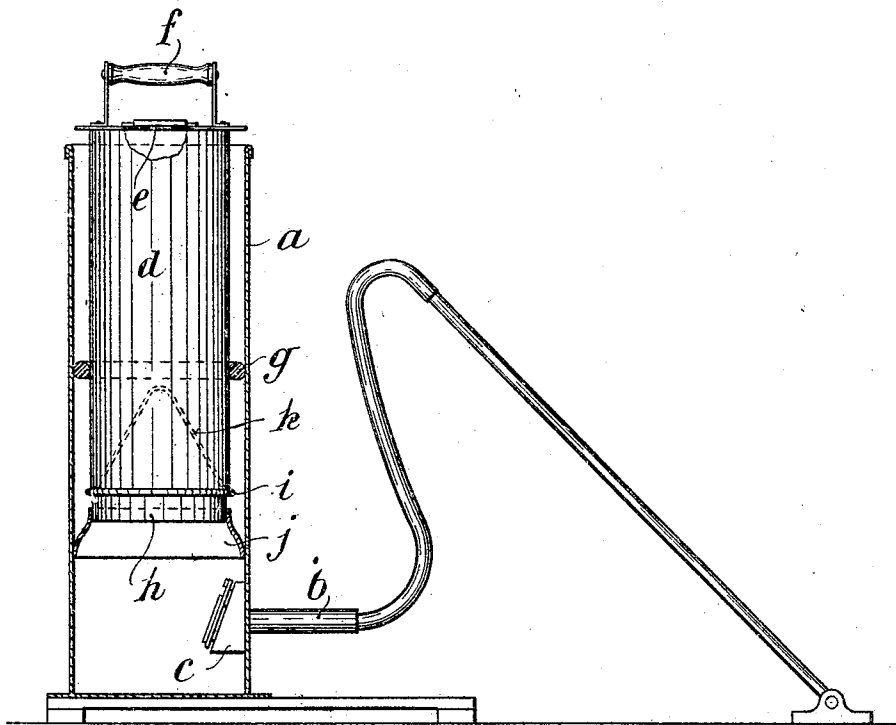


H. & S. L. WHITFIELD.
SUCTION DUST REMOVING APPARATUS.
APPLICATION FILED MAR. 17, 1910.

988,158.

Patented Mar. 28, 1911.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HARRY WHITFIELD, OF LONDON, AND SAMUEL LAING WHITFIELD, OF BEDFORD PARK, ENGLAND.

SUCTION DUST-REMOVING APPARATUS.

988,158.

Specification of Letters Patent.

Patented Mar. 28, 1911.

Application filed March 17, 1910. Serial No. 549,918.

To all whom it may concern:

Be it known that we, HARRY WHITFIELD, of 10 Dane street, London, England, and SAMUEL LAING WHITFIELD, of 7 Bedford Road, Bedford Park, in the county of Middlesex, England, have invented certain new and useful Improvements in and Relating to Suction Dust-Removing Apparatus, of which the following is a specification.

The invention relates to suction dust removing apparatus and has for its object to provide a simple and improved construction of apparatus.

Apparatus made in accordance with this invention comprises a barrel, a piston, one or more packing rings disposed between the piston and barrel and adapted to roll between the surface of the barrel and the surface of the piston, an inlet to the barrel, a valve to the inlet, and a filter, the arrangement being such that the dust laden air is drawn directly into the barrel without passing through the filter, the filter being so disposed that the dust is arrested as the air is expelled from the barrel.

The drawing is a cross section of a hand power apparatus constructed in accordance with this invention.

The apparatus comprises a cylindrical barrel *a* closed at the base and provided with an inlet *b* and valve *c*, an elongated cylindrical piston *d* provided with an outlet valve *e* and a handle *f*. Between the piston and barrel is disposed a rubber packing ring *g* of circular cross section; the inner end of the piston is provided with a recessed part *h* and a bead or collar *i* sufficiently high to form a stop to prevent the rubber rings from rolling off or being rolled off inadvertently but sufficiently low to permit of their being forced over said bead on to the recessed part *h*, should occasion arise. The inner end of the piston *d* is provided with a ring *j* of felt or similar material adapted to bear against the barrel *a* for the purpose of keeping it clean. The piston is also provided with a suitable filtering surface *k* of conical or other form.

It has been found that a packing made

and applied in accordance with the invention is liable to creep toward the inner end of the piston and that to facilitate the withdrawal of the piston for removal of the dust it is preferable in the case of hand operated machines in which the barrel is used as a dust box to provide a stop as shown above, over which the packing will ride when a slightly increased force is applied.

In operation the dust laden air is freely drawn into the pump barrel on the upward or suction stroke of the piston without being passed through any screen or filter, on the delivery or downward stroke the air is forced through the filter and the dust is retained in the lower part of the pump barrel.

To empty out the dust after collection the piston is entirely withdrawn and the barrel inverted; should the packing have been forced over the rib in withdrawing the piston it should be replaced before the piston is again inserted in the cylinder.

Instead of disposing the filter as shown at *k* it could be placed over the outlet *e* and could comprise a wire frame covered with a filtering material. The cylindrical piston could be provided with one or more layers of cotton wool, felt, wire gauze or other filtering media.

In apparatus made in accordance with this invention the labor in working the apparatus is distributed over the up and down stroke by reason of the filter being placed on the outlet instead of on the inlet and further the apparatus is extremely simple as no separate dust box is necessary, though in some modified forms it may be added.

It has been found that the presence of dust does not adversely affect the working of the mechanism.

Apparatus made in accordance with this invention is well adapted to remove dust from carpets and furniture and is especially suited for removing dust from printers' type cases.

What we claim and desire to secure by Letters Patent is:—

In suction dust removing apparatus the

combination of a barrel, a hollow cylindrical piston open at the base, packing disposed between the surface of the piston and the surface of the barrel, a valved inlet to the barrel, a valved outlet from the piston, and a filter at the base of the piston.

In witness whereof, we have hereunto

signed our names in the presence of two subscribing witnesses.

HARRY WHITFIELD.
S. LAING WHITFIELD

Witnesses:

ALFRED BEESLEY CAMPBELL,
ALFRED EDWARD GRAY.