminal eyes of the links 37, which pierce the slats and form continuous chains. The upper and lower beaters are adapted to be increased in length by the addition of the slats, which are applied when the adjustable stand is moved outwardly on the base of the frame. The flexible connections between the slats space the same to permit the escape of the dust, and they also enable the beaters to vibrate slightly in the action of the machine.

The standards 38 are stepped in upper and lower openings 42 and 43 of the top connecting plate 44 of the fixed stand and a bottom plate 45 extending across the base of the frame and suitably secured to the side bars or sills thereof, as clearly shown in Fig. 1. The top connecting plates or portions 46 of the adjustable stand is slightly inclined, and the standards 39 are stepped in openings 47 of the said top connecting plate or portion 46, and in lower openings 48 of a transverse plate 49, extending across the frame of the machine and suitably secured to and carried by the adjustable stand. The transverse plates or pieces 44 and 49 are located between the standards or legs of the stands 3 and 4, and the lower terminals 50 and 51 of the uprights or standards 38 and 39 are reduced to form shoulders, which rest upon the upper faces of the transverse plates or pieces 45 and 49. The standards 38 are preferably arranged in a vertical position, and the standards 39, which are carried by the adjustable stand, are slightly inclined, being extended upwardly and inwardly, as clearly shown in Fig. 2 of the drawings.

The levers 13 are connected with arms 52 of eccentrics 53, or other suitable crank elements of a transverse shaft 54. The sleeves 18 of the levers 13 are provided with spaced depending ears between which the arms 52 are pivoted by pins 55, or other suitable

fastening devices. The arms 52, which are inclined, extend upwardly and inwardly from the straps of the eccentrics 53, and the shaft 54 is journaled in suitable bearing brackets 56, mounted upon arms or extensions of the top plate 42 of the fixed stand. A fly wheel 57 is mounted upon one end of the transverse shaft 54, and the other end of the shaft is preferably equipped with a pulley 58, which is connected by a belt 59 with an engine, or other suitable motor for oscillating the lever frames. In practice the transverse shaft will preferably be rotated about one hundred and fifty revolutions a minute, which will cause the carpet to contact with the beaters about approximately four hundred and fifty times in five minutes, and this has been found ample for cleaning ordinary carpets and rugs. Various other means, however, may be employed for oscillating the carpet carrying devices for shaking the carpet, and the carpet shaking devices may of course be operated at any desired speed.

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

1. A machine of the class described including spaced shaking devices provided with means for holding a carpet or rug in extended relation at spaced points, and actuating mechanism for the said devices to impart to the carpet or rug a shaking movement.

2. A machine of the class described including spaced shaking devices provided with means for holding a carpet or rug in extended relation at spaced points, means for mounting the said devices for independent movement, mechanism connected with one of the said devices for actuating the same to shake a carpet or rug, and a relatively fixed beater arranged in the path of the carpet to be struck thereby.

3. A machine of the class described including spaced shaking devices provided with means for holding a carpet or rug in extended relation at spaced points, means for mounting the said devices for independent movement, and relatively fixed beaters spaced apart to receive a carpet or rug between them and arranged in the path of the same to be struck thereby.

4. A machine of the class described including spaced shaking devices provided with means for holding a carpet or rug in extended relation at spaced points, means for mounting the said devices for independent movement, mechanism connected with one of the devices for actuating the same to shake a carpet or rug, the other device being provided with a counter-weight and receiving the movements of the actuating device through the carpet or rug when the same is connected with the said shaking devices, and a relatively fixed beater arranged in the path of the carpet or rug to be struck thereby.

5. A machine of the class described including spaced shaking devices provided with means for holding a carpet or rug in extended relation at spaced points, means for mounting the said devices for independent movement, actuating mechanism for imparting motion to the said devices to shake a carpet or rug when the same is connected with the said devices, and a relatively fixed beater arranged in the path of the carpet or rug to be struck thereby and composed of transverse slats connected together and spaced apart to form openings.

6. A machine of the class described including spaced shaking devices provided with means for holding a carpet or rug in extended relation at spaced points, means for mounting the said devices for independent movement, actuating mechanism for imparting motion to the said devices to shake a carpet or rug when the same is connected with the said devices, and a relatively fixed beater arranged in the path of the carpet or rug to be struck thereby and composed of spaced transverse slats, and chains flexibly connecting the slats and holding the same in spaced relation.

7. A machine of the class described including spaced movably mounted devices provided with means for holding a carpet or rug at spaced points, and mechanism for actuating the said devices to shake a carpet or rug, upper and lower flexible beaters spaced apart to receive a carpet or rug between them and composed of spaced slats, and standards connected with and supporting the upper and lower beaters.

