

Sept. 29, 1953

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2,653,336

SPLIT HEAD MOP HAVING MECHANICAL SQUEEZING MEANS

Original Filed Oct. 8, 1945

2 Sheets-Sheet 1

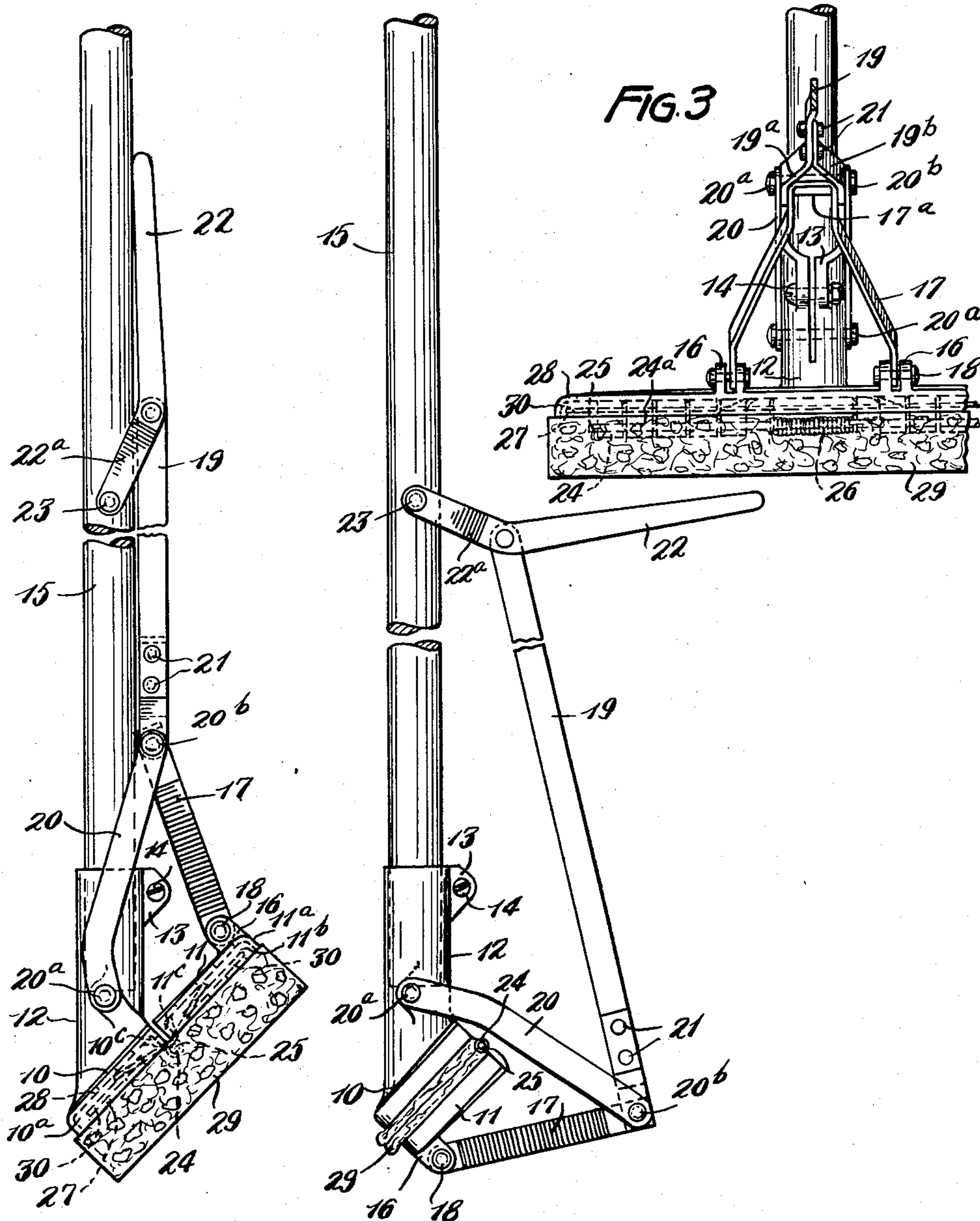


FIG. 1

FIG. 2

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SPLIT HEAD MOP HAVING MECHANICAL SQUEEZING MEANS

2 Sheets-Sheet 2

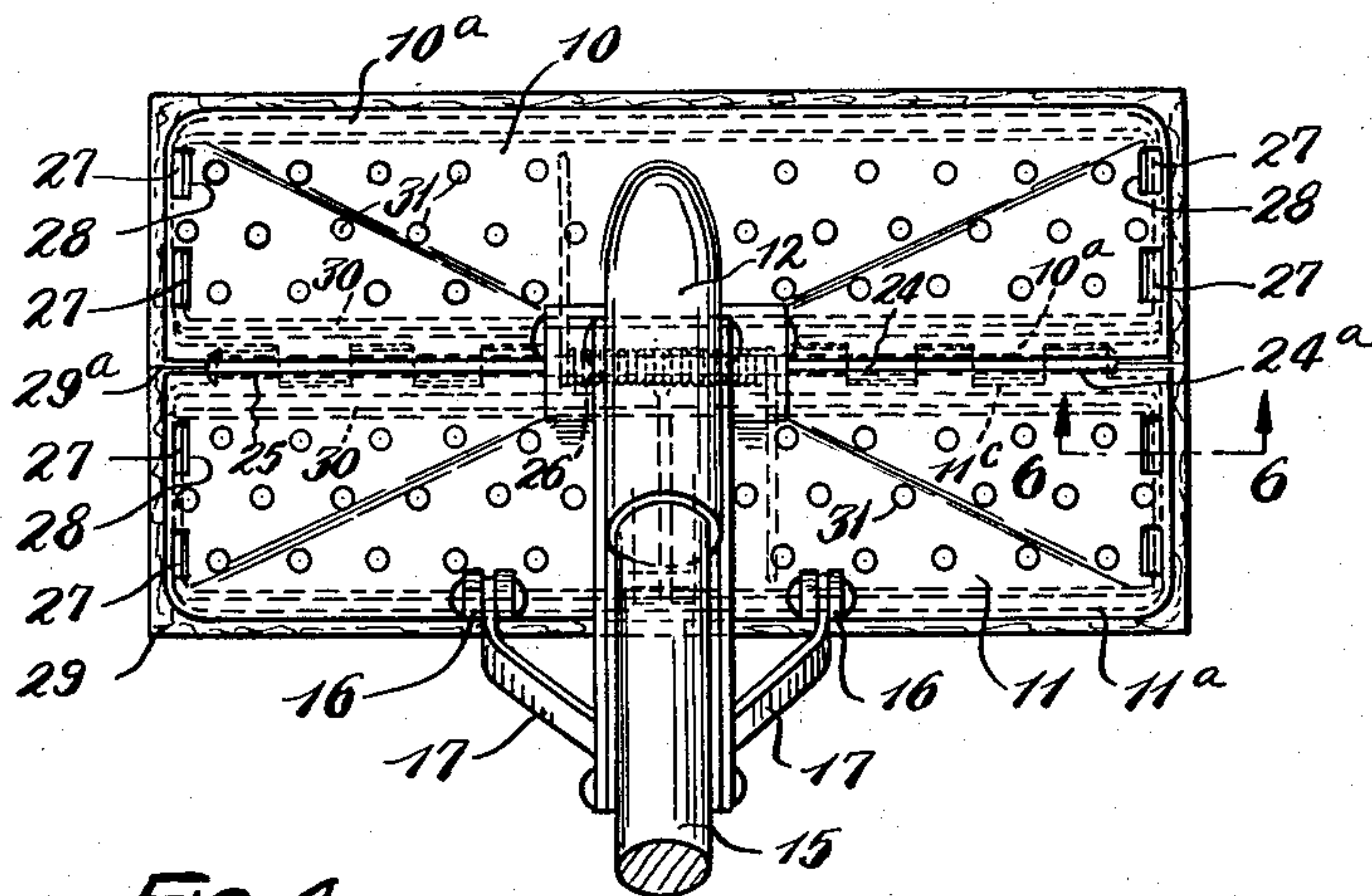


FIG. 4

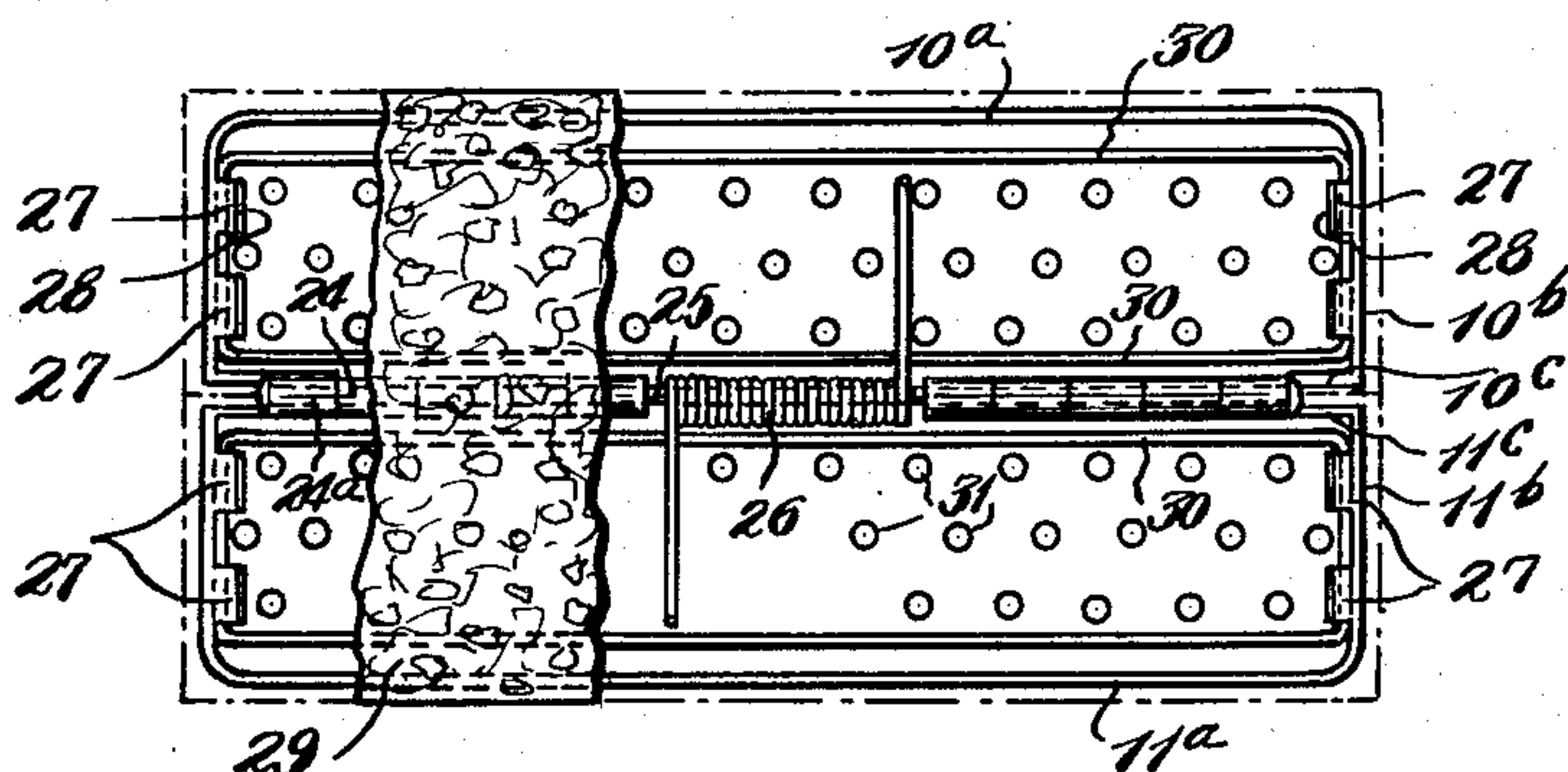


FIG. 5

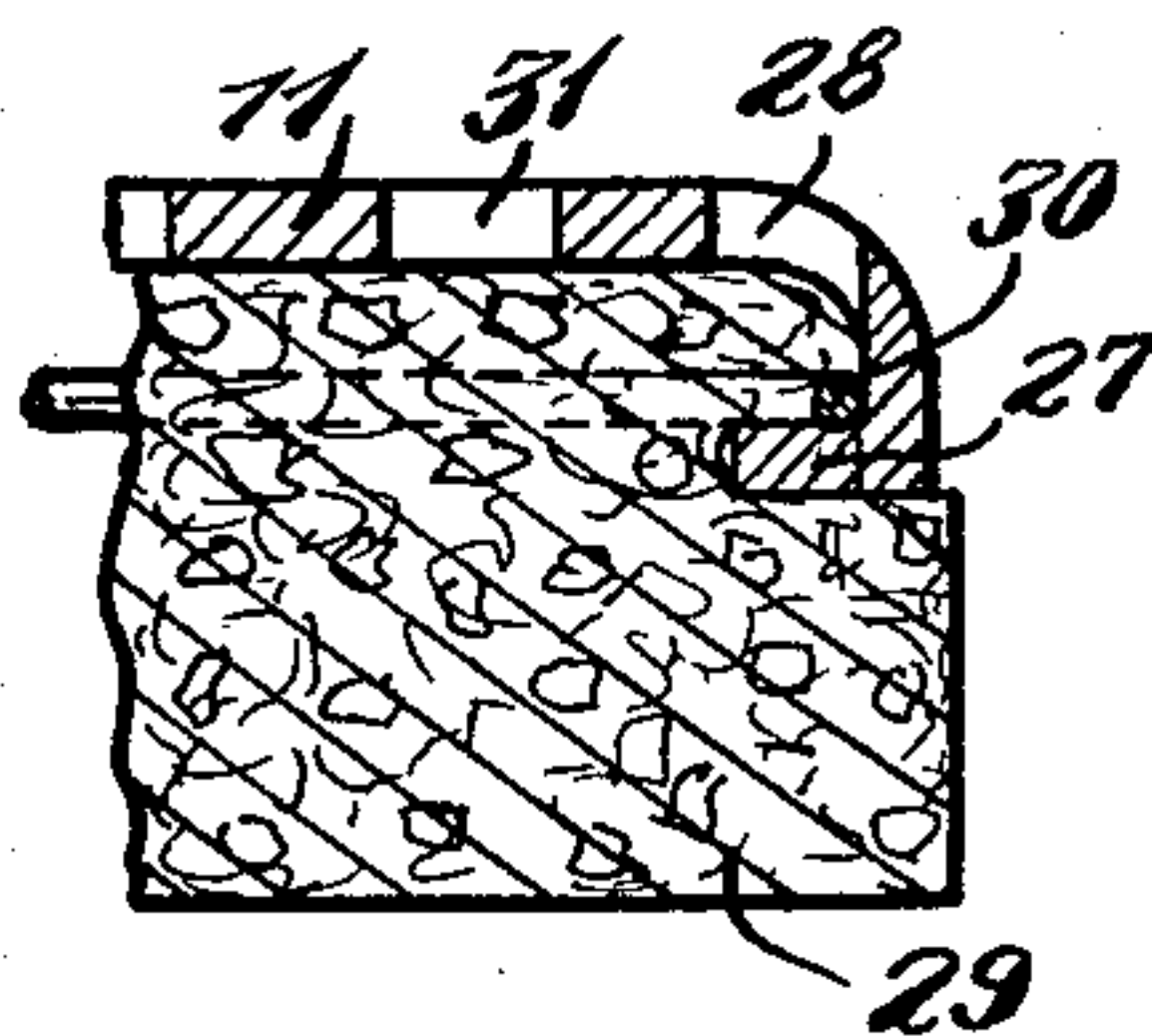


FIG. 6

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2,653,336

SPLIT HEAD MOP HAVING MECHANICAL
SQUEEZING MEANS

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Original application October 8, 1945, Serial No.
620,893, now Patent No. 2,486,102, dated Octo-
ber 25, 1949. Divided and this application April
20, 1949, Serial No. 88,503

4 Claims. (Cl. 15—119)

1

This invention relates to mops, and more particularly to mops of the type shown in my application Serial No. 538,664, filed June 2, 1944, now abandoned, wherein the operating