

No. 764,739.

PATENTED JULY 12, 1904.

W. H. LOOMIS.
CARPET RENOVATING APPARATUS.

APPLICATION FILED JUNE 11, 1903.

NO MODEL.

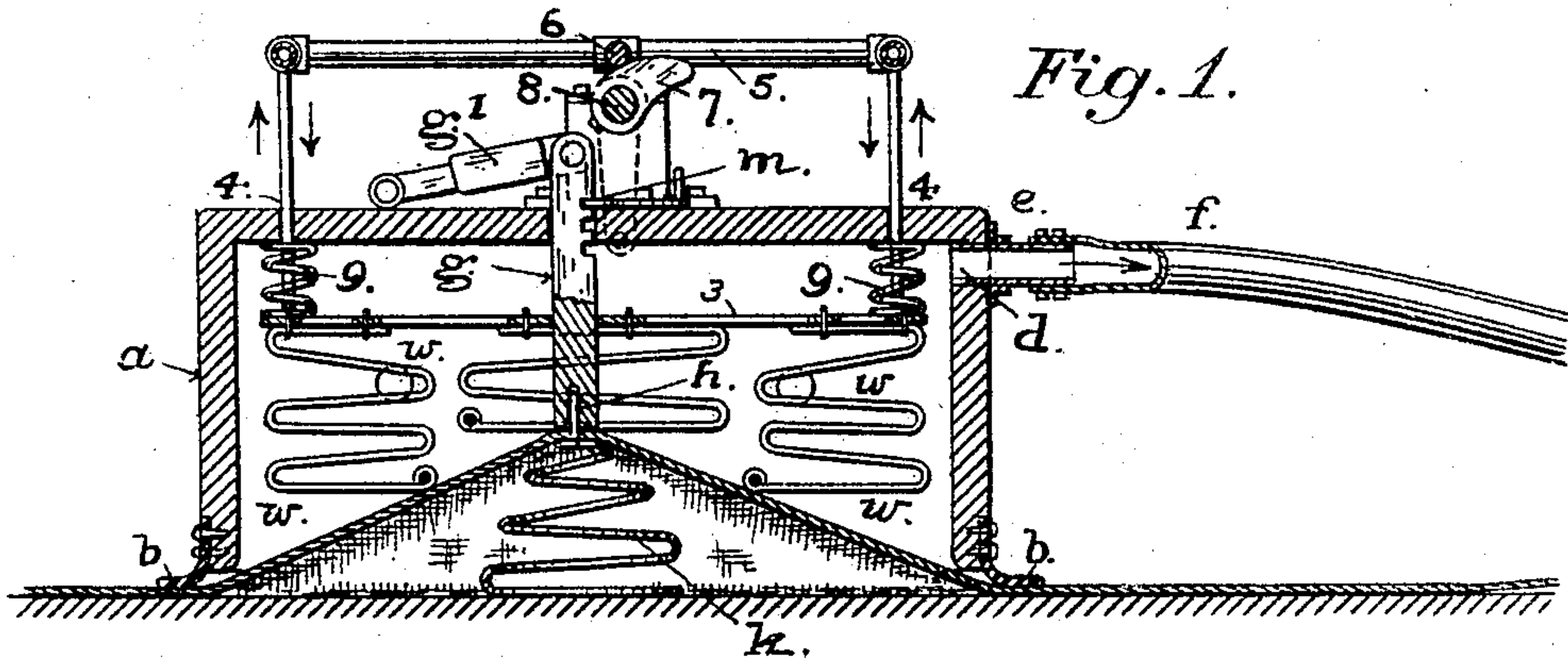


Fig. 1.

