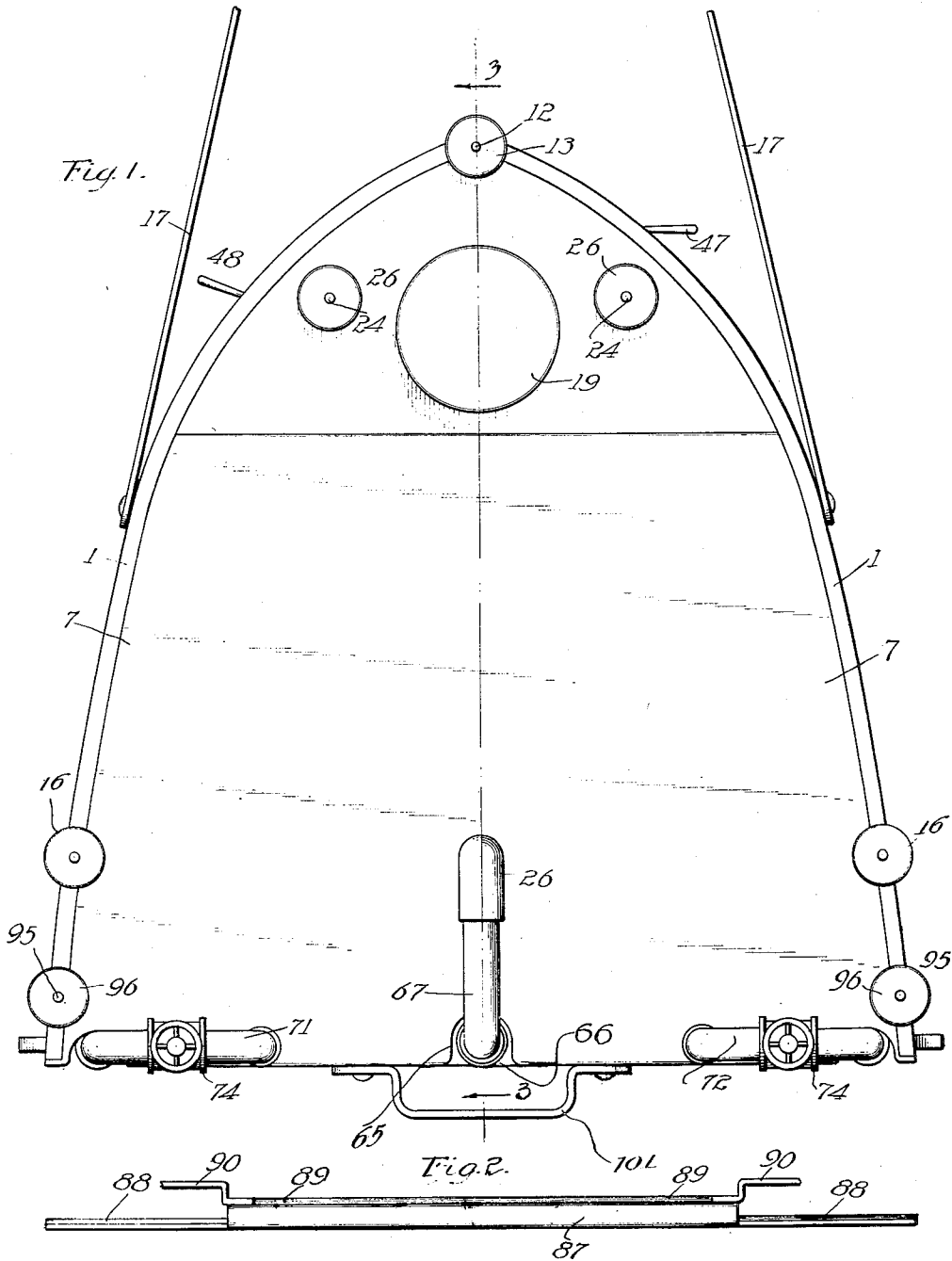


N. B. SOURIAN.  
 SCRUBBING OR CLEANING MACHINE,  
 APPLICATION FILED MAR. 6, 1914.

1,205,574.

Patented Nov. 21, 1916.

4 SHEETS—SHEET 1.



Witnesses:  
 Arthur M. Carlson  
 Robert F. Weir

Inventor:  
 Nerves B. Sourian  
 by Shee & Shee, Attys.

