(No Model.) 4 Sheets—Sheet 1.

A. B. COLLEN.

CARPET BEATING MACHINE.

No. 413,387. Patented Oct. 22, 1889.

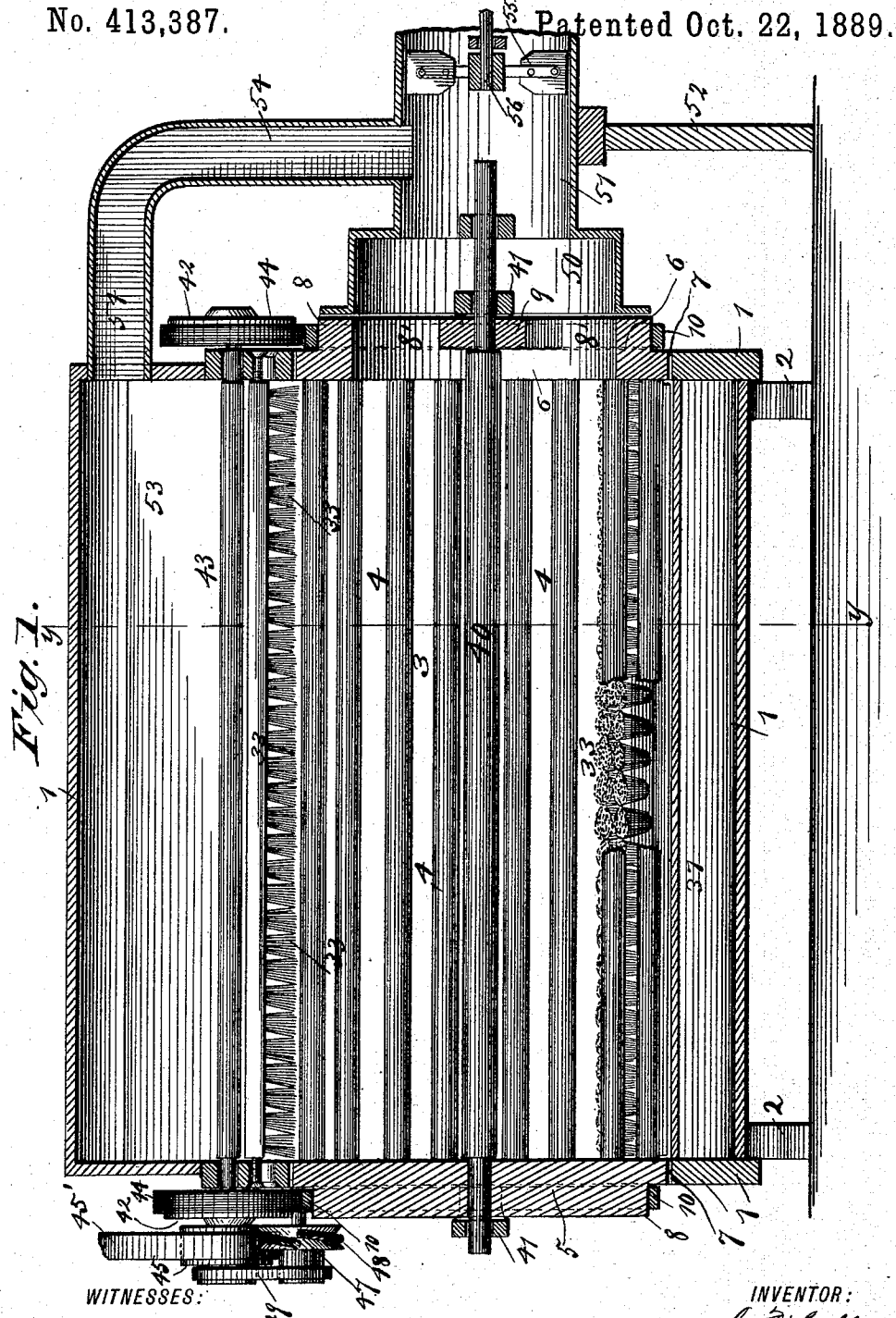


Fig. 1.

