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MOP HAVING A UNIVERSALLY ADJUSTABLE HANDLE

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2 Sheets-Sheet 1

Fig. 1.

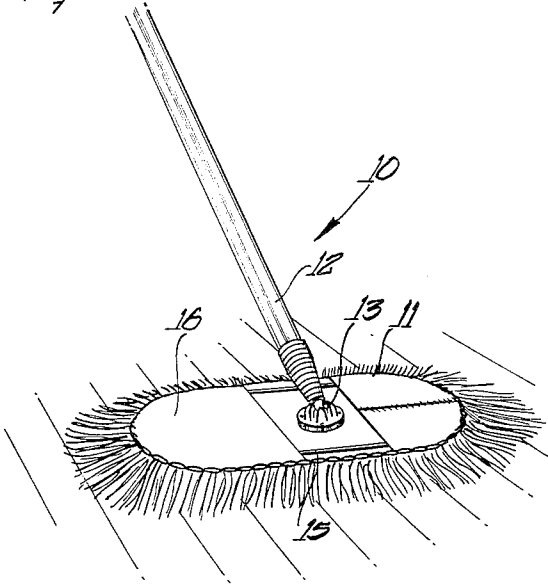


Fig. 2.

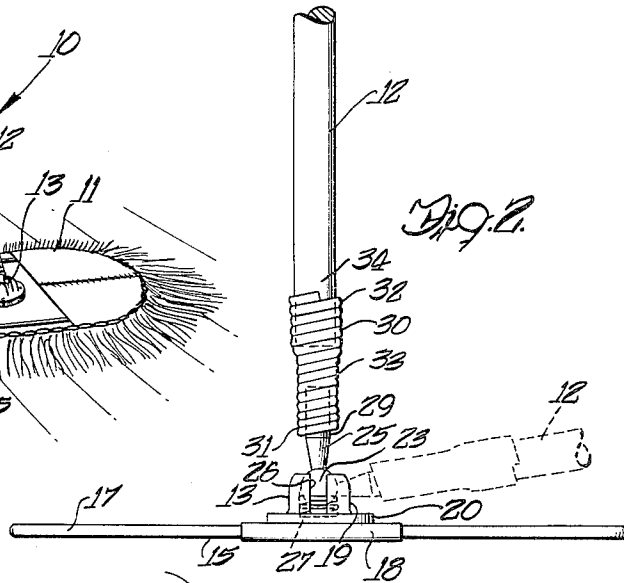
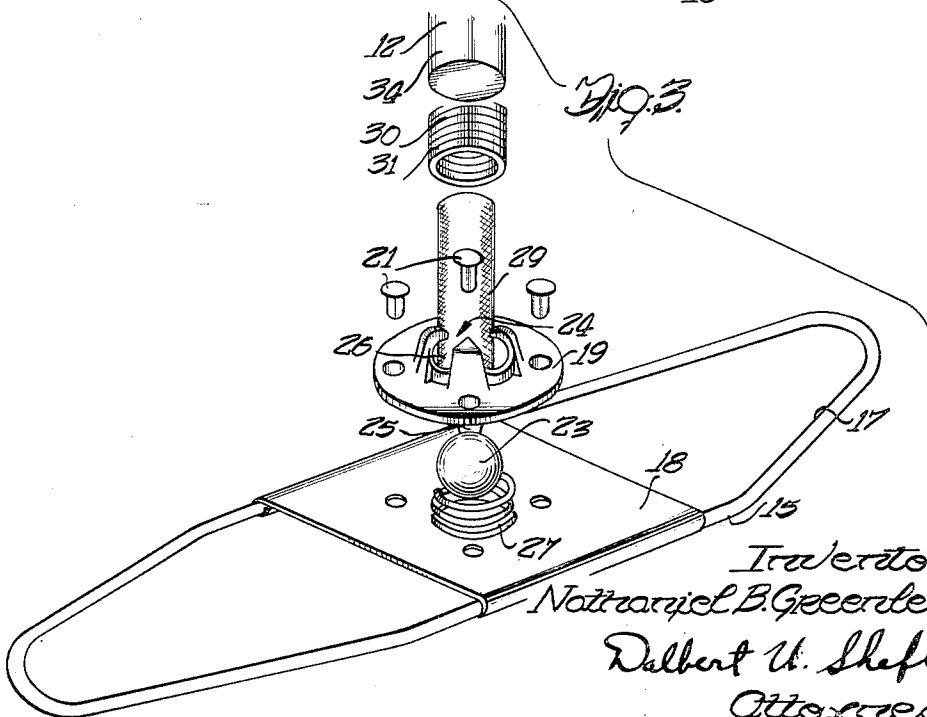


Fig. 3.

