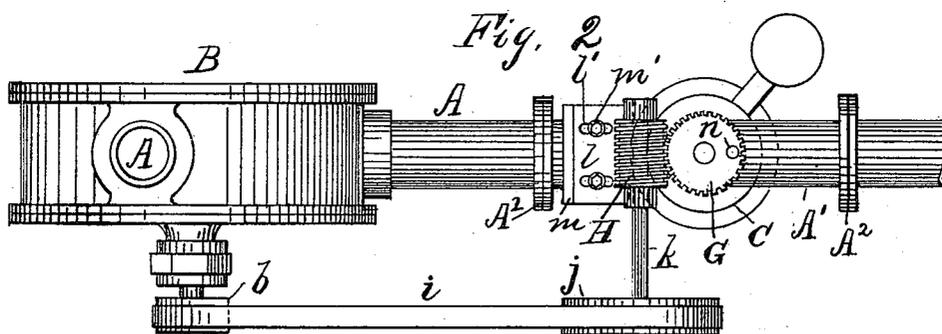
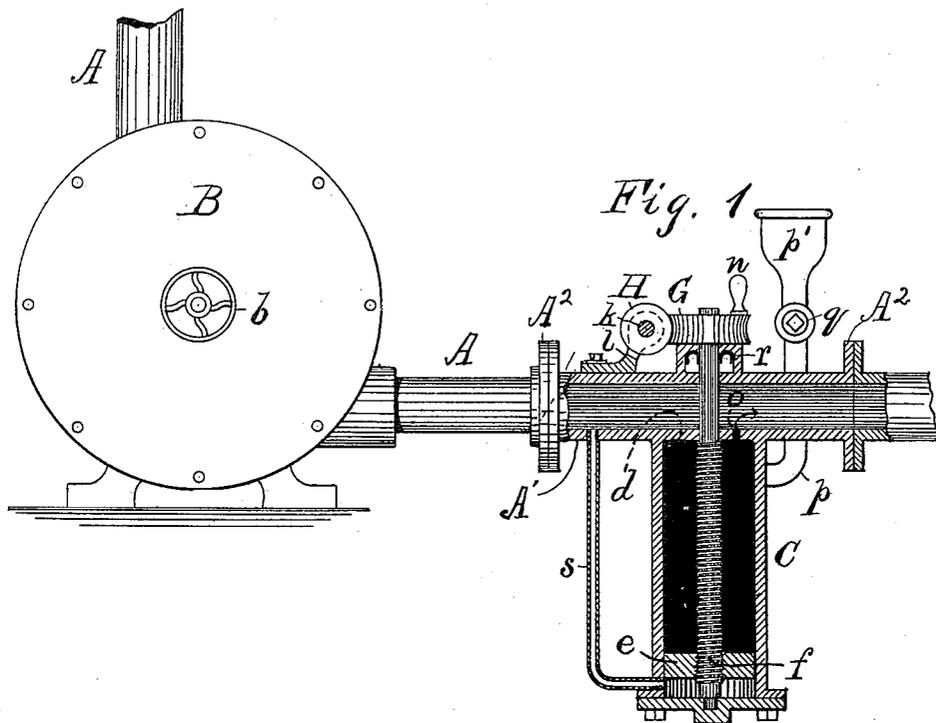


(No Model.)

J. W. HYATT
COAGULANT FEEDER.

No. 362,966

Patented May 17, 1887.



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UNITED STATES PATENT OFFICE.

JOHN W. HYATT, OF NEWARK, NEW JERSEY.

COAGULANT-FEEDER.

SPECIFICATION forming part of Letters Patent No. 362,966, dated May 17, 1887.

Application filed July 19, 1886. Serial No. 208,363. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HYATT, a citizen of the United States, residing at Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Coagulant-Feeders, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is to feed any coagulant or precipitant—as lime-paste or solution of iron or alum—to the impure water before filtration.

The invention consists in a particular construction for the coagulant-feeder patented to me February 19, 1884, as No. 293,749; and it consists in the combination, with a motor interposed in the main supply-pipe to a filter, of a coagulant-receptacle separated from such supply-pipe by a partition, which is perforated to permit the discharge of the chemical agent from the receptacle when expelled by a moving piston.

