M. S. WRIGHT.

VACUUM CLEANING APPARATUS FOR CARPETS AND THE LIKE.

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1,095,258. **Patented May 5, 1914.**

Fig. 1.

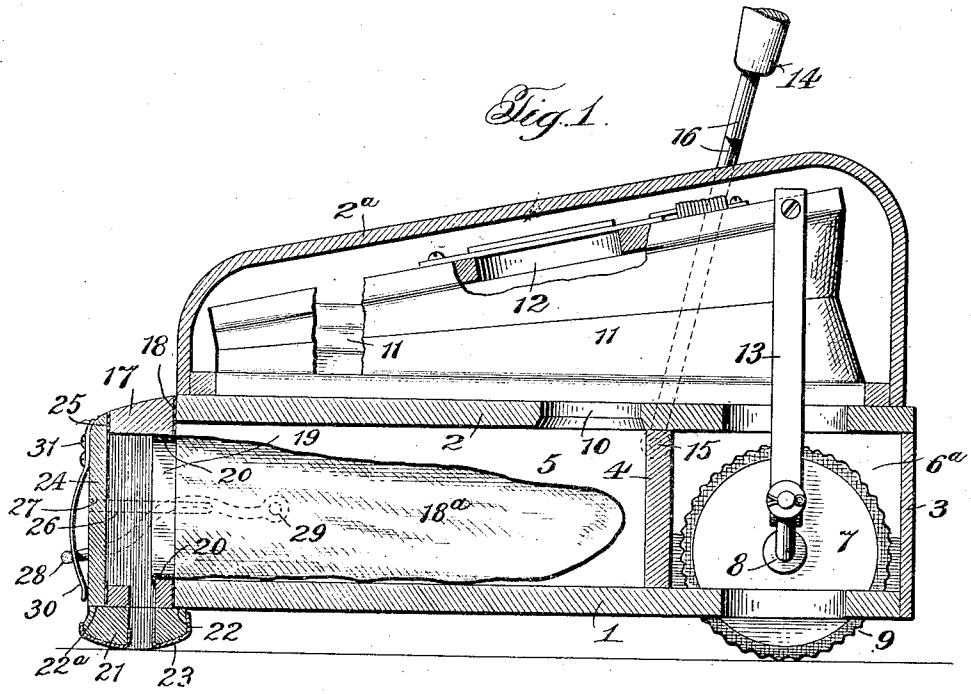
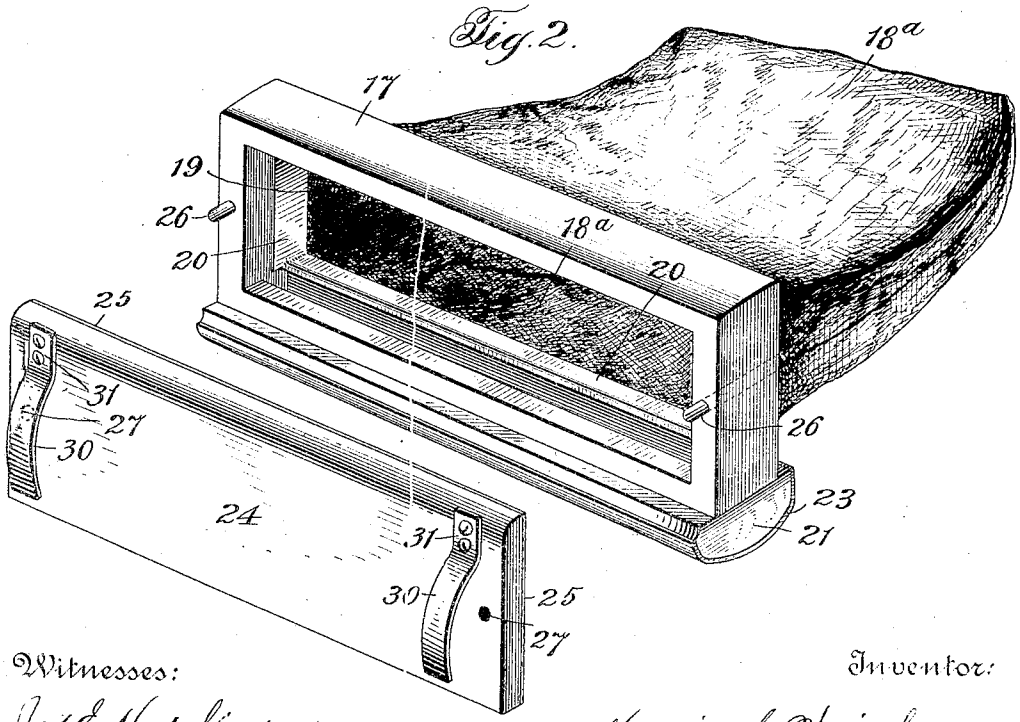


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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VACUUM CLEANING APPARATUS FOR CARPETS AND THE LIKE.