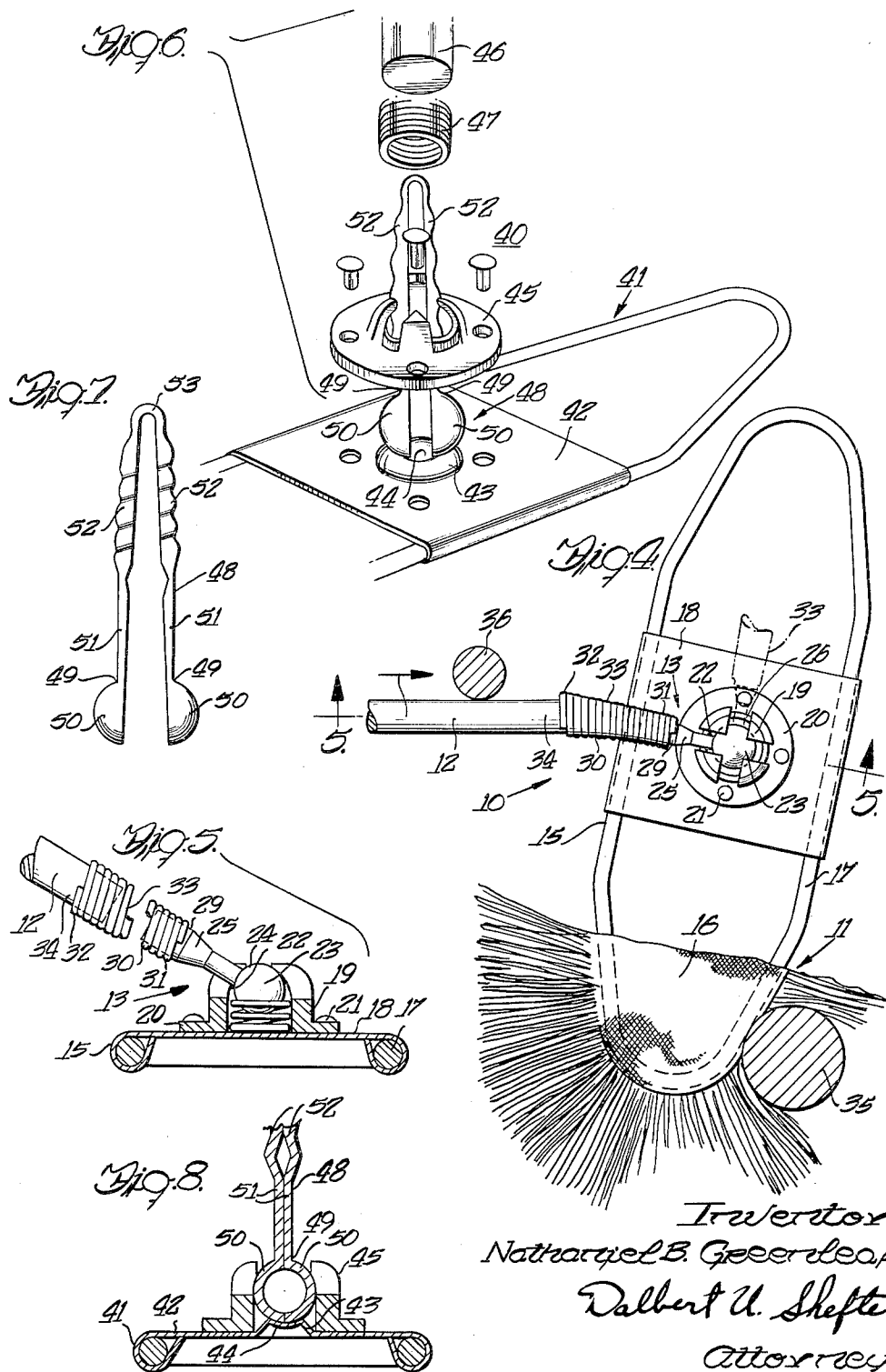


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MOP HAVING A UNIVERSALLY ADJUSTABLE HANDLE

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1 Claim. (Cl. 15-229)

This invention relates to a mop having a universally adjustable handle and more particularly to a universal connection of the ball and socket type.

