L. D. MATCHETTE.

PORTABLE VACUUM CLEANER.

APPLICATION FILED OCT. 2, 1912. RENEWED APR. 17, 1914

1,099,560.

Patented June 9, 1914.

2 SHEETS—SHEET 1.

Fig. 2.

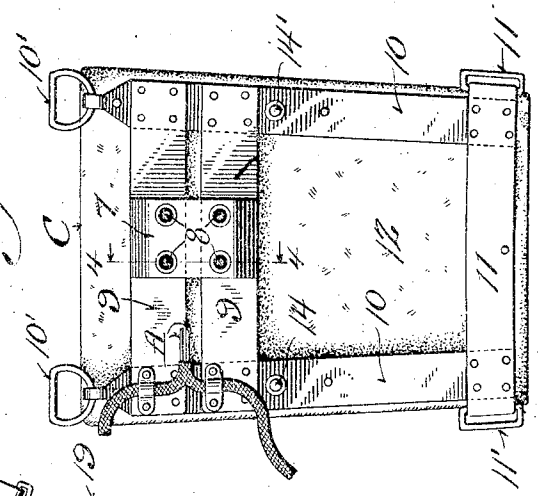
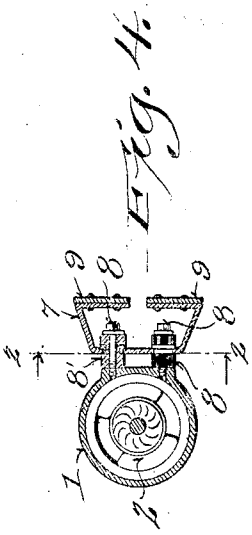


Fig. 4.



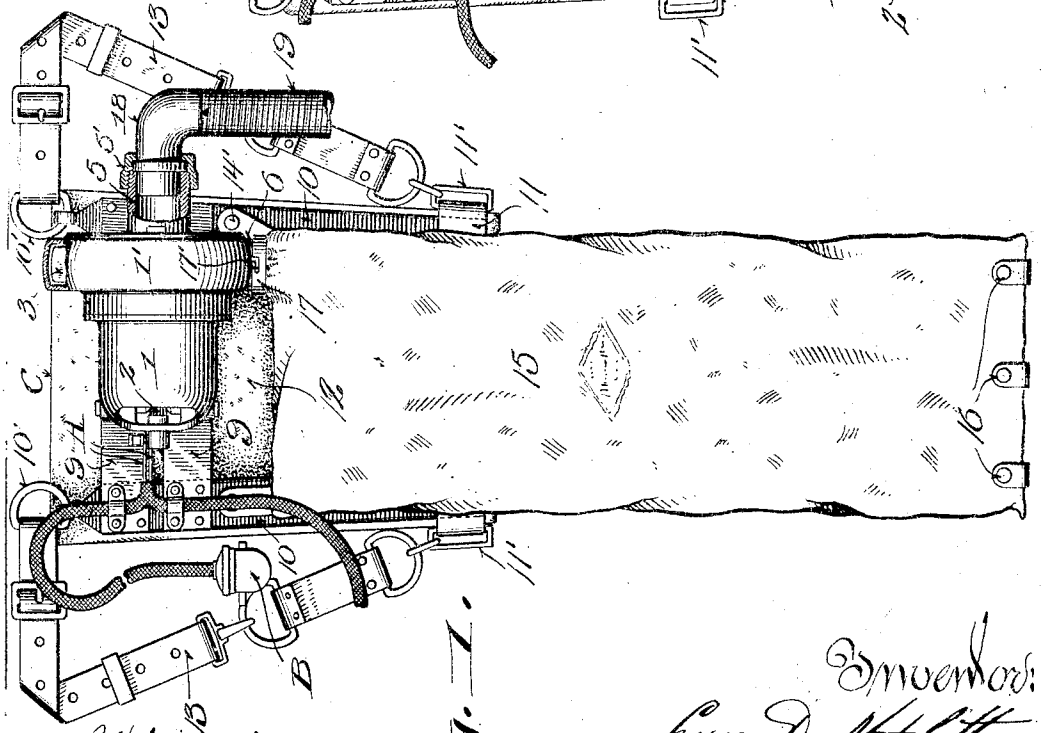


Fig. 1.

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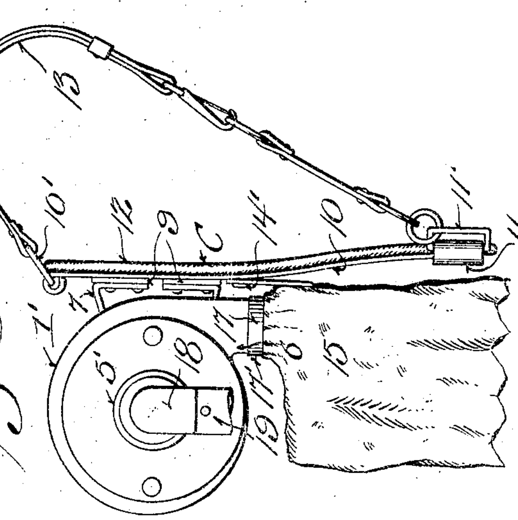

Fig. 3.