1,095,258. Specification of Letters Patent. Patented May 5, 1914.

Application filed March 10, 1913. Serial No. 753,330.

To all whom it may concern:

Be it known that I, MORRIS S. WRIGHT, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Vacuum Cleaning Apparatus for Carpets and the like, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to vacuum cleaning apparatus for carpets and the like.

The invention has more especial reference to an apparatus of the character stated, having a dust receiving chamber and dust inlet nozzle to engage a surface to be cleaned, and the apparatus being portable whereby as it is moved back and forth over the surface the dust and the like will be drawn up into and through the nozzle to the dust receptacle, where the dust laden air is properly filtered, and it is the primary object of the invention to simplify and reduce the cost of manufacture of constructions of this character, and provide novel details in the construction and arrangement of parts with a view to higher efficiency generally.

More particularly, the present invention has reference to the novel construction and arrangement of dust inlet nozzle, the associated dust receiving and filtering receptacle, and the closure for the open end of the receptacle.

It has been the custom heretofore to form the nozzle and dust receptacle or filtering bag of detached elements, the receptacle having a collar at its open end adapted to engage a relatively fixed part of the machine and to be held in place by the application of the nozzle.

In the present construction, it is one of the aims and objects to do away with the collar for the bag as an independent element and constitute the hollow wall of the nozzle as a suitable collar or reinforce for the mouth end of the bag.

Among the advantages accruing from the improved construction wherein the dust bag is connected directly to the nozzle, may be noted that an air-tight engagement is always maintained between the end of the bag and nozzle, the bag may be removed with the nozzle and carried to a place of deposit, and the nozzle constitutes a closure for the bag which cannot be accidentally displaced and cause the contents to leak out of the same.

A further improvement resides in the provision of a novel construction of nozzle having an opening in its front wall, whereby the contents of the bag may be readily discharged therefrom, together with a movable closure for said opening.

Other improvements and novel details in the construction and arrangement of parts will be appreciated from the detailed description below, which is to be read in connection with the accompanying drawings forming a part hereof, and wherein I disclose a preferred embodiment of the invention for the purpose of illustration.

In the drawings, Figure 1 is a longitudinal section of the apparatus, Fig. 2 is a perspective view of the nozzle with the connected bag and the nozzle closure removed.

Referring more particularly to the drawing, wherein like reference numerals refer to corresponding parts throughout the views, a suitable casing for the apparatus is shown, the same including a bottom wall 1, a longitudinally extending partition 2, a cover member 2^a supported on the partition 2, a rear end wall 3, and a vertical wall 4. The walls 1, 2 and 4 form with the side walls 6 of the casing a suitable dust box 5. The chamber 6^a between the vertical partition 4 and rear end wall 3 forms a suitable wheel chamber, a traction wheel 7 being positioned in said chamber and supported on a shaft 8 at a point intermediate the sides of the casing. The wheel 7 may have a suitable rubber or other yieldable tread 9 to engage the surface. A valve controlled opening 10 is provided in the longitudinal partition 2 adjacent the rear end of the dust box, and supported on said partition 2 is a suction creating means preferably taking the form of a plurality of bellows 11, the outer walls of which have suitable valve controlled openings 12, and through the medium of suitable pitman rods 13 said outer wall of the bellows receive their movement from crank extensions of the shaft 8. It is