WITNESSES:

Phil. C. Dieterich.

C. Sedgwick

INVENTOR:

A. B. Collen

BY

Munn & Co

ATTORNEYS.

N. PETERS. Photo-Lithographer, Washington, D. C.

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A. B. COLLEN.

CARPET BEATING MACHINE.

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Fig. 2.

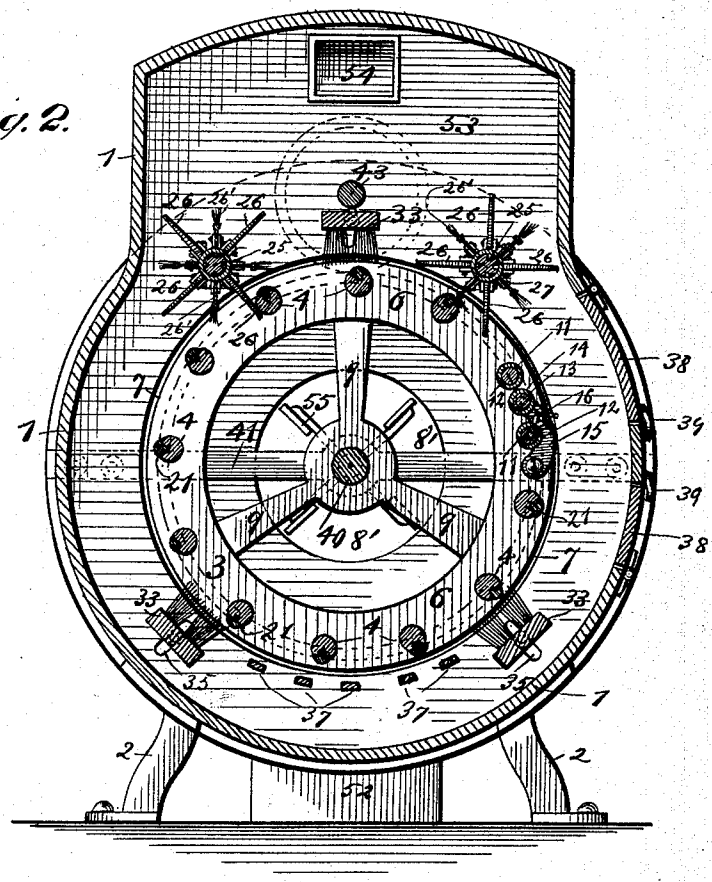
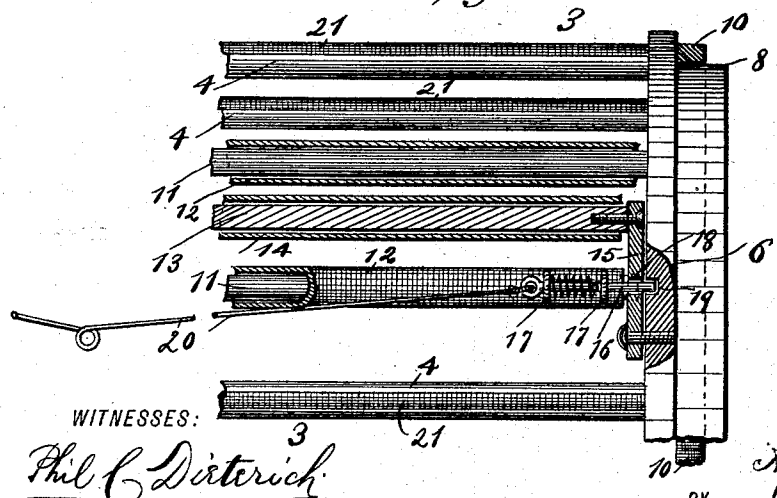


Fig. 3.



WITNESSES:

Phil C. Dieterich

C. Sedgwick

INVENTOR:

A. B. Collen

BY Munn & Co

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

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A. B. COLLEN.

CARPET BEATING MACHINE.

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Fig. 4.

