

No. 695,963.

Patented Mar. 25, 1902.

S. J. STUDER.

STRAIGHT FULLWAY VALVE.

(Application filed July 16, 1901.)

(No Model.)

Fig. 1.

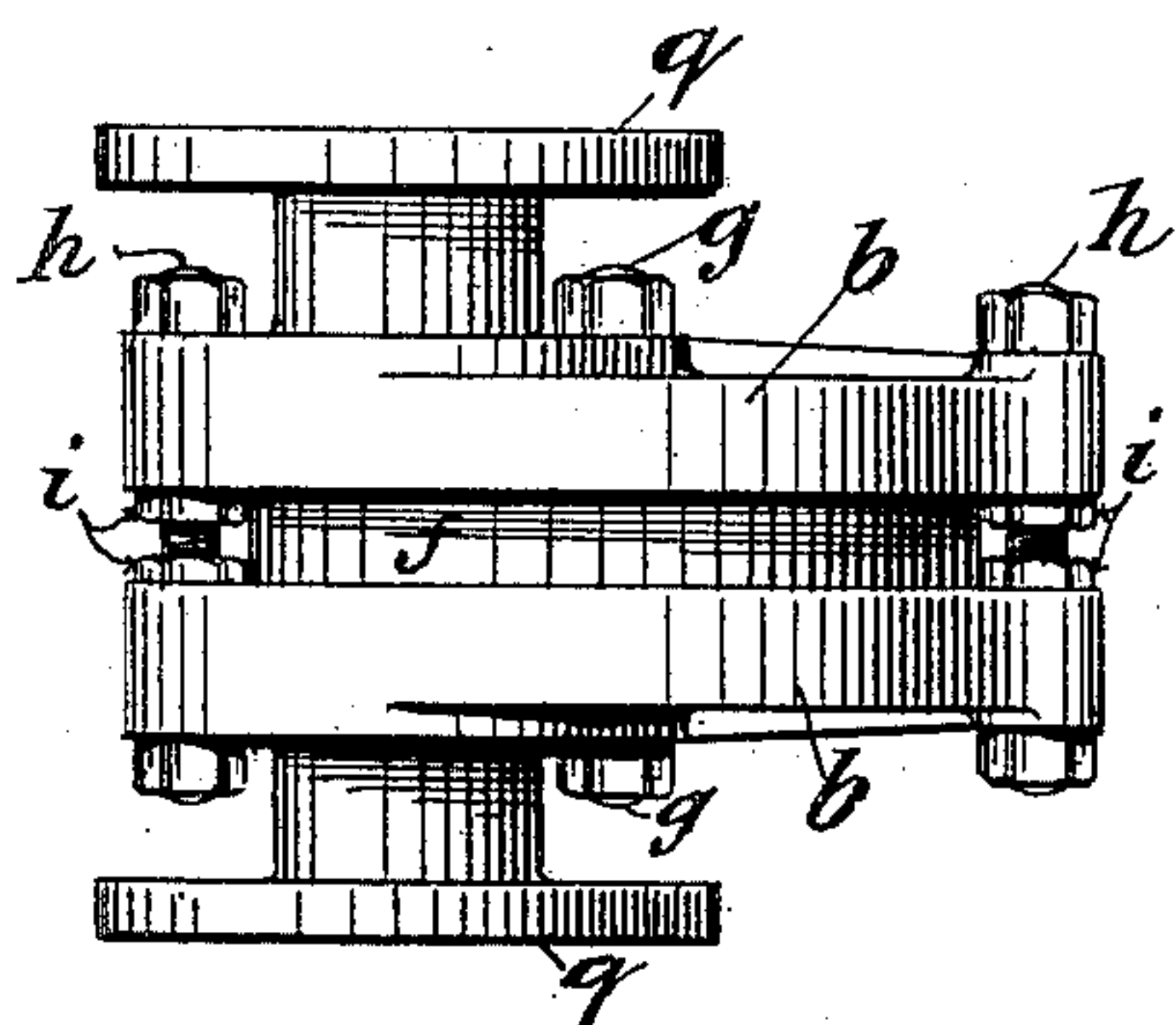


Fig. 3.