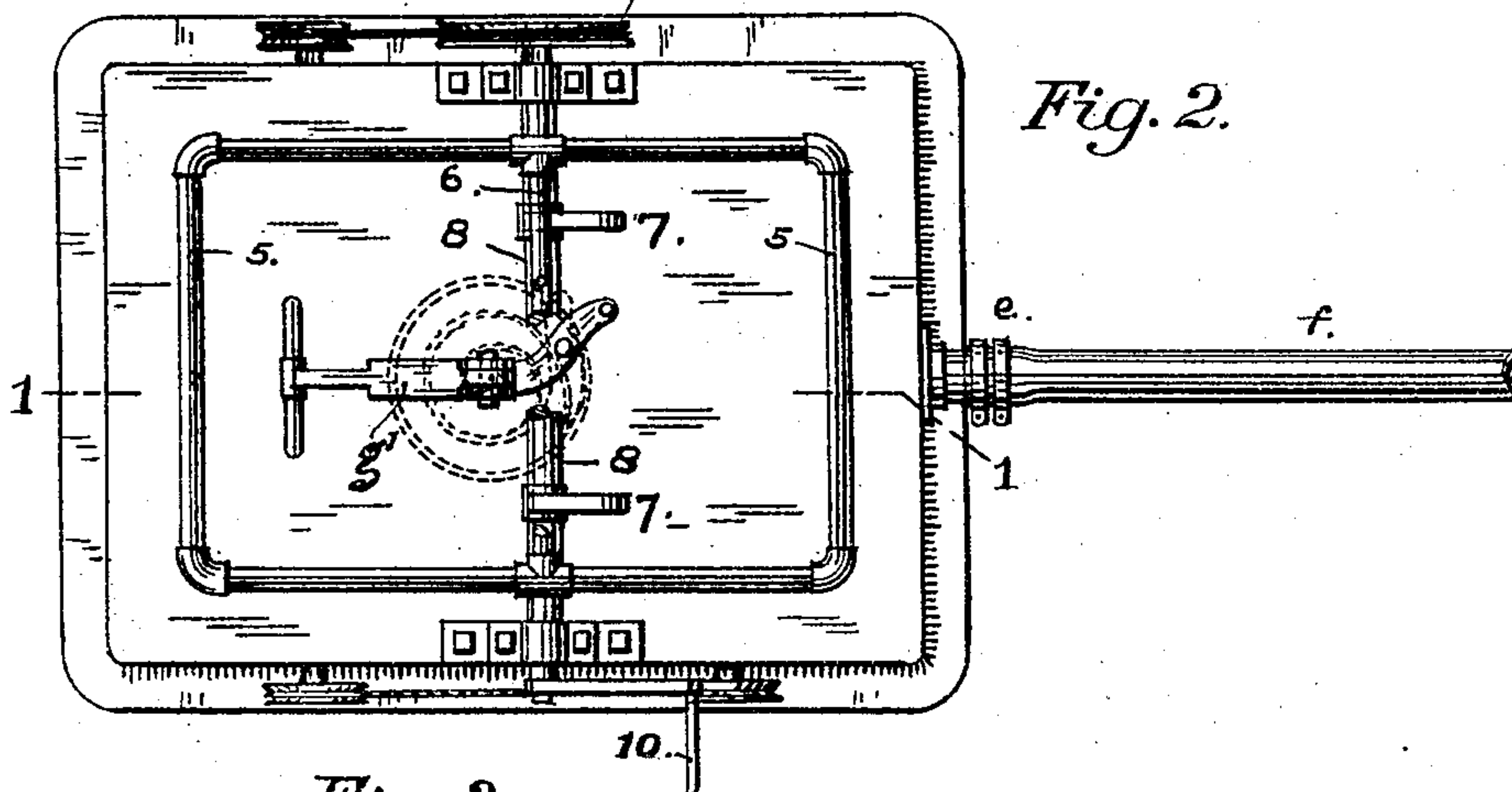


Fig. 2.

Fig. 3.

