

No. 690,540.

Patented Jan. 7, 1902.

W. WAGNER.  
WATER FILTER.

(Application filed Apr. 29, 1901.)

(No Model.)

2 Sheets—Sheet 1.

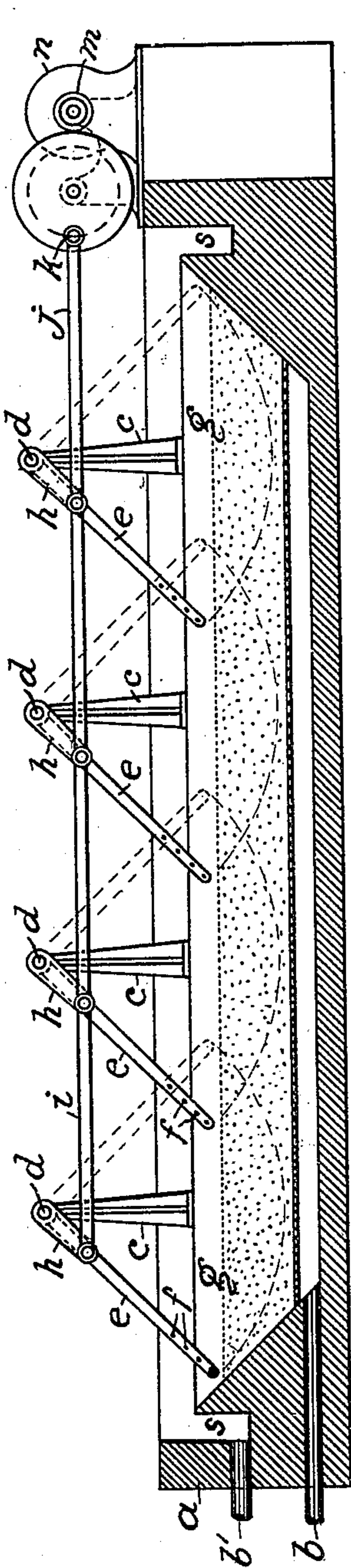


Fig. 1.

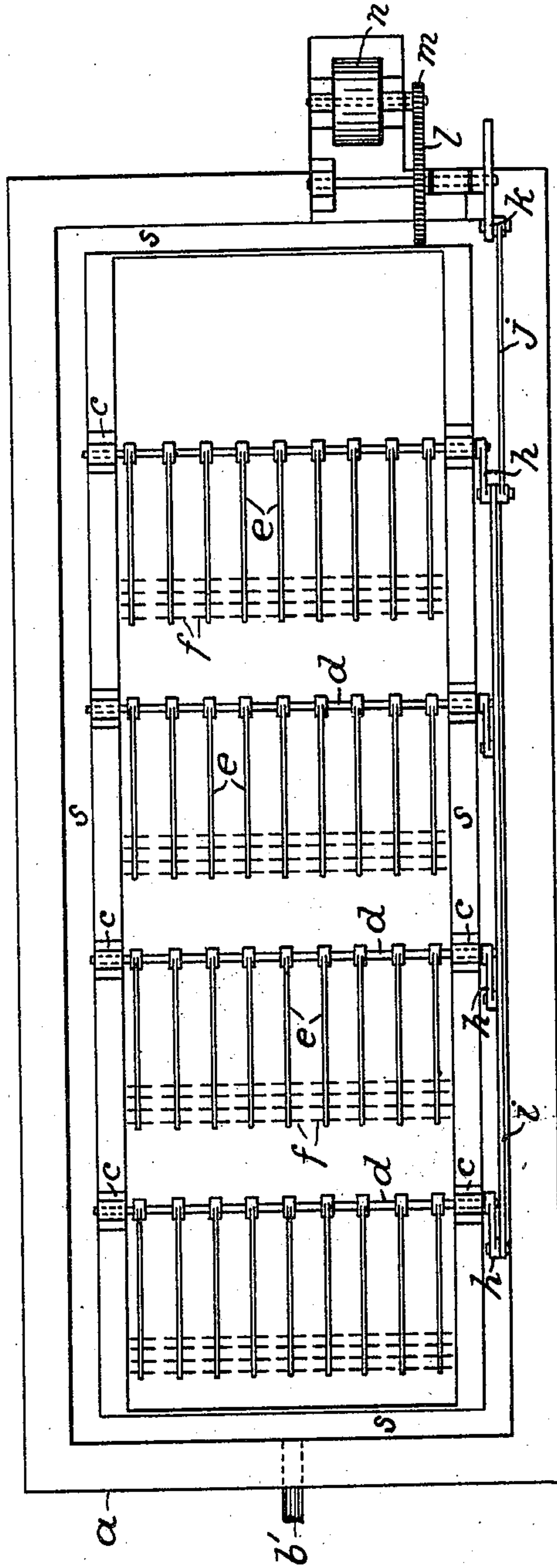


Fig. 2.

