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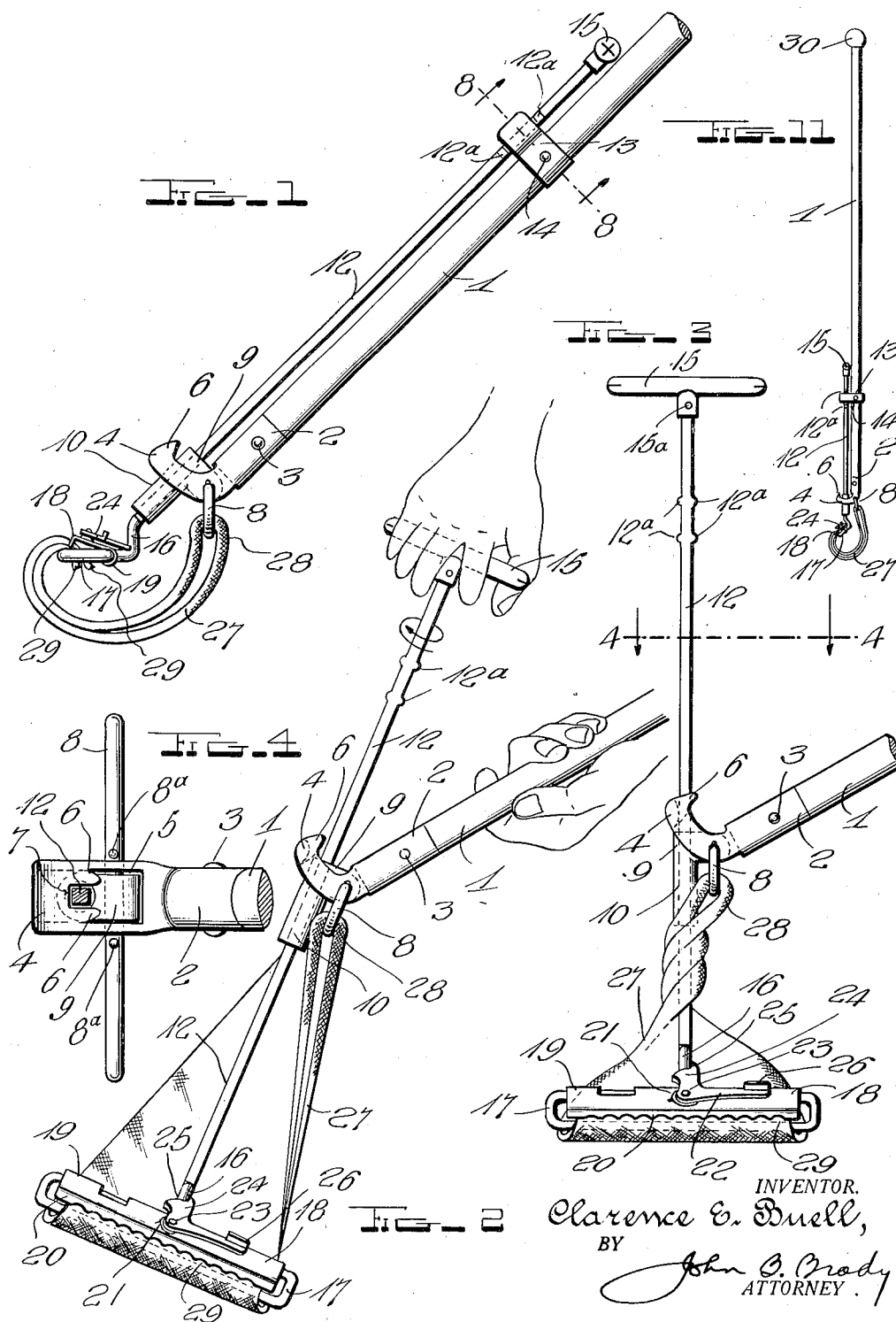
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2,059,772

