Sept. 16, 1941. J. McD. THOMPSON 2,256,299

MOP HOLDER AND MOP

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FIG. 3.

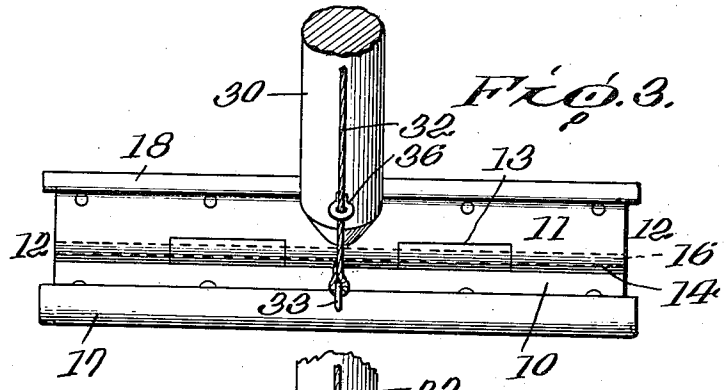


FIG. 4.

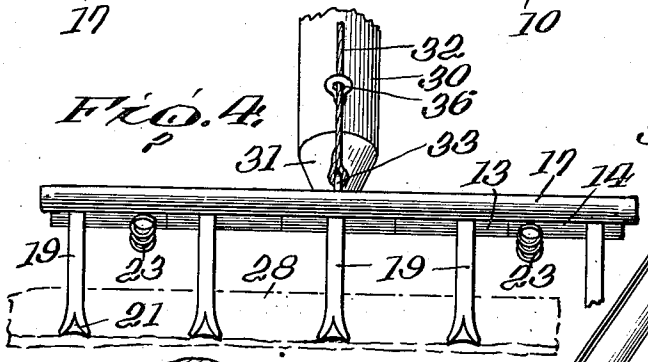


FIG. 5.

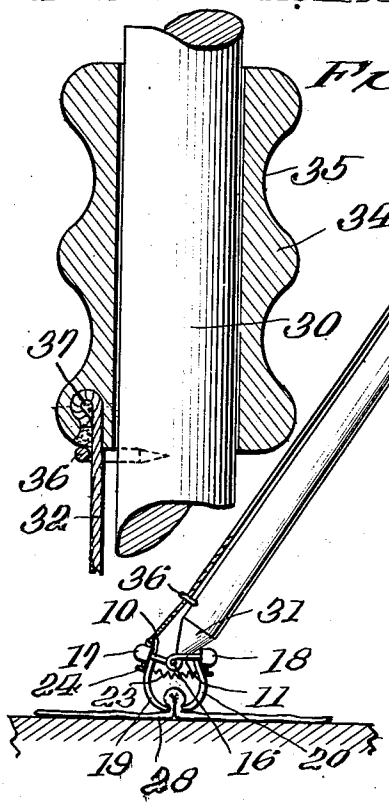


FIG. 1.

