

M. SEYFERTH.  
 FLOOR CLEANING MACHINE.  
 APPLICATION FILED APR. 19, 1911.

1,000,699.

Patented Aug. 15, 1911.

3 SHEETS—SHEET 1.

Fig. 1

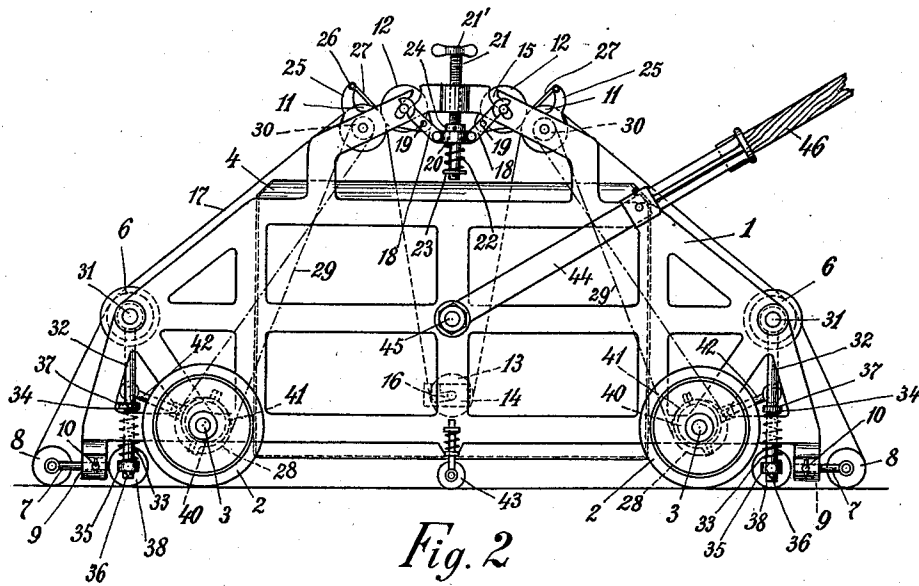
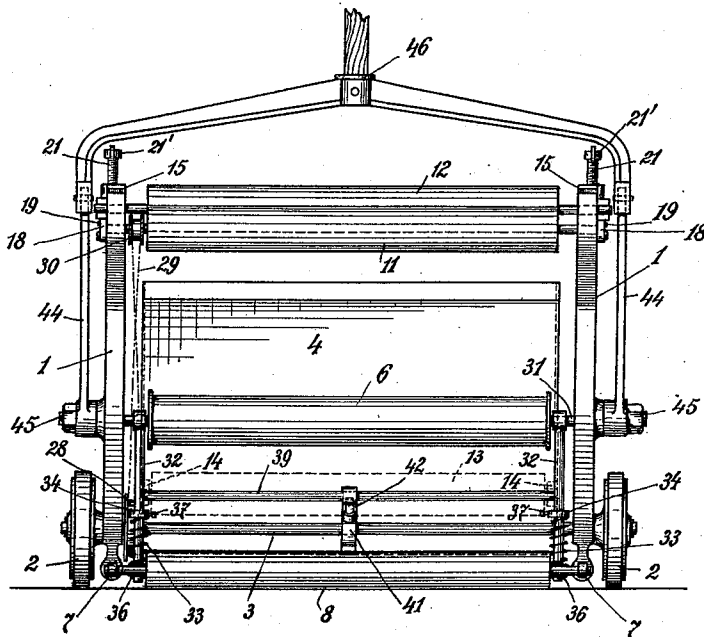


