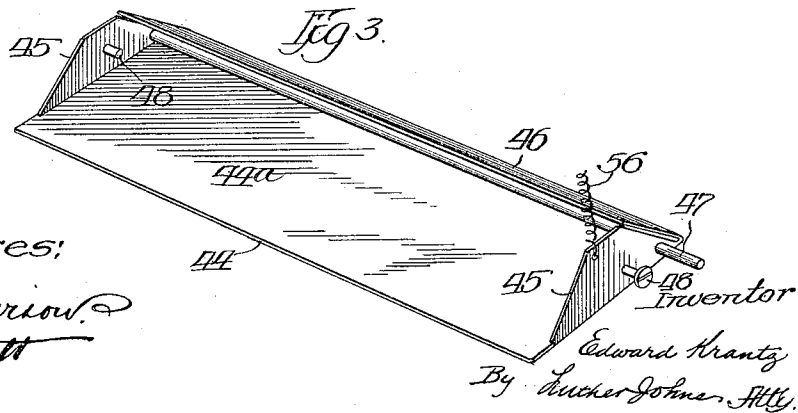
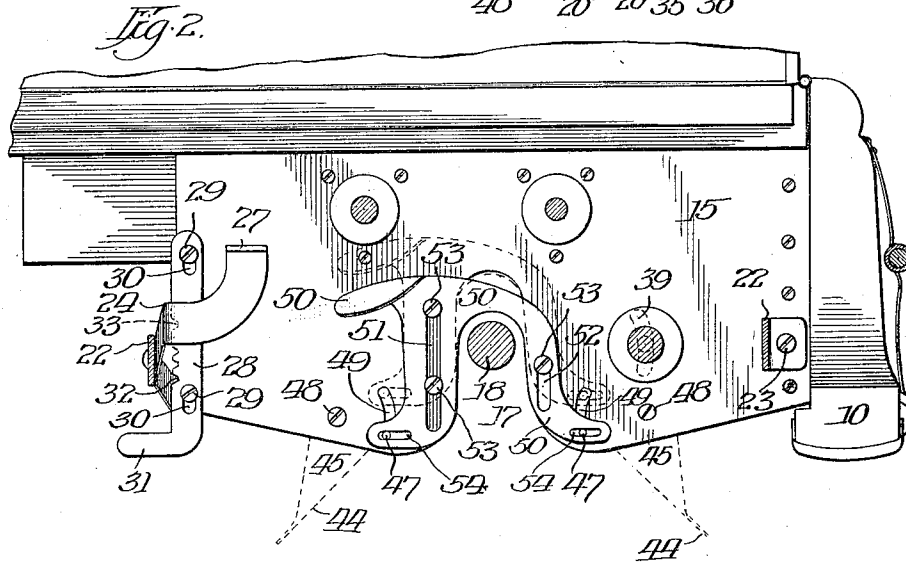
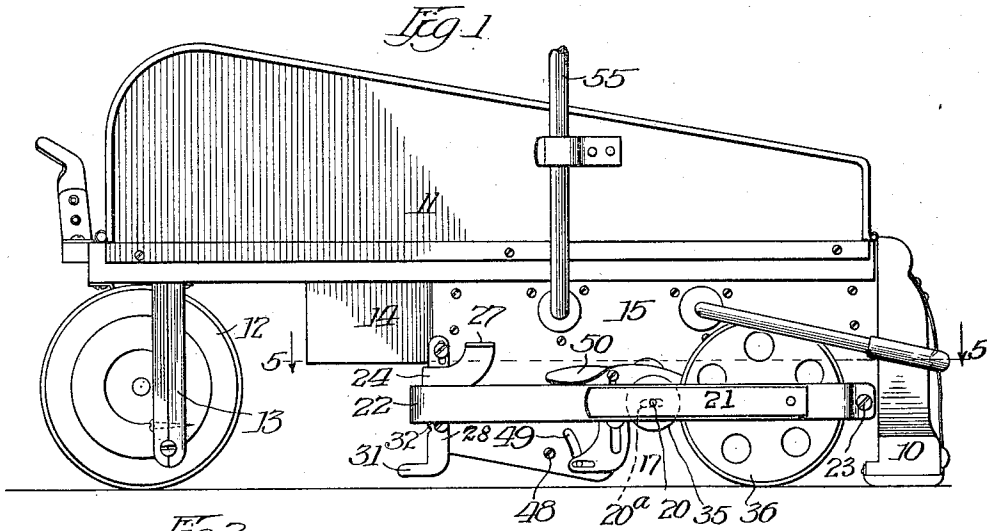


E. KRANTZ.
CLEANING DEVICE.
APPLICATION FILED MAY 4, 1914.

1,170,074.

