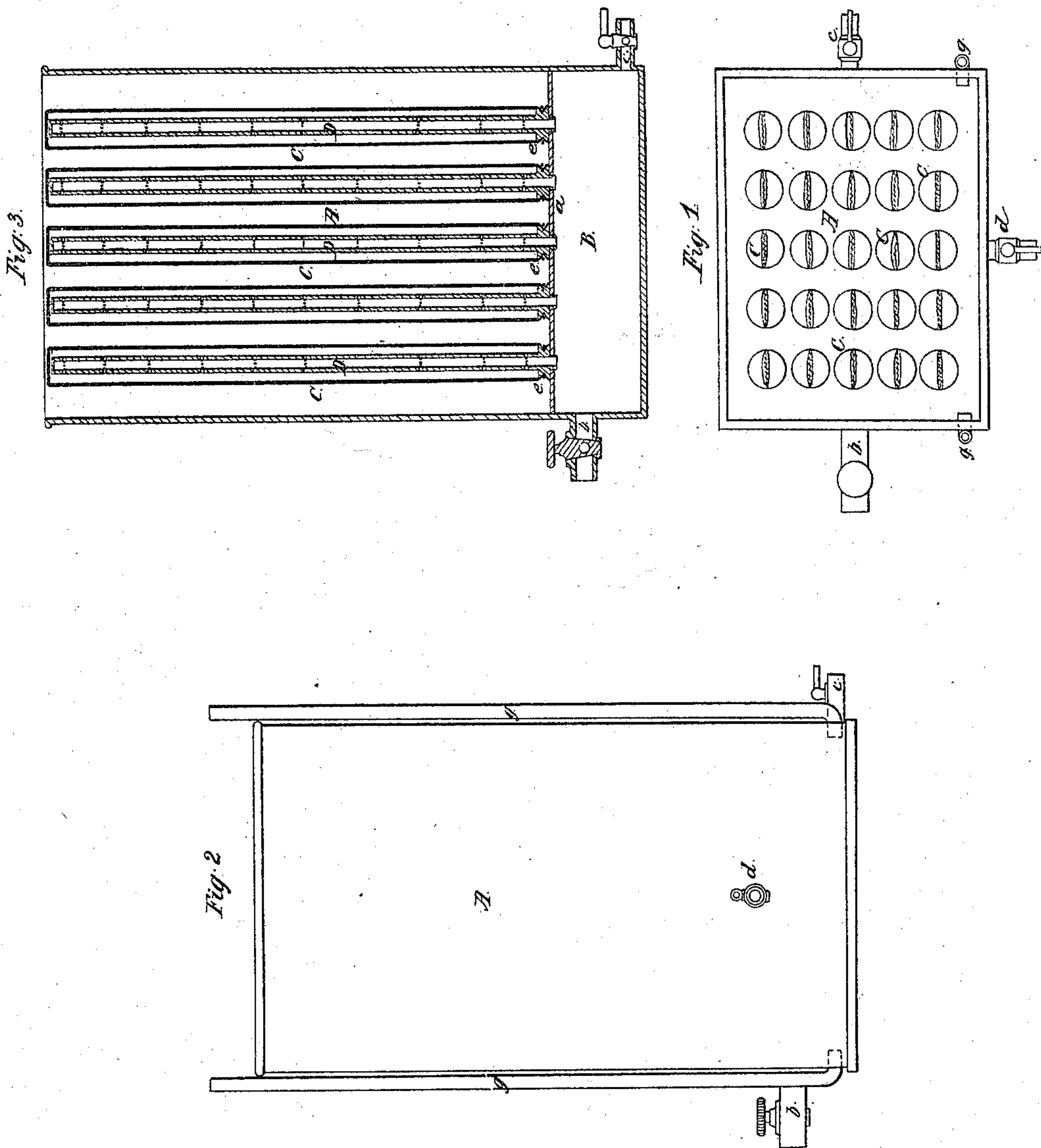


G. A. JASPER.  
BAG FILTER FOR SYRUPS, &c.

No. 42,291.

Patented Apr. 12, 1864.



Witnesses:

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# UNITED STATES PATENT OFFICE.

GUSTAVUS A. JASPER, OF CHARLESTOWN, MASSACHUSETTS.

## IMPROVED BAG-FILTER FOR SIRUPS, &c.

Specification forming part of Letters Patent No. 42,291, dated April 12, 1864.