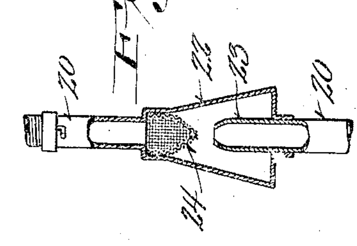

Fig. 5.

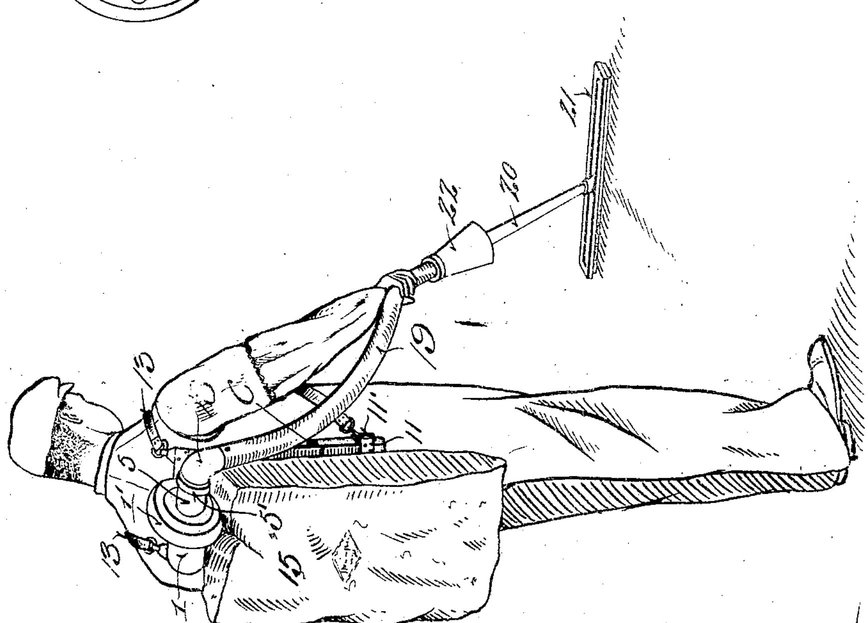

Fig. 6.

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UNITED STATES PATENT OFFICE.

LOUIS D. MATCHETTE, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO B. F. STURTEVANT COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PORTABLE VACUUM-CLEANER.

1,099,560. Specification of Letters Patent. Patented June 9, 1914.

Application filed October 2, 1912. Serial No. 723,472. Renewed April 17, 1914. Serial No. 832,634.

To all whom it may concern:

Be it known that I, LOUIS D. MATCHETTE, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Portable Vacuum-Cleaners; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention refers to portable vacuum cleaners of the general character described in an application for patent for improvements in portable vacuum cleaners filed by me July 31, 1911, Ser. No. 641548.

The object of my present invention is to simplify and perfect a portable machine of the above referred to character in its various details, such simplification of the structural features being the result of use both by the public and tests under various conditions and circumstances to which the device may be subjected.

Specific objects of my invention are to provide a portable machine, its assemblage being such that a hose coupling connection between the suction producer and the tool-carrying hose is effected in juxtaposition to an arm socket of an operator, whereby the hose is free to swing with the arm movement of said operator; and to provide a saddle for the support of the machine having a shock-absorbing means attached thereto for suspending the suction producer, whereby the vibrations incidental to motion of the producer will not be felt by the operator.

With the above and other minor objects in view the invention consists in certain peculiarities of construction and combination of parts as set forth hereinafter with reference to the accompanying drawings and subsequently claimed.

In the drawings Figure 1 represents a rear elevation of a portable cleaning machine embodying the features of my invention, with parts broken away and parts in section to more clearly illustrate certain structural features; Fig. 2, a detailed face view of a saddle to which the apparatus is attached, parts being removed and parts in section, the section being indicated by line 2—2 of Fig. 4; Fig. 3, a side elevation of the apparatus with certain parts broken away; Fig. 4, a detailed section of the spider connection between the saddle and vacuum producer casing, the section being indicated by line 4—4 of Fig. 2; Fig. 5, a detailed sectional elevation of the tool handle illustrating an interposed trap, it being understood that this trap for convenience may, in some instances, be inserted at any point between the tool and suction mouth of the vacuum produced casing, and Fig. 6, a perspective view of an operator equipped with a machine showing the relation of the flexible suction hose and arm of said operator.

