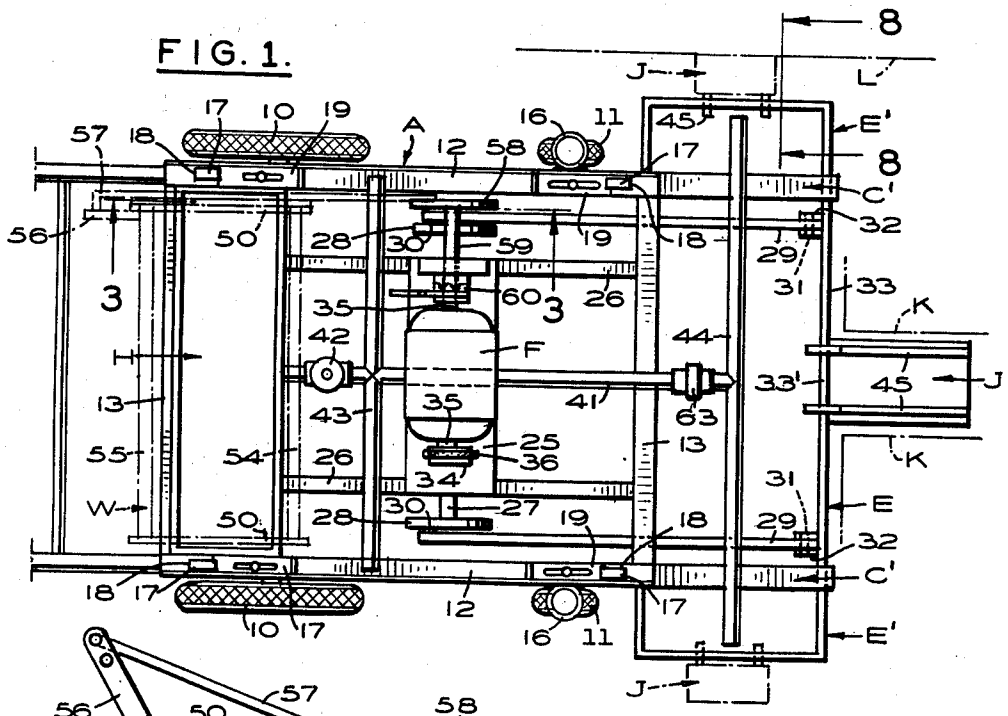
Aug. 2, 1960 K. SKINAS 2,947,012

AUTOMATIC WASHING MOP AND FLOOR DRYER

Filed March 10, 1959 2 Sheets-Sheet 1

FIG. 1.



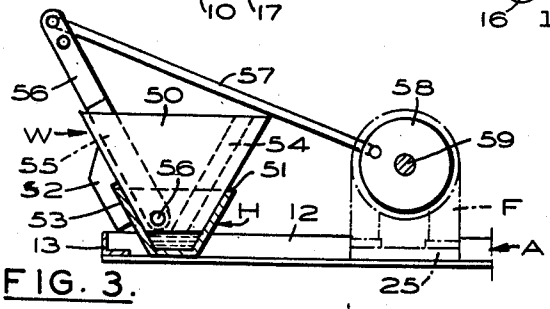


FIG. 3.