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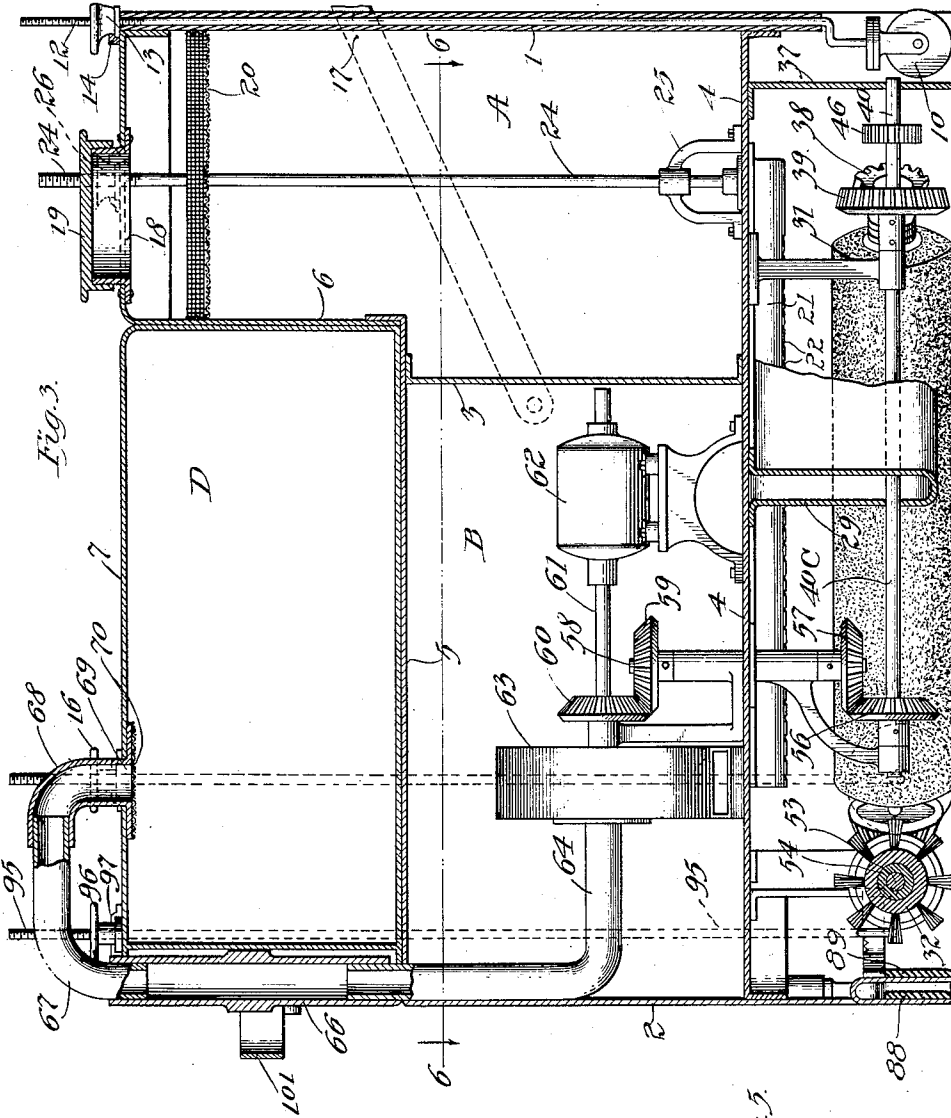


Fig. 3.

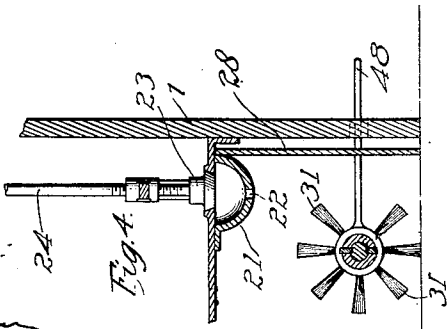


Fig. 4.

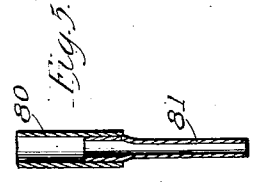


Fig. 5.

