

Feb. 23, 1937.

E. W. BURCHELL ET AL

2,071,918

MOP

Filed Aug. 27, 1934

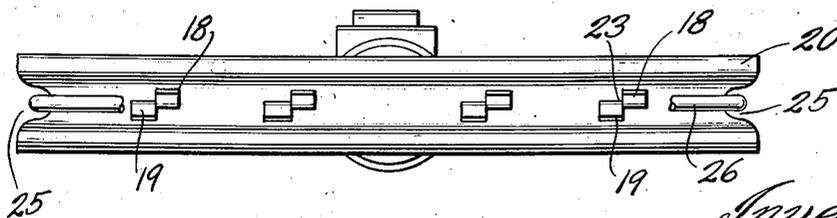
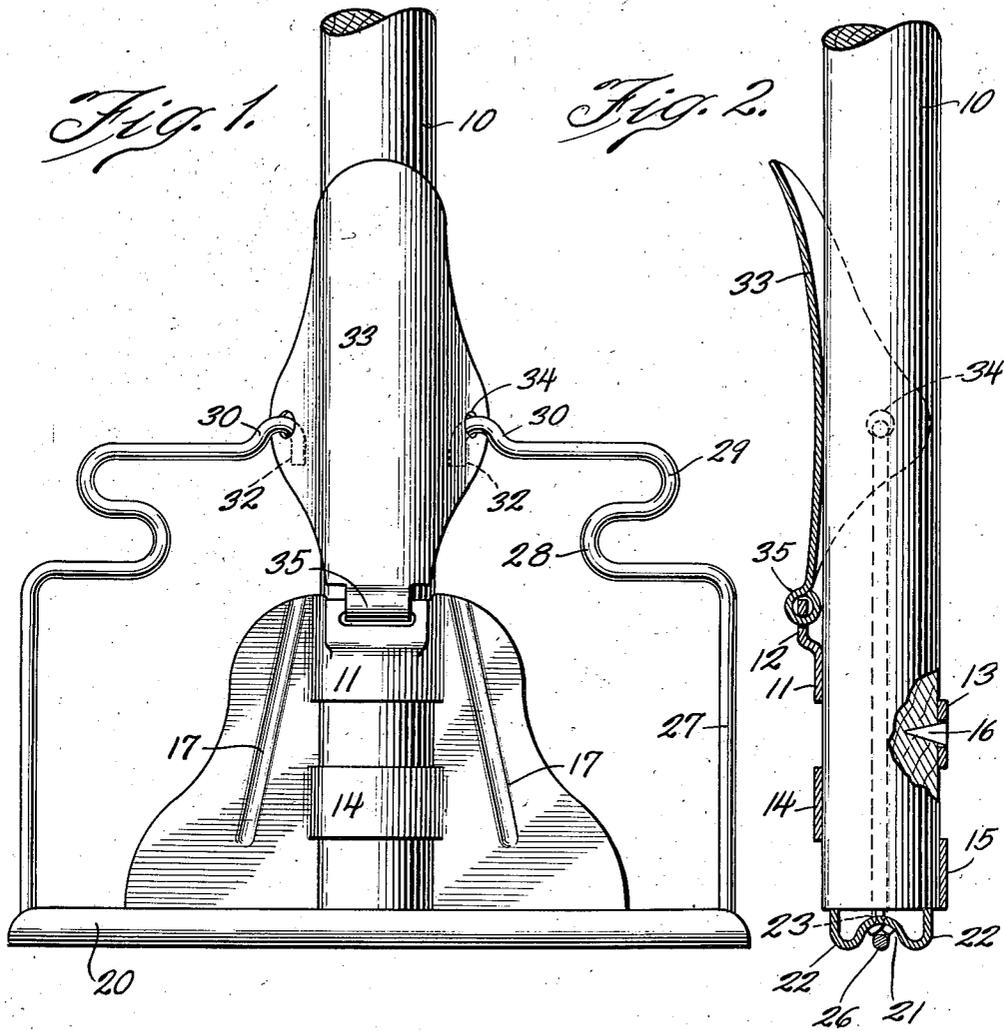


Fig. 3.

