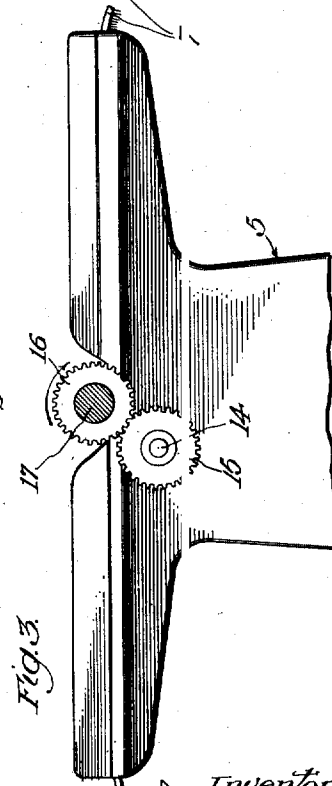
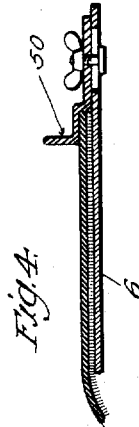
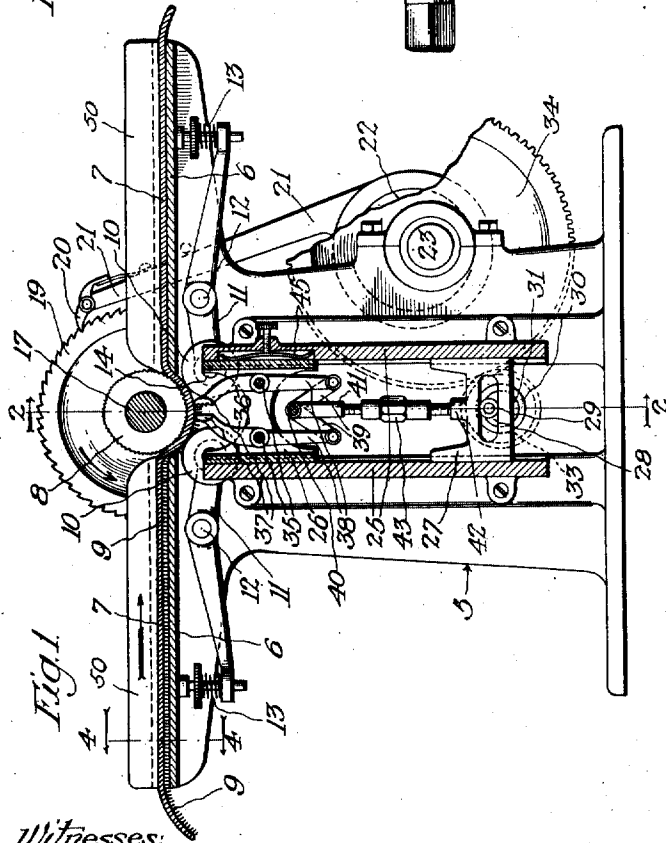
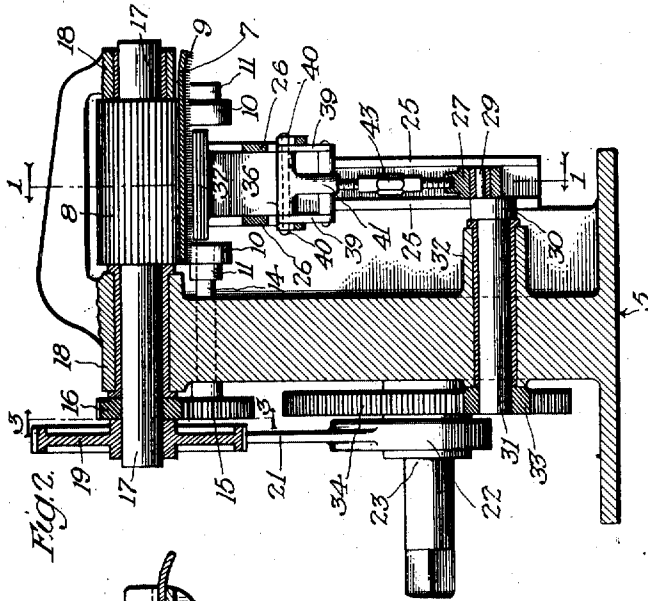


J. C. OWENS.
CARPET PLUCKER.
APPLICATION FILED NOV. 11, 1909.

1,008,610.

Patented Nov. 14, 1911.



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CARPET-PLUCKER.

1,008,610.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed November 11, 1909. Serial No. 527,424.

To all whom it may concern:

Be it known that I, JASPER C. OWENS, a citizen of the United States, residing at Hollywood, in the county of Los Angeles and State of California, have invented new and useful Improvements in Carpet-Pluckers, of which the following is a specification.

On heavy high piled carpet the edge is usually turned under to form a hem so as to make a finished appearance and durable edge. In order to make this hemmed edge so that its thickness is not excessive it is necessary to remove the nap from the edge portion which is turned under. Heretofore, so far as I am aware this operation has been done by means of cutting, a pair of shears being ordinarily used and the nap sheared off as well as possible. This shearing operation leaves a portion of the nap still in the carpet fabric. If the nap is pulled out bodily the fabric is left clean and of a minimum thickness.