Witnesses  
Charles B. Congleton.  
Frederick P. Read

Inventor  
W. Wagner.  
By his Attorney *Wm. Zimmerman.*

No. 690,540.

Patented Jan. 7, 1902.

W. WAGNER.  
WATER FILTER.

(Application filed Apr. 29, 1901.)

(No Model.)

2 Sheets—Sheet 2.

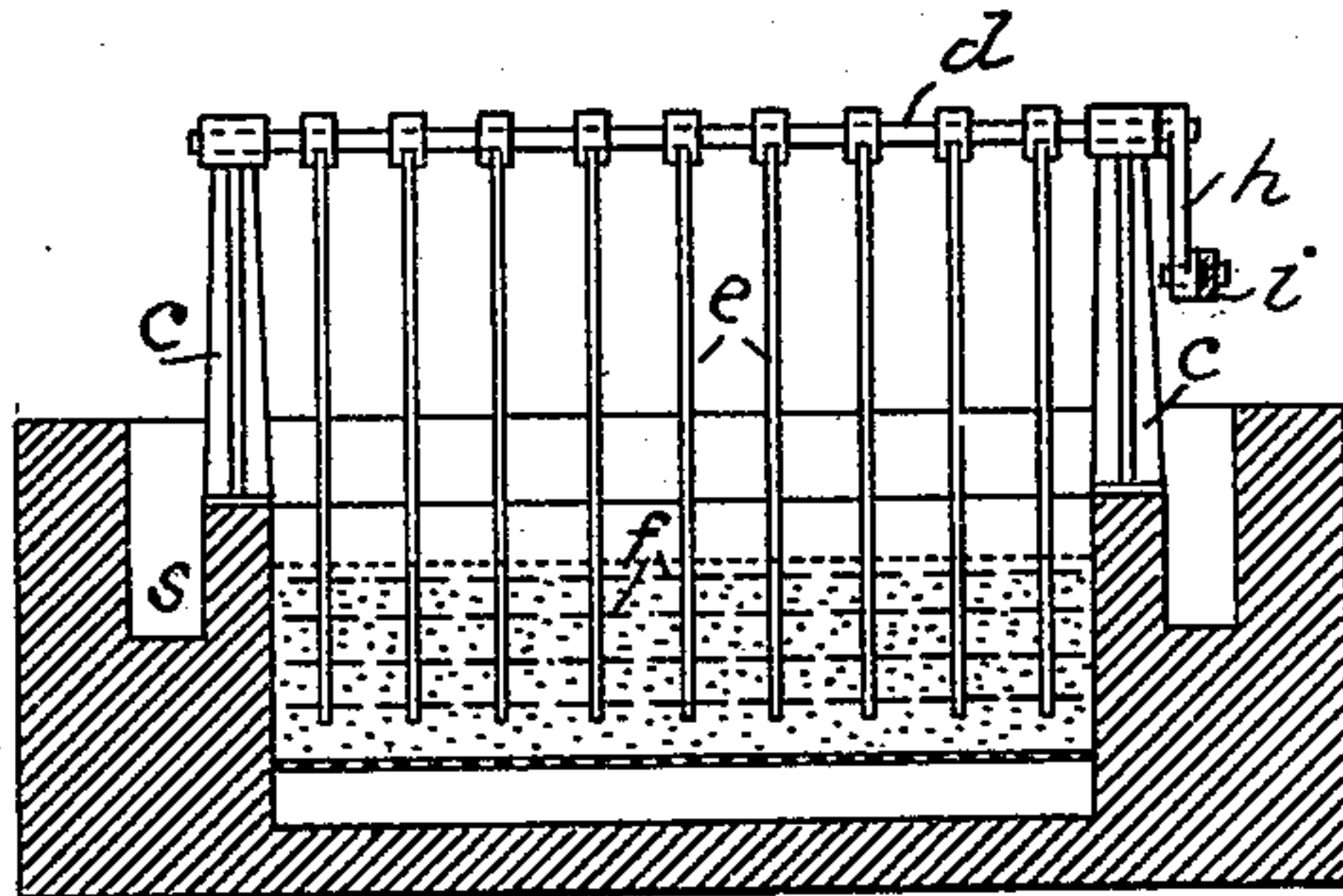


Fig. 3.