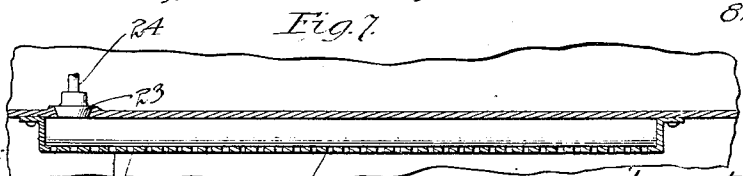
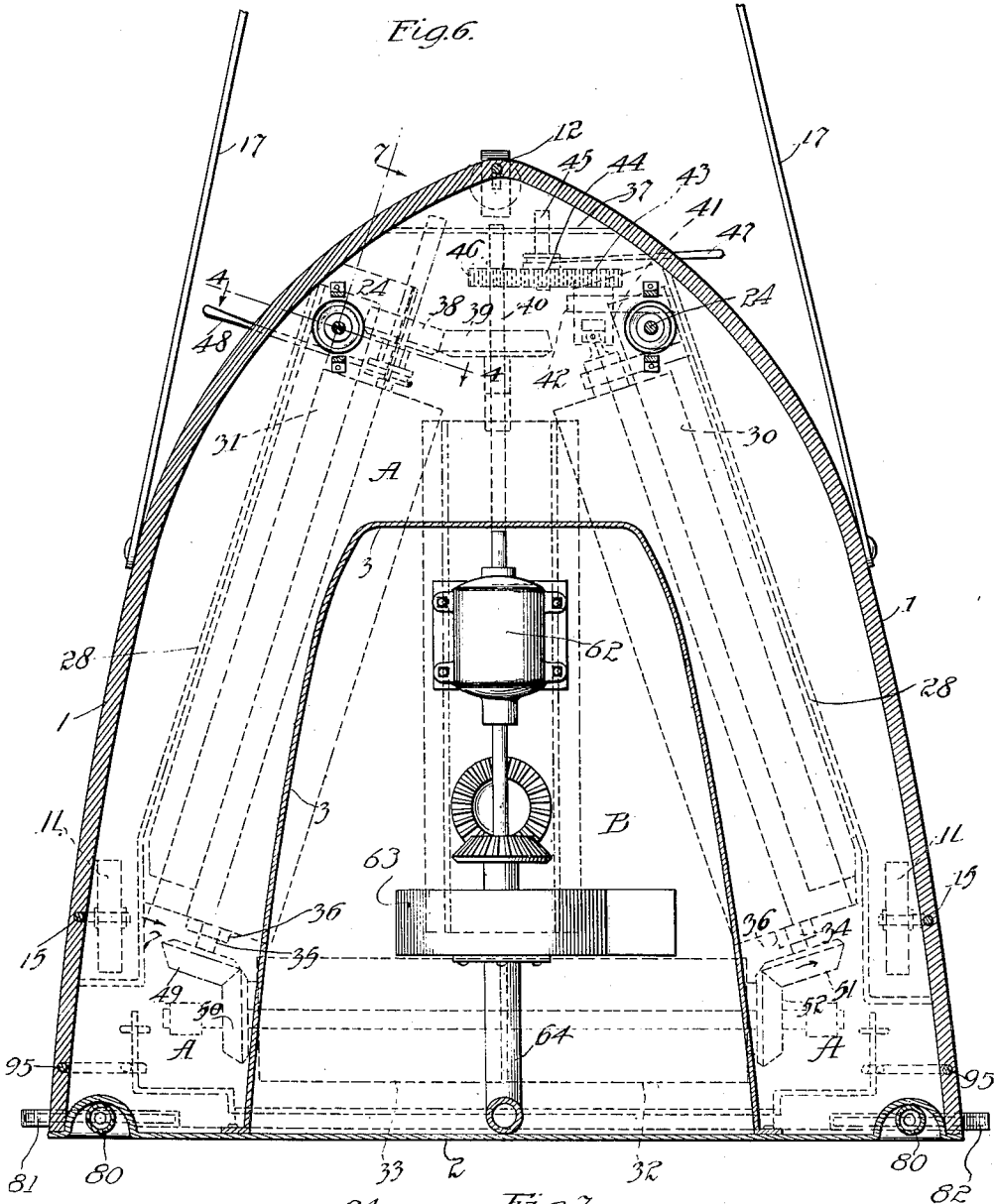
Witnesses:  
*Arthur H. Carlson*  
*Robert F. Weir*

Inventor:  
*Nerves B. Sourian*  
 By *Steeves*  
*Attys.*

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 4 SHEETS—SHEET 3.