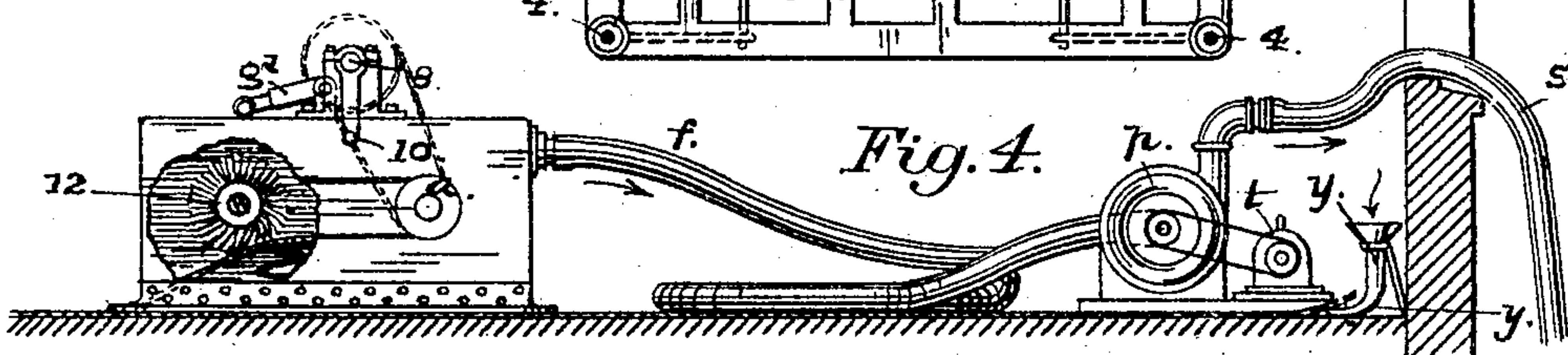
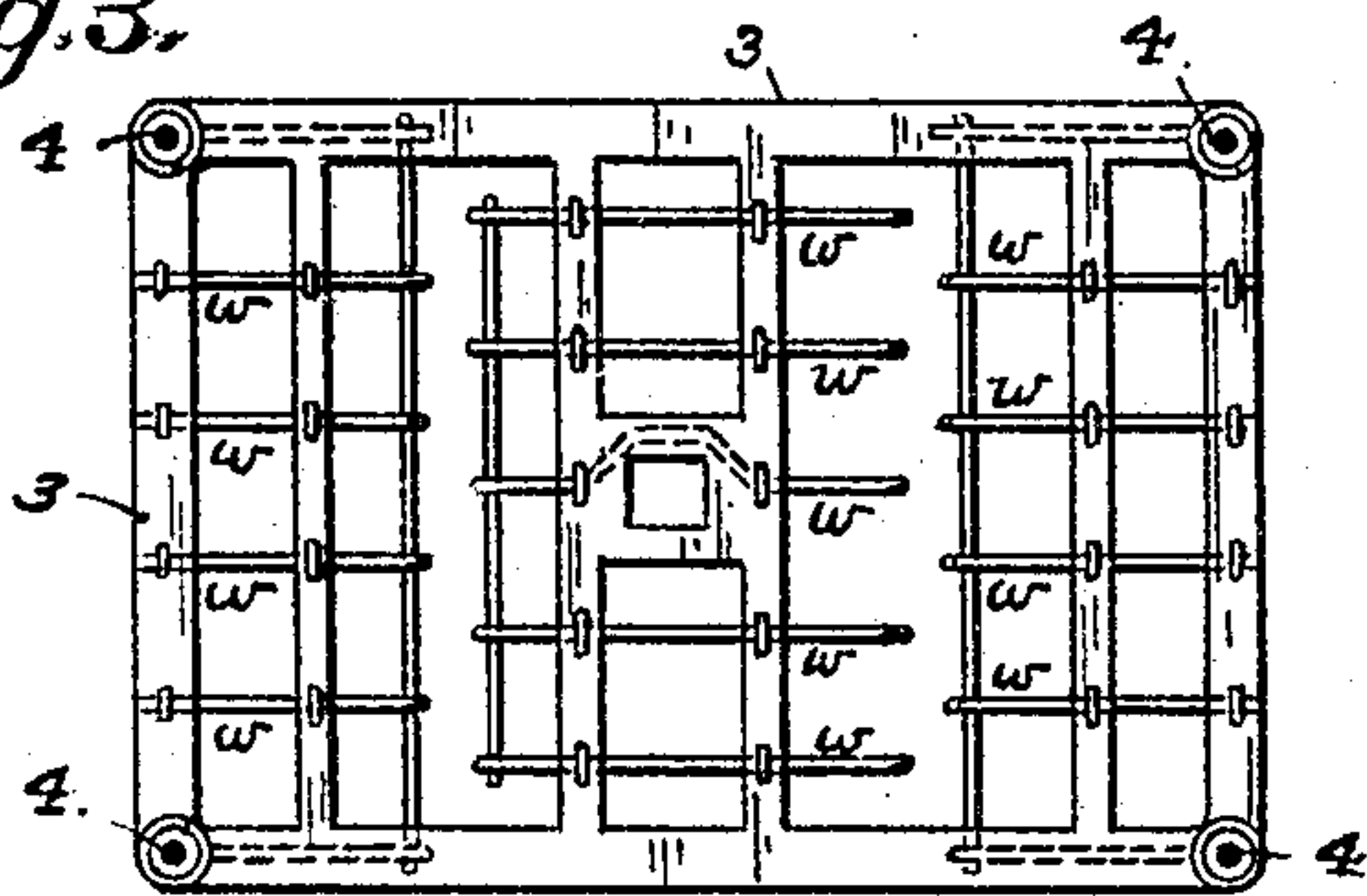


Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM H. LOOMIS, OF ALAMEDA, CALIFORNIA.

CARPET-RENOVATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 764,739, dated July 12, 1904.

Application filed June 11, 1903. Serial No. 161,023. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. LOOMIS, a citizen of the United States, residing in the city of Alameda, in the county of Alameda and State of California, have invented new and useful Improvements in Carpet-Renovating Apparatus, of which the following is a specification.

This invention relates to apparatus for renovating carpets while in place on the floor; and the invention consists in a portable apparatus capable of being moved over the carpet while in place on the floor to operate on one section or portion of the same at a time and comprising a closed casing adapted to cover a section of carpet of a square yard or more; an air-exhausting means, such as an exhaust-fan, connected with the closed casing; a means for raising above or clear of the floor that portion or section of the carpet covered by the casing, and means inside the casing for operating to remove the dust from the elevated portion of the carpet by beating or brushing the upper surface thereof.

In connection with these parts the invention embraces a means or device for raising and holding up the carpet clear of the floor to admit air underneath, also a means for admitting air beneath the edges of the carpet to accelerate the circulation of air through the portion or area of carpet covered by the casing.

The following description explains at length the nature of my said invention and the manner in which I proceed to construct, apply, and carry out the same, the accompanying drawings, forming part thereof, being referred to by figures and letters.

Figure 1 represents in longitudinal section the casing by which the section of carpet is covered, the elevating device, the means for beating the upper surface of the elevated carpet, and the connection for the exhausting apparatus. Fig. 2 is a top view of Fig. 1. Fig. 3 is a plan of the beaters and their operating-frame. Fig. 4 is a side elevation of the complete apparatus as connected for operation, a portion of the casing being broken away.

This improved apparatus operates on the exhaust plan or system by which the dislodged and loosened dust and matter is carried off and discharged into the atmosphere outside or into

a settling-chamber of any well-known construction. It comprises a casing in the shape of a rectangular inverted box *a*, provided with flaps or strips of flexible material *b*, secured to its lower edges, so arranged as to produce a joint between the edges of the casing and the carpet on which they set sufficiently tight to prevent the influx of air from the outside into the space inclosed by the casing. An aperture *d* in one side of the casing is provided with a coupling *e*, by which an exhaust-tube *f* is attached.

A device for raising and holding clear of the floor the principal portion of the carpet covered by the casing is combined with or connected to the casing in such manner that it serves to raise the carpet sufficiently above the floor to facilitate the beating operation and also to permit circulation of air from beneath the carpet upward. In addition to this elevating means the casing carries a device for agitating the carpet driven from the outside and adapted to operate on the upper surface of covered portion of the carpet.

