

A. W. CONSTANS.
APPARATUS FOR LIXIVIATION PROCESSES.
APPLICATION FILED MAR. 3, 1905.

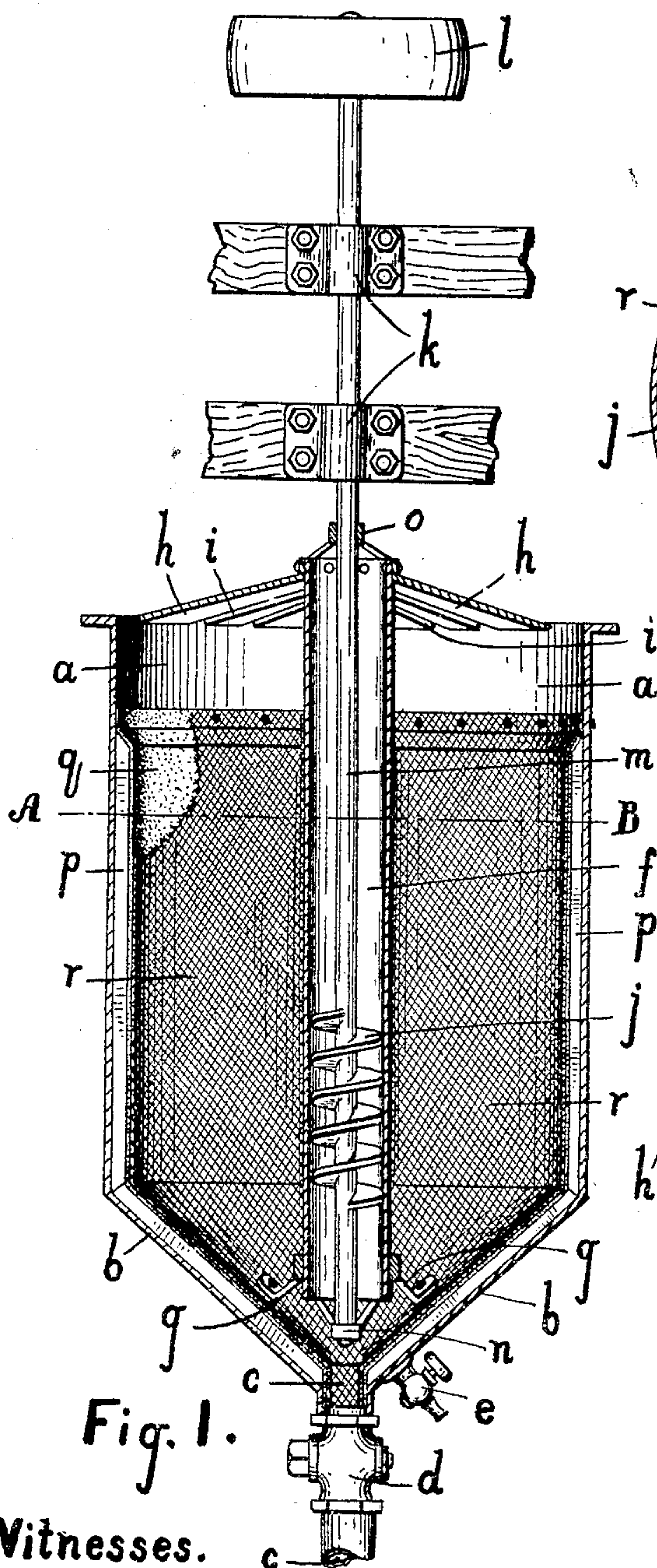


Fig. 1.