In the annexed drawings, Figure 1 represents in side elevation a motor inserted in the filter supply-pipe and the injector attached to such pipe, the injector and other parts being shown in section where hatched, and the pulley and belt for actuating the injector-screw being omitted. Fig. 2 is a plan of the apparatus, including such belt and pulley.

A is the filter supply-pipe, and B a motor inserted therein. The motor is shown herein of rotary form, but may be made of any suitable shape or character.

C is the injector-cylinder, shown herein as connected directly with a pipe-section, A', which is interposed in said pipe by flanges A². The cylinder is separated from the supply-pipe by a partition, *d*, provided with a perforation, *o*, through which the contents of the cylinder are expelled by a piston, *e*. This piston is provided in its center with a screw-thread fitted through a screw, *f*, which is rotated by a worm-wheel, G, and worm H. The latter is carried by a shaft, *k*, in a bracket, *l*, upon a seat, *m*, formed on the section A', and the shaft is provided with a pulley, *j*, which is actuated by a belt, *i*, from the motor-pulley *b*.

The rotation of the screw and the movement of the piston in the cylinder C are thus effected when the water passes through the pipe A,

and in the same proportion as the water is delivered to the filter, while the use of the worm and the thread upon the screw *f* produces a very slow movement of the piston in relation to the flow of the water. Such movement is proportioned by the sizes of the pulleys *b* and *j* to deliver the required amount of coagulant or precipitant to a given volume of fluid which passes to the filter. The shank of the screw *f* is shown passed through the pipe A, and the worm-wheel affixed upon the upper end and provided with a handle, *n*.

The bracket *l* is secured to the seat *m* by bolts *m'*, passing through slots *l'*, and the worm may thus be shifted out of gear with the wheel G when the fluid is all discharged from the cylinder C, and it is necessary to refill the same. When the worm is thus disengaged, the handle *n* may be used to quickly reverse the rotations of the screw *f*, and the piston may be thus removed to the lower end of the cylinder, as shown in Fig. 1, and the latter be refilled through a pipe, *p*, and funnel *p'*.

The pipe is provided with a cock, *g*, to close it when the cylinder is filled, and a pipe, *s*, is shown connecting the lower end of the cylinder C with the fluid in the pipe A, to balance the pressures upon the opposite side of the piston *e*, and thus diminish the stress upon the screw *f* in propelling the latter.

A cup-leather packing, *r*, is shown applied to a stuffing-box around the shank of the screw adjacent to the wheel *g*, and the fluid is thus prevented from escaping from the pipe A, over which said shank passes. The advantage of this particular construction is its compactness and cheapness and the facility with which the injector and its rotative mechanism may be applied to the filter supply-pipe in connection with the detachable section A'. The essential part of the invention is therefore the construction of the injector-cylinder adjacent to such section, and separated therefrom only by a partition, *d*, through a perforation in which the coagulant and precipitant may be injected directly into the passing fluid.

I hereby disclaim the subject-matter of my said Patent No. 293,749, in which the motor in the filter supply-pipe is claimed in combination with an ejector delivering coagulant into said pipe.

Having thus set forth the nature and advan-

tages of my invention, what I claim herein is—

1. The combination, with the filter supply-pipe and a motor inserted therein, of the pipe-section A', the injector-cylinder C, provided with the piston *g* and the screw *f*, and separated from the said section by a partition, *d*, provided with perforations *o*, and the screw adapted to be rotated by a connection to the motor, substantially as herein set forth.
2. The combination, with the filter supply-pipe and a motor inserted therein, of the pipe-section A', the injector-cylinder C, provided with a piston, *g*, and the screw *f*, and separated from the said section by a partition, *d*, provided with a perforation, *o*, the screw being extended through the pipe-section A', and provided with a stuffing-box, a worm-wheel, and a worm adapted to throw out of gear, such worm adapted to be rotated by a connec-

tion to the motor, substantially as shown and described.

3. The combination, with the filter supply-pipe and a motor inserted therein, of the pipe-section A', the injector-cylinder C, provided with the piston *g* and the screw *f*, and separated from the said section by a partition, *d*, provided with perforation *o*, and the pipe *s*, connecting the lower end of the cylinder C with the fluid in the supply-pipe, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN W. HYATT.

Witnesses:

THOS. S. CRANE,
O. N. BALDWIN.