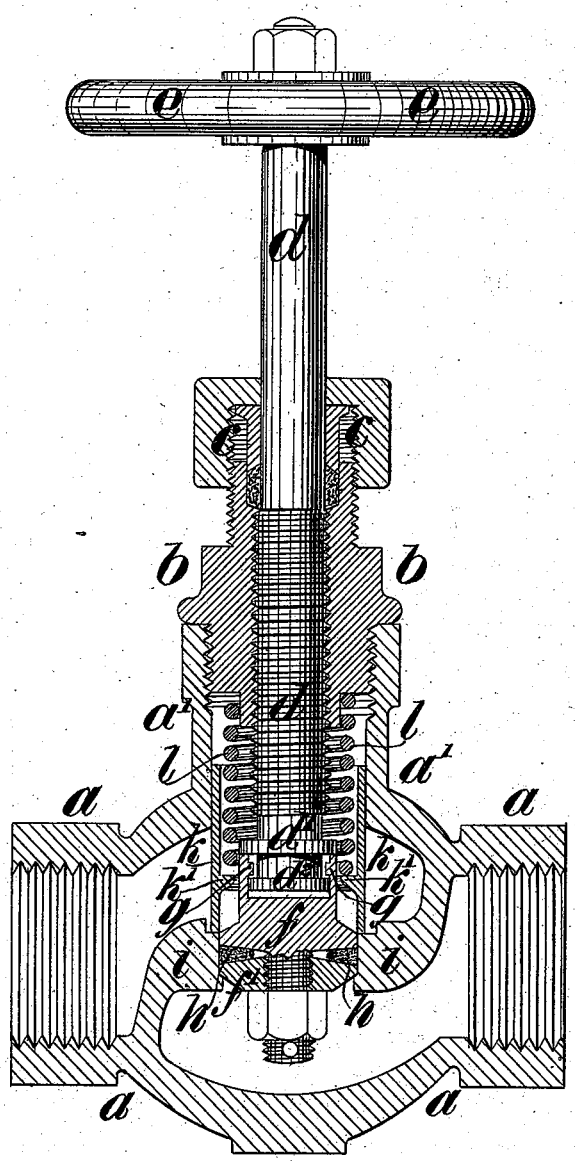
(No Model.)

J. HAWTHORN & S. MOORHOUSE.

STOP VALVE.

No. 382,469. Patented May 8, 1888.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN HAWTHORN, OF NEW MILLS, COUNTY OF CHESTER, AND SIDNEY MOORHOUSE, OF STALYBRIDGE, COUNTY OF LANCASTER, ENGLAND.

STOP-VALVE.

SPECIFICATION forming part of Letters Patent No. 382,469, dated May 8, 1888.

Application filed February 7, 1888. Serial No. 263,230. (No model.) Patented in England February 11, 1886, No. 1,984.

To all whom it may concern:

Be it known that we, JOHN HAWTHORN, of New Mills, county of Chester, engineer, and SIDNEY MOORHOUSE, of Stalybridge, county of Lancaster, England, brass-founder, subjects of the Queen of Great Britain and Ireland, have invented certain Improvements in Stop-Valves, (for which we obtained a patent in Great Britain, No. 1,984, dated February 11, 1886,) of which the following is a specification.

Our invention relates to valves for controlling and arresting the flow of fluids, and will be most clearly understood from the following description of the annexed drawing.

The said drawing is a vertical section of the improved valve.

The shell *a* is constructed in the usual manner and of a form suitable to the use for which the valve is intended. The bonnet or closing-plug *b* is formed with a packed gland, *c*, through which passes a screwed spindle, *d*, provided at its outer end with a hand-wheel, *e*, or other means of turning. The screw-spindle *d* works in the screwed bore of the plug *b*. The lower end of the spindle *d* is connected to a sliding piston, *f*, in such a manner that the spindle may revolve without rotating the piston. In the example the foot of the spindle is formed with collars d' d^2. The top of the piston *f* is recessed to admit the foot of the spindle, and the lower collar, d^2, and stops or pins *g g* prevent the spindle from being drawn out of the piston. The piston is formed of two parts, *f* and *f'*. A central stud extends from the part *f* through the part *f'*, and is provided with a nut, so that the packing *h*, which is placed between the two halves of the piston, can be compressed to any desired extent.

In the case of high-pressure steam-valves the packing *h* is preferably of asbestus; but any suitable packing material might be used. The piston accurately fits a seating bored to receive it in the partition *i* of the shell *a*, or in a lining fitted into the partition. The neck *a'* of the shell is bored to receive a sliding cylindrical shield, *k*, the lower part of the interior of the shield being bored to fit the piston *f f'*. A ledge, *k'*, is formed in the interior of the shield, and upon the said ledge bears the lower end of a coiled spring, *l*. The spring *l* is compressed between the lower end of the cover-plug *b* and the ledge *k*, so that the constant tendency of the spring is to force the shield down upon the seating of the piston-valve. When the piston is within the seating, as shown in the drawing, passage of fluid through the valve is cut off. To open a passage through the valve, the spindle *d* is turned so as to withdraw the piston from the seating. When so withdrawn, the piston first passes into the shield *k*, which remains in contact with the seating. In its upward progress, and when well within the shield, the piston comes into contact with the aforesaid inner ledge, *k'*, and overpowers the pressure of the spring, so as to lift the shield with it. By this time the piston or the packed portion of the piston has passed entirely into the shield, so that the packing is protected by the shield from the injurious effects of the rush of fluid through the valve.

When it is desired to close the valve, the spindle is turned in the contrary direction until the shield bears on the seating, the continued rotation of the spindle pushing the piston into the seating and arresting the flow through the valve.

We claim as our invention—

1. The combination of valve-casing, seat, screw-spindle, and packed pistons operated by the spindle, with a shield for the pistons, and a spring acting on the shield to tend to press it onto the seat, substantially as described.

2. The combination of a valve-casing, seat, spindle, and piston, with a shield normally on the seat about the piston and bored to receive the piston as the latter is raised, and elevates the shield also to open the passage, as and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN HAWTHORN.
SIDNEY MOORHOUSE.

Witnesses:
DAVID FULTON,
DAVID TIMPERLEY.