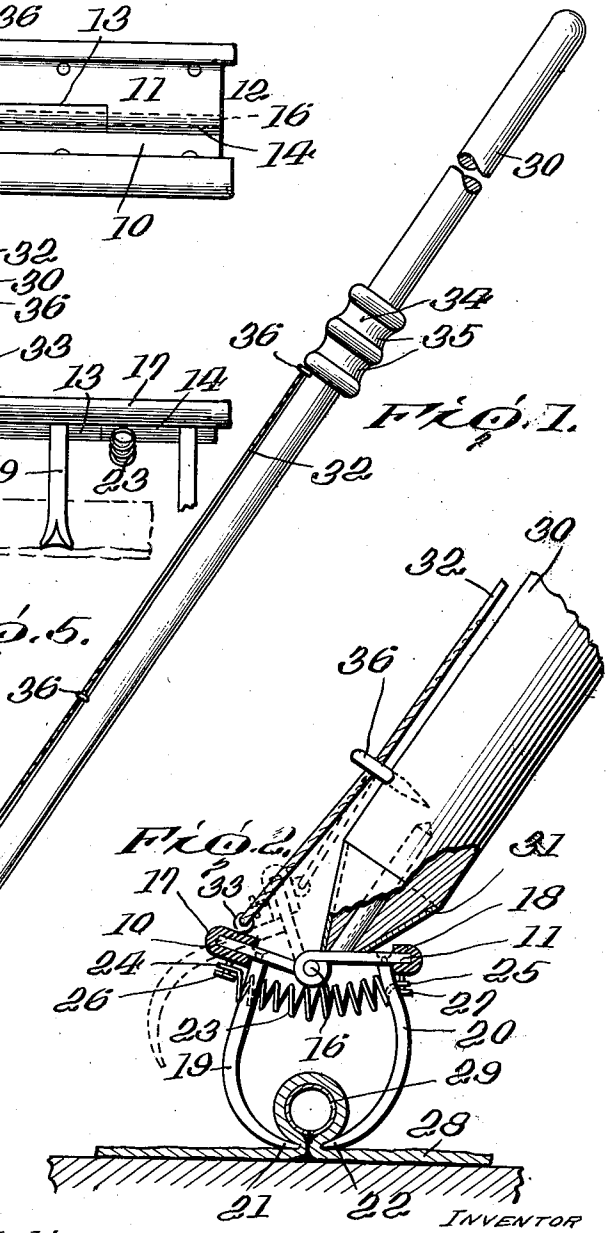


FIG. 2.

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Fig. 6.

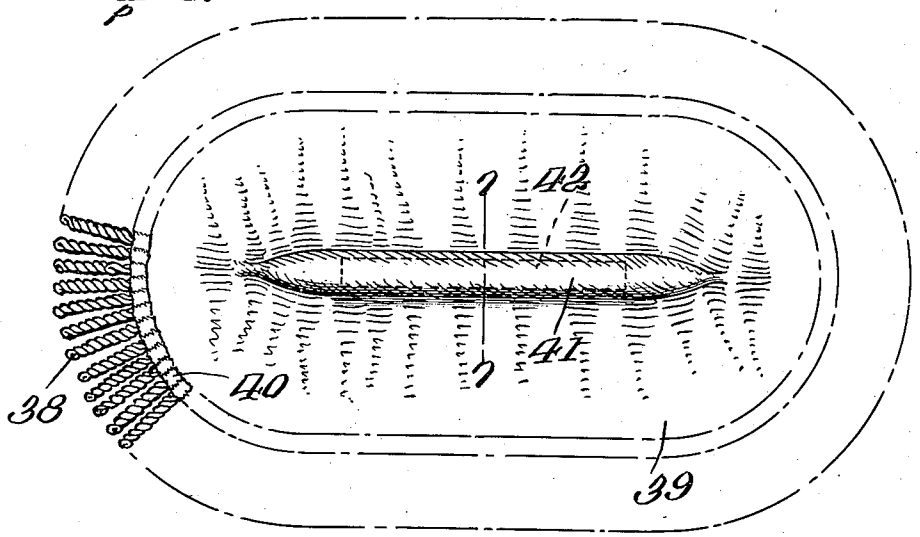


Fig. 7.

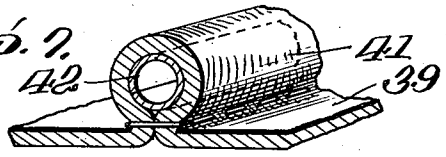


Fig. 9.

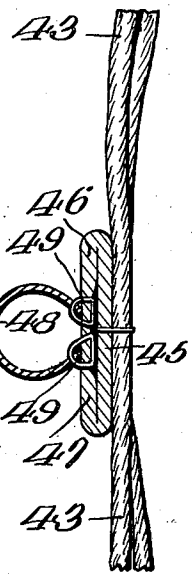
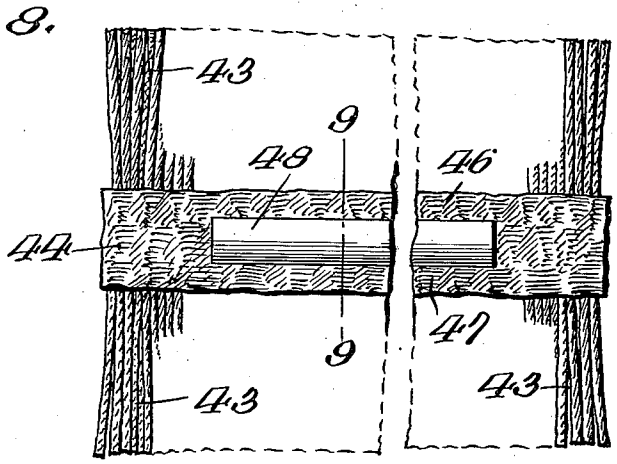


Fig. 8.



