ROTARY MOP AND APPARATUS FOR HOLDING MOP STRIP

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ABSTRACT
An apparatus for holding at least one mop strip is disclosed. The apparatus includes a body, at least one hole, and at least one elastic hook. The hole is located in the body for allowing a portion of the mop strip to pass therethrough. The elastic hook is connected to the peripheral of the hole for hooking up the mop strip.
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RELATED APPLICATIONS

[0001] This application claims priority to Taiwan Application Serial Number 98217520, filed Sep. 18, 2009, which is herein incorporated by reference.

BACKGROUND

[0002] 1. Technical Field
[0003] The present disclosure relates to a cleaning implement. More particularly, the present disclosure relates to a rotary mop.
[0004] 2. Description of Related Art
[0005] Mops were designed to provide water or a cleaning solution to the floor for removing unwanted matter from the floor. After the strips, which are connected to the front end of the mop, become dirty, the user has to manually wash the strips and then wring the strips to remove excessive water. However, this type of cleaning process is not only tiresome, but also labor intensive. In addition, the strips sometimes cannot be dried completely by user's hands, so that the floor is too wet after it is cleaned by the mop.
[0006] Recently, an improved mop is provided. The front end of the improved mop is rotatable, so that the strips on the front end of the improved mop can be dried by centrifugal force. Therefore, the strips need to be held stably on the front end of the improved mop to prevent the strips from loosening while the front end is rotating.

SUMMARY

[0007] According to one embodiment of the present invention, an apparatus for holding at least one mop strip is provided. The apparatus includes a body, at least one hole, and at least one elastic hook. The hole is located in the body for allowing a portion of the mop strip to pass therethrough. The elastic hook is connected to the peripheral of the hole for hooking up the mop strip.
[0008] According to another embodiment of the present invention, a rotary mop is provided. The rotary mop includes a stick, a rotating disk, and a strip holding disk. The rotating disk is pivotally connected to one end of the stick. The strip holding disk is connected to the rotating disk and includes at least one hole and at least one elastic hook. The hole allows a portion of a strip to pass therethrough. The elastic hook is connected to the peripheral of the hole for hooking up the strip.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a perspective view of a rotary mop according to one embodiment of this invention;
[0010] FIG. 2 is a perspective view of the strip disk of the rotary mop of FIG. 1;
[0011] FIG. 3 is a bottom view of the strip disk of FIG. 2;
[0012] FIG. 4 is a cross-sectional view taken along line 4-4 of FIG. 2;
[0013] FIG. 5 is a perspective view of an apparatus for holding at least one mop strip according to another embodiment of this invention;
[0014] FIG. 6 is a cross-sectional view of the apparatus of FIG. 5;
[0015] FIG. 7A is a cross-sectional view of the apparatus of FIG. 5, showing the mop strips are inserted into the hole;
[0016] FIG. 7B is an enlarged view of the part 7B of FIG. 7A;
[0017] FIG. 8A is a cross-sectional view of the apparatus of FIG. 5, showing the mop strips are held by the elastic hooks;
[0018] FIG. 8B is an enlarged view of the part 8B of FIG. 8A; and
[0019] FIG. 9 is a cross-sectional view of the elastic hook of FIG. 5.

DETAILED DESCRIPTION

[0020] In the following detailed description for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the disclosed embodiments. It will be apparent, however, that one or more embodiments may be practiced without these specific details. In other instances, well-known structures and devices are schematically shown in order to simplify the drawings.
[0021] FIG. 1 is a perspective view of a rotary mop according to one embodiment of this invention. The rotary mop has a stick 100, a rotating disk 200, and a strip holding disk 300. The rotating disk 200 is pivotally connected to one end of the stick 100. The strip holding disk 300 is connected to the rotating disk 200. Strips (not shown) held on the strip holding disk 300 are water-removed by centrifugal force while the rotating disk 200 is rotating.
[0022] FIG. 2 is a perspective view of the strip disk 300 of the rotary mop of FIG. 1. The strip disk 300 is round and includes at least one hole 310 and at least one elastic hook 320. The hole 310 is elliptic and located in the strip disk 300 for allowing a portion of the strip (not shown) to pass therethrough. The elastic hook 320 is connected to the peripheral of the hole 320 for hooking up the strip. In one or more embodiments, several holes 310 are arranged in a groove 330 located on the strip disk 300, and several elastic hooks 320 are connected to the peripheral of each hole 320.
[0023] FIG. 3 is a bottom view of the strip disk 300 of FIG. 2. The front ends 322 of the elastic hooks 320 define an opening 340 above the hole 310. The opening 340 is rectangular and smaller than the hole 310.
[0024] FIG. 4 is a cross-sectional view taken along line 4-4 of FIG. 2. Every elastic hook 320 inclines to the central of the hole 310 and extends into the groove 330. Furthermore, the surface 324 of each elastic hook 320 may be a spherical surface segment so that the surfaces 324 of all elastic hooks 320 connected to each hole 310 form a spherical surface.
[0025] FIG. 5 is a perspective view of an apparatus 400 for holding at least one mop strip according to another embodiment of this invention. The apparatus 400 includes a body 410, at least one hole 420, at least one elastic hook 430, and at least one partition 440. The body 410 is round and has a groove 412 located thereon.
[0026] The hole 420 is located in the body for allowing a portion of the mop strip to pass therethrough. The elastic hook 430 is connected to the peripheral of the hole 420 for hooking up the mop strip. The detail structure of the hole 420 and the elastic hook 430 is the same as those of the strip disk in the foregoing embodiment, so the details are not described again.
[0027] The partition 440 is located in the groove 412 of the body 410. In detail, the partition 440 connects the sidewalls 412a, 412b of the groove 410 for enhancing the strength of the body 410. Therefore, the partition 440 prevents the body 410 from being forced out of shape while the apparatus 400 is rotating. According to the embodiment, the partition 440 is located between every two holes 420, as shown in FIG. 5.
Next, the assembled process of the mop strip and the apparatus for holding the mop strip is described as following. FIG. 6 is a cross-sectional view of the apparatus 400 of FIG. 5. The elastic hook 430 is not bended before the mop strip (not shown) is inserted into the hole 420 of the apparatus 400.