Inventors:  
Ernest W. Burchell &  
Gustav A. Attenbern  
By *Llewellyn Lloyd* Atty.

## UNITED STATES PATENT OFFICE

2,071,918

MOP

Ernest W. Burchell and Gustav A. Altenbern,  
Chicago, Ill., assignors to Midway Chemical  
Company, Chicago, Ill., a corporation of Illinois

Application August 27, 1934, Serial No. 741,625

6 Claims. (Cl. 15—152)

The present invention relates to a structure for a resilient bail and for an improved cross head and socket to be used with a mop.

The objects of the invention include, among others, the provision of the following:

- 5 An improved resilient bail for use with a mop;
- A structure for a mop by which the bail and the bail spring are incorporated into one element;
- 10 A new cross head for a mop; and
- A novel combination of a cross head and a socket.

These objects, and such other objects as may hereinafter appear, are obtained by the novel construction, unique arrangement, and improved combination of the several elements which constitute the single form of the invention shown in the accompanying drawing, hereby made a part of this invention, and in which,

15 Figure 1 is a plan view of a mop embodying the subject matter of one form of the present invention;

20 Figure 2 is a diametric section of the mop end, the stick being shown in elevation and a part being broken away to show the attachment of the cross head to the stick; and

25 Figure 3 is an end view of the mop shown in Figure 1.

30 Like reference characters are used in the drawing and in the description which follows to designate similar parts.

The device comprises a stick 10 which has a two piece cross head at the end thereof. The cross head includes a socket part that may be stamped from a sheet of metal. The socket forming part includes a cross bar support, and a reinforcing web at each side. Such part is formed from one sheet of material. The sheet of material in plan view has a bell-like shape. At its center, it is transversely slit by three parallel cuts. The material at each side of the slits or cuts is sprung or punched out in opposite directions.

35 In this manner, a socket is formed. The socket comprises a semi-cylindrical section 11 having an offset part 12 for anchoring a lever, a second semi-cylindrical section 13 opposite punched out, a third semi-cylindrical section 14 substantially parallel with section 11, and a fourth semi-cylindrical section 15 opposed to sections 11 and 14 and parallel with section 13. The offset section 12 has a transverse transfer slot for anchoring a lever later to be described. Sections 11 and 14 on one side of the stick 10 and sections 13 and 40 15 on the other side thereof provide a substan-

tially cylindrical socket in which the stick 10 is firmly held by a tang 16 struck from section 13 and extending inwardly radially of the stick.

Reinforcing ribs 17 are formed at each side of the socket forming plate and diverge outwardly as the outer end of the cross head is approached. The socket forming plate has at its outer end a series of tangs, eight in the present instance. The tangs are designated 18 and 19.

A cross bar 20 having a central seat groove 21 and side sections 22 has apertures 23 into which the tangs 18 and 19 are inserted. Tangs 18 and 19 are crimped or clinched to maintain the cross bar 20 firmly upon the socket forming plate, the tangs 18 being turned in one direction and the tangs 19 turned in the opposite direction.

The outer ends of the cross bar 20 are notched at 25. A bail having the cross section 26 extends across the bar. The cross section 26 occupies the groove 21 when the mop is closed. The bail comprises side sections 27, and inturred U-shaped sections 28 the legs of which are parallel to cross section 26. The material of the entire bail is integral and of spring steel or similar material and it is further bent at each side by the insertion of another U-shaped reversed curve 29, one leg of which is also the leg of section 28. The other leg terminates in a slightly bent section 30. Section 30 terminates in a hook 32.

A lever member 33 of irregular half round configuration is apertured at each side at 34 to receive the hooks 32. The lever comprises sheet material bent into compound curves and has a folded over-section 35 at its front end, the material of the folded over-section 35 penetrating the slot in the off-set section 12. Connection between lever 33 and section 12 provides a pivot for the lever 33 upon the end of the firmly anchored socket forming member.

The off-set of section 12 in which the lever 33 is pivoted provides a dead center for lever 33 in a position away from the stick 10. On inward movement, the lever passes the dead center whereupon the lever snaps into a closed position along the stick 10.

