Jan. 21, 1958 P. S. VOSBIKIAN ET AL 2,820,232

STRAND TYPE MOP WITH EXTRACTING MECHANISM

Filed March 29, 1955 2 Sheets-Sheet 1

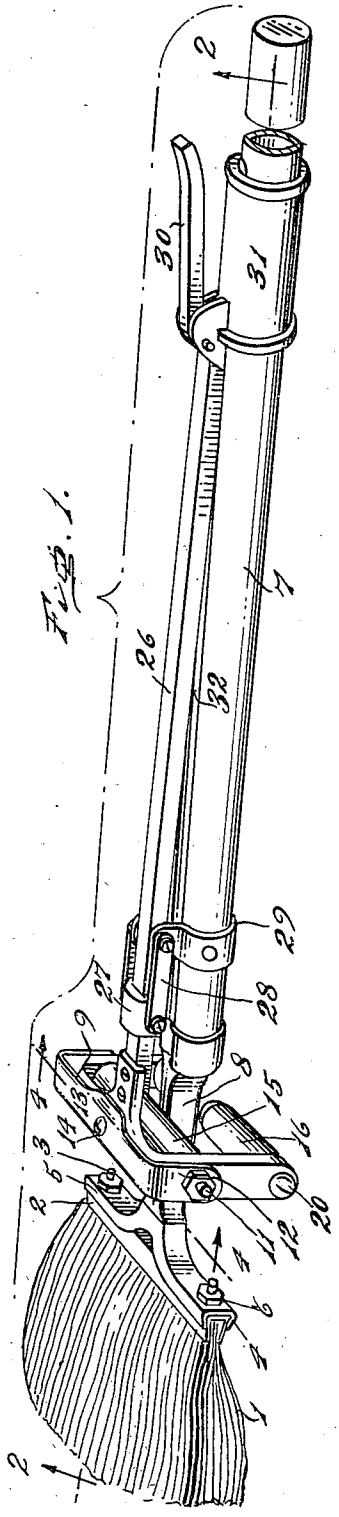


Fig. 1.

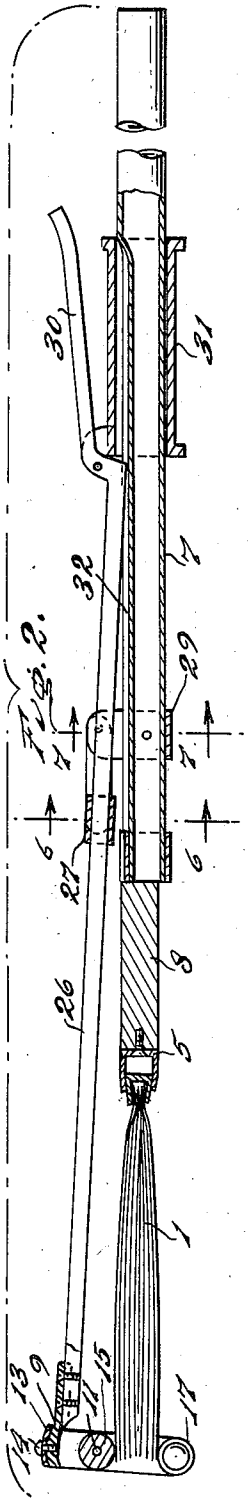


Fig. 2.

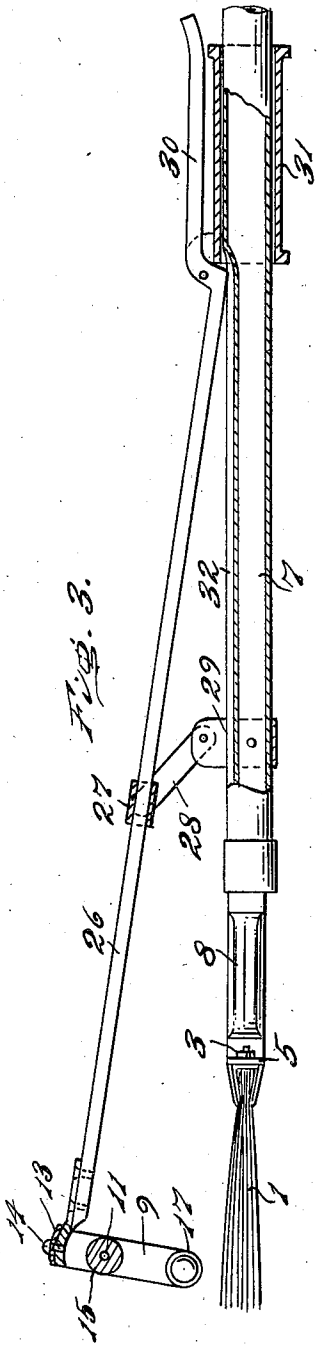


Fig. 3.

