J. BIXLER.

FILTER.

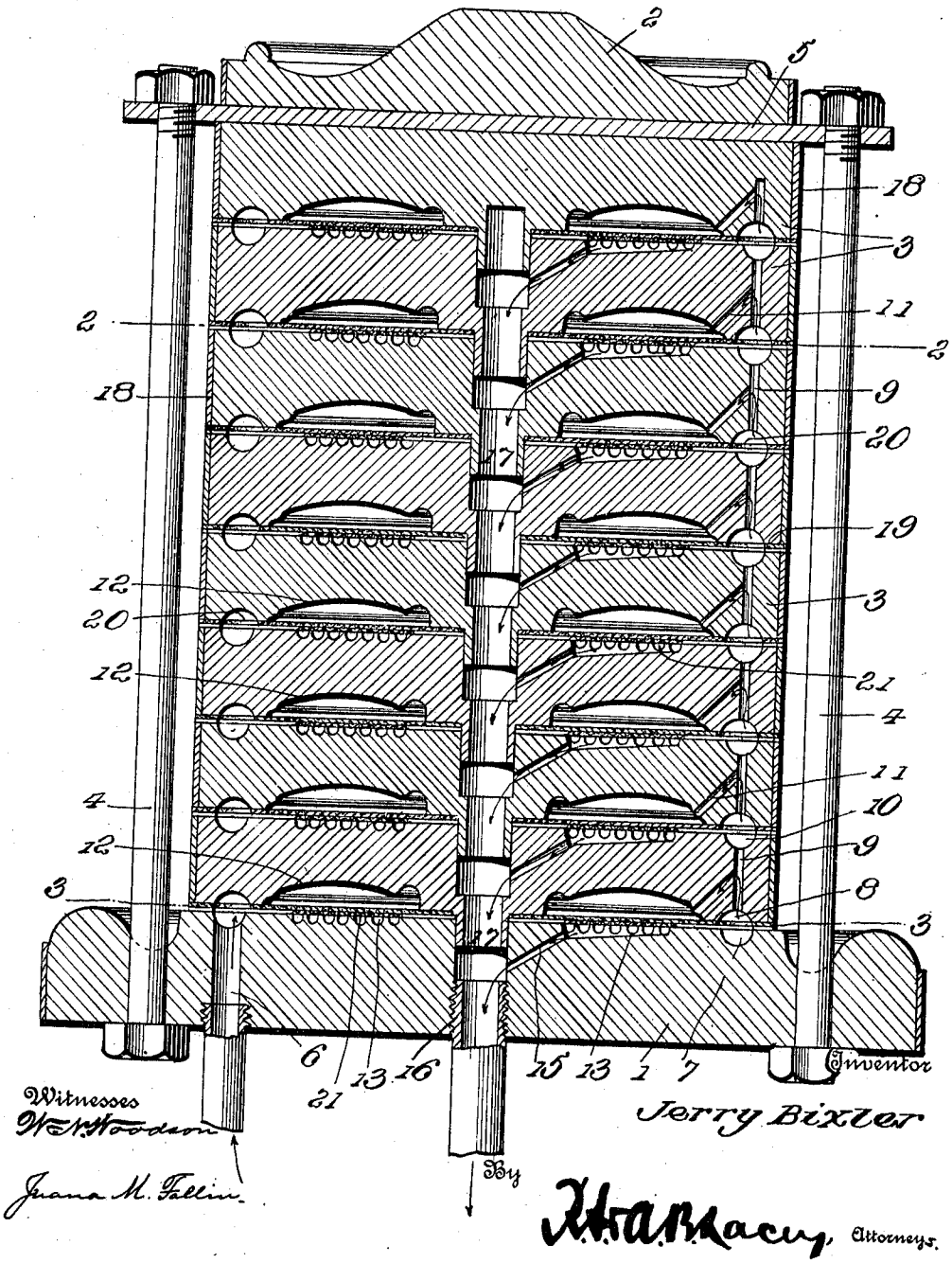
APPLICATION FILED JUNE 20, 1910.

988,854.