8. A machine of the class described including an oscillatory shaking device provided with means for connecting it to a carpet or rug, means spaced from the oscillatory device for holding the carpet or rug, and mechanism for actuating the oscillatory device to shake the carpet or rug.

9. A machine of the class described including an oscillatory device pivoted at a point intermediate of its ends and provided at its inner end with means for connecting it to a carpet or rug, means spaced from the oscillatory device for holding the carpet or rug, a rotary shaft, and a crank element connected with the shaft and with the oscillatory device beyond the pivotal point thereof for actuating the said device to shake the carpet or rug.

10. A machine of the class described including an oscillatory lever provided with means for connecting a carpet or rug to it, means spaced from the oscillatory lever for holding a carpet or rug, and mechanism connected with the lever for oscillating the same to shake a carpet or rug.

11. A machine of the class described including an oscillatory lever fulcrumed at an intermediate point and provided on one of its arms with means for connecting a carpet or rug to it, an adjustable counter-weight mounted on the other arm of the lever, mechanism connected with the lever for oscillating the same to shake a carpet, and means arranged in spaced relation with the said lever for holding a portion of the carpet or rug.

12. A machine of the class described including spaced oscillatory levers, a clamp connecting the levers and adapted to hold a portion of a carpet or rug, means for holding the carpet or rug at a point spaced from the said clamp, and mechanism for oscillating the levers to shake a carpet or rug.

13. A machine of the class described including spaced oscillatory levers, a carpet and rug clamp composed of a relatively fixed bar secured to and connecting the levers and provided with a longitudinal carpet receiving groove, a clamping rod pivoted at one end to the said bar, means located at the other end of the bar for detachably connecting the clamping rod with the same, carpet holding means spaced from the said clamp, and mechanism for oscillating the levers.

14. A machine of the class described including a stand having spaced bearings, opposite oscillatory levers provided at an intermediate point with depending arms, a pivot mounted in the said bearings and fulcruming the depending arms of the levers on the stand, a carpet and rug clamp carried by the levers, a counter-weight for the levers, mechanism for oscillating the levers, and carpet engaging means spaced from the said clamp.

15. A machine of the class described including spaced levers provided at an intermediate point with pivoted arms having sleeves detachably receiving the levers and permitting a longitudinal adjustment of the same, means carried by the levers for connecting a carpet or rug with the same, mechanism for oscillating the levers to shake a carpet or rug, and separate carpet engaging means spaced from the said levers.

16. A machine of the class described including spaced oscillatory devices having a relative adjustment to arrange them different distances apart and provided with means for connecting a carpet or rug to them and having adjustable counter-weights, and actuating mechanism connected with one of the devices.

17. A machine of the class described including fixed and adjustable stands, spaced oscillatory levers pivotally mounted on the stands, clamps carried by the inner arms of the levers for connecting a carpet or rug to the same, counter-weights mounted on the outer arms of the levers to counter-balance a carpet or rug, and mechanism mounted on the fixed stand and connected with the levers thereof for oscillating the same.

18. A machine of the class described including fixed and adjustable stands, spaced oscillatory levers pivotally mounted on the stands, clamps carried by the inner arms of the levers for connecting a carpet or rug to the same, counter-weights mounted on the outer arms of the levers to counter-balance a carpet or rug, a rotary transverse shaft journaled on the fixed stand, and eccentrics mounted on the shaft and provided with arms connected with the levers of the fixed stand.

19. A device of the class described including a frame composed of a base, a fixed stand arranged at one end of the base, an adjustable stand mounted at the other end portion of the base and adjustable along the same, oscillatory levers fulcrumed on the said stands and provided with means for connecting a carpet or rug to them, standards mounted on the said stands, and upper and lower beaters supported by the standards and spaced apart to receive a carpet or rug between them and arranged in the path of a carpet or rug.

20. A machine of the class described including a frame composed of a base and fixed and movable stands mounted on the base and having upper and lower openings, oscillatory levers fulcrumed on the stands and provided with means for connecting a carpet or rug to them, standards detachably stepped in the upper and lower openings of the said stands, and upper and lower slatted frames spaced apart to receive a carpet or rug between them and connected to and supported by the standards.

21. A machine of the class described including a frame having spaced stands provided with upwardly projecting bearing brackets, oscillatory levers provided with depending arms, pivots mounted in the bearing brackets and passing through the arms of the levers and pivoting the latter to the brackets, carpet holding means carried by the levers, and mechanism mounted on one of the stands and connected with the levers thereof for oscillating the same.

In testimony, that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

BERNHARD BECKER.
HENRY BARRY.

Witnesses:
MAX BECKER,
ALY CLAMAGE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."