Fig. 2



WITNESSES

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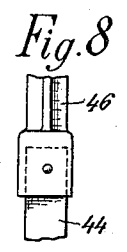
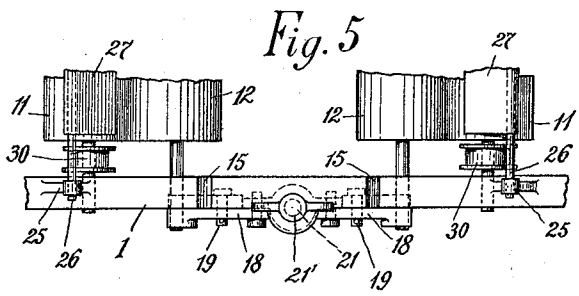
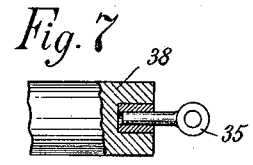
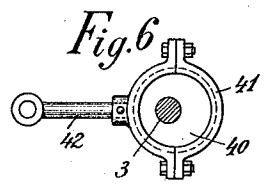
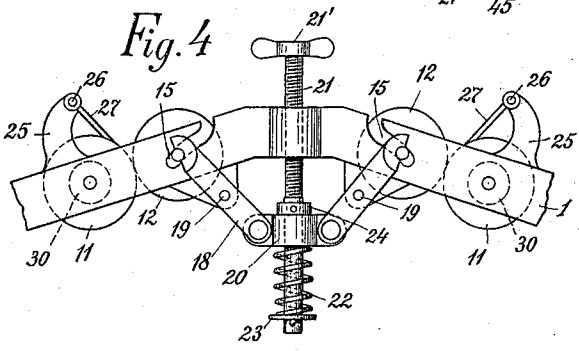
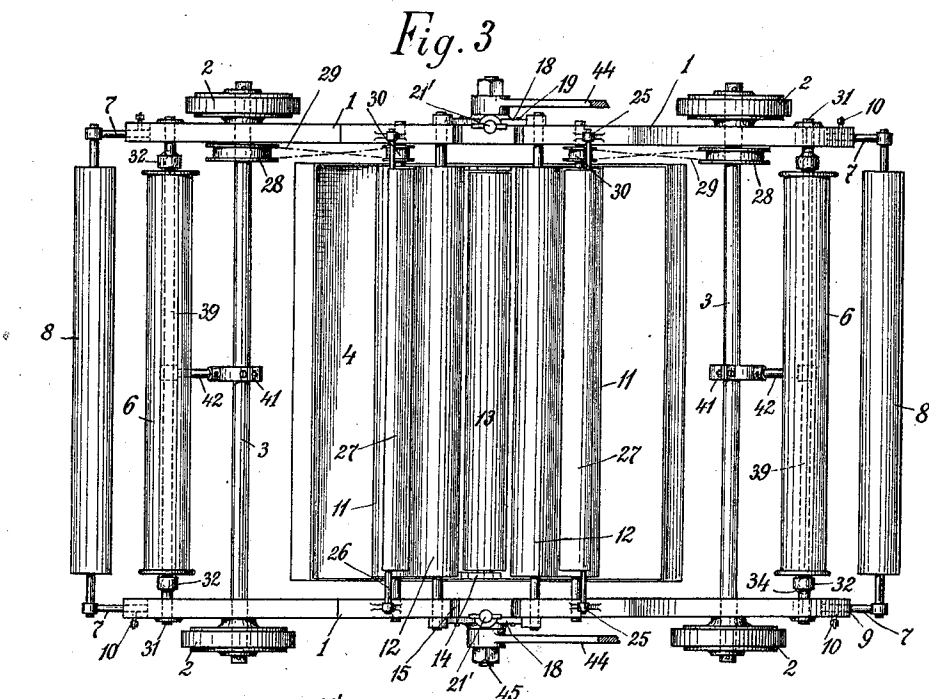
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 9

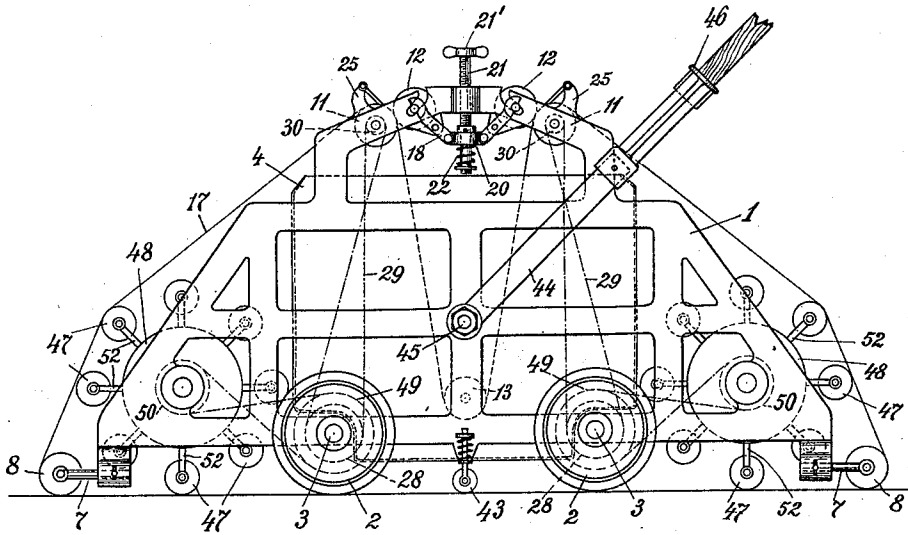


Fig. 10

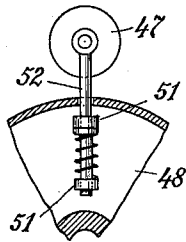
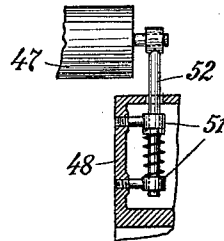


Fig. 11



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# UNITED STATES PATENT OFFICE.