portion of the mop comprises a pair of back plates which are hingedly connected and which support a pad of liquid-absorbent material and wherein means are associated with the handle for the application of power to one of the backing plates whereby it, together with the portion of the pad supported thereby, may be moved toward the other backing plate and the other portion of the pad for the purpose of expelling liquid from the pad when the latter shall have been saturated to an extent requiring such expulsion.

It is the general purpose and object of my invention to improve the construction and reduce the cost of production of mops of the aforesaid type and, as an incident to such improvement and construction, to provide the same with a particularly effective power-applying means, associated with the handle, for effecting the movement of one of the backing plates and the portion of the pad supported thereby toward the opposed backing plate and the portion of the pad supported thereby.

Further and more limited objects of the invention are: to provide an efficient connection between the movable backing plate and the power-operated member which is connected thereto; to provide an efficient manner of hingedly connecting the back plates; and to provide an inexpensive construction of backing plates and pads whereby the former may be produced by a pressure-casting operation and the latter may be conveniently and removably supported by the former.

I accomplish the foregoing objects, as well as others which will be pointed out hereinafter, by the construction and arrangement of the parts shown in the drawings hereof, wherein Fig. 1 shows a side elevational view of a mop constructed in accordance with my invention, the upper portion of the handle being broken away and showing the parts of the mop proper in the positions which they occupy when in operation; Fig. 2 a view, similar to Fig. 1, and showing the positions occupied by the parts when the sections of the mop pad are compacted against each other for the purpose of expelling liquid therefrom; Fig. 3 a rear elevational