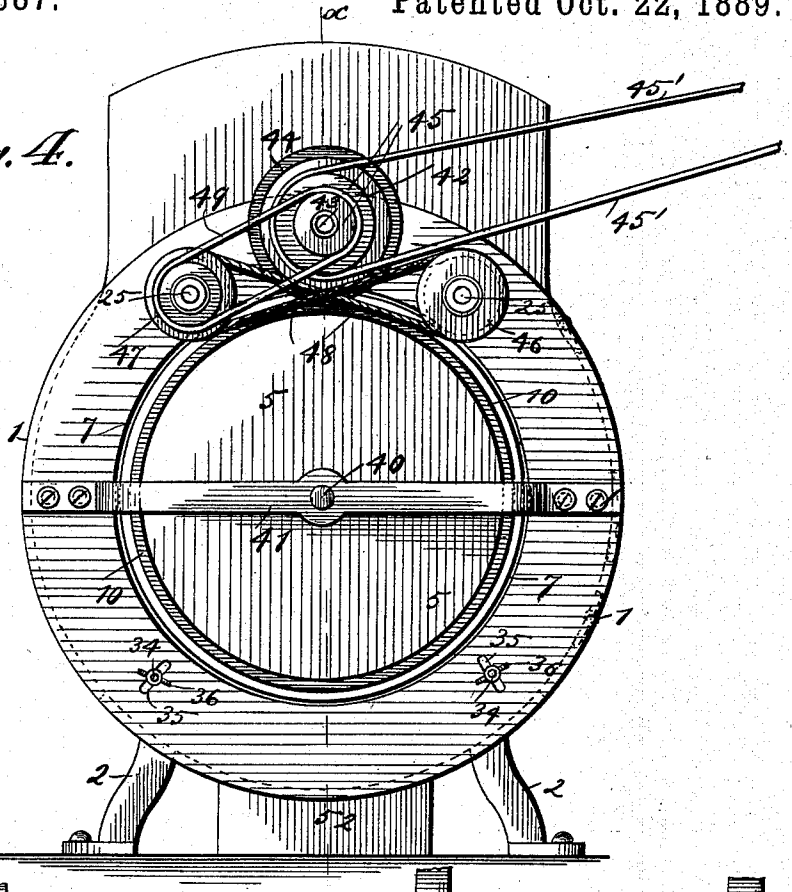


Fig. 5.

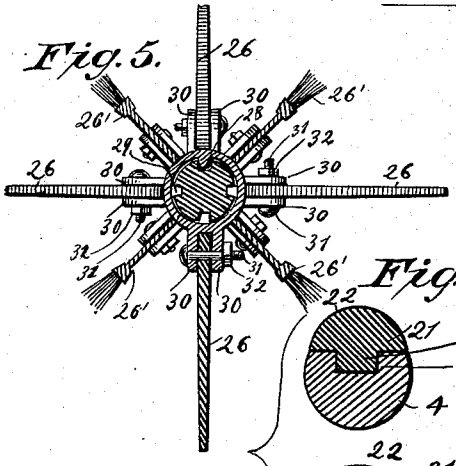


Fig. 6.

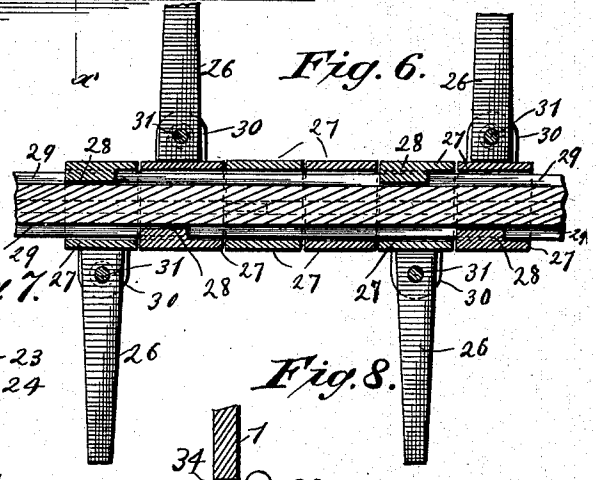


Fig. 7.