The present invention embodies a simple machine which will pull the nap from the edge portion of a carpet in a simple and expeditious manner. The mechanism comprises a pair of grippers adapted to reciprocate to and from the carpet, which is automatically fed through the machine. A peculiar and novel mechanism operates the grippers to both move to and from the carpet and to move to and from each other so as to grip the nap and release it after it is pulled out. The remaining mechanism consists of a simple and efficient means for feeding the carpet.

In the present machine the strip from which the nap is pulled is removed a small distance from the edge of the carpet, there being left immediately along the edge a strip of small width, say one quarter of an inch, where the nap is not removed. At present this small amount of nap is sheared off after the carpet has been put through the machine, but it will be obvious that the machine can easily be arranged so that it will pull the nap from a strip directly adjacent the edge. It is only for mechanical convenience that the arrangement is made as shown, and this mechanical convenience is thought to outweigh the slight inconvenience of shearing off the nap from the remainder of the strip along the edge.

In the accompanying drawings, Figure 1 is a longitudinal section taken on line 1—1 of Fig. 2. Fig. 2 is a cross section taken

on line 2—2 of Fig. 1. Fig. 3 is a sectional elevation of a part of the machine taken on line 3—3 of Fig. 2. Fig. 4 is a detail cross section taken on line 4—4 of Fig. 1.

In the drawings 5 designates a supporting frame of suitable character which carries a divided table 6 for the support of carpet 7. The carpet passes over table 6 in the direction indicated by the arrow in Fig. 1 and at the center portion of the table passes under a feeding roll 8, this roll being fluted or toothed to obtain a good driving grip on the carpet. The teeth may be made to project forwardly so as to catch the body of the carpet and hold it in place. The carpet is fed through the machine with its nap 9 below, the nap projecting downwardly where it passes over feeding roll 8 so that it may be easily gripped and pulled out, as will be hereinafter described. A pair of rollers 10 on each side of roller 8 press upwardly on the carpet and hold it in position against the feed roller. Rollers 10 are mounted on arms 11 pivoted at 12 to the frame of the machine, the arms being extended and held downwardly on their ends by adjustable springs 13. Rollers 10 are thus resiliently held upwardly against the carpet and hold it tightly against the feeding roll. Shaft 14, on which roller 10 is mounted, projects through frame 5 and is provided with a gear 15 on its outer end which meshes with a gear 16 mounted on shaft 17 of feed roller 8. This arrangement provides that roller 10 shall be driven along with roller 8 so as to positively pull the carpet through the machine. Shaft 17 of roller 8 is mounted in bearings 18 on frame 5 and is provided with a ratchet wheel 19 at its outer end for the purpose of driving it in the direction indicated by the arrow. This ratchet wheel is revolved through the medium of a pawl 20 mounted on the end of an arm 21 which is operated by an eccentric 22 on main operating shaft 23 of the machine. When shaft 23 is revolved arm 21 will be reciprocated and the ratchet wheel 19 will be intermittently rotated. The carpet will thus be fed in successive short movements through the machine.

Mounted on frame 5 is a pair of vertical ways 25, these ways holding a slider frame 26 and a cross head frame 27. Cross head frame 27 is reciprocated vertically through the medium of a horizontal slot 28 in which

crank pin 29 is adapted to move. Crank pin 29 is mounted on a disk 30 on the end of a shaft 31 mounted in bearings 32 in the lower part of frame 5. On the other end of shaft 31 a pinion 33 is mounted, this pinion meshing with a large gear 34 on main shaft 23. In the present machine the sizes of these gears are such that the shaft 31 is driven at about four times the speed of shaft 34. Shaft 23 is ordinarily driven by hand but may be equipped for power driving if desired.

Slider frame 26 in the upper part of ways 25 is provided with two pivots 35 which support grippers 36. These grippers are provided on their upper ends with nap engaging noses 37 and have extensions 38 below pivots 35. To their lower ends are pivoted links 39, pivoted together at 40 and connected to a vertical rod 41 at that point. Rod 41 extends downwardly and is secured at 42 to cross head frame 27, the rod being screw threaded and a turn buckle 43 provided for adjustment of its length.

Starting with the machine in the position shown and supposing shaft 23 to be rotated, the first operation is the closing together of the upper ends of the grippers. When cross head frame 27 moves downwardly the inner ends of links 39 are pulled downwardly and the lower ends of the grippers spread apart until the upper ends grip the nap between them tightly. During this portion of the movement slider frame 26 is prevented from moving downwardly by means of a small spring 45 which presses against the slider frame and affords sufficient friction to hold it in place. By adjusting the pressure of spring 45, the downward pull necessary to move the slider frame, and the pressure between the two grippers, may be regulated. When the grippers can be no longer moved about their pivots the remaining downward motion of the cross head frame will move the slider frame and grippers together bodily. On the subsequent upward movement of the cross head frame the lower ends of the grippers will first be contracted and the upper ends separated, so that the pulled nap is dropped. As soon as the links reach such a position as is shown in the drawings the upward component of their pull is sufficient to move the slider frame and grippers again to the position shown.