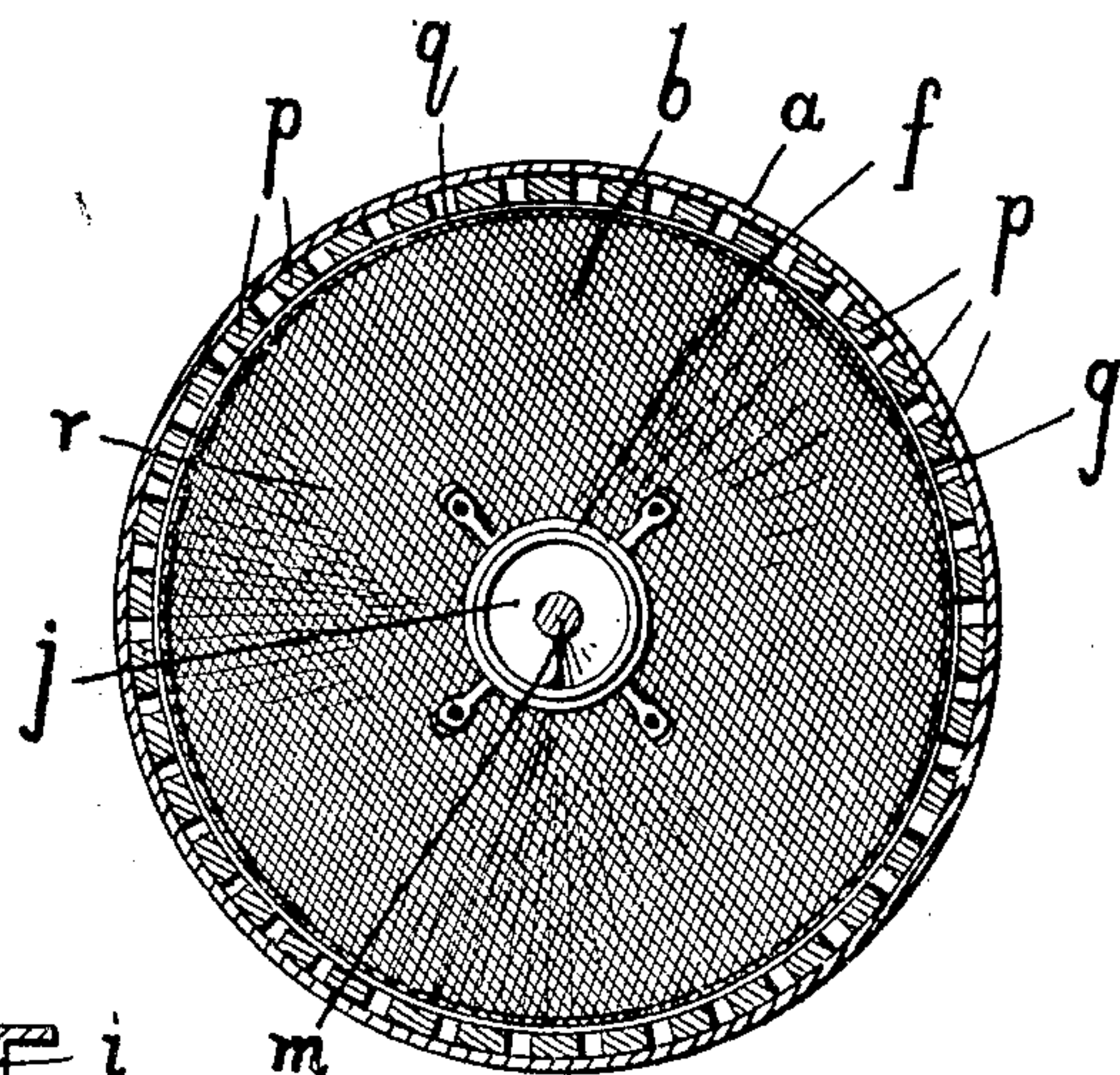


Fig. 2.