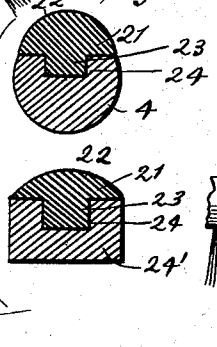
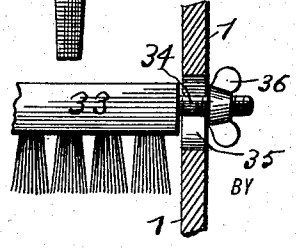


Fig. 8.



WITNESSES:

Phil. C. Dieterich.

C. Sedgwick

INVENTOR:

A. B. Collen

BY

Munn & Co.

ATTORNEYS.

N. PETERS. Photo-Lithographer. Washington, D. C.

(No Model.) 4 Sheets—Sheet 4.

A. B. COLLEN.

CARPET BEATING MACHINE.

No. 413,387. Patented Oct. 22, 1889.

Fig. 9.

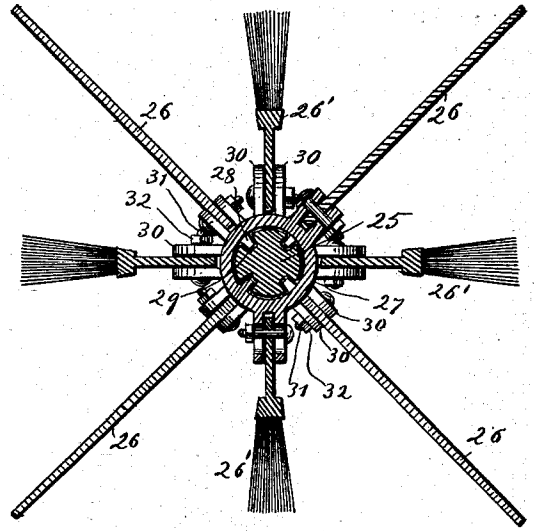


Fig. 10.

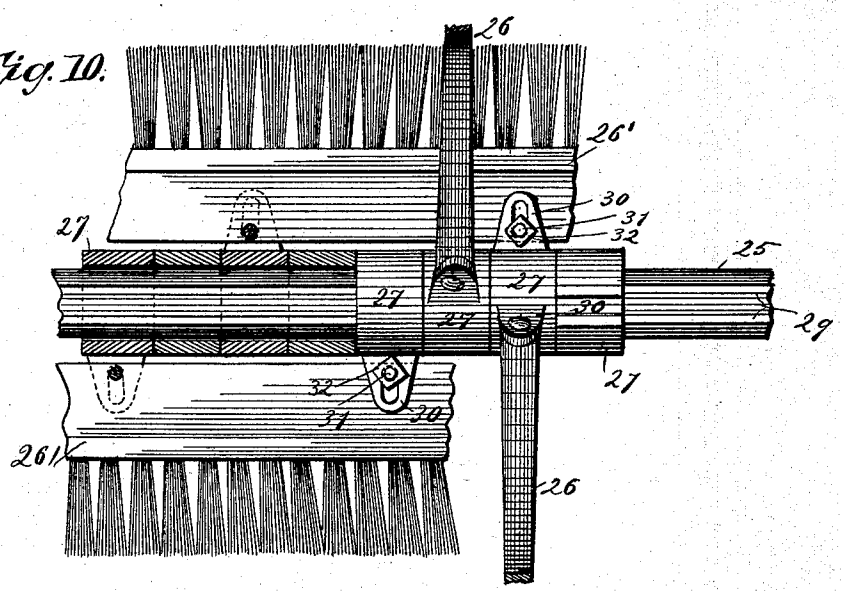
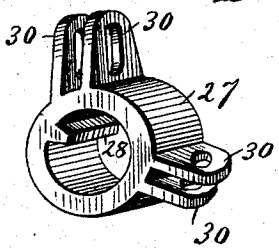


Fig. 11.



WITNESSES:

Phil. C. Dieterich.

C. Bedgwick

INVENTOR

A. B. Collen

BY Munn & Co.

ATTORNEY

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

ALEXANDER B. COLLEN, OF NEW YORK, N. Y.

