

(No Model.)

W. A. HEPBURN.
FILTER OR STRAINER.

No. 418,719.

Patented Jan. 7, 1890.

Fig. 1.

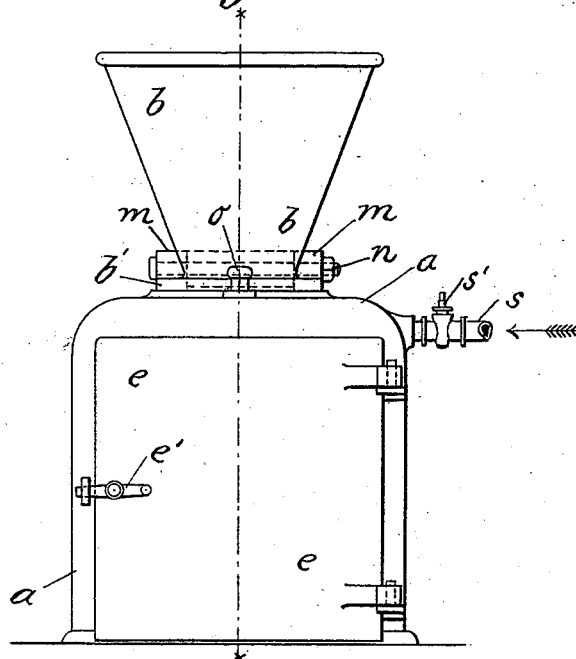
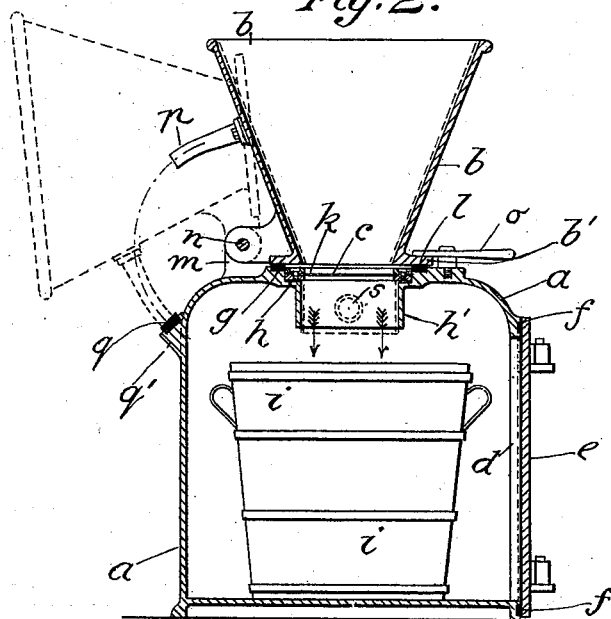


Fig. 2.



Witnesses.
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per
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UNITED STATES PATENT OFFICE.

WILLIAM ARCHIBALD HEPBURN, OF RAMSBOTTOM, COUNTY OF LANCASTER,
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FILTER OR STRAINER.

SPECIFICATION forming part of Letters Patent No. 418,719, dated January 7, 1890.

Application filed October 16, 1888. Serial No. 288,292. (No model.) Patented in England June 18, 1884, No. 9,135; in France March 19, 1885, No. 167,749; in Belgium March 20, 1885, No. 62,848, and in Austria-Hungary May 19, 1886, No. 2,819 and No. 19,174.

To all whom it may concern:

Be it known that I, WILLIAM ARCHIBALD HEPBURN, dyer and bleacher, a subject of the Queen of Great Britain, residing at Ramsbottom, in the county of Lancaster, Kingdom of Great Britain, have invented new and useful Improvements in Strainers or Filters, (partly included in English patent, No. 9,135, June 18, 1884; France, No. 167,749, March 19, 1885; Belgium, No. 62,848, March 20, 1885; Austria-Hungary, No. 2,819 and No. 19,174, May 19, 1886,) of which the following is a specification.

This invention relates, principally, to that class of filters and strainers which are used in dye, print, finishing, or other works, for straining or filtering colors, china-clay, or other semi liquids or fluids, and in which the operation of straining or filtering is effected by means of a vacuum.

This invention has for its objects to provide means whereby the filtering medium is easily accessible and can be readily removed, exchanged, and cleaned and the filtered substance readily removed. I attain these objects by the apparatus illustrated in the accompanying drawings, in which—

Figure 1 is a front view, and Fig. 2 a sectional side elevation at line *x x*, of my improved filter or strainer.

The vacuum-chamber *a* is formed on its side with an opening *d*, in front of which is hinged a door *e*, arranged to fit against an india-rubber packing *f*, for the purpose of closing the vacuum-chamber *a* hermetically by means of the latch *e'*. In the top of the vacuum-chamber *a* is formed an opening with two annular recesses *g* and *h* around it, and a flange *h'* depending therefrom, below which is placed a removable receptacle *i*, resting on the bottom of the vacuum-chamber *a*. Into the lower annular recess *h* is loosely fitted the filtering medium *c*, which consists of wire-gauze or other very finely-perforated material suitable for the intended operation, fitted between two rings *k*, secured together by means of screws. Into the top annular recess *g* and around the filtering medium *c* is fitted an india-rubber ring or packing *l*, projecting slightly, for the flange *b'* of the hopper *b* to rest on. Two eyes *m* are

cast or formed outside on top of the vacuum-chamber *a*, to which is attached, hinge-like, by means of the pin *n*, the hopper *b*, formed below with a flange *b'*, and resting on the india-rubber ring or packing *l*. This hopper *b* is kept in position over the filtering medium *c* in smaller sizes by means of the latch *o*, pivoted outside to the top of the vacuum-chamber *a*, whereas in larger sizes of filters the latch *o* may be dispensed with, the weight of the hopper *b* itself being sufficient to retain it in position over the filtering medium *c*. The object of the hinge *n* is to facilitate a quick removing of the hopper *b*, so as to give ready access to the filtering medium *c* for the purpose of removing the same or the matter deposited thereon by simply swinging the hopper *b* backward into the position shown in dotted lines. The hopper *b* is furnished with an arm or rest *p*, which, when the hopper *b* is swung back into the position shown in dotted lines, meets the india-rubber buffer *q*, fitted into the raised part *q'* on the back of the vacuum-chamber *a*, and serves as a rest for the hopper *b*. The vacuum-chamber *a* is brought into connection with a vacuum source, preferably with the condenser of a steam-engine, where such is in existence, or with a vacuum-pump, by means of the pipe *s*, having a valve *s'*, and being in communication with the interior of the vacuum-chamber *a*.

For filtering acid liquids, the hopper *b* and flange *h'* are lined with copper. (See dotted lines.)

Having now described and ascertained the nature of my invention, what I claim, and desire to secure by Letters Patent, is—

In a vacuum filter or strainer, the following instrumentalities in combination: first, a vacuum-chamber *a*, containing a removable receptacle *i*; second, a hopper *b*, hinged to the vacuum-chamber *a*, and, third, a filtering medium *c*, interposed above the removable receptacle *i*, between the vacuum-chamber *a* and hinged hopper *b*, substantially as set forth.

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Witnesses:

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