Universal connections are adaptable for many uses in various fields. One particular use is found in the construction of household implements such as dust mops, wherein the handle is connected to the mop head and is manipulated by the user to direct the mop portion over the desired surface.

The most common dust mop construction includes a handle which is hingedly connected to the mop head for pivotal movement of the handle with respect to the head so as to facilitate manipulation of the mop during use. However, this pivotal movement is normally limited to a single vertical plane so that the mop head is not freely adjustable. This construction is adequate when mopping open surfaces but is not satisfactory to mop surfaces where the manipulation of the handle is obstructed by objects such as furniture legs. Since the handle is limited to a single vertical plane, it may be impossible to position the mop head so as to pass over the entire surface under adjacent furniture or between the legs of furniture.

The present invention provides a universal connection of the ball and socket type which permits universal manipulation and when used in a mop construction, can be manipulated so that the mop head can be accessible to portions of the floor or other surfaces adjacent obstructing objects which would normally block the efficient use of the mop.

The present construction consists of a ball and socket wherein the socket is slotted to receive a stem extending from the ball thereby locking the ball in one of a number of positions. The stem is connected to the handle by a resilient coil having a free portion between the stem and handle which bends under pressure from the handle when the head is stopped by an obstructing object, thus pivoting the head about the object so that the head will move over normally unattainable area of the surface to be mopped.

It is the object of the present invention to provide a new and improved universal connection.

Another object of the present invention is to provide a new and improved universal connection of the ball and socket type.

Still another object of the present invention is to provide a new and improved universal connection as described in the preceding paragraph and including a coil portion between the stem and the handle which is resilient to permit movement of the handle with respect to the stem.

Other and further objects and advantages of the present invention will be apparent from the following description and drawings in which:

FIG. 1 is a perspective view of a mop, illustrating one embodiment;

FIG. 2 is an enlarged front elevational view of the mop construction of FIG. 1;

FIG. 3 is an exploded perspective view of the mop of FIG. 1;

FIG. 4 is an enlarged top plan view of the mop of FIG. 1, showing adjacent obstructing objects in section;

FIG. 5 is an enlarged vertical sectional view taken along line 5-5 of FIG. 4;

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FIG. 6 is an exploded perspective view of a mop construction illustrating the preferred embodiment of the present invention;

FIG. 7 is an enlarged front elevational view of the stem member of the mop of FIG. 6; and

FIG. 8 is a vertical sectional view similar to FIG. 5 and illustrating the mop construction of FIG. 6.

Referring now to the drawings, the constructions embodying the present invention and a non-elected modification thereof will be described in detail. The non-elected embodiment is illustrated in FIGS. 1 through 5 in which a dust mop 10 is illustrated consisting of a head 11, a handle 12, and a ball and socket connection 13.

The head 11 consists of a frame 15 on which the mopping pad 16 is mounted. The frame and pad may be of any conventional construction and in the illustrations the frame includes a loop 17 formed of a metal rod shaped in a somewhat oval configuration so as to be received in a similarly shaped oval pocket in the mopping pad 16. The loop 17 supports a cross plate 18 which extends across the center of the loop and has its ends bent around the loop to secure the loop in place.

The ball and socket connection 13 includes a socket portion 19 which has a peripheral flange 20 mounted flush with the cross plate 18 and secured thereto as by rivets 21. The center of the socket portion combines with the portion of the plate therebeneath to form a cup-shaped interior 22 for the reception of the ball 23. The socket portion 19 has an opening 24 through which a stem 25 extends from the ball. The socket portion is slotted as at 26 to receive the stem 25 and lock it against lateral movement with respect to the socket. In the embodiment illustrated, there are four slots equally spaced around the socket so that the stem 25 may be locked in any one of four positions. When the stem is not positioned in one of the slots, the ball may be rotated within the socket and will remain in any set position because of the action of a spring 27 mounted in the socket portion between the ball and the cross plate 18 of the frame 15. This spring 27 is biased against both the cross plate 18 and the ball 23 thus forcing the ball against the top of the socket portion 19 so that the ball is frictionally held in place. In the embodiment illustrated, the spring 27 is shown to be a coil, but it is to be understood that any type of spring or equivalent is within the scope of the present invention as long as the ball is held against the socket to prevent the stem 25 and handle 12 from dropping to a horizontal position.

