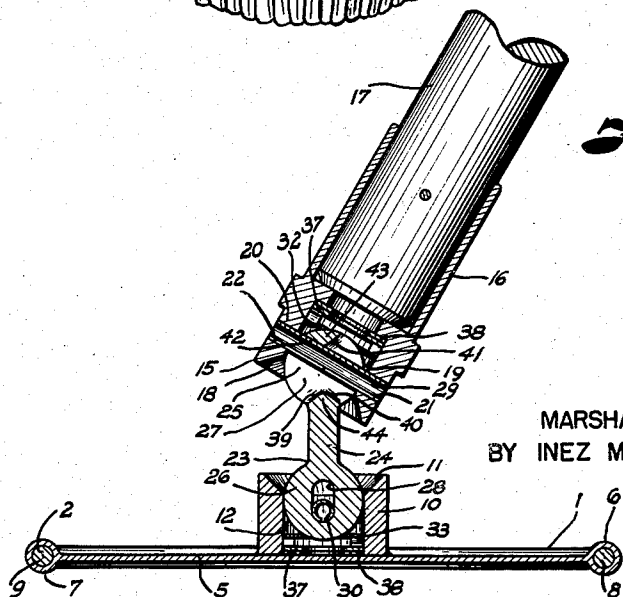


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MOP HEAD AND HANDLE THEREFOR

2 Sheets-Sheet 1



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*Fig. 3.*

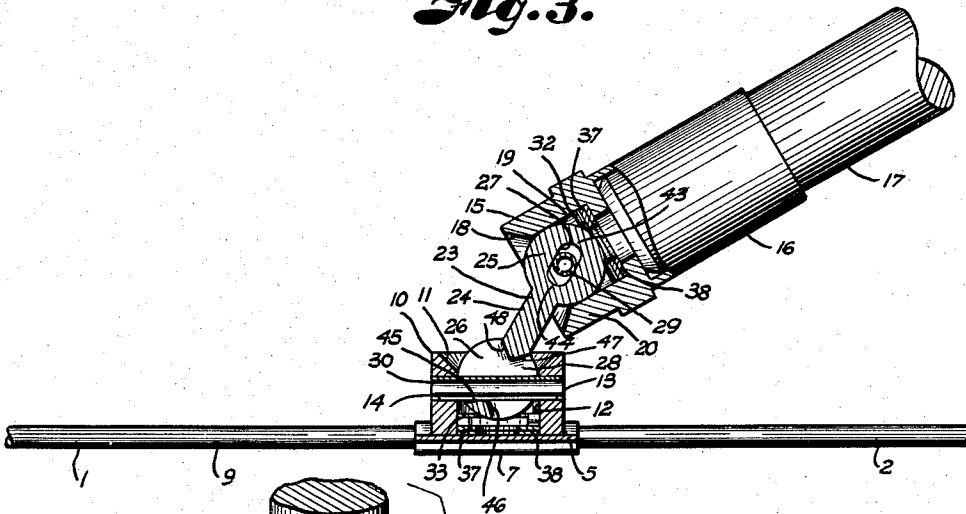
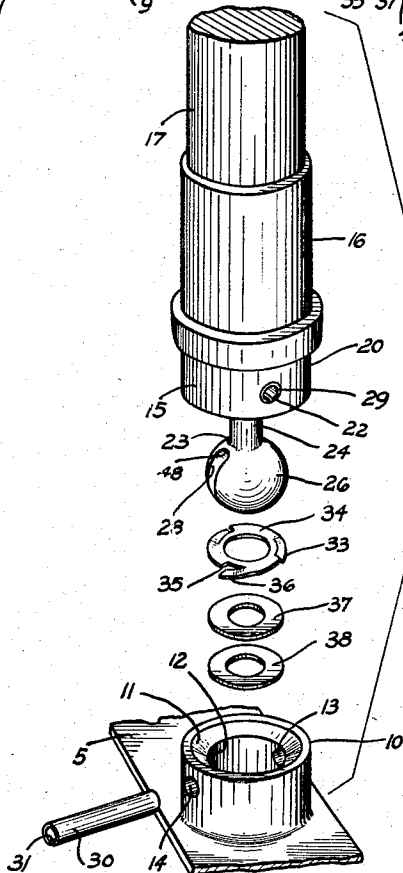


*Fig. 4.*



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## MOP HEAD AND HANDLE THEREFOR

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1 Claim. (Cl. 15—144)

This invention relates to a mop head, and more particularly to a rotatable support mechanism for joining the handle to a work head on a mop or the like in order to provide for controlled rotational movement of the two parts relative to one another, the invention being particularly adapted for use on a dry mop device although it may be used on a broom, wet mop, brush or a long handled tool of this character.