noted in this connection that the bellows are alternately acting to the end that as one is expanded the other is collapsed and in this way a constant suction is provided in the chamber 5. A suitable push handle 14 of any desired construction is pivotally connected at 15 to the side walls of the casing through the medium of a forked end 16. The front end of the dust box is open, and adapted to be fitted to said front end is a suitable nozzle 17, a suitable packing 18 being interposed between the front end of the walls surrounding the dust box, and the rear surface of the nozzle. The nozzle is of a construction to form a collar and supporting medium for the mouth end of a suitable dust receptacle preferably taking the form of a flexible bag 18^a. This bag 18^a has a substantially unrestricted open mouth and is connected directly to the nozzle. This connection is preferably provided by a substantially rectangular opening 19 in the rear surface of the nozzle connecting with the hollow interior of the nozzle. The edges of the bag at the mouth end conveniently overlie the walls surrounding the opening 19, the bag being secured at these points preferably by gluing, and a suitable protecting band or washer 20, say of leather, overlies the connected portions of said bag, thereby forming an air-tight engagement between the bag and the nozzle. The nozzle is provided adjacent its lower end with a mouth-piece 21 projecting laterally beyond opposite sides of the body portion of the nozzle, whereby to provide a shoulder 22 adapted to engage the under surface of the bottom wall 1 of the dust box when the nozzle is in position. A suitable metallic reinforce 23 preferably overlies the under surface of the mouth piece, and said metallic reinforce as well as the mouth piece of the nozzle having registering openings extending substantially from end to end of the nozzle and communicating with the interior of the nozzle, and through said hollow chamber to the interior of the dust receptacle. It will be observed that the inlet end of the nozzle mouth piece is in direct communication with the interior of the dust receptacle 18^a and that there is no obstruction for the dust as would be the case were a separate collar for the dust receptacle provided. Again, in the absence of the separate collar the size of the dust receptacle may be proportionately increased.

In order to provide a suitable discharge for the contents of the dust receptacle, I provide an opening at the front of the nozzle, and preferably this opening is of a size to form an unrestricted outlet passage for the open mouth end of the dust receptacle. This opening is provided with a removable closure 24 for the nozzle, said closure being preferably of a size and shape to conform with the outline of the nozzle, and a suitable packing 25 being interposed between said closure 24 and the wall of the nozzle, the packing being conveniently secured to the inner surface of the closure. Suitable guides are provided for assisting in the ready application of the removable closure 24 to the nozzle, said guides preferably taking the form of dowel pins 26 projecting outwardly from the nozzle adjacent opposite sides and adapted to engage in suitable sockets 27 in the closure. The shoulder 22^a of the mouth-piece of the nozzle preferably constitutes a rest for the lower edge of the closure 24. The dowel pins are of a length to project through and beyond the opposite surface of the nozzle whereby to frictionally engage in sockets in the front end wall of the dust box.

In order to secure the nozzle in position and also to secure the closure of the nozzle in place on the nozzle I preferably provide a common securing means, the same taking the form of a swinging bail 28, the opposite arms of which are pivoted at 29 to the sides of the casing, and the loop portion of which is adapted to swing over the removable closure and into engagement with suitable engaging bow spring members 30 secured at 31 adjacent the top of the removable closure, and said spring members being free at their opposite end.

The operation is as follows: It being assumed that the nozzle is in position on the apparatus, with the dust receptacle in place within the dust box, the operator by grasping the handle 14 imparts back and forth movement to the apparatus over the surface to be cleaned, the mouth piece of the nozzle being in contact with the surface. The movement of the wheel 7 actuates the movable wall of the bellows 11 through the medium of pitman rods 13, thereby creating a vacuum in the dust box chamber 5 which will suck the dust laden air through the nozzle into the flexible receptacle 18^a, thereby filtering the air and leaving the dust and particles within the dust receptacle 18^a. When it is desired to remove the contents of the receptacle 18^a, it is only necessary to swing the bail 28 about the pivot 29, when the nozzle may be removed, and by the removal of the nozzle, the dust bag is carried therewith. The nozzle forms a closure for the open end of the bag which may be carried to the place of deposit, when the contents of the bag may be discharged by removing the closure 24, it being noted in this connection that the closure 24 after the nozzle is released by the bail 28 is only held in position by frictional contact with the engaging members 26, 27. When the closure 24 is detached, it will be observed that the wall of the nozzle member forms a collar entirely around the open or mouth end of the dust receptacle to the end that an unre-

stricted outlet for the contents of the bag at this point is provided.