CARPET-BEATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 413,387, dated October 22, 1889.

Application filed January 16, 1889. Serial No. 296,476. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER B. COLLEN, of New York city, in the county and State of New York, have invented a new and useful Carpet-Beating Machine, of which the following is a full, clear, and exact description.

This invention has for its object to provide a carpet-beating machine by means of which a carpet may be readily handled when being beaten, may be thoroughly and effectively beaten, and the dust therefrom removed during the operation.

The invention consists in a carpet-beating machine and in details thereof, constructed and arranged as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a vertical longitudinal section of the invention on the line *x x* of Fig. 4. Fig. 2 is a vertical transverse section on the line *y y*, Fig. 1. Fig. 3 is a detail view showing an end thereof broken away and the casing removed. Fig. 4 is an end view of the invention. Fig. 5 is a detail view, in transverse section, of one of the shafts carrying beater-arms and brushes. Fig. 6 is a longitudinal section of a portion of one of the shafts carrying the beater-arms and brushes. Fig. 7 is a view in transverse section of two forms of one of the longitudinal rods of the carpet-supporting rotary frame; and Fig. 8 is a detail view, partly in section and broken away, of one of the brushes and its supports. Fig. 9 is an enlarged detail view similar to that in Fig. 5. Fig. 10 is an enlarged view similar to that in Fig. 6, and Fig. 11 is a perspective view of one of the adjustable rings for securing the beater-arms and brushes.

In the construction of this invention a cylindrical casing 1 is provided, mounted on supports 2, and having located therein a rotary carpet-supporting frame 3, consisting of longitudinal rods 4 and circular heads 5 and 6, projecting through circular openings 7 in the ends of the casing 1. The heads 5 and 6 are formed with a circular shouldered end 8, the head 5 being solid, and the head 6 having the openings 8′ for the escape of dust and being supported by the spider 9. The shouldered ends 8 are preferably covered with a band 10 of rubber, leather, or other suitable material, to furnish a yielding friction surface.

In one side of the frame 3 are located two rods 11, forming part of the frame 3 and having their ends mounted in the heads 5 and 6. The rods 11 are preferably provided with a covering 12 of rubber, leather, or other suitable material, and between them is located a bar 13 for clamping the ends of a carpet against the rods 11, the bar 13 having also, preferably, a covering 14 of rubber, leather, or other suitable material. The bar 13 is mounted on arms 15, pivoted to the heads 5 and 6, so as to swing in and out from between the rods 11, and is held in closed position, preferably, by means of spring-actuated bolts 16, mounted in bearings 17 on the ends of the lower rod 11, the bolts 16 being movable through a hole 18 in the pivoted arms 15 and engaging sockets 19 in the heads 5 and 6. The bolts 16 may be retracted in any suitable manner, as here shown by means of a connecting-wire 20.

With the rods 11 and bar 13 covered with soft material, as set forth, wear of the carpet clamped between them is avoided, and the end of the carpet will be firmly held. The end of the carpet being held by the rods 11 and clamping-bar 13 and the frame 3 rotated, the carpet is wound upon the latter.

To prevent wear of the carpet, the rods 4 are preferably faced on the side on which the carpet rests with strips of yielding material, such as rubber or leather. As shown, the rods 4 are faced on one side with a strip 21 of yielding material—such as rubber or leather—having an oval surface 22, and secured to the rod by a tongue 23, engaging a longitudinal slot 24 in the rod 4. In lieu of rods 4, square bars 24′ may be employed, provided with a strip 21, secured as shown in Fig. 7.

Adjacent to the top of the rotary frame 3, and on either side thereof, are located rotary shafts 25, having their ends mounted in and projecting through the ends of casing 1, and carrying a series of flexible beater-arms 26

and brushes 26′, mounted thereon in any suitable manner, the beater-arms being formed of rubber, leather, or other suitable material.

The beater-arms 26 and brushes 26′ are preferably adjustably secured to the shafts 25 by means of rings 27, movable lengthwise on the shafts 25, so as to space the beater-arms 26 at any desirable distance apart, and cause them to strike different parts of the whole surface of the carpet passing under them. The rings 27 are held from turning on the shafts 25 by means of lugs 28, located in grooves 29, extending lengthwise in the shafts 25.