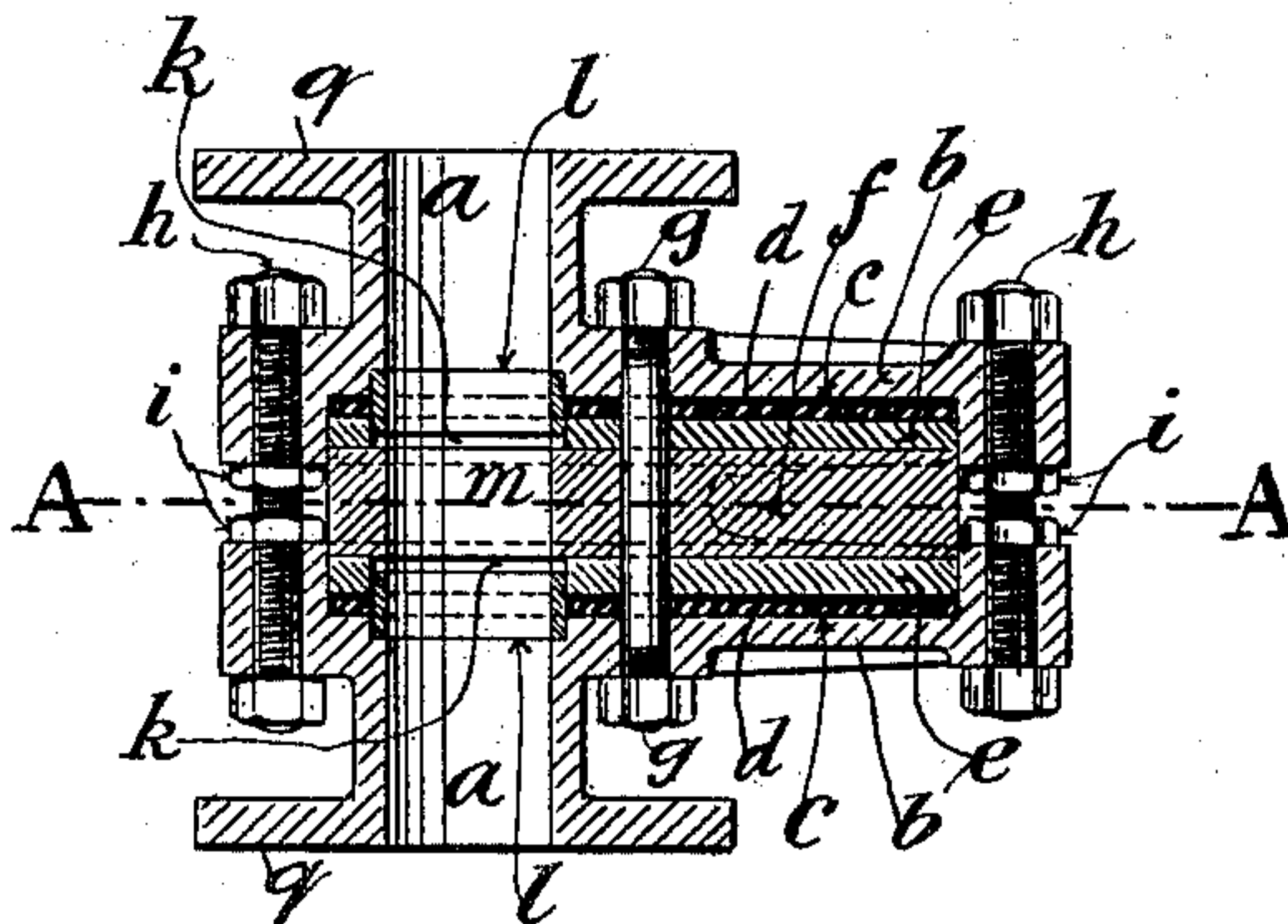


Fig. 2.