*To all whom it may concern:*

Be it known that I, GUSTAVUS A. JASPER, a resident of Charlestown, in the county of Middlesex and State of Massachusetts, have invented an Improved Bag-Filtering Apparatus; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a side elevation, and Fig. 3 a vertical section, of it.

In what are called "bag-filters," as employed in sugar-refineries and for filtering sirup, the liquor to be filtered has generally been suffered to flow directly into the bag or bags of such filters and thence in a direction from the inside to the outside of each bag. In consequence thereof the scum and impurities or deposits will remain within the bag or bags, which subsequently require to be removed from their cistern and be cleansed on their inner surfaces.

With my invention the sirup is driven through each bag from its outside to its inside surface, and therefore the extraneous matters will remain outside of the bag, the liquor flowing into the bag laterally and thence down through it and into a receiving-chamber communicating with the interior of each bag. The several bags are arranged within a cistern or reservoir, into which the liquor or sirup to be filtered is placed or suffered to flow. To cleanse the bags, steam is to be caused to rush into the receiving chamber underneath the bags, and from thence into each of the bags, and through its sides and into and through the cistern or reservoir.

In carrying out my invention I make use of, as an important auxiliary thereto, a foraminous pipe or hollow post to each filtering-bag, such pipe or post being made to open at its lower end into the receiving-chamber. It is also provided not only with an annular groove or neck, in which the bag at its neck is to be tied, but is to have at its lower end a screw, by which it may be screwed and fixed to the bottom of the cistern.

In the drawings, A denotes the receiving cistern or reservoir as having underneath its bottom *a* a close chamber, B, provided with an induction-pipe, *b*, and an eduction-cock, *c*. There is also an eduction-cock, *d*, at the bottom of the cistern A.

The series of filtering bags (made of cloth, leather, or other suitable fabric) are exhibited at C C C, &c., as arranged vertically within the cistern A, each of the said bags being supported by a hollow foraminous upright or pipe, D, which at its lower end screws into the bottom *a* and opens into the chamber B. Each of the said pipes or standards has numerous perforations or fine holes through its sides, and, furthermore, it has just above its screw *d* a grooved neck, *e*, which is circumscribed by the bag, which is fastened to the neck by a string wound about them and suitably tied.

I consider the foraminous tubes or standards as auxiliary to my main invention or improvement, and as a very useful means of supporting the bags in their positions, as well as of enabling them to be removed from the cistern as circumstances may require. When the tubes are not used, each bag may be properly supported at its upper end, its lower end being affixed to a tube or nozzle projecting upward from the bottom of the cistern. One or more air-discharging pipes, *g*, may lead out of the chamber B and upward to or above the top of the cistern A.

In using the apparatus, a sirup to be filtered is to be poured into the cistern A, from whence it will flow through the sides of the bag and from thence pass into and down their supporting-tubes and from thence pass into the receiving-chamber, out of which it may be drawn by means of the cock *c*.

When the outside surfaces of the bag may have become charged with dirt to such extent as to require the bags to be cleansed, steam under pressure may be caused to enter the chamber B, and from thence to flow up into and through the several bags and into the cistern or reservoir containing them. This will generally save the necessity of removing the bags from the cistern in order to cleanse them, as the steam by penetrating the meshes of the bags will clear them and prepare them for a renewal of the filtering process.

I do not claim a bag-filter having its bags opening at their upper ends out of a receiving-cistern and being suspended within a receiving-chamber, and so that the sirup to be filtered shall be caused first to flow into the upper end of each bag and from the interior to the exterior of each bag, as is the case in the well-known "Taylor's bag-filter."



What I do claim as my invention is—

1. My improved arrangement and application of the bags, the cistern for containing the sirup, and the chamber for receiving it after it may have been passed through the bags, the same being such as to cause the sirup to first flow against the outside surface of each bag, thence through the sides or meshes of the bag and into the interior of the bag, and from thence out of the same or into the receiving-chamber, as described.

2. The combination and arrangement of one or more hollow foraminous standards or tubes, D, with one or more filter-bags and a receiving cistern, A, arranged together in the im-

proved manner, substantially as hereinbefore described.

3. The combination and arrangement of a steam chest or receiving-chamber, B, with the chamber A, and one or more filter-bags arranged therein in manner and so as to operate substantially as described.

4. The tubular bag-supporter or post, as made with the bag-securing neck and with a screw arranged at its lower part, substantially in manner and for the purpose set forth.

GUSTAVUS A. JASPER.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.