view of a portion of the mop, showing more particularly the connections between the movable backing plate and the linkage by which the said plate is operated; Fig. 4 a plan view of the mop proper and

2

a portion of the handle which is connected thereto; Fig. 5 a bottom plan showing the backing plates in open or distended position, with a fragment of the pad extending thereacross; and Fig. 6 an enlarged detail in section taken on the line 6—6 of Fig. 4 and looking in the direction of the arrows.

Describing the various parts herein by reference characters, 10 and 11 denote the backing plates of the mop, the plate 10 being shown as having a split socket 12 rigidly connected thereto and preferably cast therewith, the socket being provided with ears 13 and a screw bolt 14 connecting said ears, whereby the lower end of the handle 15 may be detachably secured to and within the socket. The backing plate 11 is provided with laterally spaced pairs of lugs 16 for the reception therebetween of the lower ends of arms 17 of a yoke, said arms converging from the lower ends thereof and having their upper ends connected by an integral cross member 17^a, the lower ends of said arms being pivotally connected to and between the said lugs, as by means of rivets 18. The upper end of the yoke is received between forked arms 19^a, 19^b, the arm 19^a being shown as secured at its upper end to the lower portion of a link 19 of which the arm 19^a forms a continuation. 20 denotes a pair of links which are pivoted to opposite sides of the socket 12, as by means of a rivet 20^a, and the opposite ends of which extend alongside the lower ends of the arms 19^a, 19^b, the upper ends of the yoke arms 17 and the lower ends of the arms 19^a, 19^b, and the swinging ends of the links 20 being all pivotally connected by means of a pivot pin 20^b. The upper end of the link 19 is pivotally connected to and between the outer ends of fork arms 22^a forming part of a lever having an operating arm 22, the inner ends of the fork arms being pivotally connected to the handle 15 by means of a screw bolt 23.