INVENTORS.
Peter S. Vosbikian
Thomas S. Vosbikian
BY
Herbert S. Haubenstock
ATTORNEY

Jan. 21, 1958 P. S. VOSBIKIAN ET AL 2,820,232

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Filed March 29, 1955 2 Sheets-Sheet 2

Fig. 4.

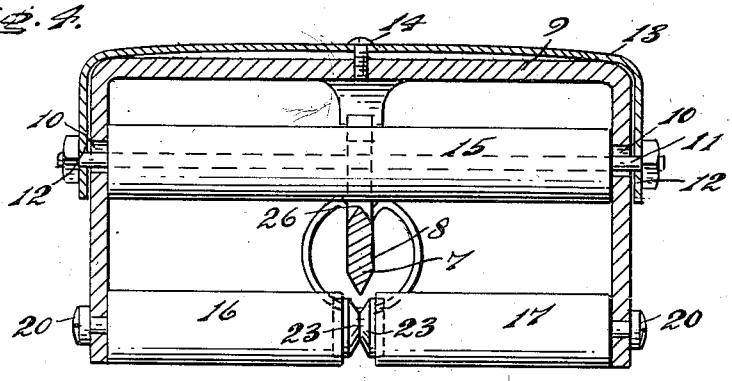


Fig. 5.

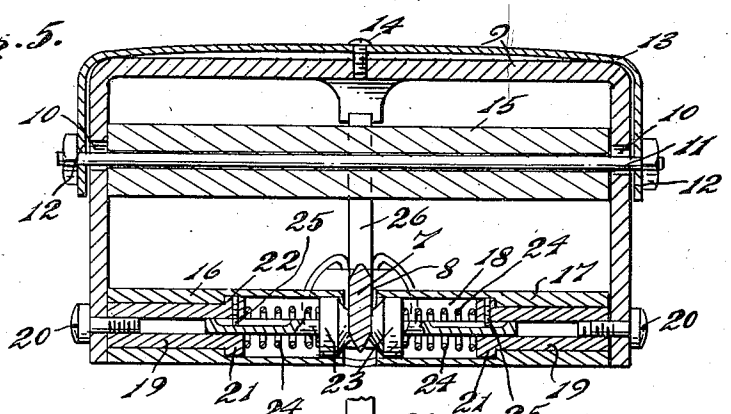


Fig. 6.

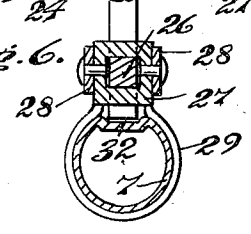
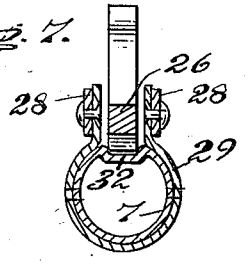


Fig. 7.



INVENTORS.
Peter S. Vosbikian
Thomas S. Vosbikian
BY
Herbert J. Fairbanks
ATTORNEY

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STRAND TYPE MOP WITH EXTRACTING MECHANISM

Peter S. Vosbikian and Thomas S. Vosbikian, Melrose, Pa.

Application March 29, 1955, Serial No. 497,529

8 Claims. (Cl. 15—119)

The object of our present invention is to devise a novel construction and arrangement of a mop of the strand or spaghetti type, and a novel construction and arrangement of extracting mechanism therefor.

The mop strands may be of the conventional strand or string type, but preferably the strands are of tubular plastic with a cotton or nylon core, and are removably carried in a mop head connected to the handle or a continuation of the handle.

A further object of the invention is to devise novel means to move a roller carrying extractor in a substantially straight forward path, at the completion of such forward path move the extractor outwardly out of the path of the mop strands, return the extractor at an angle to its forward path, and finally align the extractor in starting position with the rollers positioned to engage opposite sides of the strand assembly.

A further object of the invention is to provide novel extracting mechanism having a head carrying spaced rollers, one of which consists of spaced sections having tensioned members to snap over the handle or a continuation thereof to cause the rollers to be in the starting position of the extracting operation and positioned to engage opposite sides of the strand assembly during the forward extracting pass. The extracting operation is controlled by a sleeve slidable on the mop handle.