MAX SEYFERTH, OF CRIMMITSCHAU, GERMANY.

FLOOR-CLEANING MACHINE.

Specification of Letters Patent. **Patented Aug. 15, 1911.**

1,000,699.

Application filed April 19, 1911. Serial No. 622,035.

*To all whom it may concern:*

Be it known that I, MAX SEYFERTH, merchant, subject of the German Emperor, residing at Crimmitschau, Kingdom of Saxony, Germany, have invented a new and useful Floor-Cleaning Machine; and I do hereby declare the following to be a full, clear, and exact description of the same.

The subject-matter of my invention is a floor-cleaning machine, in which the cleaning member, preferably a wiping-cloth or the like, is under the action of springs so that it slides resiliently on the floor. In consequence of the compact construction of the machine it is very handy.

One illustrative embodiment of my invention and a modification thereof are represented in the accompanying drawing, wherein:—

Figures 1 and 2 are side and front elevation, respectively, showing one form of my machine; Fig. 3 is a bottom plan view of the same, and Figs. 4 to 8 show details thereof on an enlarged scale; Fig. 9 is a side elevation showing part of a modified machine, and Figs. 10 and 11 show details thereof in side and front sectional elevation, respectively.

Referring firstly to Figs. 1 to 8, in the frame 1 are journaled the axles 3, to which the wheels 2 are firmly connected and between which is provided a tank 4 filled with water or other suitable cleaning liquid, occupying approximately the entire breadth of the frame and extending somewhat far upward. In the frame are journaled also not only guide rolls 6, but also guide rolls 8 in horizontal arms 7. These arms or brackets 7 are displaceable in horizontal holes 9 in the frame and are secured by set-screws 10. As Fig. 1 clearly shows the rolls 8 are located in front of the frame. Above the tank 4 in the frame 1 are journaled two pairs of squeezing rolls 11, 12 which are preferably located one beside the other, and a guide roll 13 is journaled in lugs 14 provided in the tank 4. The inner rolls 12 of the pairs of squeezing rolls and the guide roll 13 are removable. To this end, the journals of the squeezing rolls 12 normally rest in the arc-shaped parts of the curved slots 15 and the journals of the guide roll 13 in the slanting parts of the angular slots 16. The wiping member 17, not shown in Figs. 2 and 3, is guided around the guide rolls 6

and 8, between the squeezing rolls 11, 12 and over the guide roll 13 in the tank 4. The position of the guide roll 13 between the pairs of squeezing rolls is such that the wiping member 17 always is guided first through one pair of squeezing rolls, then over the guide roll 13 and through the second pair of squeezing rolls, whether the machine is driven forward or backward. The wiping member 17 may be made of any suitable or desired material. The journals of the squeezing rolls 12 are held in the curved parts of the slots 15 by the levers 18 which clasp the journals with their ends, are revolvable about pivots 19 provided in the frame, and are pivotally connected at their other ends to sleeves 20. Each sleeve 20 is loose on a spindle 21, which has its upper portion screw-threaded, and is pressed against the collar 24 of the spindle 21 by a spring which is placed on the end of the spindle and secured below by a ring 23. The spindles 21 are movable in the frame 1 and are provided with heads 21' at their upper ends, as shown in Figs. 4 and 5.

When the spindles 21 are screwed upward, the free ends of the levers 18 move outwardly and press the rolls 12 against the rolls 11. If a foreign body arrives between the rolls 11, 12, the springs 22 allow the free ends of the levers 18 to move together and the rolls 12 to move inward toward one another. The journals of the guide roll 13 are held in the ends of the slanting parts of the slots 16 because the wiping member is tensioned. This member can be tensioned by shifting the arms 7 of the guide rolls 8 longitudinally outward. If the endless wiping member is to be removed, it is loosened by pushing the arms 7 inward, whereupon the guide roll 13 and the squeezing rolls 12 are removed. It is possible to remove the guide roll 13 owing to the wiping member 17 being loosened, whereas for removing the squeezing rolls 12 the spindles 21 must be screwed downward until the free ends of the levers 18 clasping the journals of the squeezing rolls are located in front of the almost vertical parts of the slots 15. After the squeezing rolls 12 and the guide roll 13 have been removed the wiping member 17 can readily be drawn laterally out of the machine, after the shaft 46 has been removed from its arm 44.