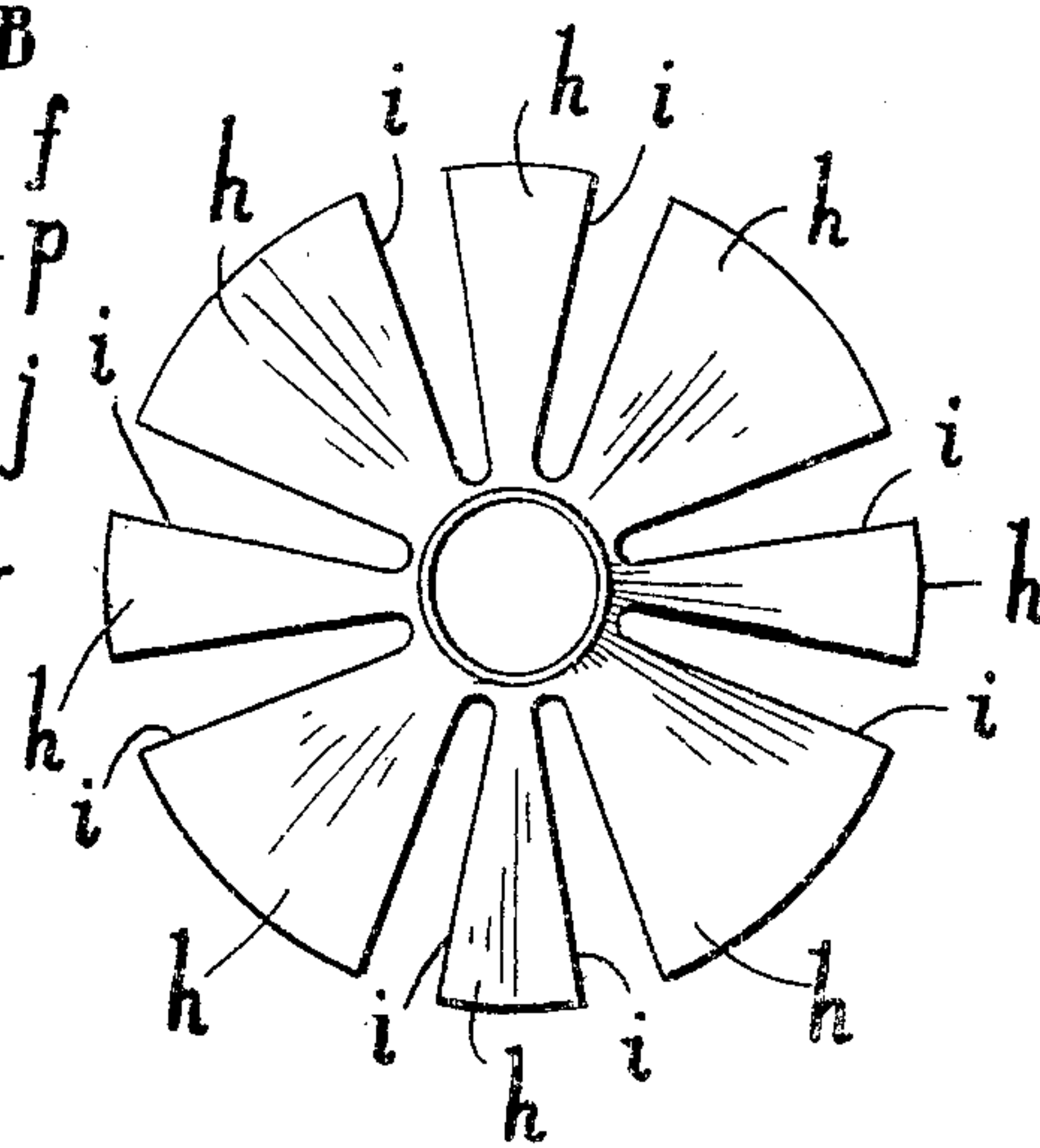


Fig. 3.

Witnesses.

Lloyd Blackmore

W. Cotton.

Inventor.

A. W. Constans

G. J. Fetherstonhaugh Atty.

UNITED STATES PATENT OFFICE.

ALFRED WILLIAM CONSTANS, OF NELSON, CANADA.

APPARATUS FOR LIXIVIATION PROCESSES.

No. 805,635.

Specification of Letters Patent.

Patented Nov. 28, 1905.

Application filed March 3, 1905. Serial No. 248,297.

To all whom it may concern:

Be it known that I, ALFRED WILLIAM CONSTANS, a citizen of the United States of America, residing in the city of Nelson, District of Kootenay, in the Province of British Columbia, in the Dominion of Canada, have invented certain new and useful Improvements in Machines for Lixiviation Processes, Such as the Cyanid Process for the Treatment of Ores, of which the following is a specification.