Witnesses:  
 Arthur H. Carlson  
 Robert H. Weir

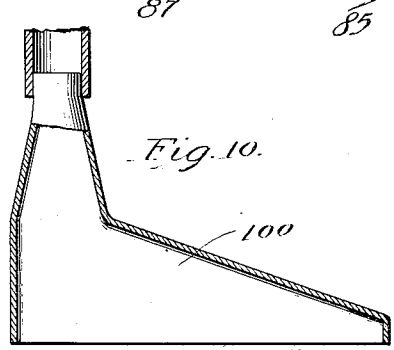
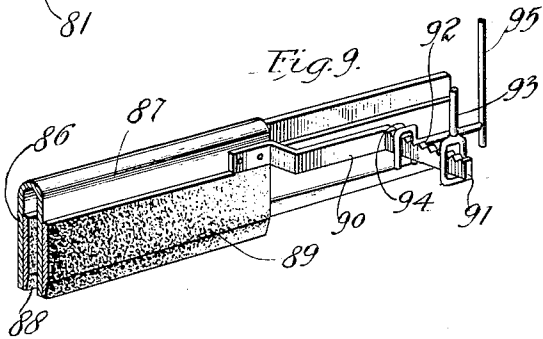
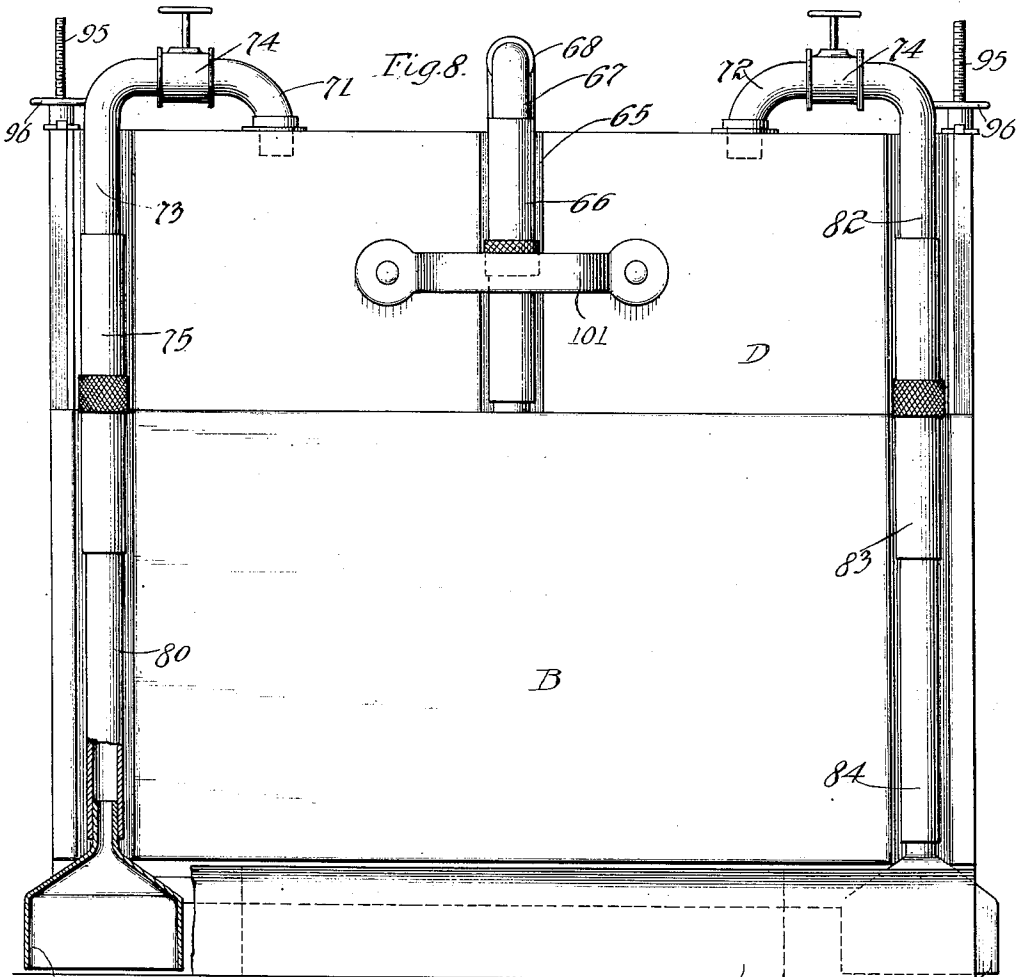
Inventor:  
 Nerves B. Sourian  
 by Nee & Nee Attys.

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4 SHEETS—SHEET 4.



Witnesses:

*Arthur M. Cook*  
*Robert H. Weir*

Inventor:

*Nerces B. Sourian*  
 64 *Shie & Shie* Attys.

# UNITED STATES PATENT OFFICE.

NERSES B. SOURIAN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO MAX BORCHARDT, OF CHICAGO, ILLINOIS.

SCRUBBING OR CLEANING MACHINE.

1,205,574.

Specification of Letters Patent. Patented Nov. 21, 1916.

Application filed March 6, 1914. Serial No. 822,997.

*To all whom it may concern:*

Be it known that I, NERSES B. SOURIAN, a subject of the Sultan of Turkey, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Scrubbing or Cleaning Machines, of which the following is a description.

My invention belongs to that general class of devices known as scrubbing or cleaning machines, and relates particularly to a machine for scrubbing carpets, rugs, or floors, and picking up or removing the dirt therefrom.