A bar *g*, fitted to slide in an aperture in the top of the casing *a*, is provided with a socket *h* in the lower end to receive the upright end of a stiff spiral wire or rod *k*, and on the upper end of the bar is a handle *g'* for raising and lowering the bar. A catch *m* on the top of the casing is arranged to lock the bar in any desired position by engaging a notch therein. This is a simple means of holding the bar when it is adjusted; but other locking means that can readily be thrown on or off could be substituted for the device described.

When it is desired to insert the spiral wire or rod *k* beneath that portion of the carpet that is to be cleaned, the lower end thereof, which is preferably pointed, is forced through the carpet, and the spiral wire device *k* is then rotated, which will cause the carpet to be raised clear of the floor into the position indicated in Fig. 1, the upper end of the wire or rod always remaining above the carpet, so that the device may be easily removed.

I prefer that the spiral wire should be resilient, so that when it is inserted beneath the carpet the latter will be yieldingly held in an elevated or raised position, so as to render

more efficient the operation of the beaters or brushes. The upright end of the spiral device *k*, that projects through and above the carpet, is inserted into a socket *h*, formed in the end of the bar *g*, when the casing *a* is in place, an arrangement that holds the spiral wire in position and prevents it from being dislocated by the action of the dust-agitating devices, while permitting easy removal of the casing. I do not wish to be limited to this specific form of separable connection between the mechanical device for holding the section of carpet lifted off the floor and the casing, as any connection that will hold the parts in proper operative relation and permit of their easy separation comes within the scope of my invention. The dust or matter removed from the carpet by the last-mentioned devices is drawn off and carried to a point of discharge more or less distant from the casing through the hose or tubing *f*, connecting the space under the casing with an exhaust-fan *p*, from the discharge side of which a conducting-pipe *s* is carried to the outer air. The fan *p* may be operated by a small motor *t*, as shown in Fig. 4. To facilitate this operation of removing the dust by suction, short tubes *y*, with upwardly-curved ends, may be inserted under the edges of the carpet or at the seams, through which the air will be drawn under the carpet more freely than it could otherwise enter, especially in working on thick closely-woven carpets, the tubes provided for this purpose being preferably formed substantially like the tube *y*. (Shown in Fig. 4.) Carpets of comparatively light or open texture, on the other hand, can be renovated without using these tubes.

The section or portion of carpet on which the exhaust or suction is brought to bear, as above described, is acted on by mechanical beaters *w*, inclosed in the casing and operated from the outside in any suitable manner.

In the form of my invention illustrated in Figs. 1, 2, and 3 the beater consists of a number of spring-arms *w*, formed of stiff wire suitably shaped and attached by their upper ends to the under side of a rectangular frame 3, from which four upright rods 4, one at each corner, extend upward through apertures in the top of the casing, connecting the beater-frame with a reciprocating frame 5 on the outside. A cross-bar 6 in the center of the latter frame and forming a rigid part thereof rests on a pair of cams 7, fast on a shaft 8, and coiled springs 9, interposed between the beater-frame and the top of the inclosing casing, hold the cross-bar in working contact with the cams. Motion is given to the cam-carrying shaft by a hand-crank 10, secured on one end, or by power applied to the belt-pulley *w*.

In the form of my invention illustrated in Fig. 4 the means for beating or agitating the surface of the carpet held elevated by the me-

chanical device *k* consists of brushes 12, but one being shown in the drawings. These brushes are arranged within the casing in place of the beaters *w*. (Shown in Figs. 1 and 3.) In practice it is sometimes found desirable to employ two devices, one like that illustrated in Fig. 1 and the other like that in Fig. 4. In such case after the elevating device *k* has been inserted beneath the carpet a casing containing beaters like that shown in Fig. 1 is first employed. After that has been operated a sufficient length of time a device like that shown in Fig. 4, where brushes are employed, is substituted in place of the first device. The beaters serve to loosen and dislodge the dust from the body of the carpet, but do not accomplish its removal from the surface so thoroughly and perfectly as do the brushes. On the other hand, the brushes do not agitate the elevated portion of the carpet with sufficient violence to dislodge the dust, particularly if the carpet be heavy and very dirty. It will be understood that in all cases the casing is connected with an exhausting apparatus by means of which the dislodged dust is rapidly drawn off and discharged.

