

G. L. ALLEN.  
FILTER.

APPLICATION FILED AUG. 2, 1909.

Patented Mar. 22, 1910.

952,972.

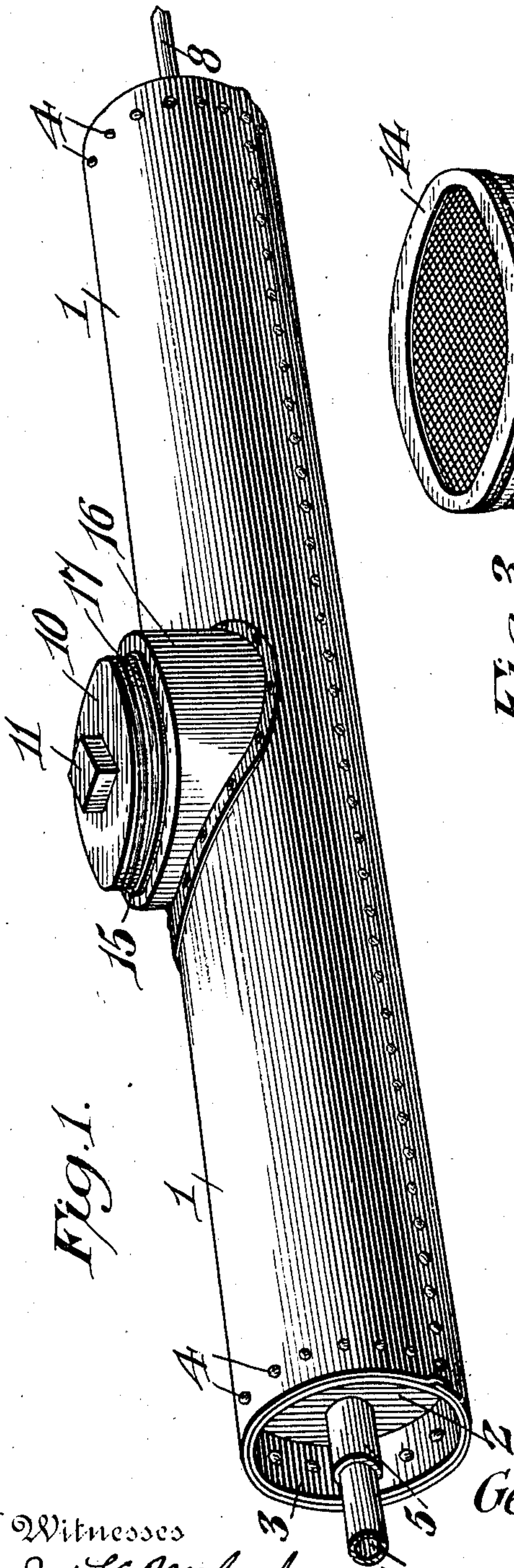


Fig. 1.