FIG. 7A is a cross-sectional view of the apparatus 400 of FIG. 5, showing the mop strips 500 are inserted into the hole 420. FIG. 7B is an enlarged view of the part 7B of FIG. 7A. In FIG. 7A, the fold parts 502 of the mop strips 500 pass through the hole 420 of the body 410 from the bottom of the body 410. The direction of the mop strips 500 passing through the hole 420 is indicated by the arrow of FIG. 7B. At this time, because of the elasticity of the elastic hooks 430, the elastic hooks 430 are forced to enlarge the width 450a of the opening 450 so that the mop strips 500 can pass through the opening 450 easily.

FIG. 8A is a cross-sectional view of the apparatus 400 of FIG. 5, showing the mop strips 500 are held by the elastic hooks 430. FIG. 8B is an enlarged view of the part 8B of FIG. 8A. In FIG. 8A, the elastic hooks 430 return to their usual state to restore the width of the opening 450 to its usual width 450b after the mop strips 500 are inserted into the hole 420. Therefore, the mop strips 500 are held by the front ends 432 of the elastic hooks 430. In addition, the mop strips 500 are difficult to get loose when a user uses the mop since the restored opening 450 hold the mop strips 500 firmly.

FIG. 9 is a cross-sectional view of the elastic hook of FIG. 5. When the mop strips are inserted into the hole, the elastic hooks 430 are forced to enlarge the opening 450 as indicated by dotted lines of FIG. 9. Therefore, the mop strips can pass through the opening 450 easily. After the mop strips are inserted into the hole, the elastic hooks 430 return to their usual state as indicated by solid lines of FIG. 9. As a result of the elastic deformation of the elastic hooks 430, the mop strips can be held by the front ends 432 of the elastic hooks 430 firmly.

The reader’s attention is directed to all papers and documents which are filed concurrently with his specification and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

All the features disclosed in this specification (including any accompanying claims, abstract, and drawings) may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

Any element in a claim that does not explicitly state “means for” performing a specified function, or “step for” performing a specific function, is not to be interpreted as a “means” or “step” clause as specified in 35 U.S.C. §112, 6th paragraph. In particular, the use of “step of” in the claims is not intended to invoke the provisions of 35 U.S.C. §112, 6th paragraph.

What is claimed is:
1. An apparatus for holding at least one mop strip, the apparatus comprising:
   a body;
   at least one hole located in the body for allowing a portion of the mop strip to pass therethrough;
   at least one elastic hook connected to the peripheral of the hole for hooking up the mop strip.
2. The apparatus of claim 1, wherein the front ends of a plurality of the elastic hooks define an opening above the hole, and the opening is smaller than the hole.
3. The apparatus of claim 2, wherein the opening is rectangular.
4. The apparatus of claim 1, further comprising:
   a groove located on the body, wherein a plurality of the holes are arranged in the groove.
5. The apparatus of claim 4, further comprising:
   at least one partition located between the holes.
6. The apparatus of claim 4, further comprising:
   at least one partition located in the groove.
7. A rotary mop comprising:
   a stick;
   a rotating disk pivotally connected to one end of the stick;
   and
   a strip holding disk connected to the rotating disk, wherein the strip holding disk comprises:
   at least one hole for allowing a portion of a strip to pass therethrough;
   and
   at least one elastic hook connected to the peripheral of the hole for hooking up the strip.
8. The rotary mop of claim 7, wherein the front ends of a plurality of the elastic hooks define an opening above the hole, and the opening is smaller than the hole.
9. The rotary mop of claim 8, wherein the opening is rectangular.
10. The rotary mop of claim 7, further comprising:
    a groove located on the strip holding disk, wherein a plurality of the holes are arranged in the groove.
11. The rotary mop of claim 10, further comprising:
    at least one partition located between the holes.
12. The rotary mop of claim 10, further comprising:
    at least one partition located in the groove.

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