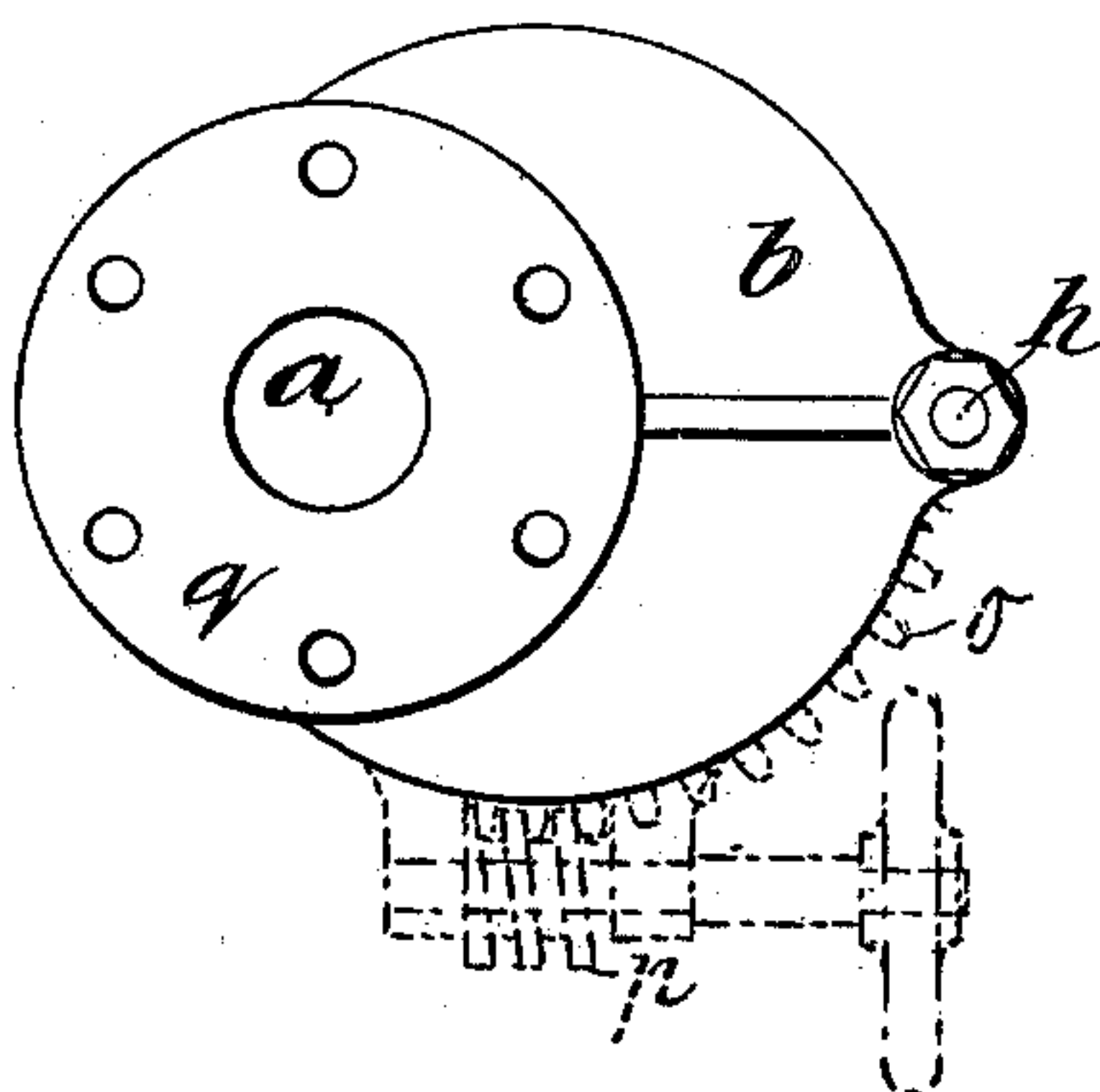


Fig. 4.