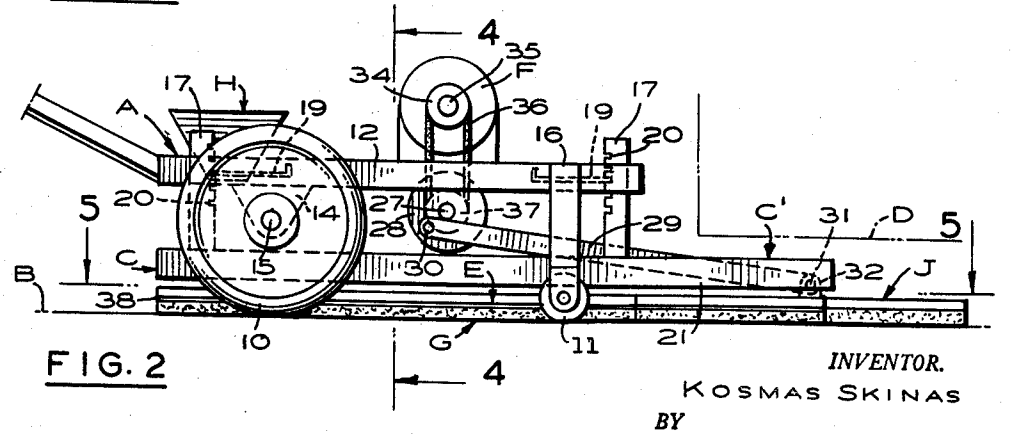


FIG. 2

INVENTOR.
KOSMAS SKINAS
BY
Munn & Liddy
ATTORNEYS

Aug. 2, 1960 K. SKINAS 2,947,012

AUTOMATIC WASHING MOP AND FLOOR DRYER

Filed March 10, 1959 2 Sheets-Sheet 2

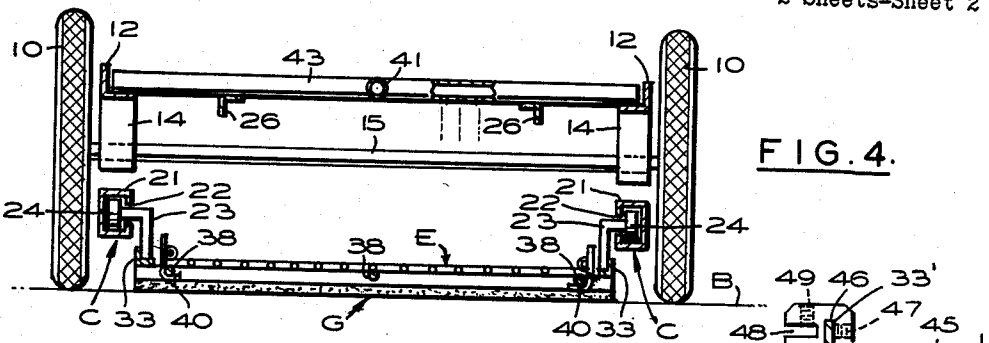


FIG. 4.

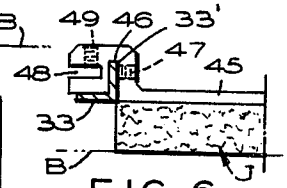


FIG. 6.

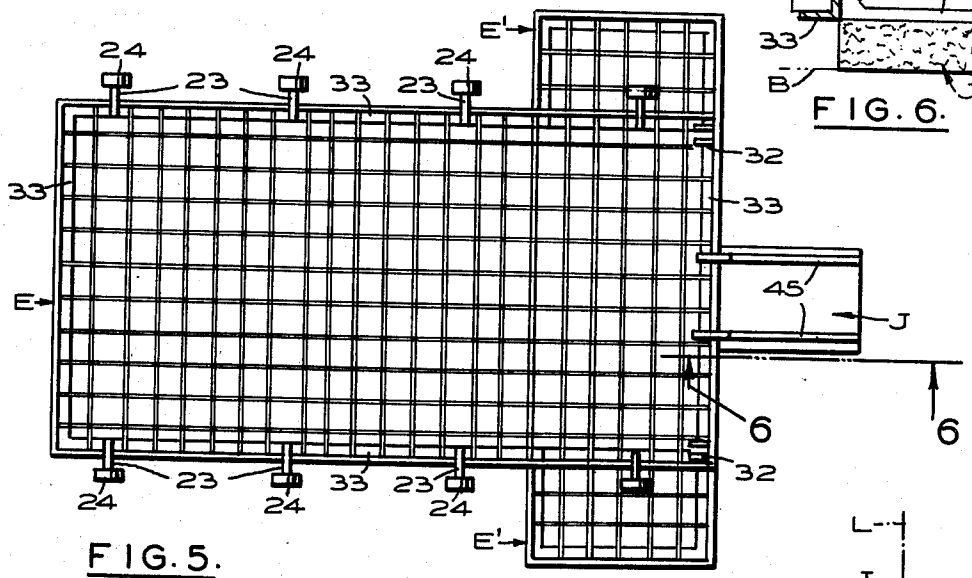


FIG. 5.