By reason of the resiliency of the spring that operates to hold elevated the section of carpet being operated upon and of the adjustability of the bar *g*, connected therewith, the height to which the carpet is raised may be varied, and also the tension of the elevated part may be varied as the use of the apparatus may demonstrate to be desirable.

The number of elevating-coils will vary with the area of the floor covered by the casing, and where that is increased, to cover a greater extent of carpet two or more of these elevating means can be used at the same time. I do not limit my invention, therefore, to the particular form nor the number of such elevating means that I have described and shown.

What I claim is—

1. In a carpet-renovating apparatus, the combination with a casing adapted to cover a section of carpet on the floor, of mechanical means for drawing up and holding the carpet clear of the floor, and a mechanical device for loosening the dirt inclosed by the casing.

2. In a carpet-renovating apparatus, the combination with a casing arranged to cover a portion of carpet on the floor, means insertible beneath the carpet for elevating it therefrom, and pneumatic exhausting means connected to the casing to cause a circulation of air through the carpet, substantially as set forth.

3. In a carpet-renovating apparatus, the combination of a casing covering a section of carpet on the floor, mechanical means for elevating the carpet clear of the floor, a dust-dislodging device arranged to operate on the elevated portion of the carpet, and air-exhausting means connected to the casing for carrying off the dust, substantially as set forth.

4. In combination, a carpet-elevating device adapted for insertion beneath a carpet when in place on the floor, to raise and support the same and a carpet-beating device to operate
5 on the elevated portion of the carpet.

5. In combination, a carpet-elevating device insertible between the floor and the carpet in place thereon, adapted to hold the carpet clear of the floor, a mechanical dust-dislodging device to operate on the elevated portion of the
10 carpet, and a casing to cover the elevated portion of the carpet and inclose the dust-dislodging device.

6. In a carpet-renovating apparatus, the
15 combination of an open-bottom casing arranged to cover a portion of carpet while on the floor, mechanical means arranged to elevate and hold a section of the carpet to be covered by the casing, a separable connection
20 between the casing and the carpet-elevating means, and means arranged within the casing for dislodging the dust from the carpet, substantially as set forth.

7. In a carpet-renovating apparatus, the
25 combination of an open-bottom casing arranged to cover a portion of carpet on the floor, removable means beneath the carpet for raising and holding it in elevated position, means for adjusting the height of the elevated
30 portion of the carpet, a dust-dislodging device inclosed by the casing, and exhausting means connected thereto for conveying away the dust, substantially as set forth.

8. In a carpet-renovating apparatus, the combination of a casing arranged to cover a
35 section of carpet on the floor to be renovated, a wire spring insertible between the carpet and the floor for raising and holding the carpet in elevated position, a bar in the casing arranged to be connected with the spring to
40 hold it in place, a device for loosening the dirt arranged within the casing, and air-exhausting means connected to the casing, substantially as set forth.

9. In a carpet-renovating apparatus, the
45 combination with a casing arranged to cover a section of carpet on the floor, a removable spring insertible beneath the carpet to raise and hold it in elevated position, a bar having connection with the spring and adjustable in
50 the casing for regulating the height of the carpet raised clear of the floor, a device for loosening the dirt within the casing arranged to operate on the elevated portion of the carpet, means arranged outside the casing for
55 operating the dirt-loosening device, and air-exhausting means connected to the said casing, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing
60 witnesses.

WILLIAM H. LOOMIS.

Witnesses:

EDWARD E. OSBORN,
HARRY J. LASK.