Patented Feb. 1, 1916.
2 SHEETS—SHEET 1.



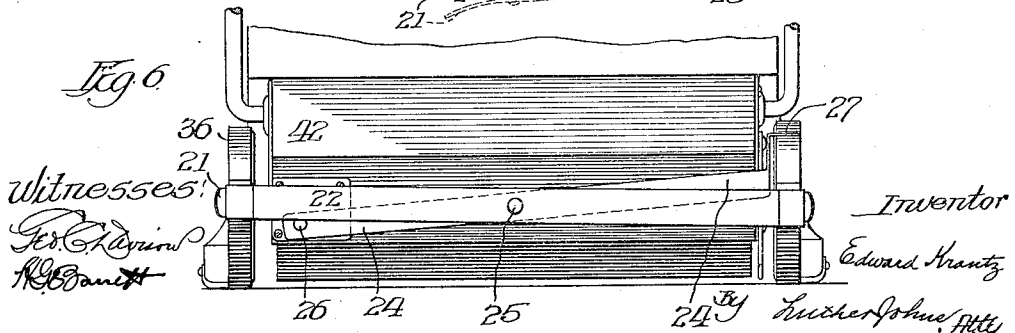
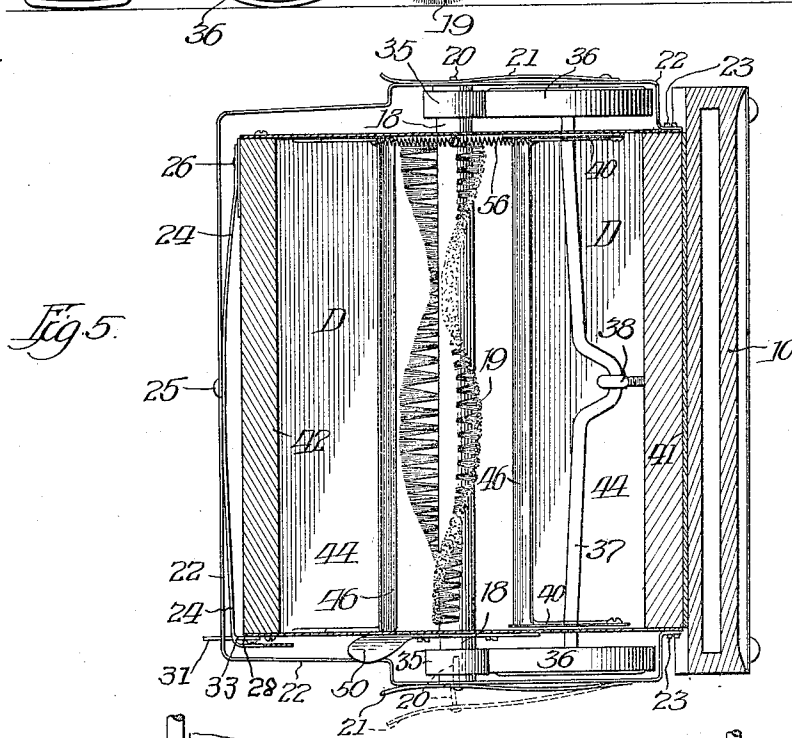
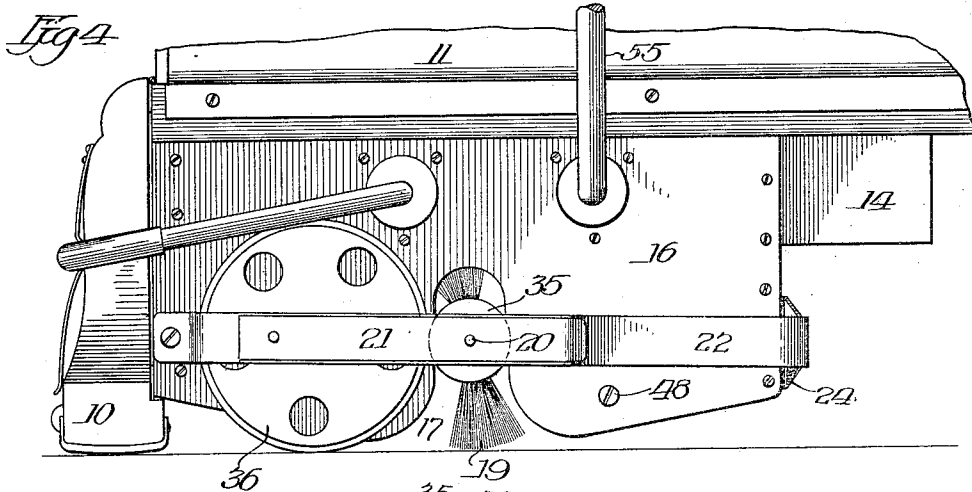
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UNITED STATES PATENT OFFICE.