The removable closure of the nozzle constitutes a closed top for the dust receptacle in transporting the same to a place of deposit, and these parts not only protect the hands from dust in this operation, but form a relatively large grasping surface, an advantage over those structures in which a relatively narrow collar is provided at the mouth end of the dust receptacle.

What I claim is:

1. In a vacuum cleaner, the combination of a horizontally disposed dust box, a nozzle at the front end of the dust box having a dust inlet opening at its lower edge, and an elongated transversely extending opening communicating through the front with the interior of the dust box, and through which the collected dust is removed, a movable closure for the dust box opening, vacuum creating means on the dust box, a wheel support at the rear of the dust box, and an operative drive connection between the wheel support and vacuum creating means.

2. In an apparatus of the character described, the combination of a movable casing having a dust chamber, a removable nozzle at one end of the dust chamber having an inlet adapted to pass over a surface to be cleaned, the nozzle having an opening in one wall thereof, and a movable closure for the opening of the nozzle.

3. In an apparatus of the character described, the combination of a casing having a dust chamber, a nozzle forming a closure for the dust chamber, said nozzle having a dust inlet opening and a dust discharge opening, and a bodily detachable closure for the last mentioned opening.

4. In an apparatus of the character described, the combination of a casing having a dust chamber, a removable nozzle at one end of the dust chamber, an independently movable wall on the nozzle forming a closure for the dust chamber, and means on the casing engaging the movable wall to retain the same in closed position and also to maintain the nozzle in place on the casing.

5. In an apparatus of the character described, a movable casing having a horizontally disposed dust box, vacuum creating means positioned thereon and in communication therewith, a nozzle at one end of the dust box having an inlet opening to engage a surface to be cleaned, a horizontally disposed filtering dust receptacle secured to the nozzle, and a releasable closure on the front wall of the nozzle for the mouth of the receptacle.

6. In an apparatus of the character described, the combination of a casing having a dust chamber, a removable nozzle at one end of the dust chamber having a discharge opening, a movable wall forming a closure for the said opening of the nozzle, and a flexible dust bag fixedly connected at its open end to the nozzle and adapted to discharge through said opening.

7. In an apparatus of the character described, the combination of a horizontally disposed substantially rectangular portable casing having a dust chamber, a nozzle projecting downwardly from the forward end of the casing and having a dust inlet opening to pass over the surface to be cleaned, said opening communicating with the dust chamber, dust separating means within the chamber, and a front end wall on the nozzle for the dust chamber removable independently of the nozzle for discharging the dust through the wall of the nozzle.

8. In an apparatus of the character described, the combination of a casing having a dust chamber, a nozzle having a dust inlet opening communicating with an opening in its back, a flexible dust bag secured at its mouth to the wall surrounding said back opening, a removable closure for the front of the nozzle, and coöperating means on the casing and closure for holding both the closure and nozzle in place.

9. In an apparatus of the character described, the combination of a dust box having an open end, vacuum creating means associated with the dust box, a dust receptacle having an open mouth, a hollow nozzle forming a collar for said mouth of the receptacle, said nozzle having a connected mouth piece at its lower end to engage a surface and also having a discharge opening, a removable closure for said discharge opening and the open end of the dust box, and common means on the nozzle engaging the wall of the dust box and said closure to form a temporary retaining means between these parts.

10. In an apparatus of the character described, the combination of a dust box having an open end, vacuum creating means associated with the dust box, a dust receptacle having an open mouth, a hollow nozzle forming a collar for said mouth of the receptacle, said nozzle having a connected mouth piece, the nozzle having an opening at its front, a removable closure to engage the nozzle at said front opening and form a closure for the open end of the dust box, a dowel projecting through the nozzle, one end of which is adapted to engage a recess in the wall of the dust box and the other end of which is adapted to engage a recess in the closure, and means on the casing for securing these parts in place.

11. In an apparatus of the character described, the combination of a dust box having an open end, vacuum creating means associated with the dust box, a dust receptacle having an open mouth, a hollow nozzle connected to and forming a collar for said mouth of the receptacle, said collar having

a connected dust inlet mouth piece and an open front, a removable closure to overlie the open front of the nozzle and form a closure for the open end of the dust box, the opening of the mouth piece being in direct communication with the interior of the dust receptacle without intervening obstructions.

In testimony whereof I affix my signature in presence of two witnesses.

MORRIS S. WRIGHT.

Witnesses:
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C. A. KREY.