Except for the fact that the backing plate 10 is rigidly connected to the socket 12 and that the backing plate 11 is movably connected to the backing plate 10 and is provided with the lugs 16, the said backing plates are identical in construction, each being provided with an outer side flange 10^a, 11^a, respectively, and with end flanges 10^b and 11^b, respectively, and at their proximate side edges with inner side flanges 10^c and 11^c, respectively, which extend inwardly from their respective end flanges toward each other, but are spaced apart at their inner ends. Each of these flanges has formed therewith hinge eyes 24, 24^a, respectively, for the reception

3

of the pintle 25, the relatively wide space provided between their inner ends being occupied by a coiled spring 26 mounted upon the pintle and having extended ends engaging the inner faces of the backing plates 10 and 11. It will be noted that the hinge construction extends substantially to the ends of the backing plates, thereby contributing to the strength and life of the former.

Each end of each of the backing plates is provided with integral short inwardly projecting shelves 27, these shelves extending beneath elongated drainage openings thereabove, as shown at 28 on Figs. 4, 5 and 6. These shelves provide seats for the ends of continuous rectangular wire springs 30 each having its sides and ends in proximity to the sides and ends of the portion of the pad 29 in which it is embedded, the said springs being so embedded during the process of molding the pad. The pad 29 is of rectangular outline and the end portions of the pad are usually confined, or compressed slightly by the springs 30 when engaged therewith, as indicated in Fig. 6 of the drawings. The pad is preferably made of cellulose sponge and, owing to the nature of the material of which it is made, it is unnecessary to provide the same with a recess for the reception of the hinge members, it being necessary only to provide the same with a slot 29^a in its upper surface, midway between its side edges and extending substantially the full length thereof, for the reception of the flanges 10^c and 11^c and the hinge eyes 24 and 24^a. The elongated openings 28 above the shelves are substantially coextensive in length and width with the length and width of the shelves. This enables me to insert in these openings cores of the same width and length as the openings, whereby the backing plates containing these openings and the shelves 27 and the liquid-expelling openings 31 can be produced by a die-casting operation, thereby enabling the backing plates to be manufactured at low cost.

With the parts constructed and arranged as described, the operation will be readily understood. The mop may be operated in the usual manner by means of the handle 15 until such time as it is desired to wring the same, at which time the operating arm 22 of the lever, which normally rests against the underside of the handle, (due to the proportioning of the parts 17, 19 and 20), will be swung downwardly to the position shown in Fig. 2, thereby swinging the link 19 downwardly and applying sufficient power to the movable backing plate 11 to insure the effective expulsion of liquid from the pad, in part through the openings 28 and 31. After this operation, the lever will be folded upwardly to the position shown in Fig. 1, and the backing plates and the pad will be restored to their operating positions by the spring 26. The pad may be secured to the backing plates by inserting opposed ends of the wire springs 30 between the shelves 27 at opposite ends of the backing plates and the bodies of the plates themselves, whereupon, by buckling the central portions of the said springs upwardly, their opposite ends can be inserted in like manner between the shelves at the opposite ends of the backing plates and the bodies of the plates. The pad can be removed by pulling outwardly upon the side portion of the pad which will contract the lengths of the springs sufficiently to disengage them from their seats on the shelves and be replaced thereafter by a like new pad. The wire

4

springs referred to constitute stiffening members for the pad as well as means whereby the pad may be detachably connected to the backing plates.

From the foregoing, it will be evident that I have produced a mop which is unusually efficient in operation and which is equally economical of production.

This application is a division of my co-pending application filed October 8, 1945, Serial No. 620,893, now U. S. Patent No. 2,486,102.