With the foregoing and other objects in view as will hereinafter clearly appear, our invention comprehends a novel mop and novel extracting mechanism therefor.

It further comprehends a novel construction and arrangement of extracting rollers and novel means to effect their forward and return movements and their alignment with the mop strand assembly.

For the purpose of illustrating the invention, we have shown in the accompanying drawings a preferred embodiment of it which we have found in practice to give satisfactory and reliable results. It is, however, to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and the invention is not limited, except by the scope of the appended claims, to the exact arrangement and organization of these instrumentalities as herein set forth.

Figure 1 is a perspective view of a mop and extractor mechanism, embodying our invention.

Figure 2 is a longitudinal section on line 2—2 of Figure 1.

Figure 3 is a longitudinal section showing certain of the component parts in a different relation from that seen in Figure 2 and showing some portions in elevation.

Figure 4 is a section on line 4—4 of Figure 1.

Figure 5 is a section similar to Figure 4, but showing the extractor rolls in section and passing over a portion of the socket.

Figure 6 is a section on line 6—6 of Figure 2.

Figure 7 is a section on line 7—7 of Figure 2.

Similar numerals of reference indicate corresponding parts.

Referring to the drawings:

The mop strands 1 are mounted in a U-shaped carrier strip 2 by means of a U shaped bolt 3 having threaded ends which pass through the strip 2. The sides of the strip 2 are preferably compressed against the mop strands. The strip 2 is removably secured in a slot 4 of a mop head 5.

The mop head is apertured to receive the ends of the bolt which are provided with nuts 6 to lock the strand carrying strip in the slot of the mop head. The front end of a tubular mop handle 7 is fixed in any desired manner to the socket portion 8 of the mop head and inwardly of the mop head the socket portion is of reduced thickness as at socket portion 8 in order to better cooperate with the extracting mechanism as will later be fully explained.

The extractor mechanism has a head 9 in the form of a U-shaped member to provide side arms having slots 10 which provide clearance for the movement of a bearing rod 11. The ends of the bearing rod 11 are fixed to the sides of a U-shaped spring 12 which extends at 13 over the top wall of the head 9 in an outwardly curved condition and fixed to the extractor head by a centrally located screw 14 to provide an adjustable tension for an outer extractor roll 15 which is freely rotatable on the bearing rod 11. The screw 14 serves as an adjustable fastening device to retain the spring 12 on the extractor head and adjust the tension of the spring.

A sectional inner roll assembly is spaced from and parallel to the outer roll and has roll sections 16 and 17, each of which are of the same construction and assembly so that a description of one will suffice for both. Each roll section has a passage through it of differential diameters as at 18 and is freely rotatable on a bearing rod 19 which extends through the sides of the extractor head and is fixed therewith by a screw 20. The outward movement of such bearing rod is limited by a shoulder 21 contacting an internal shoulder 22 in the passage 18.

Each roll section has a cone 23 slidable in its passage 18, and each cone has a stem telescoping into a bearing rod 19. A spring 24 tends to move a cone inwardly. The stem has a slot and pin connection at 25 with its bearing rod to prevent rotation of the cone in its passage.

An extractor handle 26 is fixed to the extractor head 9, and this handle 26 is preferably non-circular in cross section and is slidable in a non-circular aperture in a guide 27 pivotally mounted at the forward ends of links 28, the inner ends of such links being pivotally connected with a split ring 29 fixed in any desired manner to the mop handle intermediate the ends of the extractor handle and of the mop handle.

The inner end portion of the extractor handle is offset to provide an operating member 30 pivotally connected with a sleeve 31 slidable on the mop handle. The mop handle preferably has a depressed groove 32 which acts as a guide for the longitudinal movement of the extractor handle.

When the mop is being used for surface cleaning, the mop strands contact the surface and the mop handle inclines upwardly and rearwardly from the strands to the hand of the operator. It will thus be clear as shown in Figure 1 that the closed portion of the extractor head and the single roll is at the top, and the sectional roll is at the bottom of the head. When the extractor head is moved towards the socket portion 9, the sectional rolls can pass over such socket portion.