EDWARD KRANTZ, OF CHICAGO, ILLINOIS.

CLEANING DEVICE.

1,170,074.

Specification of Letters Patent.

Patented Feb. 1, 1916.

Application filed May 4, 1914. Serial No. 836,142.

To all whom it may concern:

Be it known that I, EDWARD KRANTZ, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cleaning Devices, of which the following is a specification.

My invention relates to cleaning devices, and more particularly to the hand propelled type of sweepers for flooring, carpets, and the like.

The principal objects of these improvements are to provide a cleaner in which the contact of the rotary cleaning brush with the surface to be cleaned may be easily and quickly adjusted, and suitably maintained in such adjusted relation, whereby cleaning may be effectively performed upon various kinds of surfaces; to provide a cleaner from which collected dust and dirt may be quickly and easily discharged; to provide a cleaner in which the rotary brush may be readily removed or replaced; and, in general, to provide a cleaning device of simple construction, which is strong and durable and effective in operation. Other objects will appear hereinafter.

A preferred embodiment of my improvements is illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of a suitable form of cleaning device carrying the improved features, this figure being on a somewhat smaller scale than the remaining illustrations; Fig. 2 is a fragment of the device of Fig. 1 but with a few outer parts removed to show hidden construction; Fig. 3 is a perspective of one of the dust collecting pans or pivoted bottom closures; Fig. 4 is a fragment of the opposite side of the device shown in Fig. 1; Fig. 5 is a horizontal sectional view substantially on the line 5—5 of Fig. 1 viewed in the direction of the arrows; and Fig. 6 is a fragmentary rear end view, the rear wheels and associated parts not being shown.

In the construction illustrated my improvements are associated with a cleaner having a suction nozzle 10, a bellows casing 11 and driving wheels 12 operating the bellows through pitmen 13; but as the present invention relates more specifically to the brushing feature of the device, it will be obvious that the same may be equally ap-

plied to a cleaner not provided with the suction cleaning parts.

On the body portion of the device, and conveniently on the suction box 14, I secure, as by screws, side plates 15 and 16 (Figs. 1 and 4) which are preferably of sheet metal, each of these plates being preferably provided with an opening or recess 17 to accommodate the shaft 18 of the rotary cleaning brush 19. This shaft 18 has its opposite ends axially recessed, and in each such recess extends a pin 20 which is rigid upon the leaf spring 21 secured to the bail-like band 22, the band 22 having an elongated hole 20^a (shown in dotted lines in Fig. 1) through which the pin 20 projects. It will be seen that when the spring elements 21 are flexed away from their mounting 22, as shown by dotted lines in Fig. 5, the brush 19 may be removed from the machine, as for cleaning, substitution, or repair, and may as easily and readily be replaced in operative position.

The band or bail 22 is pivotally mounted at its forward ends, as by screws 23, and constitutes the support for the brush 19. The bail 22 may well be a single, integrally formed piece of flat metal and is preferably positioned at the sides and rear of the dust receptacle or casing of which the plates 15 and 16 are the side walls. Centrally of the bail at the rear the lever arm 24 is pivotally secured, as by the rivet-like pivot 25, and the arm 24 is also pivoted, as at 26, to the frame of the machine, or, as shown, to the rear wall of the dust receptacle (see Fig. 6). The free end of the arm 24 terminates in a finger piece 27 projecting outwardly at the side of the machine. A catch or stop 28 is adjustably secured upon the side plate 15, as by screws 29 in elongated openings 30, the bottom portion 31 of which element constitutes a stop for the rod 24 in its lowermost position. The rear edge of the catch 28 is provided with a rack 32, and on the lever arm 24 there is a projection 33 adapted to interfit with the grooves of the rack 32. The construction is such that the lever arm 24 is under a spring pressure which normally holds the projection 33 reasonably tightly upon the rack 32, but permits the finger piece to be raised and lowered by lifting or pressing thereon. It will be seen that when the finger piece 27 is raised or lowered each end of the brush 19 will be

raised or lowered, and equally, owing to the equal spacing of the pins 20 from the pivots 23 respectively. Means are thus provided for quickly and easily raising or lowering the brush 19 so that it will contact the floor with more or less pressure as desired, according to the character of the carpet or other surface which is being cleaned. The vertical adjustability of the element 28 permits the wear upon the brush to be compensated for without sacrificing any of the adjustability provided for sweeping upon different kinds of surfaces, as just mentioned.