Patented Apr. 4, 1911

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

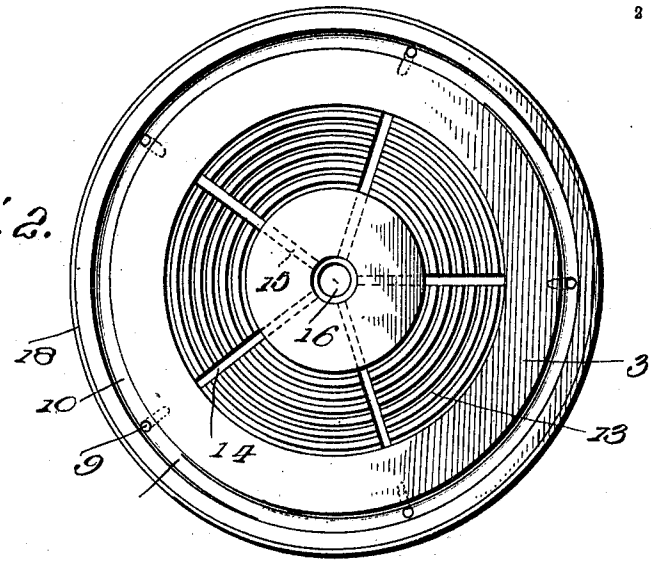
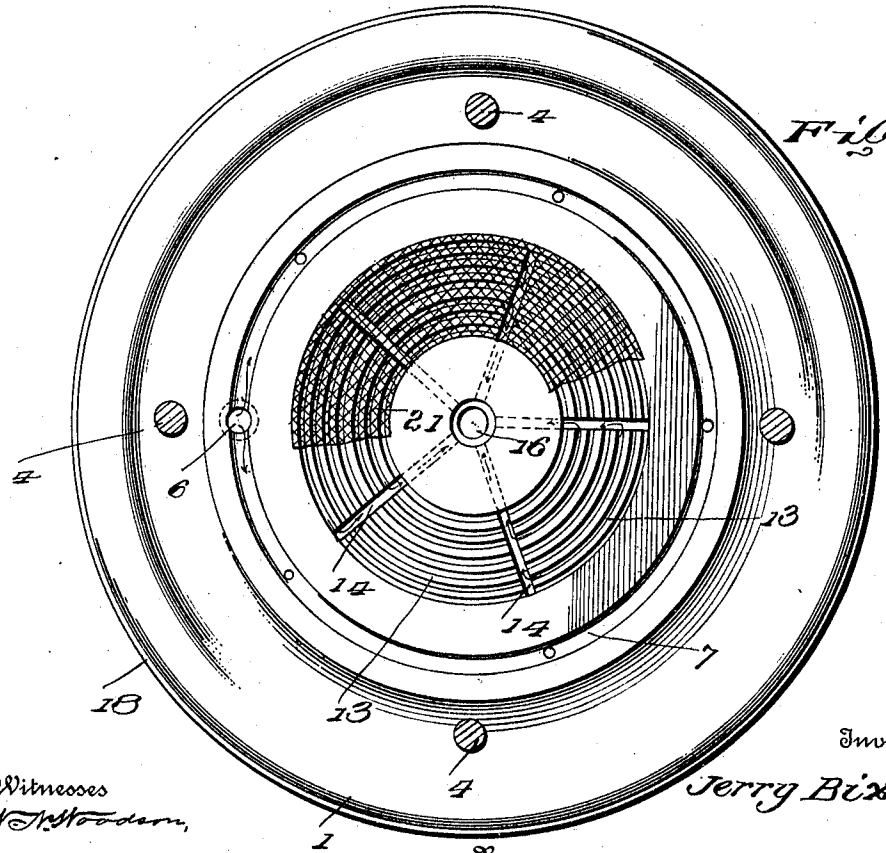


Fig. 3.



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UNITED STATES PATENT OFFICE.

JERRY BIXLER, OF FRANKFORT, KENTUCKY.

FILTER.

988,854. Specification of Letters Patent. Patented Apr. 4, 1911.

Application filed June 20, 1910. Serial No. 568,044.

To all whom it may concern:

Be it known that I, JERRY BIXLER, citizen of the United States, residing at Frankfort, in the county of Franklin and State of Kentucky, have invented certain new and useful Improvements in Filters, of which the following is a specification.

The primary object of this invention is a simple and efficient construction of filtering apparatus for liquor or other free flowing liquids, the apparatus being composed of any desired number of superposed filtering sections which may be easily manufactured and readily assembled and held in operative relation to each other and also easily disassembled for the purpose of cleaning the filter of the sediment collected therein. And the invention also aims to generally improve this class of devices and render them more commercially desirable.

With these and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a vertical longitudinal sectional view of a filter embodying the improvements of my invention; Fig. 2 is a horizontal sectional view, the section being taken substantially on the line 2—2 of Fig. 1; Fig. 3 is a corresponding view taken substantially on the line 3—3 of Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

My improved filtering apparatus embodies a base 1 of any desired size and shape, a cap-piece, and any desired number of filtering sections 3 disposed between the cap-piece and base in superposed relation to each other and held together in any desired way, as by the tie bolts 4 which are passed through the base and through a preferably metallic plate 5 with which the cap-piece is provided. Preferably, all of the filtering sections 3 are alike, and I shall therefore describe in detail only the lowest and uppermost sections and their operative relation with the base and cap-piece, respectively.