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MOP HOLDER AND MOP

Julian McDonald Thompson, R. F. D., Swoope, Va.

Application January 8, 1940, Serial No. 312,809

4 Claims. (Cl. 15—150)

My invention relates in general to the art of mops, such as are employed for conditioning floors, walls and the like, and more particularly concerns both a new form of holder for such mops, and several new forms of mops particularly adapted for cooperation with my new holder.

One object of my invention, therefore, is to produce a new form of mop holder of thoroughly practical, simple and rugged construction, characterized by its high degree of efficiency, its low cost both of production, including tooling and dieing, and of maintenance, its small number of moving parts, its simplicity and accuracy in operation, and the great surety and tenacity with which it grips the mop which it carries. Another object is to produce such a mop holder of such type that a single holder can be employed for cooperation with selected ones of a number of different types of mops, in which said mop holder can readily release from one mop and make fast to another mop with but a minimum of effort on the part of the user, which mop holder will guide the mop efficiently and effortlessly, without necessity of stooping on the part of the operator, while the mop holder is in an angular position relative to floor which is most comfortable to the user, in which the mop holder can be moved through a moderate angular distance relative to a mop which it carries without appreciable disturbance of the relation of the working surface of the mop relative to the surface undergoing treatment, and which mop holder is of such construction that danger of its marring walls, furniture, or other woodwork is practically eliminated.

Still another object of my invention is to produce a mop which will readily conform to the cooperating parts of my new mop holder, and can be easily picked up thereby, and which mop is characterized by the fact that it will readily open to operable position simply by casting it top side up, to the floor, and by its extremely simple and rugged construction, imparting long wear thereto.

Other objects will be obvious in part and in part pointed out hereinafter.

My invention accordingly resides in the several elements and features of construction, and in the relation of each of the same to one or more of the others, all as described herein, the scope of the application of which is indicated in the claims at the end of the specification.

For a more ready comprehension of my invention, reference may be had to the accompanying drawings, where in Figure 1 is a side elevation of an embodiment of the mop holder according to my invention which I prefer at present. Figure 2 is a side elevation, on a larger scale, and with parts broken away for clarity and illustrated in section, of the lower end of the mop holder of Figure 1, and depicting certain of the details of the mop-holder head. Figure 3 is a top plan view and Figure 4 a front elevation of the mop holder head. Figure 5 is a detail, partly in elevation and partly in section, showing the manipulating sleeve for the mop-holder head. Figure 6 is a top plan view of one form of mop according to my invention, while Figure 7 is a cross-sectional detail, illustrated in perspective, of the manner of providing a reinforcing rib extending along the longitudinal axis of such mop. Figure 8 is a top plan view of a further embodiment of mop suitable for use with my invention, while Figure 9 is a transverse section, on a larger scale, through the mop of Figure 8, on line 9—9.

To ensure a more thorough understanding of my invention, it may be pointed out at this time that in the past many persons, dissatisfied with the mops then available, persisted in laborious hand scrubbing or mopping, with simple scouring brushes or the like, while on their knees, or while either stooping or stretching in unnatural positions. This put them under great physical strain, and resulted in their tiring rapidly. It is a fundamental object of my invention, therefore, to produce a mop holder which substantially eliminates such tedium, and which serves as an extended hand, with the handle quickly oriented to a natural angle, ensuring, at a minimum of effort, a maximum of output of thoroughly satisfactory work, performed with the same degree of thoroughness as if performed by hand.

Although considerable effort has been expended in the art to the production of a satisfactory mop holder, the mop holders hitherto available have been signally characterized by their high degree of stiffness, their rigidity, and by what may be termed their "insensitiveness" in the hands of the user. So objectionable is this detriment that many persons old in years and for some time engaged in household maintenance, have found the use of mops of the types hitherto available both unsatisfactory and objectionable. A further object of my invention, therefore, is to produce a mop which eliminates the defects aforementioned, and which meets with the approval and endorsement of its users, and possesses a flexibility, sensitivity, and responsiveness closely akin to that of the human hand.