The beater-arms 26 and brushes 26′ are preferably secured to the rings 27 by means of lugs 30, in which the inner ends of the beater-arms 26 and the rear edges of the backs of the brushes 26′ are located, and bolts 31 passing through the lugs 30 and arm 26 and secured by nuts 32.

The shafts 25 are located at such a distance from the periphery of the frame 3 and the beater-arms 26 are of such a length that the latter will strike squarely and effectively against the surface of the carpet on the rotating frame 3.

By means of the brushes 26′ the dust is swept from the carpet as the latter is beaten by the arms 26. If desired, the brushes 26′ may be removed and the beater-arms 26 used without them, the cleaning being effected with the aid of the brushes 33 only; but the brushes 26′ are preferably used with the beater-arms 26 and brushes 33.

To aid in removing the dust and dirt from the surface of the carpet as it is carried around on the frame 3 and is beaten by the flexible arms 26, a suitable number of additional brushes are located adjacent to the periphery of frame 3 and extend from end to end of the casing 1. As here shown, three brushes 33 are employed—one above the frame 3 and two adjacent to its lower portion. The brushes 33 are preferably adjustable, so as to vary their pressure on the carpet, by means of lugs 34 on their ends, located in slots 35 in the casing 1 and held by means of wing-nuts 36.

Beneath and adjacent to the rotary frame 3 are located slats 37, which prevent the carpet from coming in contact with any dirt deposited in the bottom of the casing beneath the slats 37.

Access is had to the interior of casing 1 by means of openings extending from end to end of the casing on both sides and closed by hinged doors 38, fastened by buttons 39.

The rotary frame 3 is provided with a shaft 40, having its ends projecting through the heads 5 and the cross-bar 9, and mounted to turn in supports 41.

In order to operate the frame 3 and the shafts 25, carrying the beater-arms 26, the following mechanism is employed: Gearing by frictional contact with the shouldered ends 8 of the heads 5 and 6 of the frame 3 are two small disks or pulleys 42, mounted on the ends of a shaft 43, projecting through the ends of casing 1 and having upon their peripheries rings 44, of rubber, leather, or other suitable material, which bear against the bands 10 on the circular shouldered ends 8 of the heads 5 and 6. By means of the two pulleys 42 bearing against the circular ends 8 a steady motion is imparted to frame 3. Motion is imparted to the shaft 43 and its pulleys 42 by means of a pulley 45 on one end of shaft 43, over which pulley 45 passes an endless belt 45′, connected with and driven by any suitable power. The shafts 25 are operated by means of pulleys 46 and 47 on one of their ends, connected together by a crossed endless band 48, and a band 49 connecting the pulley 47, which is a double pulley, with the pulley 45, which is also a double pulley. As only a slow movement is required for the frame 3, equaling about one revolution a minute, the above-described mechanism is preferably employed, with the motion imparted to frame 3 through the friction-disks 42.

To withdraw dust from the machine, an air-suction apparatus is employed, preferably consisting of the cylindrical drum 50 and conduit-pipe 51, mounted on a support 52 and located over the openings 8′. The pipe 51 communicates with the chamber 53 in the top of casing 1 by means of a pipe 54. Within the pipe 51 is located a fan 55, mounted on a shaft 56, driven by any suitable power. When the fan 55 is in motion, the dust in casing 1 is drawn out therefrom through openings 8′ and pipe 54 and carried off through pipe 51 by the current of air caused by the action of the fan 55. It will thus be seen that the casing will effectively be freed from dust during the beating and cleaning of a carpet.

After a carpet has been secured at one end to the frame 3, drawn through the openings in the side of casing 1, wound upon the frame 3, and subjected to the action of the beater-arms 26 and the brushes 33, the opposite side of the carpet is cleaned by simply reversing the machine. Upon the frame 3 being caused to rotate in the reverse direction the fastened end of the carpet will be carried around with the frame 3 and the loose end of the carpet will drop off of the frame 3, and the carpet in this way dropping loosely between rotating frame 3 and the casing 1, there being room enough therefor, will be wound on the frame 3, with the uncleaned or reverse side exposed to the brushes and beaters.