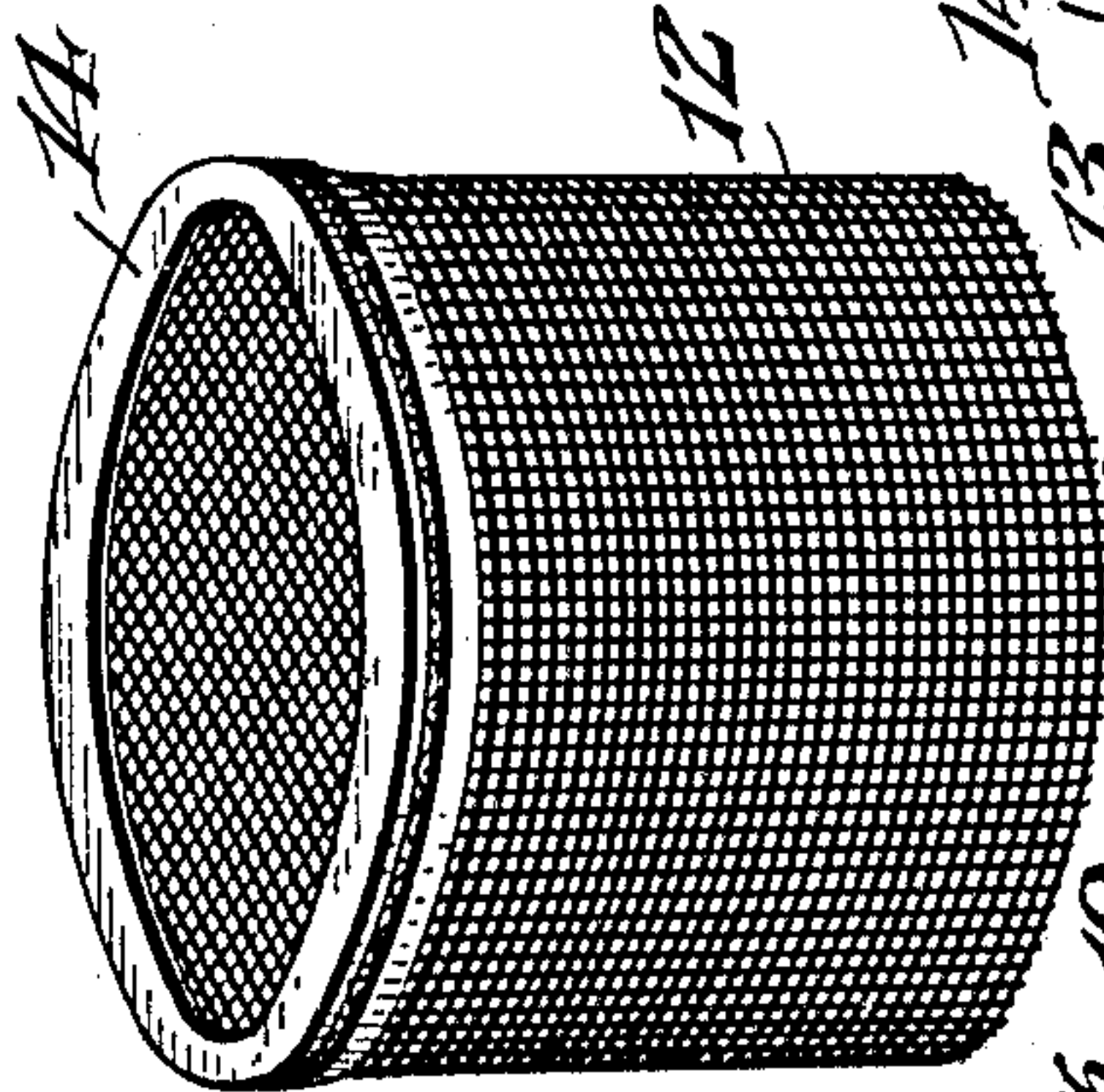


Fig. 3.

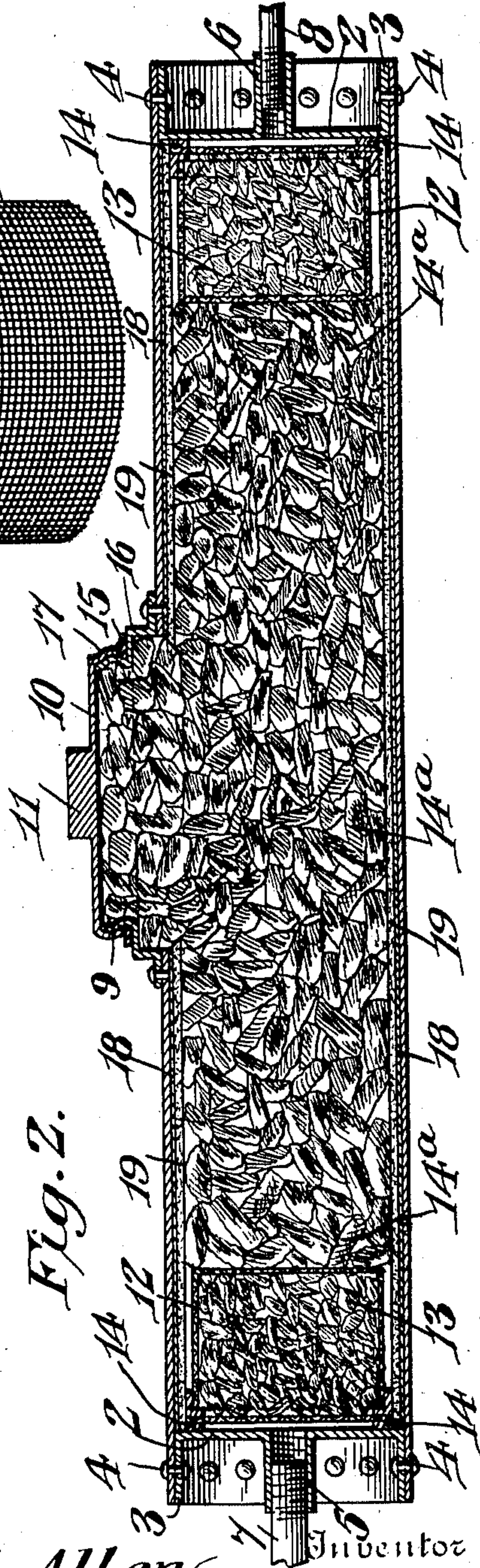


Fig. 2.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## FILTER.