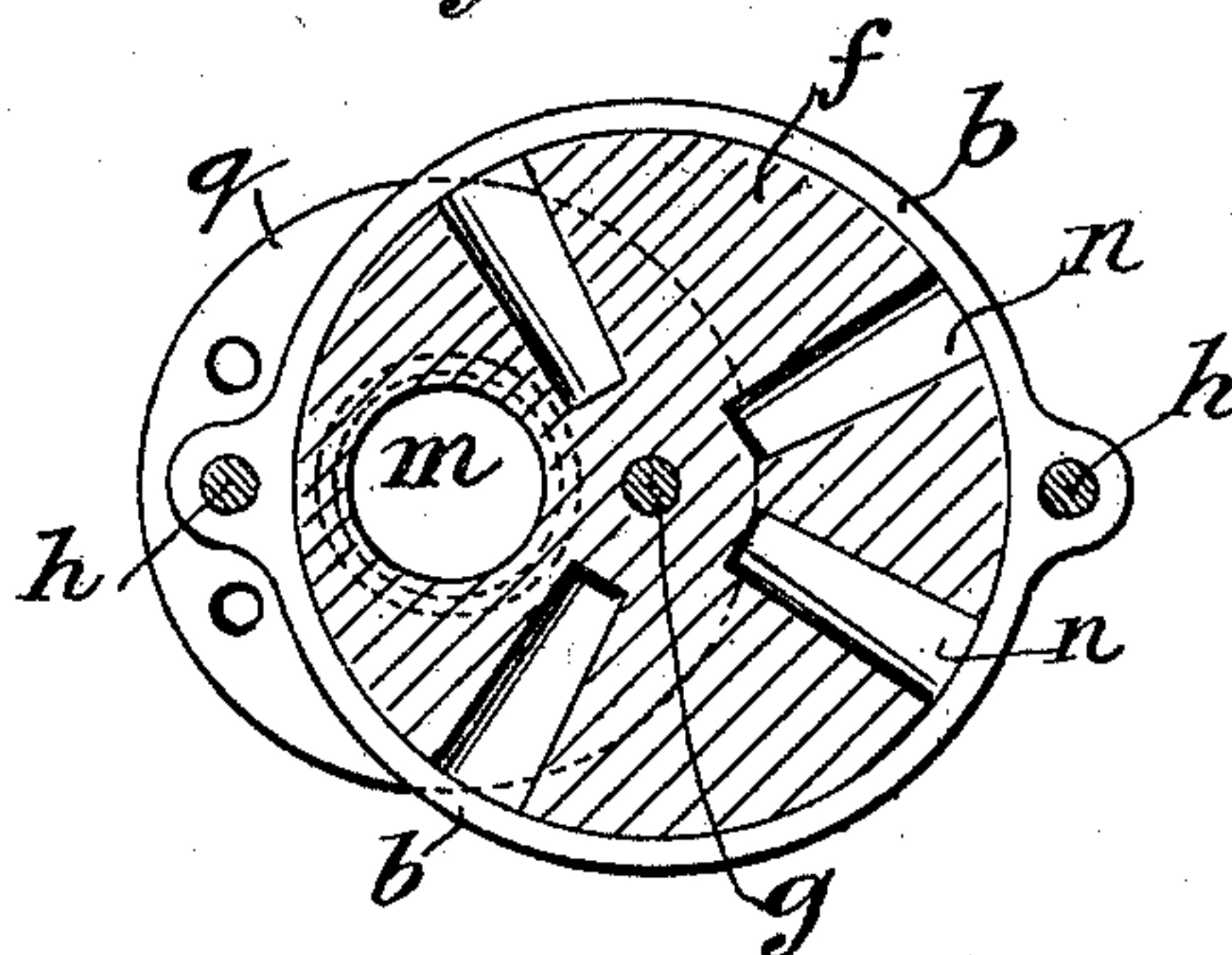


Fig. 6.