More especially it relates to a combined scrubbing and vacuum machine, wherein a cleaning substance is applied to the part to be cleaned, the same scrubbed, and the dirty water, soap-suds, or the like, is sucked up from the floor or rug, and which suction or vacuum mechanism may be used independently of the scrubbing mechanism, so as to remove the dry dust from the floor, rug, or the like.

The invention has among its objects the production of a device of the kind described that is simple, convenient, durable, compact, portable, and efficient, and may be used wherever found applicable.

To this end my invention consists in the novel construction, arrangement or combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts, Figure 1 is a top plan view of the complete machine; Fig. 2 is a top plan view of a portion of the wiping mechanism; Fig. 3 is a sectional view taken substantially on line 3, 3 of Fig. 1, a portion of the mechanism, particularly the driving mechanism, being shown in elevation; Fig. 4 is a sectional view taken substantially on line 4, 4 of Fig. 6; Fig. 5 is a section through one of the suction members; Fig. 6 is a sectional view taken substantially on line 6, 6 of Fig. 3; Fig. 7 is a sectional view taken substantially on line 7, 7 of Fig. 6; Fig. 8 is an end elevation of the rear of the machine; Fig. 9 is a perspective view of a portion of the wiping mechanism, and Fig. 10 is a sectional view through the large suction shoe.

Referring to the drawings, in which the

preferred form of my device is shown, 1 is an outer casing or frame of suitable material having a rear wall 2, and preferably provided with transverse partitions 3, 4, 5 and 6, dividing the casing into clean water and soap-suds chamber A, which, as shown, extends back to the rear wall 2 (see Fig. 6) a motor and fan chamber B, and what might be termed a scrubbing chamber C, which is open at the bottom. The partitions 5 and 6 are so arranged as to support a tank 7, the same being preferably detachable, which forms what may be termed a dirty water or soap chamber D. It may be said briefly before proceeding to the description of the machine shown that soap-suds, or the like, is discharged on to the carpet or rug, floor, or the like, and the surface cleaned by means of suitable brushes, or their equivalents, and the soapy water or the like, which soap, water, etc., carrying the dirt is suitably conveyed to the tank 7, a vacuum conveying system being employed. The casing or machine is carried preferably by suitable wheels 10 and 11, there being one wheel 10 at the front and two side wheels 11. The machine is preferably adjustably supported from these wheels, so that the height of the machine from the floor may be varied, and wheel 10 made with a swivel or rotatably connected so that the machine may be turned about conveniently. If desired, a handle 17 (only a portion being shown) may be provided for drawing or pushing the complete machine on the rug or floor. The adjustable connection, or means for adjustably regulating the height of the machine from the floor, as shown, consists of a rod 12, secured to wheel 10, which rod may be threaded at its upper end, and provided with a thumb nut 13. This nut coöperates with a suitable shoulder or flange 14 on the casing, so that as the thumb nut is turned the front of the machine is raised or lowered. The side wheels 11 are similarly provided with rods 15 extending to the top of the machine, upon which are arranged thumb nuts 16, the same coöperating with flanges similar to the flange 14. Of course any equivalent adjustable connection between the wheels and the machine may be employed.

The supply chamber A, or fresh water and soap chamber is provided with an inlet

18, preferably at the top, which may be normally closed by a detachable cover 19, if desired; a screen 20 of any suitable form may be arranged to strain the water and prevent large lumps of soap, or other cleaning material, or foreign matter from dropping to the bottom of the chamber. Arranged on the under side of the bottom 4, preferably along each side (see Figs. 3, 6 and 7) is a trough 21, provided with discharge openings 22. These troughs 21, the same being really distributing pipes, have an inlet connected with the chamber A, each inlet being preferably controlled by a valve 23, or its equivalent for the purpose. The valves 23 shown are provided with stems 24, which extend to the exterior of the machine at the top thereof. If desired, guides 25 may be arranged at the bottom, the top being guided by the top of the casing. These valves may be controlled or operated in any suitable manner, thumb nuts 26 being provided on the rods 24, the same being engaged by suitable flanges on the top of the casing, similar to the flanges 14, for the front wheel rod. As is obvious, as either of the valves are opened, the contents of the chamber A are free to pass into the distributing devices 21, from whence it is discharged through the openings 22.