This invention consists, essentially, in a casing forming a chamber for the reception of the matter in process of lixiviation, a filter of woven material lining the interior and having a suitable backing, means extending over and protecting said lining, and means for circulating and distributing the pulp in the said chamber.

The objects of the invention are to keep the filter intact during the process, thus greatly facilitating the operation of the machine and minimizing the cost of renewals, and to distribute the matter with the solution in such a manner as will insure quicker action, and consequently a reduction in the cost of treatment.

Referring to the drawings, Figure 1 is a sectional elevation of a machine for cyaniding ore embodying my invention. Fig. 2 is a sectional view on a line A B in Fig. 1. Fig. 3 is a plan view of the spreaders for distributing at the top of the chamber.

Like letters of reference indicate corresponding parts in each figure.

a is a cylindrical-shaped vat, having a funnel-shaped lower portion *b* for directing the flow of matter and solution contained in the vat to the center of said lower portion.

c is an outlet at the apex of the conical portion *b*, and *d* is a valve closing said opening.

e is a faucet in proximity to the outlet-valve *d*. The faucet *e* is provided to draw off the solution on the completion of an operation, and the outlet *c*, with the valve *d* for the removal of the pulpy matter from the vat.

f is a circular tube centrally located in the vat *a*, extending downwardly into proximity with the apex of the conical portion *b* and supported by the brackets *g*.

h represents spreaders extending radially from the top of the tube *f*, separated by the intervening spaces *i* and inclined downwardly toward and adjacent to the casing of the vat *a*.

j is a screw-hoist operating in the circular tube *f* and journaled in the bearings *k* and shown here with the pulley *l* for a suitable belt connection. The shaft *m* of the screw-

hoist is suitably journaled at its lower extremity in the bearing *n* and at the upper end of the tube passes through the guiding-spider *o*, secured to the said tube.

p represents slats vertically arranged in the interior and down the sides of the vat *a* and set apart and extending to the edge of the outlet *c*.

q is a filter of woven material, such as canvas and burlap, stretched completely over and fastened to the slats *p* and extending downwardly into the conical portion to the mouth of the outlet *c*.

r is a wire netting or screen covering the canvas filter *q* and secured to the slats *m*, and serving as a protection to the filter from contact of coarse pieces of matter, which will of necessity be in the vat.

In the operation of this machine for the cyanid process the matter contained in the vat is elevated through the circular tube *f* by the operation of the screw-hoist *j*. This matter, a mixture of ore and liquids, continues to work upwardly on the constant rotation of the screw and on reaching the top of the tube flows over the spreaders *h*, dropping over the ends into the vat again. The circulation of the matter during the operation is continuous until the ore has been thoroughly treated by the application of the cyanid, and in this connection it may be said that the particular means of distributing insures a thorough and rapid treatment of all the ore in the vat with the cyanid in a comparatively short space of time. The constant circulation of such matter, as explained, contained in the vat will materially affect the durability of a textile filter, and in order to protect said filter and to preserve it to perform its functions properly I have provided the wire-screening, which prevents the direct contact of the coarser matter with the canvas.

The salient features of my invention are the distributing of the ore and solution in such a manner that the former may be treated by the latter in a much quicker and surer manner, and the protection of the filter from injury during the process with the assurance that the said filter will remain intact.

What I claim as my invention is—

1. In a machine of the class described, in combination, a receptacle for the matter having suitable elevating means and a filter of woven material therein arranged on slats having a wire-netting corresponding in surface area and covering said filter and secured to

said slats, and means for distributing said matter over said netting, as and for the purpose specified.

2. In a machine of the class described, in
5 combination, a receptacle for the matter having a central well and suitable elevating means therein and a filter of woven material therein arranged on slats having a wire-netting corresponding in surface area and covering said
10 filter and secured to said slats, and spreaders

extending radially from the central well-casting, as and for the purpose specified.

Signed at Nelson, in the Province of British Columbia, in the Dominion of Canada, this 14th day of February, 1905.

ALFRED WILLIAM CONSTANS.

Witnesses:

I. J. NEWCOMBE,

W. S. RIBLET.