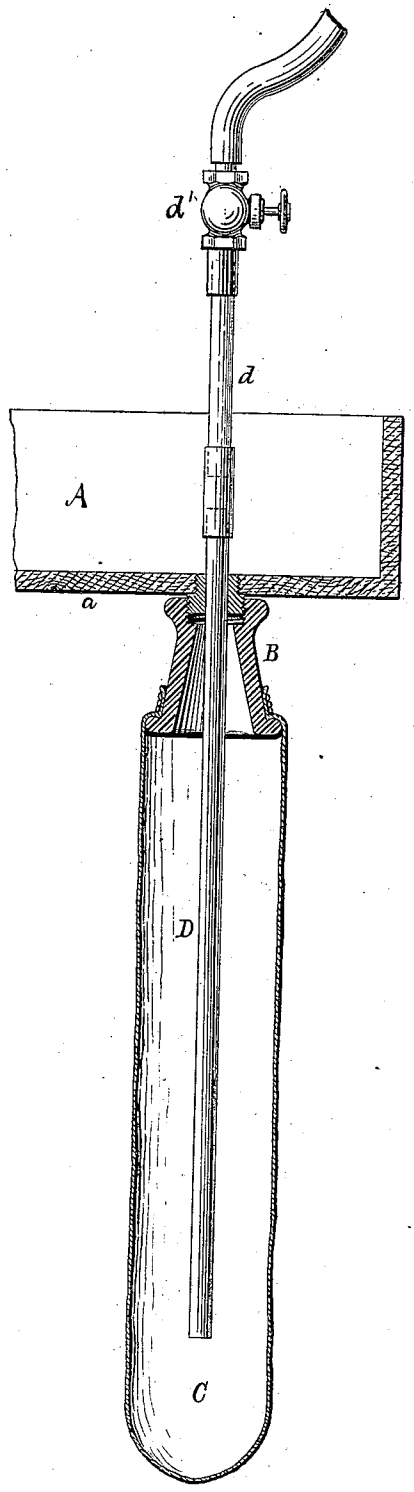
(No Model.)

H. E. NIESE.

Filtering Sugar Liquor.

No. 240,922. **Patented May 3, 1881.**



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY E. NIESE, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO F. O. MATTHIESSEN & WIECHERS SUGAR REFINING COMPANY, OF SAME PLACE.

FILTERING SUGAR-LIQUOR.

SPECIFICATION forming part of Letters Patent No. 240,922, dated May 3, 1881.

Application filed April 1, 1881. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. NIESE, of Jersey City, New Jersey, have invented certain Improvements in Filtering Sugar-Liquor, of which the following is a specification.

My improvements relate to apparatus for facilitating the employment of the canvas bags used for filtering sugar. Such bags are commonly attached to and suspended from nozzles inserted in the bottom of the sugar-liquor reservoir or tank.

In practice the sugar-liquor from the tank is forced by hydrostatic pressure through the interstices of the material of which the bags are composed, and the mechanical impurities present are retained in the bags. At intervals recurring with more or less frequency, according to the character of the sugar-liquor, the bags require to be emptied of the impurities they have collected and washed clean. There is ordinarily involved a delay of ten or twelve hours to permit the complete draining of the bags, owing to the diminished hydrostatic pressure after the tank has been emptied, and also owing to the clogging of the interstices in the material of which the bag is composed. During this period, therefore, the filtering-apparatus is comparatively idle.

It is the object of my improvement to avoid this delay; and my invention consists in the combination, with the tank and nozzles to which the bags are attached, of suction-pipes, which are adapted to be inserted through the nozzles into the bags respectively, and which are connected with a pump or vacuum-chamber, by means of which, after the tank has been emptied, the sugar-liquor is withdrawn from the bags without waiting for it to escape by exudation. The bags can then be immediately removed and clean bags attached to the nozzles, and the operation of filtering can at once be recommenced.

The accompanying drawing, illustrating my invention, is a central vertical section of a filter-bag and a nozzle, to which the bag is attached, and of a portion of a sugar-liquor tank or reservoir, showing in elevation a suction-pipe inserted through the nozzle into the bag.

The sugar-liquor tank A may be made of any desired size, according to the number of filters which it is designed to supply.

The drawing represents in central vertical section a single canvas-bag, C, the top of which is attached to the nozzle B, which is inserted in the bottom *a* of the tank. The mouth of the bag is usually tied or clamped to the nozzle, and a suitable vessel is provided to receive the sugar-liquor as it filters through the bag.

To rapidly empty the bag after the tank A has been emptied I provide a pipe, D, which is adapted to be inserted through the nozzle B into the bag C, and is connected with an ordinary pump or vacuum-chamber, by means of which the sugar-liquor is withdrawn from the bag. A section, *d*, of the pipe may be made of glass, or have glass plates inserted in it, to allow the observation of the air-bubbles in the pipe, which by their presence indicate that the bag has been nearly emptied of liquor. When the liquor has been withdrawn from the bag the valve *d'* is closed and the pipe D is withdrawn from the bag, which can then be removed from its nozzle, preparatory to emptying and washing it, and a clean bag can be at once attached in its place.

In practice the pipe D does not extend to the bottom of the bag, and thus the mechanical impurities are left in the bag undisturbed while the superincumbent sugar-liquor is being withdrawn.

In cases where a large reservoir is employed, with numerous nozzles to receive the filter-bags, it may be convenient to employ the pipe D as a plug to prevent the escape of liquor into the filter-bag, after the operation has been carried on so long that the bag has collected a considerable quantity of mechanical impurities and requires to be cleaned. In such a case the valve *d'* in the pipe may be closed, and the pipe allowed to remain inserted in the nozzle while the bag C is being removed and a clean bag applied to the nozzle in its place, after which the pipe D can be withdrawn from the nozzle, and the sugar-liquor will be supplied from the tank to the clean bag.

I claim as my invention—

In apparatus for filtering sugar-liquor, a tank provided at its bottom with a downwardly-projecting nozzle, to which a filter-bag is attached, in combination with a suction-pipe, which is adapted to be inserted through the nozzle into the bag, and means of withdrawing the sugar-liquor from the bag through the pipe, substantially as and for the purpose set forth.

HENRY E. NIESE.

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