Ledge 50, against and under which the carpet travels, is made adjustable as shown in Fig. 4. The width of the pulled portion may thereby be varied within the limits of the width of rollers 10, it always being necessary to keep the carpet in engagement with the edge rollers to a small extent.

The arrangement of the different parts of the machine is so made that the carpet is only fed through as fast as the grippers can remove the nap. In the present construction

the grippers operate continuously while the carpet is fed intermittently. This specific arrangement, however, is of no importance, it being possible to feed the carpet continuously if desired. To remove the pulled nap from the machine a blower or any other approved means may be used. If necessary, the machine may be doubled, one set of grippers acting on the carpet after the other has pulled most of the nap, thus cleaning the carpet thoroughly.

Having described my invention, I claim:—

1. A carpet plucker, comprising a means for supporting a carpet, a slider frame adapted to move to and from the carpet, a pair of grippers pivotally mounted on the slider frame, a pair of links pivoted to the ends of the grippers and to each other, means to impart a reciprocating motion to the pivoted connection of the two links, and means for retarding the reciprocation of the slider frame.

2. A carpet plucker, comprising a mechanism for holding and moving the carpet, a pair of grippers, and means for moving the grippers bodily to and from the carpet and for moving the grippers toward each other at the end of their movement toward the carpet and for moving them apart at the end of their movement away from the carpet.

3. A carpet plucker, comprising a mechanism for holding and moving the carpet, a pair of grippers, means for moving the grippers bodily to and from the carpet and for moving the grippers toward each other at the end of their movement toward the carpet and for moving them apart at the end of their movement away from the carpet, and connective mechanism whereby the carpet moving mechanism and the grippers are operated together.

4. A carpet plucker, comprising a means for supporting and feeding the carpet, a slider frame adapted to move to and from the carpet, a pair of grippers pivotally mounted on the slider frame, a pair of links pivoted to the ends of the grippers and to each other, and means to impart a reciprocating motion to the pivotal connection of the two links.

5. A carpet plucker, comprising a frame, a horizontal table on the frame for supporting the carpet, vertical ways mounted on the frame beneath the table, a slider frame mounted in the ways, frictional means for holding the slider frame at rest, a pair of grippers pivotally mounted on the slider frame, links pivoted to the grippers and to each other, a cross head frame mounted in the ways, connective means between the cross head frame and the links at their point of attachment to each other, a crank mechanism for reciprocating the cross head frame, and a feeder mechanism for the carpet, the feeder mechanism and crank mechanism be-

ing connected so as to operate simultaneously.

6. A carpet plucker, comprising a frame, a carpet table supported by the frame, a set of
5 carpet feeding rollers mounted on the frame and adapted to feed the carpet off the table, a pair of vertical ways mounted on the frame, a slider frame mounted in the ways, frictional means for holding the slider frame
10 at rest, a pair of grippers pivotally mounted on the slider frame and extending upwardly to a point adjacent the carpet, the upper ends of the grippers being provided with noses for engagement with the carpet nap, the
5 grippers being extended below their pivots, a pair of links connected to the lower ends of the grippers and to each other, a cross head frame slidably mounted in the ways, a connecting rod of adjustable length connect-
10 ing the cross head frame with the links at their point of attachment to each other, a crank mechanism for reciprocating the cross head frame, a main operating shaft for the machine, connecting means between the main
5 operating shaft and the crank mechanism, and connecting means between the main operating shaft and the carpet feeding rollers.

7. A carpet plucker, comprising a frame, a carpet table supported by the frame, means
10 to adjust the position of the carpet transversely on the table, a carpet feeding roller mounted on the frame and adapted to feed the carpet over the table, means to hold the carpet in engagement with the roller, a pair
5 of vertical ways mounted on the frame, a slider frame mounted in the ways, frictional means for holding the slider frame at rest, a pair of grippers pivotally mounted on the

slider frame and extending upwardly to a point adjacent the carpet, the upper ends of
40 the grippers being provided with noses for engagement with the carpet nap, the grippers being extended below their pivots, a pair of links connected to the lower ends of the grippers and to each other, a cross head
45 frame slidably mounted in the ways, a connecting rod of adjustable length connecting the cross head frame with the links at their point of attachment to each other, a crank mechanism for reciprocating the cross head
50 frame, a main operating shaft for the machine, connecting means between the main operating shaft and the crank mechanism, and connecting means between the main operating shaft and the carpet feeding rollers.
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8. A carpet plucker, comprising a means for holding and feeding a carpet, a slider frame adapted to move to and from the carpet, a pair of grippers movably mounted on the slider frame, and means for moving the
60 grippers to and from each other on the slider frame and for moving the slider frame to and from the carpet, the grippers being moved toward each other when the slider frame is at the end of its stroke near the
65 carpet and apart from each other when the slider frame is at the opposite end of its stroke.

In witness that I claim the foregoing I have hereunto subscribed my name this 6th
70 day of November 1909.

J. C. OWENS.

Witnesses:

ELWOOD H. BARKELEY,
LIZZIE D. BRETT.

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