Referring now to Figures 1 and 2, it will be seen

that my new mop holder comprises two head plates 10, 11 hinged together, as perhaps best shown in Figure 3, along a longitudinal center line 12, 12. While any suitable form of hinge may be satisfactorily employed, I have illustrated a form of hinge comprised of channelled flanges 13 and 14, respectively, peripherally disposed on adjacent edges of head plate 10, 11. The channels of these flanges are aligned so as to provide a central longitudinal bore 15, through which extends a hinge rod 16.

To ensure that the head plates 10, 11 cannot damage furniture or other articles with which they come into contact, I provide bumpers 17, 18, formed of soft material such as rubber, fibre, fabric, or the like, disposed about the peripheries of the head plates, except along the center line 12, 12.

Depending from the underside of each head plate 10, 11 are provided a number of fingers 19, 20, preferably disposed in two aligned rows, one row on each head plate. These fingers may be made fast in the head plates in any desired manner, as by riveting, sweating, welding, threading, or the like.

The fingers of the row on one head plate are aligned with the fingers of the row on the other head plate in such manner that they cooperate in interlocking relationship with each other. I prefer to bow the fingers outwardly to a slight extent, the limit of such bow preferably being determined by imaginary perpendicular lines dropped from the periphery of the head plates 10, 11. This ensures that the entire assembly of the mop holder head lies within the confines of the bumpers 17, 18 previously described, and thus cannot contact nor mar furniture, base boards, or the like.

At their free ends, the fingers are curved inwardly into normally engaging relationship with each other. Preferably, the slope of such curve is such that there will be no tendency to scratch or mar the floor, even in the instance where no mop is being held in the mop holder, so that the holding fingers of the mop holder rest on the floor. Thus, the curvature is such that the free ends of the fingers are asymptotic with reference to the surface on which they bear.

As will be evident from a consideration of Figure 4, in a preferred embodiment of my invention, the fingers 19 terminate at their free ends in bifurcated teeth 21. The fingers 20 may if desired end in similar bifurcated teeth; or the teeth 22 of these fingers 20 may simply be pointed. With either such construction of teeth 22, it will be evident that the teeth 21, 22 are capable of interlocking in firm gripping engagement, from which it is substantially impossible for a mop to be released unintentionally. The manner in which these fingers are required to grip about the head of a mop will be described hereinafter.

It will readily be understood from the foregoing that the head plates 10, 11 are pivotal relative to each other about center line 12, 12, so as to swing the fingers 19, 20 out of and into engagement with each other. It will likewise be evident that it is when the head plates 10, 11 are oriented into positions substantially in alignment with each other that the fingers are in their interlocking or gripping relationship.

Since this interlocking or gripping action is what is normally sought, it is desirable to provide some means capable of exerting a strong biasing action on the head plates and hence on the fingers, urging the fingers into their desired gripping position. Such biasing means may conveniently take the form of springs. Such springs may either be compression or tension, leaf or coiled, and may be provided in any desired location, as wrapped around the hinge rod 16, extended transversely across the top sides of the head plates, or between the two rows of fingers themselves. I find it advantageous, however, to dispose such springs transversely across the under faces of the head plates. By concealing them in this manner, not only is the appearance of the mop holder improved, but additionally, the springs are shielded to a certain extent from the action of the elements, and from possible injury or displacement resulting from blows while the mop holder is in use.

The springs 23, 23 may be mounted from the head plates 10, 11 in any desired manner. I preferably terminate the ends of the springs (Figure 2), however, in loops 24, 25 fitting about pins, screws or the like 26, 27 secured in and depending from the head plates 10, 11. Pins 26 and 27 preferably are headed, to ensure that the loops 24, 25 of the springs 23 are retained in position, and cannot slip off the pins. Normally, these springs 23 bias the head plates 10, 11 into their closed position, with fingers 19, 20 in gripping relation.

The ensemble of head plates 10, 11, fingers 19, 20, and springs 23, I choose to call a mop-holder head. It is apparent that the head plates may be of any desired size, that the number of fingers, and their spacing in their rows may be selected in answer to the dictates of convenience, and that the springs 23 may be in any desired number and of any desired tension.