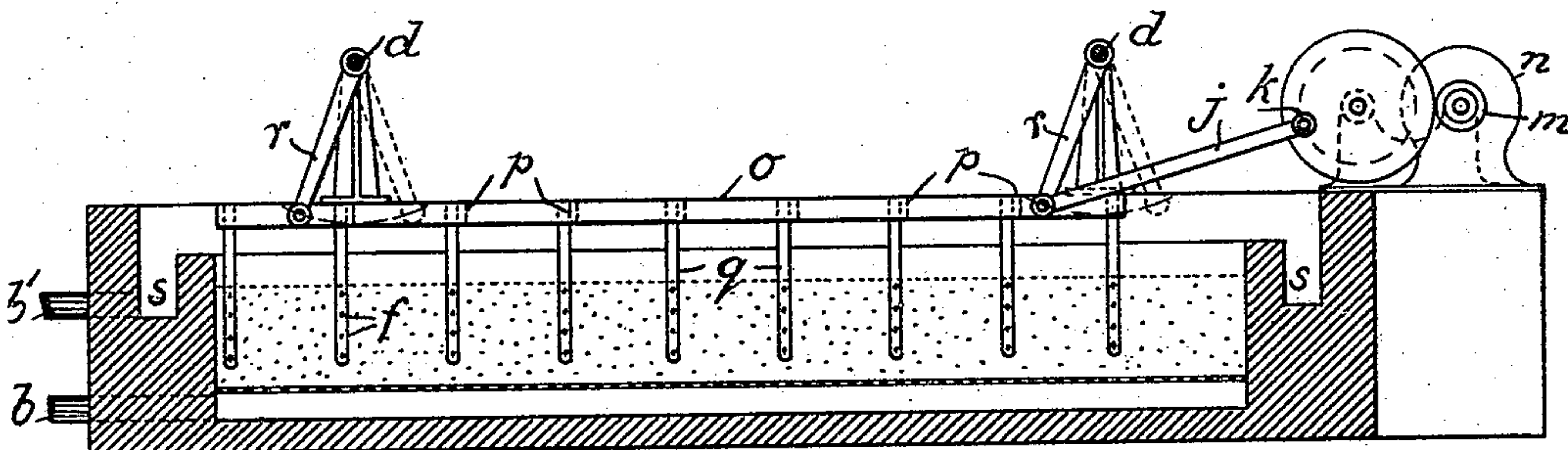


Fig. 4.