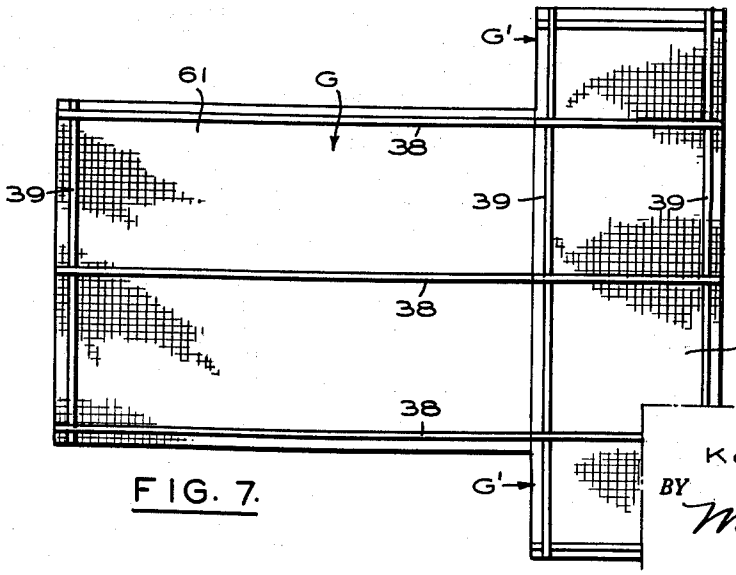


FIG. 7.

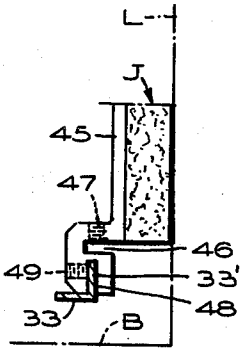


FIG. 8.

INVENTOR.
KOSMAS SKINAS
BY Munn & Liddy
ATTORNEYS

United States Patent Office 2,947,012 Patented Aug. 2, 1960

2,947,012

AUTOMATIC WASHING MOP AND FLOOR DRYER

Kosmas Skinas, 171 Noe St., San Francisco, Calif.

Filed Mar. 10, 1959, Ser. No. 798,439

4 Claims. (Cl. 15—98)

The present invention relates to improvements in an automatic washing mop and floor dryer. It consists of the combinations, constructions, and arrangement of parts, as hereinafter described and claimed.

An object of my invention is to provide an automatic washing mop and floor dryer, which is adapted to be used for rapidly cleaning a floor and drying the latter, with the minimum amount of effort being required by the operator. Moreover, the device is adapted for reaching into rather crowded spaces, such as between two pieces of furniture or the like, or cleaning underneath a relatively low piece of furniture. Also, the device is arranged so that the lower portions of walls may be cleaned.

Other objects and advantages will appear as the specification proceeds. The novel features will be set forth in the claims hereunto appended.

Drawings

For a better understanding of the invention, reference should be had to the accompanying drawings, forming part of this specification, in which:

Fig. 1 is a top plan view of an automatic washing mop and floor dryer made in accordance with my invention;

Fig. 2 is a side elevational view thereof;

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 1, and showing a wringer attachment;

Fig. 4 is a vertical transverse sectional view taken along the line 4—4 of Fig. 2;

Fig. 5 is a horizontal sectional view taken along the line 5—5 of Fig. 2, and showing a screen that I employ;

Fig. 6 is a sectional view taken along the line 6—6 of Fig. 5, and illustrating a horizontal auxiliary cleaning member;

Fig. 7 is a top plan view of the main floor-cleaning member; and

Fig. 8 is a vertical sectional view taken along the line 8—8 of Fig. 1, showing a lower part of a wall being cleaned by the detachable auxiliary cleaning member.