It will thus be seen that carpets may be thoroughly and effectively beaten and cleaned.

While I have described a specific construction of parts, I do not desire to limit myself thereto, as their construction and arrangement may be varied without departing from the essential features of the invention.

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

1. In a carpet-beating machine, a rotary carpet-supporting frame, with means for se-

curing the carpet thereto, in combination with rotary shafts having flexible beater-arms and brushes mounted on the same shaft, the brushes projecting radially therefrom alternately with the beater-arms, substantially as shown and described.

2. In a carpet-beating machine, a rotary shaft having flexible beater-arms and brushes, the beater-arms projecting radially from the shaft alternately with the brushes, substantially as shown and described.

3. In a carpet-beating machine, a rotary carpet-supporting frame, with means for securing a carpet thereto, in combination with brushes located adjacent to the rotary frame and rotary shafts having flexible beater-arms and brushes mounted on the same shaft, the beater-arms projecting radially from the shaft alternately with the brushes, substantially as shown and described.

4. A carpet-beating machine consisting of a casing, a rotary carpet-supporting frame located in the casing, with a fastening device for detachably securing one end of a carpet thereto, a number of rotary beaters and a number of brushes adjacent to the rotary frame, a suction device for drawing off dust from the casing, and a driving mechanism for operating the rotary frame, the rotary beaters, and the suction device, substantially as described.

5. In a carpet-beating machine, a rotary carpet-supporting frame having its sides formed of longitudinal rods, and having a bar to clamp the end of a carpet, in combination with rotary shafts with flexible beater-arms located adjacent to the periphery of the rotary frame, substantially as described.

6. In a carpet-beating machine, a rotary carpet-supporting frame having its sides formed of longitudinal rods, and having a bar to clamp the end of a carpet, in combination with rotary shafts with flexible beater-arms and brushes located adjacent to the periphery of the rotary frame, substantially as described.

7. In a carpet-beating machine, a rotary carpet-supporting frame having its sides formed of longitudinal rods, and having a bar to clamp the end of a carpet, in combination with rotary shafts with flexible beater-arms and adjustable brushes, with means for holding them in adjusted position located adjacent to the periphery of the rotary frame, substantially as described.

8. In a carpet-beating machine, a rotary carpet-supporting frame having its sides formed of longitudinal rods, with their outer faces covered with a yielding material, substantially as described.

9. In a carpet-beating machine, a rotary shaft provided with beater-arms and detachable brushes, substantially as described.

10. In a carpet-beating machine, a rotary carpet-supporting frame 3, having its sides formed with the longitudinal rods 4, with their outer face having a strip 21 of yielding material, and the longitudinal rods 11 at one side of the frame 3, with a yielding covering 12, a clamping-bar 13, located between the rods 11, having a yielding covering 14 and mounted on arms 15, with bolt-holes 18, pivoted to casing 1, having sockets 19, and spring-actuated bolts 16, substantially as described.

11. In a carpet-beating machine, a rotary carpet-supporting frame 3, having heads 5 and 6 with shouldered projecting ends 8, in combination with disks 42, held in frictional contact with projections 8 and mounted on a shaft 43, having a pulley 45, with endless belt 45′, connected with and driven by a suitable power, substantially as described.

12. In a carpet-beating machine, a rotary shaft 25, having longitudinal grooves 29, in combination with rings 27, having lugs 28 engaging grooves 29, and outwardly-projecting lugs 30, with flexible beater-arms 26, secured in lugs 30 by bolts 31 and nuts 32, substantially as described.

13. In a carpet-beating machine, a rotary shaft 25, having longitudinal grooves 29, in combination with rings 27, having lugs 28 engaging grooves 29, and lugs 30, with flexible beater-arms 26, and brushes 26′, secured in lugs 30 by bolts 31 and nuts 32, substantially as described.

ALEXANDER B. COLLEN.

Witnesses:
EDWARD W. CADY,
C. SEDGWICK.