The brush 19 is rotated through the engagement of the friction wheels 35 on the shaft 18 with the tread surfaces respectively of driving wheels 36, which wheels 36 are rotatably mounted on the ends of a shaft or rod 37 loosely secured off center intermediate its ends suitably by an eye-bolt 38 to the frame of the machine. The rod 37 projects through the side plates 15 and 16 in a slotted opening 39 in each plate respectively, the arrangement being such that substantially vertical relative movement may exist between the rod 37 and the side plates when the cleaner is in operative position. A spring 40 secured to each side plate and pressing upon the shaft 37 holds each driving wheel upon the floor for traction therewith, and permits suitable yield of the same in passing over irregular objects. The weight of the machine is chiefly carried by the rear wheels 12 and the suction nozzle 10, but the wheels 36, contacting the floor under the spring pressure mentioned, take some of the weight or downward pressure.

When the cleaner is moved upon the floor, either forward or backward, rotary sweeping motion is imparted to the brush 19 and dirt is thrown into the dust chamber D (Fig. 5) on one side or the other of the brush. The dust collecting casing, including the side walls 15 and 16, the front wall 41, the rear wall 42 and the top wall, which is the bottom board of the suction box 14, and which casing may be considered part of the body portion of the device, is open at the bottom except for the two pan-like closures 44. The preferred construction of these closures or bottom walls is well shown in Fig. 3 from which it will be understood that each thereof comprises a substantially flat base part 44^a (preferably of light sheet metal) having small turned up end pieces 45 and an inclining bent over side portion 46, the latter being swept by the brush 19 and constituting a baffle to prevent the escape of the dirt into the space occupied by the brush and thus upon the floor. A pintle or projection 47, which may suitably be the end of a longitudinally extending rod, is preferably secured rigidly at one end of the closure and spaced from the pivot 48.

The pivots 48 hold the closures in position between the side plates 15 and 16 and respectively pass through the side plates, as is well shown in Figs. 2 and 4, and may suitably be small bolts having smooth pivotal ends. One of the side plates, as 15, preferably has two arcuate slots 49 in which the pintles 47 respectively travel, and preferably on the same side plate there is secured the sliding finger-piece 50 provided with elongated openings 51 and 52 and held for substantially vertical movement by the screws 53. The lower end of the finger-piece 50 has the slot-like openings 54 accommodating the pintles 47 and permitting travel therein due to their arcuate movement with respect to the pivots 48 respectively. It will be seen that when the finger piece 50 is raised from the full line to the dotted line position shown in Fig. 2 the closures or bottom walls 44 of the dust receptacle will be moved from a closed to the open position shown by dotted lines, permitting the collected dust to be emptied from the machine. Such emptying is normally performed by first lifting the cleaner off the floor by the driving bail 55 (not shown in full, but common to such machines), and the arrangement of the finger piece 50 is such that the operator can then place a thumb on the top of the machine and a finger on the finger piece 50, thus providing a good grasp and grip upon the entire machine, in a convenient and natural manner, and by a simple finger movement discharge the dust and dirt into a suitable receptacle, such discharge being thus easily controlled. Springs 56, which may suitably be in the form of coils, are secured to the upper wall of the dust collecting casing or to one of the side plates, as 15, near such upper wall, as shown in Fig. 5, and to the closures 44, thus maintaining them normally in closed position.

While I have illustrated and described preferred embodiments of these improvements, some changes and departures may be made from the illustrated details of construction and arrangement within the spirit of the invention, and reference should be had to the appended claims to determine the extent of such departures as are contemplated by me.

I claim:

1. In a cleaner of the character described having side walls and a bottom closure pivotally mounted therein, the combination therewith of means for moving said closure pivotally, said means comprising a finger piece slidably mounted on said side wall, said finger piece having a slotted opening, a projection on said closure spaced from the pivot thereof, one of said side walls having a clearance opening in which said projection travels with an arcuate movement when the closure is moved on its pivot, said pro-

jection being also in the slotted opening of said finger piece, said slotted opening being adapted to permit arcuate movement of said projection when the closure is moved on its axis.

2. In a cleaner of the character described, the combination of a casing having side walls, and a pair of bottom closures spaced apart and pivotally mounted in said side walls, one of said side walls having two clearance openings therein, each of said closures having an operating projection adapted to travel with an arcuate movement in said openings respectively when the closures are pivotally moved, a finger piece mounted on said side wall having said openings, said finger piece being operatively connected to

each of said projections, said finger piece having a finger engaging portion thereof lower than the top of said cleaner when in operative position, the arrangement being such that when said cleaner is lifted horizontally off the floor with the thumb of the operator on the top thereof said finger piece may be engaged by the operator's finger and caused to move said closures from a closed to an open position, and spring means adapted to retract said closures into a closed position when the operator's finger is removed from said finger piece.

EDWARD KRANTZ.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."