The principal object of the present invention is to provide a joiner or connecting member for connecting the head of the mop to the handle portion for rotational movement of the head with respect to the handle somewhat of a universal character but still not completely universal movement in all positions of the joiner member.

Further objects of the invention are to provide a base member or head for the dry mop portion of the mop; to provide a cross member for the base or head having a boss provided with a socket; to provide a handle support having a socket for the handle and having a head provided with a cylindrical socket; to provide a joiner member having two spherical ball like members one on each end of an elongated shank; to provide the ball members with grooves extending through the head one in transverse relation to the other; to provide aligned openings in the wall of the upstanding boss on the base of the mop for receiving a pin for extending through the groove on one of the balls to retain the ball in the socket in the boss; to provide aligned openings in the head or socket portion of the support member for the handle for receiving a pin extending through the slot in the other ball member; and to provide an inexpensive mop head for use in sweeping and polishing floors and walls at various angles as related to the handle of the mop.

Other objects of the present invention are to provide the slots in the respective ball heads on the end of the joiner member with sloping or beveled faces at the outer end of the ball and the inner end thereof so that the pin holding the same thereon will be movable at an angle with respect to the balls to provide for movement of the head at various angles; and to provide the said slots with a slightly larger opening at the respective outer edges of the slots so that the joiner member may be turned completely around the socket in the head of the mop and in the handle portion thereof; to provide the slot with a smaller center portion to prevent movement of the joiner portion in a straight transverse direction to the head on the mop and the ball on the handle portion will also not be movable directly longitudinally of the mop head.

Still further objects of the invention are to provide resilient washer members in the sockets and the head of the mop and in the head of the handle to place a pressure on the respective outer ends of the joiner member or balls to provide a resilient mounting of the joiner member and a resiliency on the handle of the mop and to control movement of the head by prevention of

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the transverse movement of the connecting member with respect to the head of the mop without pressure on the handle to overcome the pressure of the washer.

Still further objects of the invention are to provide a novel rotational transmission means for interconnecting the handle and the base member of a mop whereby a positive pull of the rotation of the mop head is accomplished without twisting or turning the handle with which the mop is manipulated.

In accomplishing these and other objects of this invention, improved details of structure have been provided, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of the mop head with the cloth string covering partly broken away to better illustrate the invention.

Fig. 2 is a cross-sectional view taken on a line 2—2, Fig. 1.

Fig. 3 is a longitudinal cross-sectional view of the invention shown in Fig. 1.

Fig. 4 is a fragmentary disassembled view particularly illustrating the resilient washers for pressure on the connecting member.

Referring more in detail to the drawings:

1 designates a frame for the mop head consisting of a wire or rod member 2 with a tapered front end as indicated at 3 and having the usual cloth string mop covering as indicated at 4. A cross member 5 having sleeved ends 6 and 7 connects the side arms 8 and 9 of the wire member 2 and extending upwardly at substantially the center of the cross member is a boss 10 having a downwardly sloping upper surface as indicated at 11 and provided with a cylindrical bore or socket 12. The boss is provided in the sides thereof with aligned openings 13 and 14. 15 designates a head for a support 16 for a handle 17.

The head 15 has an inwardly sloping outer edge 18 and a longitudinal cylindrical bore or socket 19. The wall 20 of the head is provided with aligned openings 21 and 22.

23 designates a connecting member comprising, a rod like member 24 having spherical members or balls 25 and 26 on each end thereof, one of which is adapted to engage in the socket 12 of the boss 10 and the other in the socket 19 of the head 15 of the handle 17.

Each of the spherical members 25 and 26 are provided with slots 27 and 28 extending therethrough and transversely one to the other. The spherical members 25 and 26 are held in the sockets by split tubular pins 29 and 30, the split or slots being indicated at 31 (Fig. 4), engaging in the openings 13 and 14 and 21 and 22, respectively. The pins 29 and 30 are made of spring steel so that when they are inserted in said openings in the boss of the head of the mop and the head of the handle they will extend through the grooves 27 and 28 of the spherical members and retain the same in the sockets 12 and 19.

Adapted to be seated in the bottom of the sockets 12 and 19 are resilient washers 32 and 33 for exerting pressure on the end of the respective spherical members or balls 25 and 26 of the connecting member 23. The purpose of the resilient washers is to exert pressure on the extreme outer ends of the balls to press the balls against the transverse tubular pins 29 and 30. The rims 34 of the washers 32 and 33 are provided with cuts as indicated at 35 (Fig. 4) and the cut portions are bent slightly out of alignment with the rim 34 and body of the washer to form tongues 36 to provide the resilient pressure on the spherical balls 25 and 26. Spacer washers as indicated at 37 and 38 as desired are provided in each socket 12 and 19 to insure of sufficient pressure of the resilient washers 32 and 33 on the balls 25 and 26.