Transverse rods 26, to which are attached

doctors 27, preferably of leather, contacting with the wiping member, are journaled in lugs 25 of the frame.

The pairs of squeezing rolls 11, 12 are driven by the axles 3 through the medium of the belt pulleys 28 keyed on the latter, the crossed belt 29 and the belt pulleys 30 fast on the journals of the squeezing rolls 11. The ratio of transmission is such that the wiping member 17 is driven faster than the wheels 2 rotate.

One-armed, pendent levers 32 are revoluble about the shafts 31 of the guide rolls 6. On each of these levers is a pressure spring 33, whose upward movement is limited by a ring 34 and below each spring a ring 35 is loose on the lever 32. By adjusting the ring 34 which is fixed by the set-screw 37 the tension of the spring 33 can be varied. The rings 35 are formed toward the inside of the machine as pivots, with which they engage loosely into the ends of the press rolls 38 provided with bushes (Fig. 7), so that these rolls can rotate. Each two opposite levers 32 are connected by a rod 39. On each axle 3 is an eccentric 40, whose strap 41 is revolubly connected by means of the rod 42 with the rod 39 (Fig. 6), so that when the machine is driven the rods 39 are reciprocated and the levers 32 and the press rolls 38 carried by them oscillate to and fro and thereby repeatedly press each part of the wiping member 17, so that the wiping operation is rendered more effective. The arrangement is preferably such that the press rolls 38 oscillate more rapidly than the wiping member 17 is fed, that is to say the rolls 38 have a greater speed than that of the wiping member 17. One or more spring-pressed press rolls 43 may be provided in the frame between the oscillating press rolls 38.

My machine can be driven forward and backward by means of the shaft or handle 46, whose forked ends 44 are detachably connected by pins 46' (Fig. 8) with the arms loosely mounted on the pivots 45 in the frame, when the pairs of squeezing rolls 11, 12 drive the wiping member 17, and each part of the same is driven, after it has operated on the floor, first through one pair of squeezing rolls 11, 12, then through the tank 4, and then through the second pair of squeezing rolls, so that it is constantly cleaned and wrung out for work.

The modified machine represented in Figs. 9 to 11, differs from that described above in that instead of the oscillating press rolls 38, rotating drums are provided having elastic press rolls 47 preferably leading in front of the wiping member 17. These drums are driven by the rotating axles 3 by

pulleys 49, 50 through the medium of a crossed belt 49'. Attached to the inside of the end of the drums 48 are bearings 51 in which spring-pressed arms 52 passing through the wall of the drum are radially guided. The free, outer ends of these arms are formed as bearings for the journals of the press rolls 47, as clearly shown in Figs. 10 and 11.

I claim:—

1. A floor-cleaning machine comprising a frame, a tank thereon, an endless wiping member guide-rolls guiding the wiping member across the floor and into the tank, wheels for supporting the frame, an operative connection between the wheels and rollers for rotating the rollers to cause the wiping member to move relative to the frame as the frame moves across the floor, press rolls bearing on the wiping member where the wiping member contacts the floor, and means for moving the press rolls relative to the frame in the direction of the path of the frame.

2. A floor cleaning machine comprising a frame, a tank thereon, an endless wiping member guide-rolls guiding the wiping member across the floor and into the tank, wheels for supporting the frame, an operative connection between the wheels and rollers for rotating the rollers to cause the wiping member to move relative to the frame as the frame moves across the floor, press rolls bearing on the wiping member where the wiping member contacts the floor, and means for moving the press rolls relative to the frame in the direction of the path of the frame at a speed greater than the speed of the wiping member.

3. A floor cleaning machine comprising a frame, a tank thereon, an endless wiping member guide rolls guiding the wiping member across the floor and into the tank, wheels for supporting the frame, an operative connection between the wheels and rollers for rotating the rollers to cause the wiping member to move relative to the frame as the frame moves across the floor, press rolls bearing on the wiping member where it contacts the floor, and means operatively connected with said wheels for reciprocating the press rolls relative to the frame in the direction of the movement thereof.

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

MAX SEYFERTH.

Witnesses:

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RUDOLPH FRICKE.