MOP AND WRINGER

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2 Sheets-Sheet 1



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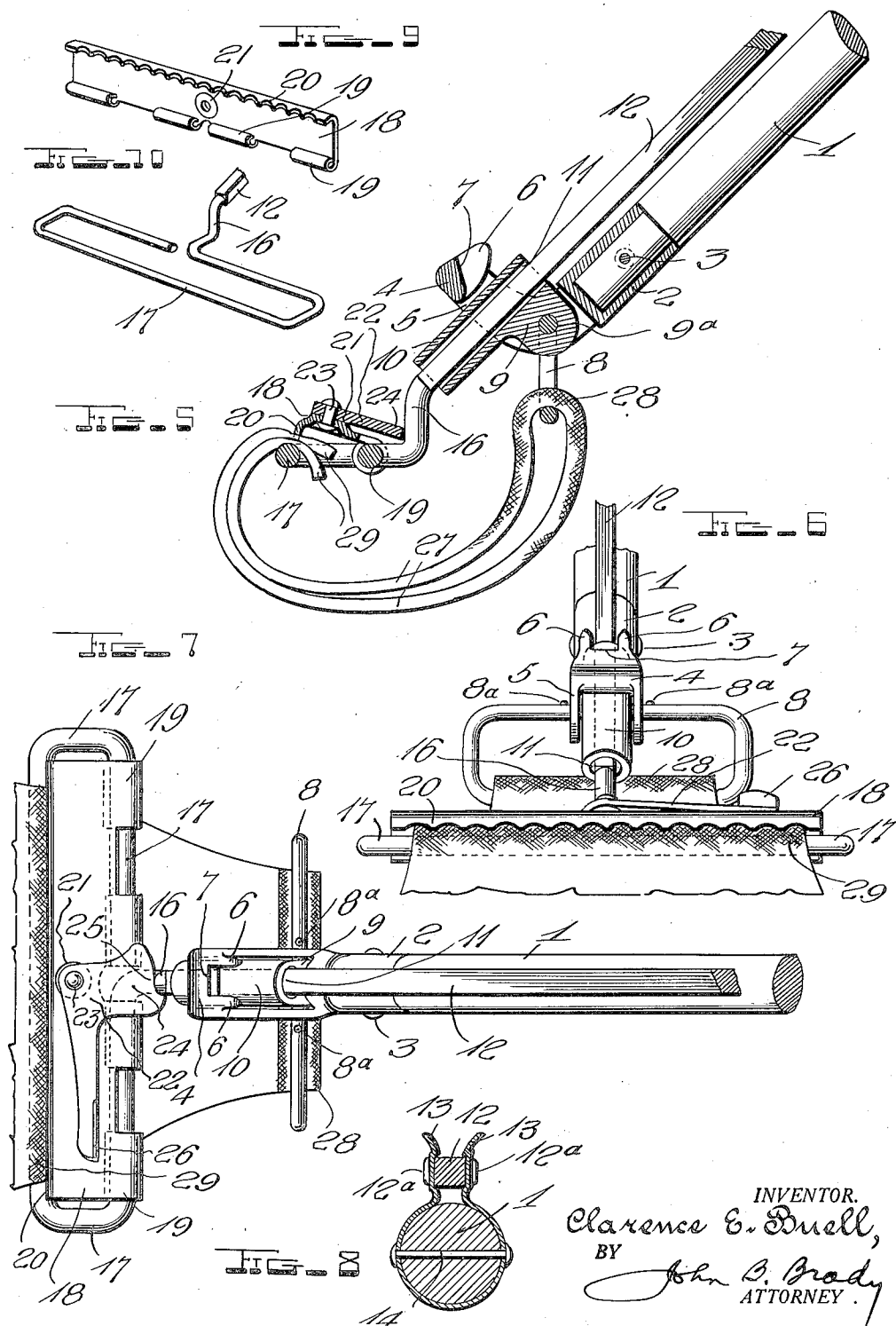
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UNITED STATES PATENT OFFICE

2,059,772

MOP AND WRINGER

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5 Claims. (Cl. 15—120)

My invention relates broadly to mops and wringers, and more particularly to an improved construction of mop head and manually controllable wringing means associated therewith.

One of the objects of my invention is to provide a simplified and inexpensive construction of mop and wringer which may be conveniently operated with minimum physical exertion.

Another object of my invention is to provide a construction of support and clamp for the end of a mop cloth which is operated by an angularly movable cam pivotally mounted on the clamp and manually shiftable into locking engagement with the support for removably gripping the mop cloth.