Sections 28 and 29 of the bail compensate for the separation of the cross head and bail when swabs or thrums are held in the mop. The bail and bail spring thus are in a single piece of spring wire. Because of the linear extent of the material in the U-shaped sections 28 and 29, the bail adequately compensates for the mop material inserted into the mop from time to time and holds

such material firmly, whether there is a small or a large quantity of it.

One method of assembly for the mop is to unite the cross head socket forming part and lever **33** after which the socket forming part is applied to the stick. After the socket has been firmly attached by the insertion of the tang **16** into the material of the stick, the bail is positioned by inserting hooks **32** into the apertures **34** of the lever **33**. The mop is then ready for use. If preferred, the bail may be attached to the assembly before the stick is inserted into the socket.

For use, the lever **33** is first pulled away from the stick. The bail is thus moved from contact with the cross head. Thrums or swabs are inserted between the cross head and the cross section of the bail. The lever **33** is then angularly moved toward the stick **10** and after it passes a dead center it snaps into place.

To release the swabs or thrums, the lever **33** is angularly moved away from the stick **10**. Such movement frees the cross section of the bail from the cross head and admits of the removal of the swabs or thrums.

What is claimed as new and is desired to be secured by Letters Patent of the United States is:

1. In a mop head organization of the type employing a stick, having on one end thereof a sheet metal socket carrying one element of the mop clamp, and a lever actuating the other mop clamping element; the improvement wherein the sheet metal socket has a portion extending laterally away from the peripheral plane of the stick, said outwardly bent portion being slotted to provide a pivot bar transverse to said stick, the lever having a tongue portion adjacent one end extending through said slot and around the pivot bar, and into the space formed by said outwardly bent portion of the socket to pivot the lever to the socket.

2. In a mop head organization of the type employing a stick, having on one end thereof a sheet metal socket carrying one element of the mop clamp, and a lever actuating the other mop clamping element; the improvement wherein the sheet metal socket has adjacent the inner end a portion extending laterally away from the peripheral plane of the stick, said outwardly bent portion having an opening adjacent said inner edge, the lever having a tongue portion adjacent one end extending through said opening and into the space formed by said outwardly bent portion of

the socket, and having a bent portion thereon to pivot the lever to the socket.

3. In a mop head organization of the type employing a stick, having on one end thereof a sheet metal socket carrying one element of the mop clamp, and a lever actuating the other mop clamping element; the improvement wherein the sheet metal socket is formed of one sheet having an arcuately outstruck portion forming a stick socket, a portion of said arcuately outstruck socket extending laterally away from the peripheral plane of the stick, said outwardly bent portion being slotted to provide a pivot bar transverse to said stick, the lever having a tongue portion adjacent one end extending through said slot and around said pivot bar, and into the space formed by said outwardly bent portion of the socket to pivot the lever to the socket.

4. A mop head comprising a sheet of metal adapted to be secured parallel and adjacent one end of a mop stick, tangs along an outer edge of said sheet and a second section of sheet material, said second section being shaped to form a trough and having slots in the bottom thereof spaced to receive said tangs, said sections being joined with the edge of the first sheet lying along the back of the trough by said tangs passing through said slots and being turned over within said troughs.

5. A mop head comprising a stick socket portion carrying a flat sheet portion, and a channel shaped blank of sheet metal, said sheet portion and said channel shaped piece being united by integral tongues on one piece fitting in the slotted portions of the other piece whereby integrally to unite the same, the tang portion of the member containing the tangs lying along and adjacent the portion of the slot portion of the member containing the slots.

6. A mop head comprising a sheet of metal adapted to be secured parallel and adjacent one end of a mop stick, integrally formed pairs of tangs along an outer edge of said sheet and a second section of sheet material, said second section being shaped to form a trough, and having slots in the bottom thereof spaced to receive said tangs, the tangs of each pair being bent in opposite directions and lying in said trough whereby to firmly attach the sections together with the edge of the first sheet lying along the back of the trough.

ERNEST W. BURCHELL.  
GUSTAV A. ALTENBERN.