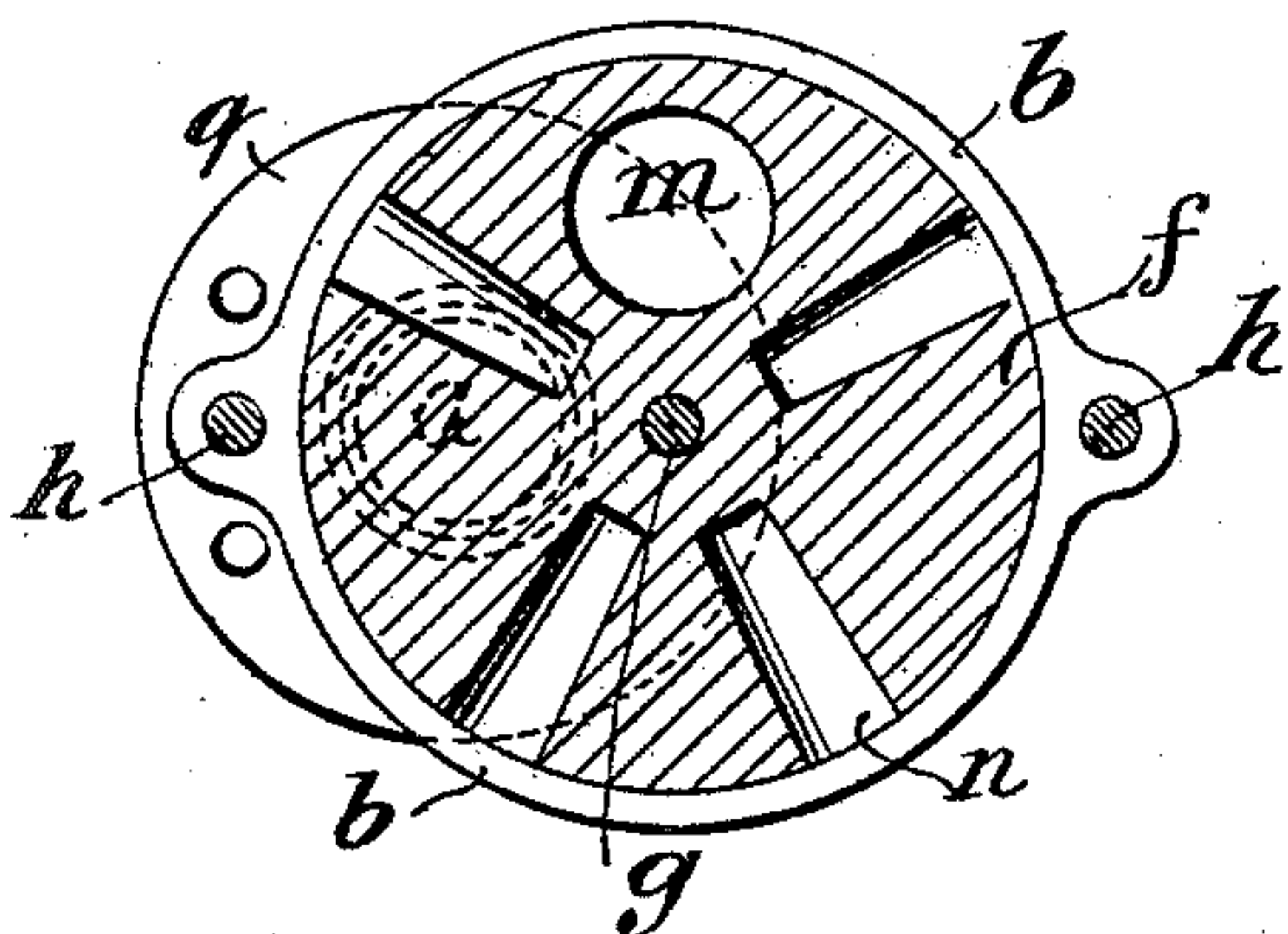