Having thus described my invention, what I claim is:

1. A mop comprising a pair of opposed backing plates with edge flanges thereon and each plate having offset hinge means rigidly formed on one edge flange thereof, a hinge pin fixedly engaged with said hinge means to secure said plates together in fixed relation for relative pivotal movement, a unitary pad of liquid absorbent material detachably connected to both of said backing plates, one of said plates having an integral socket extending from a center portion thereof and the other plate having integral laterally spaced support lugs thereon, a handle secured in said socket, a relatively short yoke having an outer end with inwardly extending arms the inner ends of which are pivotally connected to said lugs extending from the said plate, a pair of relatively short links pivotally connected at their outer ends to the outer end of said yoke and having their inner ends pivotally connected to opposite sides of said socket adjacent said backing plate, a relatively long control link, connecting means pivotally securing the lower end of said control link to the outer end of said yoke, means connecting said control link only at its upper end to said handle for movement longitudinally thereof to swing said other plate about said hinge pin and bring said plates in superimposed relation and squeeze said pad therebetween, and spring means engaged with said plates for urging them to an open position, said control link, links and yoke all normally lying substantially flush with said handle and moving only a short distance therefrom on squeezing action to provide a compact mop.

2. A mop comprising a pair of opposed backing plates each having rigid offset hinge means formed on one edge thereof, a hinge pin engaged with said hinge means to secure said plates together in fixed relation for relative pivotal movement, a pad of liquid absorbent material detachably connected to said backing plates, one of said plates having a socket extending from the center portion of the upper face thereof and the other plate having laterally spaced support lugs thereon, a handle secured in said socket, a relatively short yoke having an outer end with inwardly extending arms the inner ends of which are pivotally connected to said lugs extending from the said plate, a pair of relatively short links pivotally connecting at their outer ends to the outer end of said yoke and having their inner ends pivotally connected to opposite sides of said socket, a relatively long control link, connecting means pivotally securing the lower end of said control link to the outer end of said yoke and to the outer ends of said pair of links, means connecting said control link at its upper end to said handle for movement longitudinally thereof to swing said other plate about said hinge pin and bring said plates in superimposed relation and squeeze said pad therebetween, and

5

spring means connected between said plates for urging them to an open position.

3. A mop comprising opposed backing plates pivotally connected at their proximate edges, a pad of liquid-absorbent material detachably connected to the said backing plates, one of said plates being provided with a socket to which a handle is connected and the opposite plate being provided with laterally spaced pivotal supporting members, a yoke having arms the ends of which are pivotally connected to the said pivotal supporting members and having an outer end, a pair of links pivotally connected at their outer ends to the outer end of the yoke and having their inner ends pivotally connected to opposite sides of the socket on said one plate, a link having yoke arms formed at the lower end thereof of pivotal connecting means extending through the said second-named yoke arms, the outer end of the said yoke and the outer ends of the first mentioned links, and a lever pivotally connected intermediate of its ends to the upper end of the second mentioned link and having a forked end receiving therebetween a portion of the handle remote from the said backing plates and pivotally connected to said handle said lever having a free end movable in an arc towards and away from the said backing plates for actuating said links and yoke to move said backing plates towards and away from each other.

4. A mop comprising opposed backing plates pivotally connected at their proximate edges, a pad of liquid-absorbent material detachably connected to the said backing plates, one of said

6

plates being provided with a socket to which a handle is connected and the opposite plate being provided with laterally spaced pivotal supporting members, a yoke having arms the ends of which are pivotally connected to the said pivotal supporting members and having an outer end, a link, pivotally connected at one end to the said socket and at its other and outer end to the outer end of said yoke, a link and means operatively connecting its lower end to the outer end of the yoke and to the outer end of the former link, a lever pivotally connected intermediate of its ends to the upper end of the second mentioned link and being pivotally connected to said handle, said lever having a free end movable in an arc towards and away from the said backing plates for actuating said links and yoke to move said backing plates towards and away from each other.

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