The operation is as follows:

Assuming that the component parts are in the position seen in Figure 1 and it is desired to extract the water from the mop strands, the operator slides the sleeve 31 forwardly causing the mop strands to be compressed between the upper roll and the inner sectional rolls and

the extractor head to be advanced beyond the mop strands. The operator next presses the extractor handle portion 30 towards the sleeve 31, thereby causing the head 9 to move laterally or upwardly out of the path of the mop strands as shown in Figure 3, the links 28 swinging outwardly. With the handle portion 30 depressed, the operator draws the sleeve 31 rearwardly until the sectional rolls are in the position seen in Figure 4 and located above the reduced width 8 of the mop handle. The operator now holds the mop handle in one hand and with the other hand presses on the portion 26 of the extractor handle or the extractor head towards the mop handle and the tensioned cones pass over the reduced width 8, see Figure 5, and into starting position shown in Figure 1 with the extractor rolls properly aligned for the forward extracting pass. The reduced width 8 is preferably converged at the top and bottom. When the parts are in the position shown in Figure 1, they are arranged for normal operations of mopping a floor. The tubular handle 7 is secured at its forward end to the socket portion 8. Therefore, the sectional rolls 16 and 17 can be considered forming the inner roll, and the roll 15 can be considered as the outer roll.

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

1. In a mop, a mop head, strand material carried by said head, a handle connected with the mop head, an extractor having a head with spaced extracting rolls, one of said rolls being sectional with the sections being in longitudinal alignment and with juxtaposed sections spaced from each other, a handle connected of one end with the extractor head, a guide in which said extractor handle is longitudinally slidable, links pivotally connected at their forward ends with said guide and at their rear ends with said mop handle, and a sleeve slidable on the mop handle and to which the extractor handle near its opposite end is pivoted, whereby, when the said opposite end portion of the extractor handle is pressed towards the sleeve, the guide and links move the extractor handle and extractor head outwardly so that the mop strands are out of the path of the extractor head during its rearward movement.

2. In a mop, a mop head, strand material carried thereby, a handle fixed to the mop head, an extractor head having side arms and spaced inner and outer rolls, the inner one being in sections, a U-shaped spring extending across the back of the extractor head, bowed outwardly therefrom and having side arms extending along the side arms of the extractor head, an adjustable fastening device for the spring located centrally of and connected with the extractor head, a bearing rod for the outer roll passing through the side arms of the extractor head with a clearance and connected with the side arms of the spring, a bearing for each of the inner roll sections carried by the side arms of the extractor head, the sectional roll having its sections in longitudinal alignment with juxtaposed ends being spaced from each other, a handle for the extractor head,

a guide in which the extractor handle is slidable, links pivotally connected with said guide and with said mop handle, and a sleeve slidable on the mop handle and to which the extractor handle is pivoted near the inner end of the extractor handle.

3. The construction defined in claim 2, wherein the inner end of the extractor handle is offset to provide a manually operated portion which when pressed towards the sleeve causes the links to swing outwardly with the guide and move the extractor head and its rolls out of operative alignment with the mop strands.

4. The construction defined in claim 2, wherein tensioned cones are slidable through the inner ends of the inner roll sections.

5. The construction defined in claim 2, wherein tensioned cones have limited longitudinal movement at the inner ends of the inner roll sections, and the mop handle in rear of the mop head is of reduced width to facilitate the cones passing over such reduced width of the handle.

6. The construction defined in claim 2, wherein the mop handle has a groove in which the extractor handle is longitudinally guided.

7. A mop having a mop head, strand material carried by said mop head, a mop handle fixed at its forward end to the mop head, an extractor head closed at its top and sides and open at its bottom and positioned above the strands when in non-extracting position, a spring adjustable on said extractor head, a roll carried by said spring, a second roll spaced from the first roll and comprising two longitudinally aligned sections carried by the sides of the extractor head and having juxtaposed ends spaced from each other, and positioned near the open bottom of the extractor head, an extractor handle fixed at its forward end to the extractor head, a sleeve slidable on the mop handle and to which the rear end portion of the extractor handle is pivoted, a guide in which said extractor handle is non-rotatable and longitudinally slidable, links pivoted at their forward ends to said guide and having their rear ends in fixed pivotal connection with the mop handle, said extractor head when in its rear retracted position and moved towards the mop handle causing the mop handle to pass through the space between said second roll sections and thus position the rolls for the extracting operation on the strand material when the sleeve is moved forwardly on the mop handle.

8. The construction defined in claim 7, wherein the portion of the mop handle which passes between the said second roll sections has converged edge portions.

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