Still another object of my invention is to provide a construction of a pivotally mounted tubular member forming part of a mop head and providing a slidable mounting for the wringer actuating rod of a mop and coacting with a bifurcated locking member for securing the actuating rod in a predetermined position when said tubular member is shifted to a wringing position.

A further object of my invention is to provide a construction of wringer for a mop cloth actuated by a wringer rod of polygonal cross-section which is manually slidable and rotatable to a selected position and engageable in any selected position by means gripping the opposite sides of the polygonal cross-sectioned rod for maintaining the mop cloth in twisted position for thoroughly expelling the cleaning fluid from the cloth after a mopping operation.

A still further object of my invention is to provide a construction of wringer rod and coacting securing means carried by a mop handle for normally maintaining the wringer rod in parallel relation to the mop handle.

Another object of my invention is to provide a construction of manually operative wringer rod which is rotatably and longitudinally slidable with respect to a mop head and with reference to a coacting locking device which allows the mop to be wrapped upon itself in convenient angular twists intermediate which the wringer rod is securedly latched in the locking device while the cleaning fluid is expelled from the mop cloth.

Other and further objects of my invention reside in the features of construction of mop and wringer set forth in the specification hereinafter following, by reference to the accompanying drawings, in which:

Figure 1 is a side elevation of the combined mop head and wringer constructed in accordance with my invention; Fig. 2 is a side elevation showing the preliminary operation of twisting the

mop cloth after a mopping operation preparatory to forcibly wringing it, the mop head actuating handle being in a position to freely revolve; Fig. 3 is a side elevation of the combined mop head and wringer, showing the mop actuating handle locked in wringing position; Fig. 4 is a detailed horizontal sectional view on an enlarged scale taken on line 4—4 of Fig. 3; Fig. 5 is a longitudinal sectional view of the lower portion of my combined mop head and wringer; Fig. 6 is a front elevation thereof; Fig. 7 is a top plan view thereof; Fig. 8 is a transverse vertical section on line 8—8 of Fig. 1; Fig. 9 is a detailed perspective view of one of the clamping jaws comprising part of the mop carrying head; Fig. 10 is a fragmentary perspective view of the coacting clamp formed on the lower end of the actuating rod of the mop wringer; and Fig. 11 is an elevational view of the assembled mop and wringer of my invention.

My invention is directed to a construction of mop and wringer which is particularly adapted for inexpensive quantity production. The mop and wringer of my invention is highly convenient and simple in operation. The mop is readily controlled to effect a wringing operation which may be accomplished by a simple twisting movement of the wringer actuating rod. The degree of twist required in any one of a multiplicity of successive movements does not exceed, in any instance, an angular distance of 90 degrees thereby decreasing manual strain incident to the operation of the wringer. The mop of my invention has been designed particularly to increase the ease of operation of the mop in renewing the mop cloth and in effectively wringing the cleaning fluid from the mop cloth. The specific features of the construction of the mop and wringer of my invention will be understood more fully by detailed reference to the drawings.

Reference character 1 designates the mop handle which is reduced in cross-section at its lower end to receive a socket member 2 which is riveted thereto by the rivet member 3. An angularly disposed support 4 is integrally connected with the socket member 2 and extends along a substantially convolute curve with respect thereto. The support 4 is provided with a substantially rectangular aperture 5 toward which there extends the bifurcated projection 6 integrally connected with the remote end of the support 4. I provide a rectangular recess 7 in the bifurcated extension 6 on support 4 for receiving the wringer rod 12 when moved to wringing position, as will be hereinafter more fully described. A mop 55

cloth carrier loop 8 is pivotally mounted in the support 4 on an axis normal to the axis of the mop handle 1. The mop cloth carrier loop 8 has a pair of centering projections 8a thereon which serve to position the mop cloth carrier loop in the support 4.