As illustrated in Figures 1, 2 and 4, the fingers 19, 20 are adapted to grip a cooperating mop, indicated broadly at 28. Such mop 28 is shown as having a central, longitudinally extending, upright rib 29, about which the fingers 19, 20 tightly grip. The serrated teeth 21 of these fingers facilitate the tight, interlocking gripping action of these fingers, inasmuch as they ensure minute bundles of the material of the mop being interlaced and interlocked in the interspaces formed between the teeth of any cooperating pairs of fingers. It is to be noted that the mop holder head contacts the mop along a line defined by the cooperating teeth of the rows of fingers. Hence the mop holder head can be rocked about the rib 29, without appreciably disturbing the contact of the latter with the surface on which the mop bears.

A handle 30 is provided for the mop holder head. This handle may be secured to one of the head plates, say head plate 11, in any desired manner, as by a pin set into the head plate, bent, and secured at its other end to the bottom of the handle. I prefer, however, simply to taper down the end of the handle adjacent the head plate into a conical shank, and to then insert a pin through the head plate 11 and up into said shank, so that the handle sets flush against the head plate. It is advantageous to provide such conical shank with a metal ferrule 31, to protect and reinforce the same and to impart a pleasing appearance thereto. To this end, copper, bronze, chromium, nickel, stainless steel or the like may well be employed as the metal stock from which such ferrules are formed. The handle 30 preferably is set at an angle to the head plate such that the relation to the horizontal is that found by experience to be most suitable for the average person employing the

same. If the user finds it convenient to rock the handle slightly from this normal position, this will result in practically no disturbance of the mop so far as concerns the position of its working surface relative to the surface undergoing treatment. Thus the operator can quickly and expeditiously orient the handle into the position most comfortable to him, and in which he can quickly and effortlessly apply great force to the mop. This is to be contrasted sharply with the manipulation of known mops, in which the mop is practically immobilized relative to the mop holder.

I provide means for swinging or pivoting the head plates 10, 11 about their hinges relative to each other, against the tension or biasing action of the springs 23, so as to separate the fingers 19, 20, and permit the release of one mop and the pick-up, if desired, of a second mop. Such swinging means may have the form desired, and may for example, comprise a rigid link, together with a lever for rocking or camming the same. However, I have illustrated a very satisfactory embodiment of such means, comprising a flexible cable 32 extending between head plate 10, and being secured thereto by any suitable means such as eye 33, and means for manipulating the cable. A suitable manipulating means for moving the cable relative to the handle 30 may conveniently assume any one of a number of known and conventional forms, such as a pivoting latch. I have shown this means, however, as comprising a sleeve 34 snugly fitting about, and movable along the handle 30. Annular finger depressions 35 (Figure 5) are provided for ready manipulation of the sleeve.

Suitable means are provided for guiding the cable 32 in its movement relative to the handle 30. While such means may assume any one of a variety of different forms, such as a tunnel secured along and parallel to handle 30, and housing the cable, upstanding guide ribs along the handle and in which the cable is guided, and the like, I have elected to provide guide eyes 36 along the length of the handle 30, through which guide eyes the cable 32 extends. The eyes may be fastened in the handle 30 in any desired manner, as by nailing, or screwing, and although a separate limiting means may be employed if desired, I have elected to have the topmost eye 36 (Figures 1 and 5) serve as a stop for sleeve 34, limiting the downward movement of said sleeve. This stop of course exerts no limiting action on the upward movement of sleeve 34 along handle 30, such limit of upward movement being determined by the degree of swinging of head plate 10 relative to head plate 11 about hinge rod 16. The hinge elements themselves may be designed to provide a stop for such upward lift, if desired. The cable 32 may be secured to sleeve 34 in any desired manner, as by an eye, wedging, or as shown, by the use of a locking pin 37. It is of course desirable and feasible to dispose said sleeve along said handle at a distance above the mop holder head most readily adapting itself to the convenience of the user. While the use of a flexible cable is, as has been suggested, by no means mandatory, its use ensures substantial absence of possibility of binding, with a minimum of complication of parts.

It is to be understood that the mop holder in reality may consist of but three or four parts movable with respect to each other. For example, the head plate 10, row of fingers 19 and cable 32 or other lifting means, together with sleeve 34, may constitute one unit, while head plate 11, row of fingers 20, and handle 30 may constitute a second unit.