Each side of the entrance to the slot 27 of the ball 25 is provided with sloping faces 39 and 40 and 41 and 42 as shown in Fig. 2 forming V-shaped bearing surfaces 43 and 44 for the pin 29, and slot 28 of the ball 26 is also provided with sloping faces 45 and 46 and 47 and 48 as shown in Fig. 3, forming V-shaped bearing surfaces for the pin 30.

Due to the particular shape and arrangement of the slot 28 in the ball 26 the connecting rod 24 can only be moved longitudinally, that is parallel with slot 28 and pin 30, but not laterally or transversely of the head of the mop since the pivoted point of the ball 26 on the pin 30 in normal position is below the center of the ball (Fig. 2). By placing pressure on the handle and pressing the ball down against the resilient washer 33 until the pin 30 is in the center of the slot 28 or ball 26 the connecting member may be moved transversely of the head and also rotated entirely around circumferentially of the boss 10 to make a universal connection.

The same action is true on the ball 25 in the head of the handle so that when the pressure is placed on the ball by the resilient washer 32 the handle cannot be moved longitudinally or in axial alignment with the point of the head of the mop without pressure being placed downwardly on the handle (Fig. 3). In other words, due to the action of the resilient washers in the socket there is only partial universal movement of the handle with respect to the spherical members 25 and 26 and of the connecting rod 24 when the pressure is on the ball in the socket of the boss of the head of the mop, the purpose being to give leverage on the head of the mop; otherwise a complete universal movement at all times would allow for loss of control of the head of the mop with respect to the handle. With the present arrangement the slots in the spherical members will bind on the transverse pins and thereby through the handle control movement of the head to allow the user to move the head into small places, corners, and other places for dusting and similar work.

When pressure is placed on the ball 26 to move it against pressure of the resilient washer 33 the connecting member 23 may be pushed downwardly and outwardly until the rod 24 engages with the sloping surface 11. The connecting member 23 with the handle 17 may then be rotated 360° whereby the rod 24 slidably engages the sloping surface 11. Also when pressure is applied against the resilient washer 32 by the ball 25 the handle may be rotated 360° and at an angle as shown in Fig. 2.

It will be obvious the sloping or beveled slots and the V-shaped bearing points for the pins allow for movement of the connecting rod 24 at various angles, and when the pressure of the washers is on the balls the head of the mop may be controlled by the handle at the will of the user.

It will be obvious from the foregoing that there has been provided an improved mop head and connecting rod or joinder member between the head and handle for controlling movement of the head at the will of the operator through the handle.

What is claimed and desired to secure by Letters Patent is:

A cleaning device of the character described comprising, an elongate head having a cleaning element on the lower portion thereof and including a member having an upwardly opening socket, an elongate handle with an end adjacent said head and having a socket opening from said end and extending therein, said sockets in the handle and the head member each having a cylindrical portion terminating in an enlarged portion adjacent the open ends thereof, a connecting member having spaced spherical end portions of a diameter substantially corresponding to the diameter of the cylindrical socket portions whereby said spherical end portions are movable in the respective sockets, said spherical end portions each having a transverse slot extending therethrough at right angles to the longitudinal axis of the connecting member, said slots being in planes longitudinally of the connecting member with one at right angles to the other, said spherical end portions having end walls spaced longitudinally of the connecting member and defining inner and outer ends of the slots with said end walls inclined toward the center of the respective slot and being substantially V-shaped, transverse pins secured in the socket member of the head and said handle end and extending through the respective slot of the spherical end portion positioned in the respective socket to retain said spherical end portions in said sockets, said slots being of a length relative to the thickness of said pins between mid-portions of the respective end walls and whereby said spherical end portions are movable axially of said sockets to move the centers of said spherical end portions inwardly and outwardly relative to the respective pins, said spherical end portions being pivotable in the plane of the respective slot therein in all axial positions, and resilient members in the respective sockets urging the respective spherical end portions outwardly thereof whereby the pins are engaged by the inner ends of the slots and the centers of said spherical end portions are in the cylindrical portions of the sockets and spaced outwardly relative to the respective pins at which position the pins and sockets retain the spherical members against swinging movement about the axis of said pins, said spherical end portions in the respective sockets being freed for swinging movement about the axis of said pins in response to inward movement of the spherical end portions in the sockets to position the centers of the respective spherical end portions on the axis of the respective pin.

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