A partition or baffle 29 is preferably arranged lengthwise and centrally the machine, below the floor or partition 4, and upon each side of this baffle are arranged brushes 30 and 31 respectively. Along each side of the machine are guards 28 (see Figs. 4 and 6). These brushes may be driven in any desired manner, and as shown, the same are preferably arranged between the distributing pipes 21 and guards 28, and the partition or baffle 29, and are adapted to rotate or be driven so that the bottom turns inwardly, throwing any soap or water toward the baffle 29. As the soap and water are dropped from the distributing pipes 21, and the machine drawn along, the wheels or brushes rotating at a comparatively high rate of speed, pick up the soap and thoroughly scrub the surface over which the machine is drawn, all the soap and water, however, being thrown inwardly and not scattered. The same is further rubbed over the floor or rug by additional brushes 32 and 33, the waste particles of soap and water, or that is, the dirty soap and water, being picked up and carried to the dirty water tank, as hereafter described. While the brushes 30, 31, 32 and 33 may be operated in any desired manner, a very simple arrangement is shown for the purpose. Referring particularly to Figs. 3 and 5, the brush 30 is provided with a shaft 34, and brush 31 with a shaft 35, the free ends of the brushes being supported in brackets 36, or their equivalents. The forward end of

shaft 35 is supported by a partition or the equivalent 37, and is provided with a gear 38 in mesh with the gear 39 on the main driving shaft 40. It may be mentioned that the construction is preferably so that the brush may be thrown out of operation, a simple construction consisting in making the gear or pinion 38 movable, and controlling the same by a lever 48, or its equivalent, so that it may be thrown out of mesh with the gear or pinion 39. The end of the shaft 34 is connected through a universal coupling 41, supported by a bracket 42 to a gear 43, which meshes with a gear 44, or idler carried by shaft 45, which is in mesh with gear 46 arranged on shaft 49, by moving the gear 44 out of mesh with the two gears mentioned, brush 30 may be thrown out of operation. A lever 47 is shown for the purpose, gear 44 being slidable on the shaft 45. The brushes 32 and 33 are each provided with a bushing 54, secured thereto, which are rotatably mounted upon a shaft 53. Power is transmitted from the shafts 34 and 35 through pinions or beveled gears 51, 52 and 49, 50 to the two brushes 32 and 33, so as to drive the same. As is obvious, if the brush 30 is not driven, brush 32 remains stationary, and similarly for brushes 31 and 33.

The shaft 40, which is supported in any suitable manner may be connected to the motive power in any desired way. As shown, an electric motor 62, or its equivalent, is arranged in the chamber B, and provided with a driving shaft 61. The shaft 40 is connected to the driving shaft 51 through gears 56 and 57, shaft 58 and bevel gears 59, 60. (See Figs. 3 and 6). Any equivalent construction may be employed.

Arranged at the rear of the brushes 32 and 33 is a suitable wiper, or what is sometimes called a squeegee. This squeegee will be described in detail hereafter. As was before mentioned, the water from the floor or rug is removed, preferably by means of a suction or vacuum. Arranged in the chamber B is a suction pump 63, the same being preferably driven from the shaft 61. This pump is provided with an intake pipe 64, which is connected through connection 66 and pipe 67 to a pipe 68, arranged on the tank 7, 69 being the outlet. If desired, a screen 70, or its equivalent, may be arranged as shown in Fig. 3. When the pump is operated a suction is created in the chamber D. The tank 79 is preferably provided with a plurality of inlets, one from the pipe 71, which is connected to pipe 73, connection 75, pipe 80, to a suction shoe 81. The inlet 72 is connected by pipe 82, connection 83, and pipe 84, to shoe 85. Valves 74 are also preferably provided as shown. As is obvious, as the machine is moved there is a suction through the shoes up into the chamber D, picking up any dirt, moisture, dirty soap,

or dirty water, from the floor and conveying it into the dirty water tank. As was previously mentioned, a squeegee is preferably arranged at the rear of the machine, and is to direct any water, dirt, or the like, to the suction shoes. This squeegee is best shown in Figs. 2 and 9. Referring to these figures, 86, 87 is preferably a metal piece, or its equivalent, provided with rubber squeegees or feet, 88 and 89, secured to the front piece 87, and to the rear 86. This squeegee is secured to the machine in any desired manner. Referring particularly to Fig. 9, in which a portion of the same is shown, the front squeegee 89 is shorter than the rear one, and an arm 90 provided and extended as at 91 on the front sides at each end, the same being preferably notched as at 92. The forward ends of 91 extend through brackets 93, suitably carried by the machine. The squeegee is maintained upon the floor or rug by rods 95, provided with transverse extensions 92, forked as at 94, and extending over 91. It is obvious as the rod 95 at each side is depressed the squeegee is pressed against the floor. Because of the notches the same may be adjusted in or out, and arranged in the desired position. The rods 95 may be provided with thumb nuts 96, engaged by the flanges 97 on the machine, and controlled substantially similar to the valve and wheel rods previously mentioned. As is obvious, the squeegee collects the water at the center of the machine, and causes it to be moved toward the suction shoes.