The mop holder may be employed to grip and manipulate a large variety of mops adapted for different uses. It may be employed for example with mops adapted for dusting floors and walls, mops for waxing, scrubbing mops, and the like.

Where an upstanding rib is provided centrally along the mop, as is preferred, and by which the mop is gripped by the mop holder head, a strikingly efficient combination results, in that, as has been suggested, the mop holder pivots about the rib of the mop, and while thus readily adapting itself to the position most comfortable to the user, permits the mop itself to remain in that position relative to the surface being treated thereby at which the mop will function most effectively, so that great pressure can be applied on the mop, at a minimum of effort or discomfort to the operator.

Although my new mop will operate successfully with most types of mops, I find that it works best with mops embodying certain structural characteristics designed especially for adapting such mops for use with my new mop holder.

Two embodiments of such new mops are depicted in Figures 6 through 9. In the first of these two mops, that shown in Figures 6 and 7, the mop is oblong in shape, formed of outwardly extending strands of soft, flexible material sewn or otherwise secured together, the ends 38 of the strands being free so as to penetrate and adapt themselves readily to the contours of intricately profiled interstices into which they are forced. Centrally of the mop, extending along the major axis thereof, and of substantial area, is a reinforcing sheet or backing of some suitable flexible material, such as stiff rubber, canvas fabric, fibre, or the like, and which is secured to the strands of soft material in suitable manner as by sewing, cementing, impregnating the central portions of the strands of soft material with rubber and then vulcanizing the backing material thereto, and the like. A stiffening rib 40 of rubber or other suitable material is provided on the soft flexible strands, either interior or exterior of the reinforcing backing, near the periphery of the latter.

The function of this central reinforcement is to ensure that when the mop is tossed from a height of about three feet, say, to the floor, preparatory to gripping it with my new mop holder, the mop will spread out and adapt itself to the floor, so as to be in readiness for immediate use. Thereafter, if at any time while in service, the mop is picked up from the floor, or other surface, and then replaced thereupon, it will at once and with surety spread into position for efficient use.

To provide for the mop being readily and quickly picked up and gripped by my new mop holder, the reinforcing backing 39 is provided with a central hump 41 in the nature of a straight, upstanding rib, extending along the greater part of the length of said reinforcing backing. The teeth, 19, 20 of the mop holder head readily fit about and conform themselves to the contours of this rib. To ensure that the rib will possess the requisite straightness, however, and that the mop holder head will grip thereabout with certainty and precision, it is advantageous to provide some means in association with this rib to impart the requisite straightness and stiffness thereto. Such means may be either metallic or non-metallic. For example, should the mop be of the well-known wet mop type, as

well as in other instances, the rib may be comprised largely of any suitable form of rubber or other flexible material. Thus such a wet mop can readily and efficiently be wrung dry through conventional wringers. For dusting mops and all other mops which do not require wringing, the reinforcing means for the aforesaid rib may take the form of some non-corrosive metal, hard rubber, synthetic resins, and the like.

The reinforcing means may be in the shape of a central rod or tube, extending through said rib, a sleeve fitting snugly about said rib, or simply a building up of the rib itself. It is advisable, when a reversible mop is employed, to provide the upstanding rib on both sides of the mop, perhaps covering the rib with some suitable soft material, such as lamb's wool.

In the embodiment under discussion, I have imparted to such reinforcement the form of a central tube **42** of corrosion-resistant metal, such as galvanized iron, zinc, or the like.

A mop according to this example will readily open into position for use when cast or otherwise placed upon the floor, and can be picked up quickly and surely by my new mop holder.

In the modification shown in Figures 8 and 9, the loops or strands **43** of soft flexible material, preferably cotton, are sewn or otherwise secured together along a central line, and extend at right angles to the major axis of the mop. Thus the mop is rectangular or oblong in shape. A reinforcement **44** extends along the center line of the mop, being secured by sewing or other suitable expedient to the strands **43**. The reinforcement **44** may consist, as shown in section in Figure 9, of a central web **45**, having folded-over end wings **46**, **47**. The longitudinal central rib for facilitating the gripping action of the mop holder head is shown as comprising a longitudinally opened, upstanding tubular member **48**, cemented, sewed or otherwise secured to web **46**, as illustrated at **49**, **49**.