The stem 25 is provided with an enlarged outer end portion 29 which has a knurled cylindrical surface upon which one end 31 of an elongated resilient coil 30 is secured by being forced onto the knurled surface. The coil 30 extends outwardly from the stem 25 and has its other end 32 secured to the handle 12. The stem 25 and handle 12 are spaced apart so that the coil has a free portion 33 therebetween. This free portion is resiliently bendable so as to permit the handle 12 to be moved out of alignment with the stem 25. To facilitate mounting of the handle 12 onto the coil 30 the end 34 of the handle may be threaded so that it can be screwed into the coil 30.

The universal connection of the embodiment of FIGS. 1 through 5 is assembled from the separate parts illustrated in the exploded view of FIG. 3. The stem 25 of the ball 23 is inserted through the socket portion 19 from the bottom. The spring is placed on the cross plate 18 and the socket portion is riveted to the cross plate by the rivets 21 with the spring 27 located between the cross plate 18 and the ball 23. The end 31 of the coil 30 is then forced onto the knurled stem 25, and the end 34 of the handle is screwed into the other end 32 of the coil.

When in use, the stem may be locked in any one of the four slots of the socket 19 by lowering the handle. When thus locked, the head 11 is in a fixed position with respect to the handle so as to be positively controlled by manipulation of the handle, and since the stem may be locked in any one of four positions, the head 11 can be positioned as desired depending on the particular use of the mop. For instance, if a narrow space is to be mopped, the handle can be locked so as to be in line with the long dimension of the head, or when used to approach a wall or along a similar object, the handle can be locked in line with the shorter dimension of the head 11.

The advantage of the resilient coil 30 is illustrated in FIG. 4 wherein it is seen that it is desirable for the mop to be used between two objects 35 and 36 such as legs of furniture or posts. In the arrangement illustrated, it would be impossible for the conventional mop to be manipulated to cover the entire surface behind these objects. However, with the present construction, the mop head 11 can be pivoted about the object 35 adjacent the head 11 by forcing the handle 12 in the direction of the arrow, causing the coil 30 to bend as the head 11 pivots into the area normally inaccessible. Manipulation of the mop is not obstructed by contact of the handle with the adjacent object 36 as occurs with the conventional mop.

The preferred construction is illustrated in FIGS. 6 through 8 wherein a mop 40 similar to the mop 10 of the above described embodiment is seen to consist of similar elements. Thus a similar head 41 is illustrated having a cross plate 42 that differs from the cross plate 18 of the above embodiment by having a raised portion 43 at its center. This raised portion 43 has a cup-like indentation at its top for the receipt of the ball which will be described. The socket portion 45 is identical to the above socket portion 19 and the handle 46 and coil 47 are identical to the handle 12 and coil 30 above. However, no spring such as the spring 27 above is required. Substantially the same result is accomplished by the use of a bifurcated stem and ball member 48. This stem and ball member 48 is illustrated clearly in FIG. 7 and is seen to be formed from a single piece of material such as a resilient metal, which, when bent back upon itself, will form two halves that spring away from each other. The halves 49 have semi-spherical ends 50 which combine to form the ball portion. The stem portions 51 extend from the semi-spherical ends 50 and are enlarged and threaded as at 52 near their juncture 53 for the receipt of the coil 47. The stem and ball portion 48 is formed so that when it is forced into the socket 45, the semi-spherical ends 50 will be resiliently biased apart against the inside

of the socket 45 and will thus frictionally engage the socket so as to remain as positioned.

The operation of the embodiment of FIGS. 6 through 8 is identical to the operation of the mop of FIGS. 1 through 5, both embodiments providing a mop construction which may be manipulated around, between, and against objects so as to efficiently pass over adjacent surfaces with little obstruction in efficiency caused by these objects. The four-way slots and the coil permit angular positioning of the head with respect to the handle in almost any desirable manner for efficient operation of the mop.

While this invention is susceptible of embodiments in many different forms, there is shown in the drawings and is herein described in detail several embodiments with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention, and is not intended to limit the invention to the embodiments illustrated. The scope of the invention will be pointed out in the appended claim.

I claim as my invention:

A mop construction, comprising: a mop head having a socket portion; a ball and stem member having a ball portion mounted in said socket for universal movement therein and having a stem portion extending from said ball portion; said ball portion being bifurcated and the ball and stem member having a resilient portion normally urging the bifurcated ball portion apart and against the interior of the socket so that the ball and stem member is frictionally held in place; an elongated resilient member mounted on the free end of said stem portion and having an end portion extending therefrom; and a handle mounted in said end portion of said resilient member and spaced from the stem portion, said resilient member flexing under pressure applied to the handle when said mop head contacts an immovable obstruction to permit pivotal movement of the head with respect to the handle.

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