In Fig. 10 is shown an enlarged suction shoe 100. When desired, the shoe 81, or shoe 85, may be removed and the large shoe inserted, it being understood that there may be one for each side, if so desired. The large shoe, however, is particularly intended for use when the brushes upon one side of the machine only are used. As is most clearly shown in Figs. 1 and 8, a handle 101 may be arranged upon the dirty water tank for convenience in carrying the same when detached. Assuming the machine to be set up as shown, if the valves 23 are opened and the brushes driven, clean soapy water, or the equivalent, is discharged at the brushes, the rug or floor scrubbed and the excess water, soap, dirt, etc., taken up by the shoes 81, and discharged into tank 7. One or both sides of the machine may be operated as may be desired. When it is desired to empty the tank 7, the vacuum pipes may be disconnected at any of the required points, and the tank 7 removed for emptying. It may be mentioned that the capacity of the tank 7 (chamber D) is preferably greater than the chamber A, so that more soap and water will not be drawn into the tank than the tank will hold.

When it is desired to use the machine simply as a vacuum machine, the brushes

may be thrown out of operation, and a suitable nozzle for vacuum purposes connected to one of the pipes 71 or 72, the valve of the pipe not used being closed. In this case the dirt would be drawn into the tank 7. Suitable means, however, should be provided for preventing it from being drawn out through the suction pipe 68. If the connection 66 is connected with any of the portable shoes of well known construction, the result will be the same, except, however, means should be provided for receiving the accumulated dirt or dust. Where the machine is used as a vacuum cleaner and the brushes thrown out of operation, the machine should be raised from the floor by adjusting the position of the wheels, and the shoes dropped close to the floor. It may also be mentioned that in case it is so desired, the brushing members may be covered with suitable material, or other brushes substituted, for example, felt brushes, so that a waxed floor might be very efficiently polished. This is merely mentioned as an illustration.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement or combination of parts herein shown and described, or uses mentioned.

What I claim as new and desire to secure by Letters Patent is:—

1. In a device of the kind described and in combination, a suitable casing provided with a liquid supply tank therein, and formed with a chamber at the lower part of the casing, open at the bottom, adjustable wheels for carrying said casing, a plurality of brushes arranged in said chamber, means arranged in said casing and operatively connected with said brushes for driving the same, suction mechanism arranged in said casing and operatively connected with said brush driving mechanism, a fluid receiving tank operatively connected at its top with said suction mechanism, and a separate suction pipe extending from said tank to proximate the lower side of the casing, and means for conveying the used cleansing fluid to proximate said suction pipe.

2. In a device of the kind described and in combination, a casing provided with means for adjustably supporting the same, and with a fluid supply tank, a scrubbing chamber, a motor chamber, and a receiving tank, scrubbing brushes arranged in said scrubbing chamber along each side thereof, and at the rear, driving mechanism for said brushes arranged in said motor chamber and operatively connected with said brushes, distributing pipes connected with said supply tank and positioned to discharge the cleans-