It is an advantage of my construction, as is readily apparent, that with the mop separate and detachable from the handle, it can be kept clean, sanitary and aired at all times while not in actual use. It is desirable that mops for use with my new mop holder, other than for the upstanding rib, be flat and comparatively thin, so as to conform readily to the surface against which it bears.

It is apparent from the foregoing that my new mop holder possesses marked advantages from the standpoint of simplicity, ruggedness and low cost, both initially and for maintenance. It is exceedingly easy to manipulate, and adjusts itself readily to the position for which the individual user can most readily and comfortably apply great force thereon, while the mop itself is conforming to the contour of the surface over which it passes. Because of this, among other reasons readily apparent from the foregoing, mopping practiced with the use of my new mop holder is particularly suitable for both old and very young and frail persons, who have found it impossible to use known types of mops without results definitely detrimental to the users.

The mop holder can be employed with a variety of different mops, readily picking them up and releasing them at will, and holding the mop tenaciously when gripped about its holding rib. Thus it is ensured at all times that the mop itself occupies just the proper position with relation to the floor, to ensure the highest efficiency in mopping action.

It becomes possible by the practice of my new invention, to limit materially the investment in materials and apparatus for carrying out a variety of different forms of mopping, all with a minimum of inconvenience and expenditure of effort. All parts susceptible to wear are adequately protected, so that the device is ensured a long useful life, with a minimum of loss, both of use and investment, for carrying out repairs.

Mops according to my invention are efficient in operation, adapting themselves readily to the surface undergoing mopping, are durable and of low first cost, are readily maintained sanitary, and can quickly be picked up or released from the mop holder.

As many embodiments and variations may be made of my invention, and as changes may be made in the embodiments hereinbefore set forth, it will be understood that all matter described herein, or shown in the accompanying drawings, is to be interpreted as illustrative, and not in a limiting sense.

I claim:

1. A mop holder, comprising a mop-holder head formed of two approximately flat, elongated plates, hinges hinging said plates together along juxtaposed longitudinal edges for pivotal movement relative to each other, separate fingers mounted along and extending downwardly at approximately right angles from said hinged plates near their outer, longitudinal edges, the fingers of one plate being in substantial alignment with those of the other plate and normally converging so that the free ends of the fingers of one plate contact the corresponding fingers of the other plate while in the rest positions of said head plates, springs normally urging said head plates about their hinges into their nearly aligned, rest positions, so that a mop between said fingers is held firmly by both gravity and spring force, a mop handle secured to one head plate and extending upwardly therefrom, and means mounted for movement along said handle and attached to the other said head plate, for pivoting said head plates about their hinges against the tension of said springs, to separate the fingers.

2. A mop holder head, comprising two plates, hinges securing said plates together along juxtaposed longitudinal edges, fingers disposed along the lengths of said plates, and extending downwardly at right angles from the underside of the head plates, corresponding fingers of the two head plates being aligned along the lengths of the head plates, and springs disposed transversely of the head plates on the under sides thereof, and attached one end to each said head plate, and normally urging the head plates together so that the corresponding fingers contact in gripping relation against each other.

3. A mop-holder head comprising two elongated head plates hinged together along juxtaposed longitudinal edges, a row of gripping fingers disposed along the length of each said head plate and extending downwardly at right angles therefrom, and means normally biasing the head plates about their hinges so that the fingers are interlocked in gripping relation, the free ends of at least one said row of fingers being bifurcated, and the relation of the fingers of one head plate with the corresponding fingers of the second head plate being such that when the head plates are in their normal position, the bifurcated free ends of the corresponding fingers are in positive, interlocking engagement with each other.

4. A mop-holder head comprising two elongated head plates, hinges securing said head

plates together along juxtaposed longitudinal edges, soft material about the edges of said head plates to protect objects from blows from the mop-holder head, a row of separate gripping fingers each terminating in teeth, the teeth of at least one row being bifurcated disposed along the length of each said head plate and extending downwardly at right angles therefrom, and means normally biasing the head plates about their hinges so that the fingers are in gripping relation, the fingers of each head plate being bowed outwardly, with the outermost extent of said bowed portions lying within the confines of imaginary vertical lines dropped from the peripheries of the head plates, and the free ends of said fingers extending inwardly, so that the bifurcated teeth of the fingers of one row firmly interlock with the teeth on the fingers of the other row.

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