The base 1 is formed at any desired point with an inlet passage 6 extending entirely therethrough, as best seen in Fig. 1, the said inlet passage opening into an inlet groove 7 which is formed in the upper face of the base. The groove 7 registers with a corresponding groove 8 formed in the lower face of the lowermost opening section 3 which rests directly on the base, and said filtering section is formed with any desired number of vertically disposed passages 9 which establish direct communication between the groove or channel 8 and a corresponding groove 10 formed in the upper face of the section. Each of the vertically disposed passages 9 is provided with a downwardly and inwardly extending branch passage 11 which leads into an annular chamber 12 formed in the bottom of the section and separate or distinct from the channel 8, save for the indirect communication which is established by the branch passages 11 leading from the vertically disposed passages 9.

The base section 1 of the apparatus is formed in its upper face with a plurality of concentric annular channels 13 which register with the annular chamber 12 that is formed in the bottom of the next adjacent filtering section 3, said annular grooves or channels 13 being intersected with radial channels 14 which lead inwardly throughout the entire set of annular channels 13, the radial channels 14 then being deflected downwardly and inwardly, as indicated at 15, and opening into a centrally disposed outlet passage 16. Correspondingly, the lowermost section 3 is formed with a plurality of concentric annular grooves 13 in its upper face, registering with an annular channel 12 in the section next above and intersected by radial channels 14, the inner ends of which are deflected and open into a central outlet passage 16 above and in direct longitudinal alinement with the outlet passage 16 of the base section 1.

Each filtering section 3 is formed at its center with a depending nipple 17 which fits within the next outlet passage 16 below, these nipples serving to properly center and guide the sections to their place one upon the other in the assembling of the parts. The uppermost section 3 is formed with a plurality of vertically disposed passages 9 which, however, stop short of the upper surface of said section, and it is also formed with corresponding branch passages 11

opening into an annular chamber 12 formed in the bottom of said section. This section also differs from the section below it in that it is plain on its upper face and not provided with any concentric grooves or channels and intersecting radial channels, the upper face of said section directly contacting with the binding plate 5 to which the cap-piece 2 is secured.

Preferably, all of the sections, together with the base 1 and cap-piece 2, are encircled by metal bands 18, in order to keep the sections or other parts from slipping, as in the present embodiment of my invention, the sections are made of wood, although it is to be understood that the invention is not limited to the use of any particular substance or material for any of the parts and that various other changes may be made in the construction and arrangement of the parts without departing from the scope of the invention as defined in the appended claims.

Interposed between the several sections and between the lowermost section of the base, are any desired number of sheets of filtering paper or the like, as indicated at 19, said sheets being preferably formed with orifices 20 registering with the vertical passages 9, although I do not regard it as essential that these orifices be provided.

If desired, each filtering section and the base section may be provided with a screen 21 of any desired formation and material, the said screens lying flat over the channels 13 and 14 and thereby promoting the free flow of the liquid, as the screens will effectively prevent the filtering sheet or sheets from sagging down into the channels, and with a tendency to clog.

From the foregoing description in connection with the accompanying drawing, the operation of my improved filtering apparatus will be apparent.

In the practical use of the device, the liquid to be filtered is forced in through the inlet opening 6 and passes into the channels 7 and 8 and up through the passages 9 in succession, a portion of the liquid, however, flowing inwardly from the passages 9 through the branch passages 11, and thence to the chambers 12, whence the liquid passes through the filtering paper and flows into the channels 13 and 14, and finally passes out in filtered condition through the outlet passage 16.

It is manifest that the parts of my filtering apparatus may be easily made and readily assembled and that they may be easily disconnected whenever desired so that the sediment may be removed and fresh filtering paper supplied.

Having thus described the invention, what is claimed as new is:

1. A filtering apparatus comprising superposed sections each having a central opening and with annular channels in their upper and lower faces and connected by vertical passages, each of said sections being further provided in its lower face with an annular chamber spaced from the annular channels and connected with the same by passages and provided in its upper face with a plurality of concentric grooves connected by radial channels communicating with the central opening, and a sheet of filtering material between the adjoining faces of the sections and extending over the annular channels.

2. A filtering apparatus comprising superposed sections each having a central opening and with annular channels in their upper and lower faces and connected by vertical passages, each of said sections being further provided in its lower face with an annular chamber spaced from the annular channels and connected with the same by passages and provided in its upper face with a plurality of concentric grooves connected by radial channels communicating with the central opening, a supporting sheet of wire fabric bearing over said concentric grooves, and a sheet of filtering material between the adjoining faces of the sections and extending over the annular channels in contact with said supporting fabric.

In testimony whereof, I affix my signature in presence of two witnesses.

JERRY BIXLER. [L. S.]

Witnesses:
DORA FERGUSON,
RICHARD FERGUSON.