While I have shown only the preferred form of my invention, it should be understood that various changes, or modifications, may be made within the scope of the annexed claims without departing from the spirit thereof.

Detailed description

Referring now to the drawings in detail, I have shown a main frame which is indicated generally at A. This frame is supported on a pair of rear wheels **10** and a pair of front dolly wheels **11**. The frame A comprises longitudinal members **12** that are spaced apart and secured to transverse members **13** (see Fig. 1). Brackets **14** are fastened to the longitudinal members **12** and rotatably carry an axle **15** to which the rear wheels **10** are fastened. The dolly wheels **11** are carried by a pair of tubes **16** which are secured to the longitudinal members **12**.

It will be apparent from Fig. 2 that the main frame A is disposed at a suitable elevation above the floor B over which the wheels **10** and **11** are adpated to roll. Of course, the elevation of this frame above the floor may be changed to suit requirements.

With particular reference to Figs. 2 and 4, it will be noted that a cradle frame C is arranged between the main frame A and the floor B, and the cradle frame is mounted for up and down adjustments. For this purpose, the cradle frame C has four uprights **17** secured thereto, and these uprights extend upwardly through openings **18** that are fashioned in the longitudinal members **12** (see Fig. 1). Latches **19** are slidably carried by the members **12** and are adapted to be engaged with selected notches **20** formed in the uprights **17**. Thus the cradle frame C may be raised or lowered with respect to the floor B and then held in adjusted position by engaging the latches **19** with the appropriate notches **20**.

The cradle frame C has a portion C' projecting in front of the main frame A and adjacent to the floor B at a low elevation so as to be movable underneath a piece of furniture D, as suggested in Fig. 2. Moreover, a T-shaped horizontal screen E is supported by the cradle frame C for longitudinal reciprocation. For this reason, the cradle frame C is made from a pair of spaced parallel and longitudinally extending box beams **21** having longitudinal slots **22** formed therein (see Fig. 4). Axles **23** are secured to the screen E and carry rollers **24** that are disposed to ride along the interiors of the box beams **21**, with the axles **23** projecting through the slots **22**, as shown in Fig. 4.

In order to reciprocate the screen E rectilinearly back and forth, I have provided a motor F, the latter being mounted on a base **25**. This base may be supported on bars **26** that are secured to the transverse members **13** of the main frame A (see Fig. 1). As shown in Figs. 1 and 2, a transverse shaft **27** is mounted to extend across the bars **26**, and this shaft has a pair of discs **28** secured thereto. Pitmans **29** have their rear ends connected to the discs **28** by journal pins **30**, while the front ends of these pitmans are swingably attached by pins **31** to brackets **32**. These brackets are fastened to an angle bar **33** that surrounds the screen E. A pulley **34** is fastened to the motor shaft **35**, and this pulley is connected by a belt **36** to a second pulley **37**, the latter being fixed to the shaft **27**. Thus the turning of the motor F will result in reciprocating the screen E back and forth and lengthwise relative to the cradle frame C.

It will be noted that a T-shaped main floor-cleaning member G is removably attached to the underneath surface of the screen E for engaging with the floor B. This cleaning member may be made from any suitable material, such as fabric, and may be reinforced by longitudinal and transverse bars **38** and **39**, respectively, as disclosed in Figs. 4 and 7. Hooks **40** may be swingably secured to the screen E so as to be engageable with the bars **38** in the manner shown in Fig. 4 to thus detachably connect the main cleaning member G to the screen E. Any other suitable means may be employed for securing the cleaning member to the screen.