I provide a pivotally mounted guide 9 shaped to conform to the interior limits of the aperture 5 in support 4, as shown. The pivotally mounted guide 9 is laterally apertured at 9a, as represented more clearly in Fig. 5. The mop cloth carrier loop 8 extends through the aperture 9a and thus serves as a journal about which the pivotally mounted guide 9 may be rocked. The pivotally mounted guide 9 includes a tubular extension 10 having a cylindrical bore 11 therein through which the wringer rod 12 of polygonal cross-section passes. The wringer rod 12 is capable of translatable and rotary movement through the cylindrical bore 11. The wringer rod 12 is provided with lugs 12a in spaced positions adjacent the upper extremity of the rod between which the resilient clip 13 carried on the mop handle 1 is arranged to engage. The resilient clip 13 is secured to mop handle 1 by rivet 14 and includes a pair of resilient jaws which engage opposite sides of the wringer rod 12 for maintaining the wringer rod 12 in position immediately adjacent the mop handle 1 when the mop is in use. The wringer rod 12 is provided with a laterally extending handle grip secured thereto by securing means 15a, in the particular embodiment of my invention illustrated herein. The wringer rod 12 has been shown square in cross-section in order to provide for 90 degree displacements in the position of the rod when twisting the mop cloth for effecting a wringing operation. That is to say, the square cross-section construction of wringer rod 12 allows the wringer rod to be inserted in the rectangular recess 7 and between the bifurcated extension intermediate each twisting and wringing operation.

The wringer rod 12 terminates in an end portion of circular cross section as represented at 16 which is bent to form a loop 17 constituting the mop head. The clamping plate 18 is rockably mounted with respect to the loop 17 by means of hinge members 19 which embrace the rear portions of the loop 17. The clamping plate 18 is stamped from sheet metal and is provided with a clamping jaw 20 on its outer extremity. The clamping plate 18 is outstruck at 21 to provide a bearing support for the locking lever 22. The locking lever 22 is riveted by means of rivet member 23 to the bearing support 21 for angular movement. Locking lever 22 carries an integrally related cam 24 formed on an axis which is substantially normal to the axis of the actuating lever portion of the locking lever. A locking notch 25 is provided in the face of the cam 24 adapted to engage the periphery of the central portion 16 of the wringer rod when locking the clamping plate 18 in a position for clamping the free ends 29 of the mop cloth 27 in the mop head. To facilitate the angular displacement of the locking lever 22, I provide a finger grip 26 adjacent the end of the locking lever 22 which may be manually pressed in either direction to latch notch 25 into engagement or shifted from engagement with respect to portion 16 of wringer rod 12. The mop cloth 27 is looped as shown at 28 through the mop cloth carrier loop 8 and has the free ends 29 thereof brought into a position intermediate the loop 17 of the mop head and the clamping jaw 20 of the clamping plate 18. To

secure the mop cloth in position the clamped plate 18 is moved to a position in which clamping jaw 20 engages the free ends 29 of the mop cloth 27 and secures the said free ends against the loop 17. In this position the locking lever 22 is shifted so that the cam 24 thereon has the notch 25 therein engaged with the circular portion 16 of the wringer rod 12.

In order to facilitate the use of the mop, a spherical member 30 is applied to the end of the mop handle 1, thereby enabling the pressure to be placed against the mop longitudinally of the mop handle 1 when the mop is in use. When it is desired to wring the mop, the wringer rod 12 is disengaged from the resilient clamp 13 and while in a position intermediate the normal position and a locked position a twisting movement is imparted to the handle 15 for twisting the mop cloth 27 as represented in Fig. 2. This is a very easy and natural position in which the mop may be held as the left hand can normally grip the mop handle 1 while the right hand grips the wringer rod handle 15, as illustrated in Fig. 2. Several turns may be imparted to the mop cloth in the position in which the wringer rod 12 is free to revolve as shown in Fig. 2. When the mop cloth 27 has been twisted to a position in which the tension is readily felt at the handle 15, the wringer rod 12 is shifted in an angular direction away from the mop handle and inserted in the rectangular recess 7 between the bifurcated extensions 6 on the support 4 as illustrated in Fig. 3. This angular movement of the wringer rod 12 does not exceed the limits of an acute angle with respect to the axis of the mop handle 1. It may now be desirable to again withdraw the wringer rod 12 from locked position by shifting the wringer rod from the position shown in Fig. 3 to a position free of the rectangular recess 7 and the bifurcated extensions 6 and impart to the wringer rod 12 quarter turns for tightening the mop cloth under such tension as will expel all excess cleaning fluid therefrom. The ordinary wringing process of a mop entails considerable strain upon the hands and fingers and the ability of the wringer construction of my invention to allow twisting operations through small angular distances greatly increases the convenience and the ease with which the mop may be used as a household device. The insertion of a renewal mop cloth is also extremely simple and convenient inasmuch as the finger grip may be quickly actuated to move the notch 25 out of engagement with the central portion of the wringer rod at 16 to allow the removal of a worn mop cloth and to allow the insertion of a fresh mop cloth with minimum exertion. The mop may be readily packed and shipped inasmuch as the mop head is normally retracted by drawing up the wringer rod 12 and effecting engagement of the wringer rod 12 between resilient jaws 13. Fig. 11 illustrates the position of the mop ready to be packed for shipment. The resilient jaws 13 are readily sprung apart thus allowing the wringer rod 12 to be thrust forward to the position illustrated in Fig. 2 for effecting the wringing operation illustrated in Fig. 3.