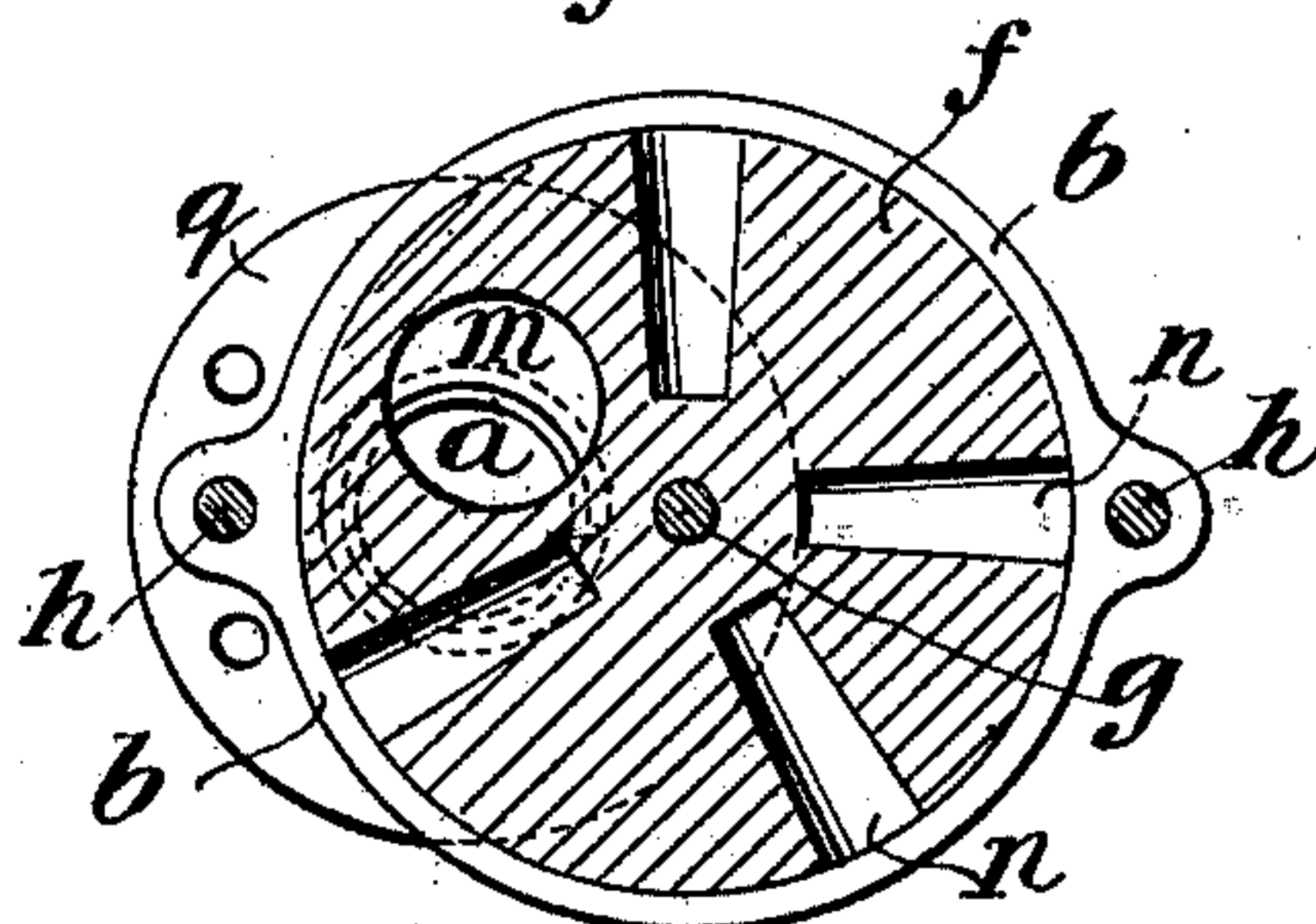