In order to deliver a cleaning liquid, such as water and detergent, to the main cleaning member G, I provide a tank H. This tank may be supported at the desired elevation on the main frame A. A header pipe **41** leads from the tank H and has a valve **42** arranged therein to control outflow of the liquid from the tank. An upper sprinkler pipe **43** communicates with the header pipe **41**, and it may be supported on the bars **26** in the manner shown in Figs. 1 and 4. A lower sprinkler pipe **44** communicates with the forward end of the header pipe **41** so as to overlie the front part of the screen E. Obviously, the liquid from the tank H will be delivered through the pipes **43** and **44** to the screen E for downward flow into the main floor-cleaning member G.

Particular attention is called to the fact that the main

floor-cleaning member G is provided with wing portions G' at its forward end (see Fig. 7). Likewise, the screen E has wing portions E' at its forward end. The wing portions E' and G' project laterally beyond the wheels **10** and **11**, whereby these wing portions may be used for cleaning a floor adjacent to a wall. Both the screen E and the cleaning member G define body portions that extend longitudinally of the cradle frame C (see Figs. 5 and 7). It will be apparent from Figs. 5 and 7 that the screen E and cleaning member G are identical in size and shape.

Referring now to Figs. 1, 2, 5 and 6, it will be noted that I provide an auxiliary cleaning member J which is detachably secured to the forward end of the screen E so as to extend horizontally in front of the screen. The cleaning member J has less width than the screen so as to be movable into a crowded space between two pieces of furniture K, or the like, as suggested in Fig. 1, for cleaning such space during reciprocation of the screen. It will be observed that I have provided brackets **45** that are fixed to the cleaning member J. These brackets have notches **46** therein which are adapted to fit over a flange of the angle bar **33** in the manner shown in Fig. 6. A set-screw **47** may be provided in each of the brackets **45** for engaging with the flange **33'** of the bar **33** so as to firmly hold the cleaning member J to the screen E.

As shown in Figs. 1 and 8, the auxiliary cleaning member J may be detachably secured to either side wing portion E' of the screen E so as to extend vertically and engage with a wall L for cleaning the engaged portion of the wall during reciprocation of the screen E. At this time, the brackets **45** have notches **48** that will fit over the flanges **33'** of the angle bar **33** in the manner shown in Fig. 8. A second pair of set-screws **49** may be used for firmly anchoring the vertical brackets **45** to the flange **33'**. Of course, any other suitable means may be resorted to for detachably connecting the auxiliary cleaning member J to the screen, either at the front of the screen or at either lateral side of the screen.

In order to remove liquid from the cleaning members G and J after cleaning the floor B or the wall L, respectively, I have provided a wringer that is designated generally at W in Fig. 3. This wringer has end walls **50** which are shaped to fit into the tank H, the latter having an open top **51**. Lugs **52** are formed on the end plates **50** so as to slip over the rear wall **53** of the tank H (see Fig. 3). A stationary front wall **54** extends between the end walls **50** of the wringer, while a swingable wall **55** has its lower end attached to the end walls **50** by pins **56**.

Any suitable mechanism may be provided for swinging the wall **55** toward the stationary wall **54** so as to squeeze out liquid from the cleaning members G or J, when interposed between the walls **54** and **55**. For this purpose, I have shown a handle **56** on the swingable wall **55**, and this handle has a link **57** connected thereto. The forward end of this link is swingably connected to a disc **58**, the latter being driven by a stub shaft **59** that may be connected by a clutch **60** to one end of the motor shaft **35** (see Fig. 1). The handle **56** and link **57** may be arranged at one end of the tank H so as to leave the major length of the tank unobstructed. Thus the wringer W is operated by the motor F.

When the main floor-cleaning member G and the auxiliary cleaning member J are being used for scrubbing the floor B, or the latter member is being utilized for cleaning the wall L, these members will be in the nature of a mop, and will be made of suitable material, such as fabric. After the floor or wall has been scrubbed, the members G and J may be replaced by sponges so that the floor and wall may be dried.

Upon removing the pins **31** from the pitmans **29**, the screen E may be entirely withdrawn from the cradle frame C, since the longitudinal slots **22** extend the full length of the box beams **21**. This arrangement will facilitate the changing of the main floor-cleaning member G from a mop to a sponge and vice versa.