By reason of the relatively small number of parts required in the construction of mop and wringer of my invention production costs may be maintained at a minimum for correspondingly benefiting the ultimate consumer.

While I have described the mop and wringer of my invention in one of its preferred embodi-

ments I desire that it be understood that modifications may be made and that no limitations upon my invention are intended other than are imposed by the scope of the appended claims.

5 What I claim as new and desire to secure by Letters Patent of the United States is as follows:

1. A combined mop and wringer comprising a mop handle, a supporting member carried by the end of said mop handle, a pivotally mounted guide journaled in said support, a wringer actuating rod extending through said pivotally mounted guide and rotatable therein, a mop head carried by the end of said wringer actuating rod, a mop cloth mounted between said support and said mop head, engaging means to prevent rotation of said wringer actuating rod carried by said support and engaging means to hold said rod in inoperative position carried by said mop handle, said wringer actuating rod being shiftable from a position in engagement with the engaging means on said mop handle to a freely rotatable position intermediate each of said engaging means and to a position in engagement with the engaging means carried by said support.
2. In a combined mop and wringer, a mop handle, a support extending from the end of the mop handle, a wringer actuating rod slidable and rotatable with respect to said support, engaging means on said support to prevent rotation of said rod, engaging means on said mop handle to hold said rod in inoperative position, said wringer actuating rod being shiftable into engagement with either of said engaging means, a mop head carried by said wringer actuating rod, a mop cloth connected between said support and said mop head, said wringer actuating rod being operative for twisting said mop cloth into wringing position when said wringer actuating rod is in a position intermediate both of said engaging means.
3. A combined mop and wringer comprising a mop handle, a support projecting from said mop handle, a mop carrier pivotally mounted in said support, a tubular guide rockably mounted in said support, a wringer actuating rod extending through said rockable guide and being slidable

and rotatable with respect thereto, a mop head carried by said wringer actuating rod, a mop cloth connected between said mop head and said mop carrier, engaging means on said support to prevent rotation of said rod, separate engaging means on said mop handle to hold said rod in inoperative position, said wringer actuating rod being shiftable to a position intermediate each of said engaging means for imparting a twisting movement to said mop cloth and being selectively engageable with each of said engaging means.

4. In a mop and wringer, a mop handle, a support carried by the end of said mop handle, one end of said support being bifurcated with tongues thereon projecting towards said mop handle, a tubular member rockably mounted in said support, a wringer actuating rod of polygonal cross-section slidable and rotatable through said tubular member, a mop head carried by the end of said wringer actuating rod, mop cloth supporting means carried by said support, and a mop cloth extending between said mop cloth supporting means and said mop head, said wringer actuating rod being capable of being aligned with said mop handle for normal use of said mop, or engaged between the projecting tongues of said support to prevent rotation of said rod, or operative midway said aligned and said engaged positions whereby said mop cloth may be stretched and twisted, said engaged position being readily available for locking said mop cloth in position for wringing cleansing fluid therefrom intermediate twisting operations.

5. In a mop and wringer, a mop handle, a support carried thereby, an elongated loop member pivotally mounted in said support, a rockably mounted tubular member pivoted on said loop member, a wringer actuating rod rotatably and slidably mounted in said tubular member, a mop head connected with said rod, means for mounting a mop cloth between said loop member and said mop head, and locking means on said support engageable by said rod by swinging said rod about said pivot for holding said mop cloth in selected twisted positions.

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