- ing fluid proximate said side brushes, a squeegee arranged proximate said rear brushes, suction shoes arranged proximate the ends of said squeegee, means for connecting said shoes with said receiving tank, suction mechanism arranged in said motor chamber, and operatively connected with the top of said tank, and means for operatively connecting said suction mechanism with said brush driving mechanism.
3. In a device of the kind described and in combination, scrubbing mechanism, comprising a pair of brushes arranged in the form of a V, means for driving the brushes in opposite directions with the under sides thereof thrown inwardly, and a pair of brushes arranged end to end at the separated ends of said first brushes, and each operatively connected with the adjacent end of said first mentioned brushes, a source of cleansing fluid supply, adjustable means for conducting the cleansing fluid to proximate the first mentioned brushes at the exterior sides thereof, a receptacle for receiving the used cleansing fluid, and means for conveying the fluid from the scrubbing mechanism to said receptacle, comprising pipes extending to the outer ends of said last mentioned brushes and to said receptacle, and means for creating a vacuum in said receptacle.
4. In a device of the kind described and in combination, scrubbing mechanism, a source of cleansing fluid supply, means for conducting the cleansing fluid to proximate the first mentioned brushes at the exterior sides thereof, a receptacle for receiving the used cleansing fluid, and means for conveying the fluid from the scrubbing mechanism to said receptacle, comprising an adjustable wiper arranged at the rear of the scrubbing mechanism, and suction mechanism connected to said receptacle, including suction shoes arranged at each end of said wiper, a pipe to said receptacle and pumping mechanism independently piped to said receptacle.
5. In a device of the kind described and in combination, scrubbing mechanism, comprising a pair of brushes arranged in the form of a V, and a pair of brushes arranged end to end at the separated ends of said first brushes, and each operatively connected with the adjacent one of said first mentioned brushes, a source of cleansing fluid supply, means for conducting the cleansing fluid to proximate the first mentioned brushes at the exterior sides thereof, a receptacle for receiving the used cleansing fluid, and means for conveying the fluid from the scrubbing mechanism to said receptacle, comprising an adjustable wiper arranged at the rear of the scrubbing mechanism, said wiper adjustable both horizontally and vertically, means for positively holding said wiper in the desired position, and suction mechanism connected to said receptacle including suction shoes arranged at each end of said wiper.
6. The combination of an adjustably supported casing provided with a cleansing fluid supply receptacle, and distributing pipes connected therewith on the under side thereof, rotary scrubbing brushes arranged between said pipes and carried by said casing, a detachable fluid receiving receptacle and a suction conveying mechanism for picking up the dirty cleansing fluid and conveying the same to said receptacle, including a pump and means for connecting the same with said receiving receptacle, and a pipe extending from said receptacle to proximate the floor, and provided with a suction shoe thereat, and a plurality of squeegees adjustably arranged at the rear of the machine and terminating at said shoe.
7. In a device of the kind described and in combination, the combination of a suitable casing provided with a liquid supply tank therein, and formed with a chamber at the lower part of the casing, open at the bottom, adjustable wheels for carrying said casing, a plurality of rotatable brushes arranged in the form of a V in said chamber with the point of the V at the front of the casing, and rotatable inwardly at their juncture with the floor, means arranged in said casing and operatively connected with said brushes for driving the same independently of each other, means for conveying the liquid cleansing fluid from said supply tank to the brushes, suction mechanism arranged in said casing and operatively connected with said brush driving mechanism, a detachable fluid receiving tank operatively connected with said suction mechanism, and an adjustable suction pipe extending from said tank to proximate the lower side of the casing, and means adjustable horizontally and vertically for conveying the used cleansing fluid to proximate said suction pipe.
8. In a device of the kind described and in combination, a casing provided with means for adjustably supporting the same, and with a fluid supply tank, a scrubbing chamber, a motor chamber, and a detachable receiving tank, scrubbing brushes arranged in said scrubbing chamber along each side thereof, and at the rear thereof, driving mechanism for said brushes arranged in said motor chamber and operatively connected with said brushes, means for controlling the operation of said brushes, distributing pipes connected with said supply tank and positioned to discharge the cleansing fluid proximate said side brushes at the outer sides thereof, a squeegee arranged proximate said rear brushes, adjustable suction shoes arranged proximate the ends of said squeegee, means for detachably connecting said shoes with said receiving tank,

suction mechanism arranged in said motor chamber, and operatively connected with said tank, and means for operatively connecting said suction mechanism with said  
5 brush driving mechanism.

9. In a device of the kind described and in combination, a casing provided with means for adjustably supporting the same, and with a fluid supply tank, a scrubbing  
10 chamber, a motor chamber, and a detachable receiving tank, scrubbing brushes arranged in said scrubbing chamber along each side thereof, and at the rear thereof, driving  
15 mechanism for said brushes arranged in said motor chamber and operatively connected with said brushes, means for independently controlling the operation of said brushes, a  
20 baffle for each side brush arranged in the exterior chamber at the outer side of the brushes and extending to substantially the plane of the lower sides of the brushes, dis-  
tributing pipes connected with said supply tank and positioned to discharge the cleansing fluid proximate said side brushes at the  
25 outer sides thereof, means for controlling the passage of fluid from the tank into said distributing pipes, guards arranged at the outside of said distributing pipes, an ad-  
justable double squeegee arranged proximate said rear brushes, means for maintain-  
30 ing said squeegee on the floor at the desired pressure, adjustable suction shoes arranged

proximate the ends of said squeegee, piping means for detachably connecting said shoes with said receiving tank, suction mecha- 35  
nism arranged in said motor chamber, and operatively connected with said tank, and means for operatively connecting said suction mechanism with said brush driving  
40 mechanism.

10. The combination in a rug scrubbing machine of the kind described of a suitable fluid containing casing, a plurality of brushes arranged on the under side of the casing, said brushes disposed in triangular 45  
form, means for rotating the brushes with the under sides thereof turning inwardly, distributing pipes extending from said casing on the outer sides of the brushes at two  
50 sides of the triangle, and a squeegee arranged on the outside of the brushes on the other side of the triangle, suction shoes disposed at the ends of said squeegees, a detachable receptacle mounted on said casing,  
55 pipes extending to said receptacle from said shoes, and means independent of said piping for creating a vacuum in said receptacle.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

NERSES B. SOURIAN.

Witnesses:

ROY W. HILL,  
CHARLES I. COBB.