In order to facilitate the placing of the cleaning member or mop G in the wringer W, it has been made in two sections which are indicated at **61** and **62**. Each section may be connected to parts of the bars **38**, the latter being made in two parts, each bar part being engageable by the hooks **40**, thus allowing the mop sections **61** and **62** to be separated one from the other.

As shown in Figure 1, the lower sprinkler pipe **44** may be detachably connected to the header pipe **41** by a union **63**, or other suitable fastening means. The sprinkler pipe **44** is long enough to extend over the wing portions E' of the screen E so as to deliver water thereto.

I claim:

1. In an automatic washing mop and floor dryer: a main frame supported on wheels so as to be rolled about over a floor to be cleaned; the main frame being disposed at an elevation above the floor; a cradle frame carried by the main frame and being arranged between the main frame and the floor; the cradle frame having a portion projecting in front of the main frame and adjacent to the floor at a low elevation so as to be movable underneath a piece of furniture or the like; the cradle frame defining a pair of spaced parallel and longitudinally extending beams; a T-shaped horizontal screen supported by the beams of the cradle frame for longitudinal reciprocation; a horizontally disposed T-shaped main floor-cleaning member removably attached to the underneath surface of the screen for engaging with the floor; the screen and the main floor-cleaning member being identical in size and shape and both defining main body portions that extend longitudinally of the cradle frame; both the screen and the main floor-cleaning member being provided with wing portions at their forward ends which project laterally in both directions beyond the wheels, whereby these wing portions may be used for cleaning a floor adjacent to a wall; means operable for reciprocating the screen and the main floor-cleaning member rectilinearly back and forth over the floor in directions extending lengthwise of the cradle frame; and means for delivering a cleaning fluid to the screen for downward flow into the main floor-cleaning member.

2. The automatic washing and floor dryer, as set forth in claim 1; and in which an auxiliary cleaning member is detachably secured to the forward end of the screen so as to extend horizontally in front of the screen; the auxiliary cleaning member having less width than the screen so as to be movable into a crowded space between two pieces of furniture or the like, for cleaning the floor in said space during rectilineal reciprocation of the screen.

3. The automatic washing mop and floor dryer, as set forth in claim 1; and in which an auxiliary cleaning member is provided; brackets carried by the auxiliary cleaning member; and means for selectively and detachably securing the brackets to either side wing portion of the screen so that the auxiliary cleaning member will extend vertically and engage with a wall, whereby the engaged part of the wall may be cleaned during reciprocation of the screen.

4. In an automatic washing mop and floor dryer: a main frame supported on wheels so as to be rolled about over a floor to be cleaned; the main frame being disposed at an elevation above the floor; a cradle frame carried by the main frame and being arranged between the main frame and the floor; the cradle frame having a portion projecting in front of the main frame and adjacent to the floor at a low elevation so as to be movable underneath a piece of furniture or the like; the cradle frame defining a pair of spaced parallel and longitudinally extending box beams, each having a longitudinal slot formed therein; a T-shaped horizontal screen having axles secured thereto which project through the slots;

these axles having rollers that are disposed to slide along the interiors of the box beams; a horizontally disposed T-shaped main floor-cleaning member removably attached to the underneath surface of the screen for engaging with the floor; both the screen and the main floor-cleaning member defining main body portions that extend longitudinally of the cradle frame; both the screen and the main floor-cleaning member being provided with wing portions at their forward ends which project laterally in both directions beyond the wheels, whereby these wing portions may be used for cleaning a floor adjacent to a wall; means operable for reciprocating the screen and

the main floor-cleaning member rectilinearly back and forth over the floor in directions extending lengthwise of the cradle frame; and means for delivering a cleaning fluid to the screen for downward flow into the main floor-cleaning member.

References Cited in the file of this patent

UNITED STATES PATENTS

199,875	Stockley	Jan. 29, 1879
979,798	Post	Dec. 27, 1910