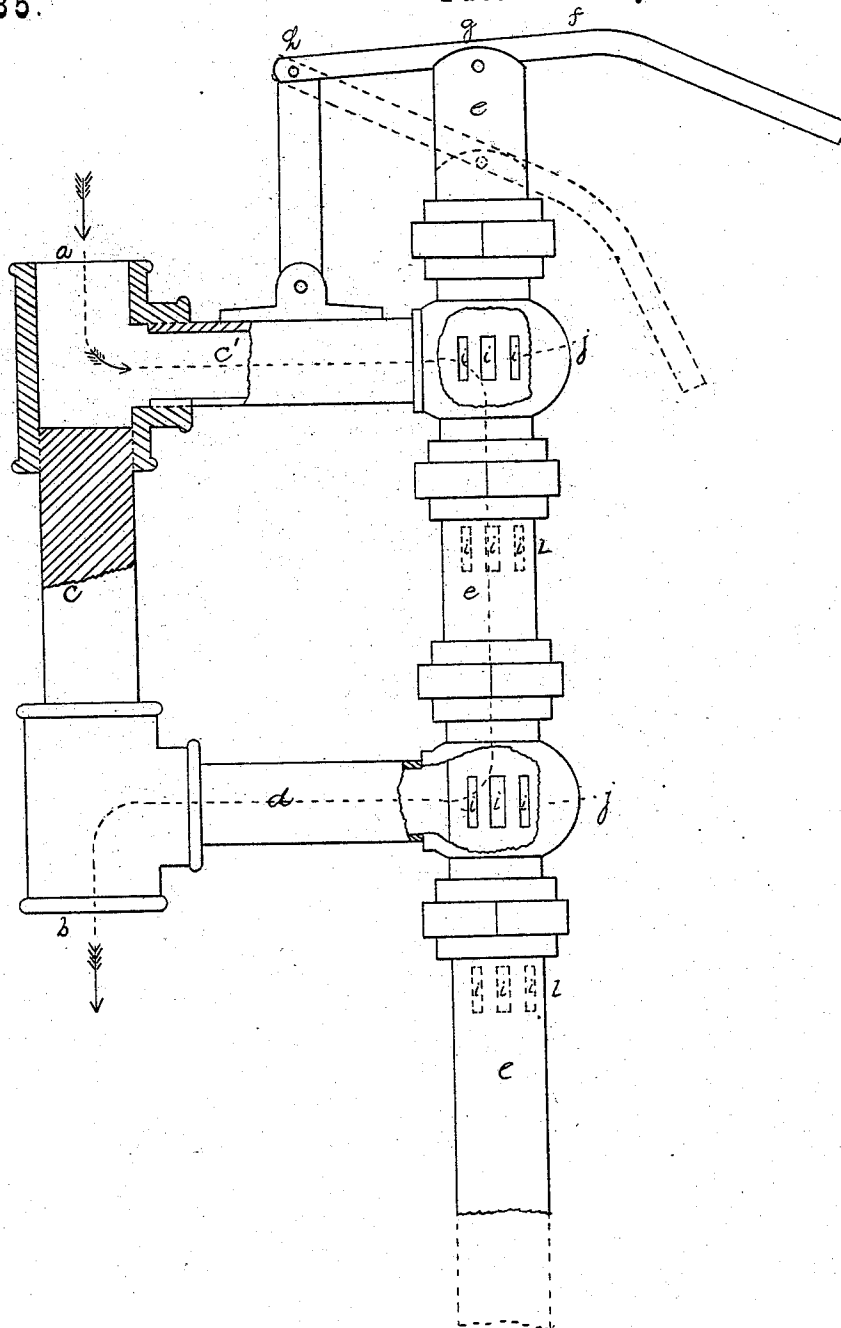


L. H. BEAL & W. ANDREWS.
THROTTLE VALVE.

No. 177,985.

Patented May 30, 1876.



WITNESSES:

Charles E. Clifford
Edgar A. Brown

INVENTOR:

Leonard H. Beal
Williams Andrews
Per Wm Henry Clifford
Attorney

UNITED STATES PATENT OFFICE.

LEONARD H. BEAL AND WILLIAM ANDREWS, OF LISBON FALLS, MAINE.

IMPROVEMENT IN THROTTLE-VALVES.

Specification forming part of Letters Patent No. **177,985**, dated May 30, 1876; application filed May 1, 1876.

To all whom it may concern:

Be it known that we, LEONARD H. BEAL and WM. ANDREWS, of Lisbon Falls, in the county of Androscoggin and State of Maine, have invented certain new and useful Improvements in Valves; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The drawing shows our improved valve in side view, part in section.

a is the entrance-port. *b* is the exit. The part *c* is made solid or with a stoppage, in order to prevent any passage of steam through it. The pipes *c' d* are provided at their ends with holes or sockets, through which passes the sliding pipe *e*. The pipe *e* is moved by the lever *f*, pivoted at *g* and *h*. *i* are ports in the sliding pipe *e*. When the pipe is so moved as to bring the ports *i* into the positions indicated at *j*, the steam, entering as indicated by the arrows, follows the dotted line, and enters the cylinder or machine at *b*. When it is desired to cut off the steam, depress the lever *f*, as shown by the dotted-line lever, and this will slide the ports down to *l*. Thus the solid parts of the pipe *e* are intro-

duced into the holes or sockets in the pipes *c d*, and the passage of the steam is prevented through the sliding pipe *e* into the cylinder, machine, or engine.

It will be seen that the sockets or holes for the sliding pipe *e* in the pipes *c d* are capable of being very securely and tightly packed.

A modification of the structure and operation above described can be produced by having the pipe *e* fixed. Then the sockets or holes would be formed in *e*, and the ports *i* in pipes *c'* and *d*. *c* and *d* would be made to slide through the sockets in *e*, instead of *e* moving through the sockets in the ends of *c* and *d*.

In either of these two methods a simple and effective valve is produced, and one easily kept durable and in repair.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination herein described of the pipes *c' d*, part *c*, the sockets on the ends of pipes *c' d*, pipe *e*, with ports *i*, and lever *f*, all to form a valve operating as herein set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

LEONARD H. BEAL.
WILLIAM ANDREWS.

Witnesses:

CHAS. B. PLUMMER,
GEO. MCINTOSH.