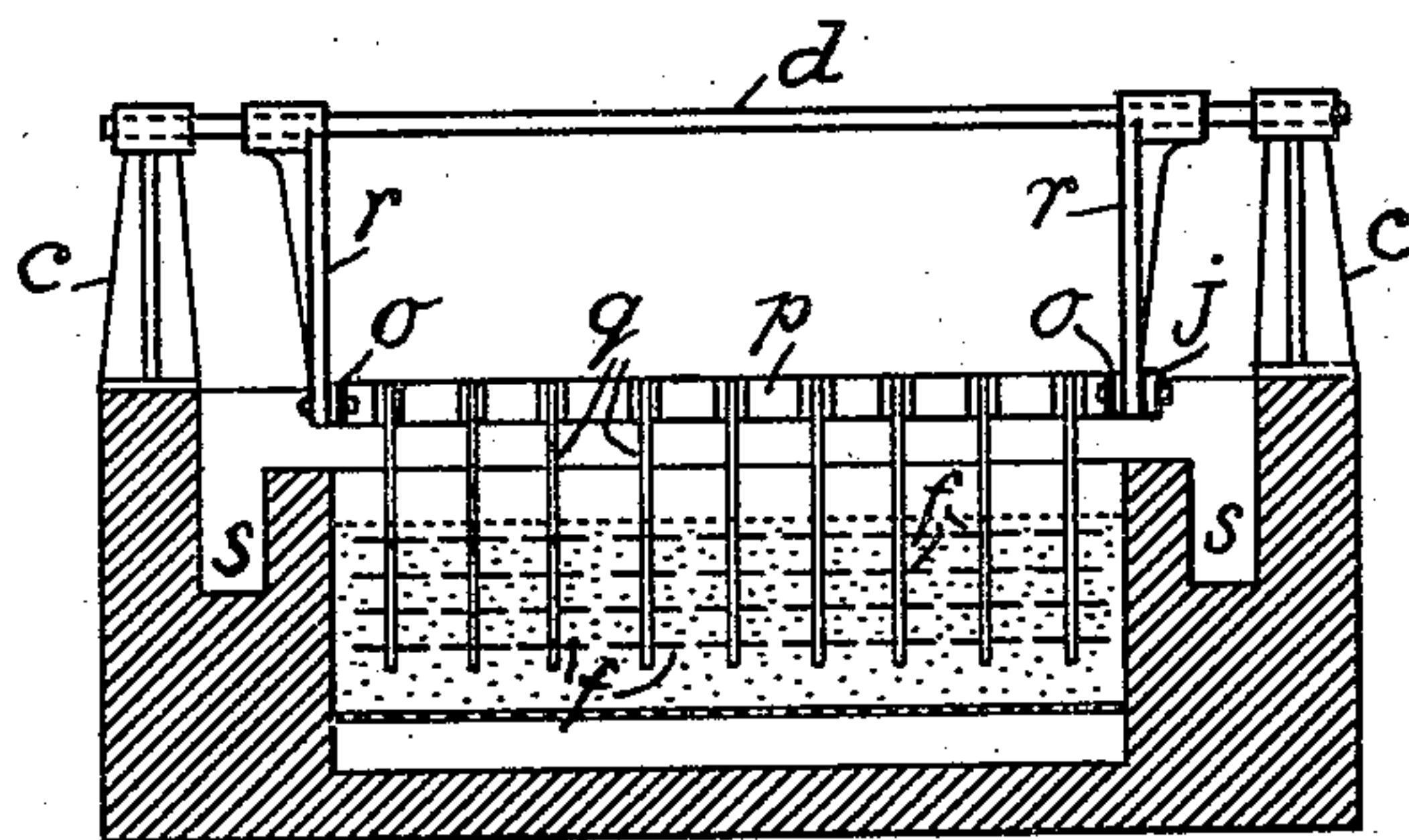


Fig. 5.

Witnesses  
Charles E. Conington.  
Frederick P. Read

Inventor  
Walter Wagner  
By his Attorney  
J. M. Zimmerman.



# UNITED STATES PATENT OFFICE.

WALTER WAGNER, OF BERWYN, ILLINOIS.

## WATER-FILTER.

SPECIFICATION forming part of Letters Patent No. 690,540, dated January 7, 1902.

Application filed April 29, 1901. Serial No. 67,949. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER WAGNER, a citizen of the United States, residing at Berwyn, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Water-Filters, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part hereof, and in which—

16 Figure 1 shows a longitudinal section of my said device. Fig. 2 shows Fig. 1 in entirety and in plan view. Fig. 3 shows Fig. 2 in transverse section. Fig. 4 shows a longitudinal section of a modification of Fig. 1. Fig. 15 5 shows Fig. 4 in transverse section.

Like letters of reference denote like parts in all the figures.

The object of my invention is to produce a suitable agitating mechanism for scouring 26 the sand in filter-basins wherein the current is reversible, and minor improvements, as shown. To attain said desirable end, I construct my said new device in substantially the following manner, namely:

25 On the walls of the filter-basin *a*, provided with reversible inlet and outlet pipes *b b'*, are set-posts *c*, bearing at their tops revolvable shafts *d*, and to said shafts are attached stirrers or arms *e*, vibratable like a pendulum 30 from said shaft or shafts *d*, carrying at their lower ends transverse stirring spurs or pins *f*, which enter into and stir up the filtering-sand *g*. Said arms and their spurs are made as numerous as circumstances may prove 35 necessary. A series of crank-arms *h* are attached to the ends of the shafts *d*, and to them is secured a connecting-bar *i*, of which one end is joined to a connecting-rod *j*, which

is actuated by a crank *k*, driven by gears *l m* of a dynamo *n* or other suitable motor. 40

In my modified construction there are pendent arms *r*, to the free ends of which is attached pivotally a framework composed of a set of outer bars *o* and thereto attached transverse bars *p*, from which descend rigidly-fixed stirrer-arms *q*, having near their 45 ends the same transverse pins or stirring-spurs *f* as shown in the former construction and used for the same purpose—namely, to stir the sand thoroughly, and thereby scour 50 it and free it from all adhering and foreign substances—while the reversed current is fed through the pipe *b* and forced through the bottom of the filter-bed and discharged into and thence through the canals *s* and pipe *b'*. In the 55 preferred construction the arms *e*, which swing or vibrate like pendulums, are suspended out of the sand, as shown; a condition which is considered a desirable advantage, because it leaves the sand free from any foreign material 60 while the filtering process is going on.

The canals *s* affords an all-around overflow, and therefore a quick discharge from the filter of all material loosened from the sand by the stirrers or agitators, and thereby greatly fa- 65 cilitating the thorough cleansing of the sand of the filtering-bed.

What I claim is—

The combination with a reversible-current filter-basin, of reciprocable stirring-arms in 70 series on fixed fulcrums above said basin, substantially as specified.

WALTER WAGNER.

Witnesses:

WM. ZIMMERMAN,

CHARLES E. CONGLETON.