Fig. 5.



Witnesses.

Alfred Bosshardt
Stanley Bramall

Inventor.

Simon Joseph Studer

By G. B. Shardt.

Attorney.

UNITED STATES PATENT OFFICE.

SIMON JOSEPH STUDER, OF WARRINGTON, ENGLAND.

STRAIGHT FULLWAY VALVE.

SPECIFICATION forming part of Letters Patent No. 695,963, dated March 25, 1902.

Application filed July 16, 1901. Serial No. 68,490. (No model.)

To all whom it may concern:

Be it known that I, SIMON JOSEPH STUDER, a citizen of the Republic of Switzerland, whose post-office address is Grappenhall road, Stockton Heath, Warrington, in the county of Lancaster, England, have invented new and useful Improvements in Straight Fullway Valves, (for which I have made application for a patent in Great Britain, No. 23,546, dated December 24, 1900,) of which the following is a specification.

The object of my invention is to provide an improved form of straight fullway valve, which has a fullway fullbore passage, is free from recesses or lodgments, cannot bind as is the case in plug-valves, and the wear of which is even and can be readily compensated for without taking the valve to pieces. I attain this object by the means illustrated in the accompanying drawings, in which—

Figure 1 is a side view, Fig. 2 a plan, Fig. 3 a vertical section, and Figs. 4, 5, and 6 sectional plans at line A A of Fig. 3, of my improved valve.

Similar letters refer to similar parts throughout the several views.

In carrying out my invention and referring to the figures generally my improved valve consists of a casing made in two symmetrical parts, each formed with a fullway-passage *a a* and a plate *b b*, eccentric thereto. In the face of each of these plates I form a circular recess *c*, adapted to receive a cushion *d d*, made of rubber or other suitable yielding material—such as asbestos, woodite, or the like—upon each of which I place a disk *e e*. Between these two disks *e e* a third disk *f* is rendered oscillatory or rotary adjustable on a fulcrum—say, a bolt *g*, passed through the two disks *e e*, cushions *d d*, and plates *b b* of the valve-casing, which, together with other bolts *h h*, passed through the plates *b b*, outside the cushions *d d* and disks *e e* and *f*, hold the whole securely together. In order to provide additional security, I may employ back nuts *i* on the bolts *h*, screwed against the plates *b b*, which nuts prevent the casing-halves jamming the disk *f*, for instance, when fixed in the middle of a main.

The cushions *d d* and the two disks *e e* are each formed with a port *k*, which are concentric with and form a continuation of the passages

a a in the valve-casing. In order to protect the cushions *d d*, the said ports are fitted with metal rings *l*, (see Fig. 3,) the interior diameter of which corresponds approximately with that of the said passages. The middle disk *f* has also a port *m*, corresponding in diameter with that of the passages *a a*, and by turning the disk *f* its port *m* can be brought wholly or partly in and out of register with the said passages as may be required.

The cushions described serve to keep the disks *e e* always in uniform yielding contact with the surface of the disk *f*, which prevents liquid or solid matter making its way between the said disk surfaces, while at the same time the said cushions compensate for the contraction and expansion of the said disks and casing, and thus keep the respective disk-surfaces always fluid-tight without causing undue friction thereon.

In Fig. 4 the port *m* of the disk *f* is shown completely in register with the passages *a a* in the valve-casing, in Fig. 5 half-way, and in Fig. 6 completely cut off therefrom.

In order to facilitate the oscillatory or rotary adjustment of the middle disk *f*, which takes the place of a plug in a tap, recesses *n* may be formed in the periphery thereof adapted to receive a bar, as will be readily understood, or it may have a segmental worm-wheel *o* and rotated by a worm *p*, arranged in gear therewith. (See dotted lines, Fig. 2.)

As in other valves, the valve-casing *b b* may be formed with flanges *q* at the outer end of the passages *a a* or with screw-threaded recesses adapted to receive pipe connections, as will also be readily understood.

Any wear or leakage which is at once apparent can be readily compensated for by drawing the bolts *h h* tight and readjusting the back nuts *i i*.

The disks *f* and *e e* may be made of metal, earthenware, slate, stone, ebonite, vulcanite, and the casing *b b* of ordinary or enameled metal or an alloy of metals, ebonite, vulcanite, or other material which will resist corrosion or the action of the passing acid, fluid, or substance.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a straight fullway valve, a casing formed in two parts each having the passage

a in line with each other and the plate *b* eccentric thereto, the opposing faces of which plates are each formed with the circular recesses *c*, the disk *f* having the port *m*, the
5 disks *e*, *e* on each side of the disk *f* and the cushions *d*, *d* upon the disks *e*, *e* in the said recesses, the said cushions *d*, *d* and disks *e*, *e* being each formed with a port *k* forming a
10 continuation of the passages *a*, *a*, all combined substantially as and for the purpose set forth.

2. In a straight fullway valve, the disk *f*

held in between the plates *b*, *b* of the two parts of the valve-casing, by bolts *h*, *h* passing through and having nuts adapted to be
15 screwed against each side of the said plates, all substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

SIMON JOSEPH STUDER.

Witnesses:

ALFRED BOSSHARDT,
STANLEY E. BRAMALL.