952,972.

Specification of Letters Patent. Patented Mar. 22, 1910.

Application filed August 2, 1909. Serial No. 510,778.

*To all whom it may concern:*

Be it known that I, GEORGE LOUIS ALLEN, a citizen of the United States, residing at Mangum, in the county of Greer and State of Oklahoma, have invented a new and useful Filter, of which the following is a specification.

The invention relates to improvements in filters.

10 The object of the present invention is to improve the construction of filters, and to provide a simple, inexpensive and durable filter, designed for general use, where filtering is desirable or required and adapted to be advantageously employed in connection with the water works of a city, and to be arranged in a ditch and to be covered with earth, whereby it is prevented from freezing in winter and is maintained in a cool condition in summer.

20 With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claim hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claim, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

35 In the drawing:—Figure 1 is a perspective view of a filter, constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a perspective view of one of the cylindrical baskets or cages.

40 Like numerals of reference designate corresponding parts in all the figures of the drawing.

1 designates a cylindrical casing, forming a receptacle for filtering material and provided with heads or ends 2, having peripheral flanges 3, secured within the ends of the cylinder by rivets 4, electric welding, or other suitable means. The casing is designed to be constructed of galvanized metal, or other suitable material, and the heads or ends are provided with interiorly threaded outwardly extending necks 5 and 6, adapted for connection with inlet and outlet pipes 7 and 8. The inlet pipe 8, which is designed to be connected with a suitable source of supply of water under pressure, is of greater diameter than the outlet pipe 7 in order to

maintain a constant pressure within the filter.

The casing is provided at the top with a flanged man hole or opening 9, having a removable threaded cap 10, equipped with a polygonal lug 11, adapted to receive a wrench or other tool for enabling the screw cap to be removed when it is desired to clean the filter or replenish the filtering material. The opening 9 is of sufficient size to permit the introduction of cylindrical baskets or cages 12, constructed of woven wire or other foraminous material, galvanized or otherwise coated to prevent rusting and designed to contain charcoal 13, or other filtering medium. The wire baskets 12, which consist of a body portion and reinforced heads 14, are located at the ends of the cylindrical casing and are held against the inner faces of the ends or heads 3 by charcoal 14\*, or other filtering medium, interposed between the baskets or cages, as clearly illustrated in Fig. 2 of the drawing. The charcoal within the baskets is more finely divided than the charcoal, which is located between the baskets, so that an effective filter is provided at each end of the casing. The finely divided charcoal is closely packed within the baskets, and it prevents the pressure of water from letting a current through at any point, the water being distributed by the baskets to more thoroughly filter the former. The loose charcoal interposed between the baskets preferably consists of one to two inch pieces, and they operate to maintain the baskets in position against the ends of the casing.

A rubber gasket 15, or other suitable packing is interposed between the threaded cap and the shoulder or seat 16, formed at the base of the threaded flange 17, and prior to placing the filtering material within the casing, the latter is coated interiorly with pitch, as indicated at 18 and is lined with asbestos 19. The pitch prevents rust, and the asbestos forms a packing and effectually prevents any liquid or sediment from passing around the end baskets instead of passing through the same, thereby insuring an effective filter. The pitch prevents friction and together with the charcoal tends to improve the water passing through the filter. The exterior of the casing is also designed to be coated with coal tar to prevent rust, when it is used in the ground, and it may be constructed of any



size and be employed for a variety of other purposes. It may be used on vessels and also in connection with cisterns, as the filter is constructed to stand high pressures.

5 Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

10 A filter of the class described including a cylindrical casing having an intermediate opening and provided at one end with an inlet and having an outlet at the other end, foraminous baskets, of a size to be passed through the said opening, located within the casing at the ends thereof and designed to  
15 contain filtering material, said baskets being spaced apart to provide an intervening space

for other filtering material and adapted to be retained by the same in position against the ends of the casing, a cylindrical lining of asbestos extending from one end of the casing to the other and forming a packing around the baskets to prevent any liquid or sediment from passing around the ends of the baskets instead of through the same, and a closure for the opening of the casing. 20 25

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE LOUIS ALLEN.

Witnesses:

FRED SWETZER,  
T. S. DE ARMAN.