Referring by characters to the drawings, 1 represents a casing having an electric motor 2 located therein, which motor carries a fan 3 constituting a vacuum producer. The fan is mounted in a spirally formed housing 1′, the same constituting part of the casing and is provided with a centrally arranged suction nozzle 5 and tangentially disposed discharge nozzle 6. The electric motor is connected to a suitable source of energy by feed wires A under control of a switch B, which switch is secured to ends of branch wires and is adapted to swing in a position conveniently accessible to the hand of an operator, whereby it can be manipulated. The casing 1 is secured to a metallic spider 7 by means of bolts 8, which bolts pass through apertures in the head of said spider and are surrounded by interposed buttons 8′ that are formed from some yieldable insulating material. The feet of the spider are permanently secured to transverse flat strips 9, 9, that constitute members of a shoulder saddle C, the same being provided with longitudinal flat strips 10, 10, and a similar bottom connecting strip 11, all of which strips are riveted together and carry a suitable pad 12 that is adapted to rest against the back and shoulders of the operator. The upper ends of the side strips 10 and terminals of the lower strip 11 of the saddle carry rings 10′, 11′, respectively, for connection with adjustable shoulder straps 13 which are arranged to be passed over the arms of the operator, as best shown in Fig. 6, whereby the saddle is suspended centrally of the back and between the shoulder blades of said operator. The vertical strips 10 of the saddle also carry heads 14 that are adapted to receive snaps 14′ that are mounted upon ears which extend from a dust receiving bag 15, the bag being composed of any suitable porous textile material, having a discharge mouth that

is closed by snaps 16, which closure connection forms no part of my present invention. As best shown in Fig. 1, the ears carrying the snaps thus serve as means for suspending the bag or dust receiver, together with its load, from the saddle frame. The bag or receiver is also provided with an intake nozzle 17 having bayonet jointed slots that are adapted to engage pins 17', which pins extend from the discharge nozzle 6 of the casing, this detachable coupling connection being for the purpose of readily removing the bag, attention being called to the fact that the coupling connection so arranged is free from load strain.

The end of the suction nozzle 5 carries a coupling ring 5' which is in threaded union therewith and is provided for the reception of a shouldered coupling elbow 18, the same being oscillatorily mounted within the mouth of the suction nozzle. Fastened to the downturned end of the coupling elbow is a flexible suction hose section 19, which section, as shown, is preferably formed from spirally wound metal strips interlocked to form an air-tight tube, it being understood however that any flexible hose may be utilized for the purpose. Owing to the transversely disposed position of the casing 1 and its suction nozzle 5, it is apparent that the mouth of said nozzle is brought to a position just rearward of the arm socket of the operator and owing to the coupled elbow an articulated union is formed at this point which is near the arm socket of the operator, the flexible hose being extended parallel with the arm of said operator with its lower end coupled to the end of a hollow handle 20 that carries a tool 21 of any suitable design.

Interposed in the handle is a shell 22, the same forming a chamber into which is extended a section 23 of the handle through which air is discharged against a conically formed deflecting screen 21, whereby coarse material such as threads or small bits of paper may be trapped. Thus the air cleared of the coarse matter is permitted to enter the flexible hose section and fan casing and from thence the same is discharged into the receiver or dust bag.

From the foregoing description it is apparent that by the arrangement, with relation to the flexible hose section 19 and arm of the operator, freedom of movement is had, whereby the tool may be manipulated freely without utilizing any of the strength of the operator for flexing said hose. Attention is also called to the fact that the casing containing the vacuum producer is offset from the saddle and supported by a shock-absorbing spider or bracket, whereby the vibratory motion incidental to rotation of the fan is not appreciably felt by the operator and that by interposing the insulating buttons all danger of shock from the live wires is eliminated. Furthermore by the details in construction as shown, wherein the saddle is formed of flexible strips provided with suitable padding a light and comfortable device is had which can be readily worn for hours without discomfort to an operator who, owing to the freedom of movements, can as readily manipulate the device overhead, upon cornices of buildings, or upon ladders for cleaning purposes, the only connection between the operator and a fixed source of power being the light feed wires, which can readily be taken care of.

I claim:

1. A portable cleaning machine comprising a saddle adapted to fit the back of an operator, a spider, a transversely disposed casing secured to the spider, a suction producer therein, a suction nozzle extending from one end of the casing and adapted to be alined in juxtaposition to an arm socket of an operator, a flexible hose, and an oscillatory coupling connecting the upper end of said hose and said suction nozzle.

2. A portable cleaning machine comprising a saddle adapted to fit the back of an operator, a casing secured to the saddle, a suction producer therein, a suction nozzle extending from the casing and adapted to be alined in juxtaposition to an arm socket of an operator, a flexible hose, and an oscillatory coupling connecting the upper end of said hose and said suction nozzle.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

LOUIS D. MATCHETTE.

Witnesses:
GEO. W. YOUNG,
M. E. DOWNEY.