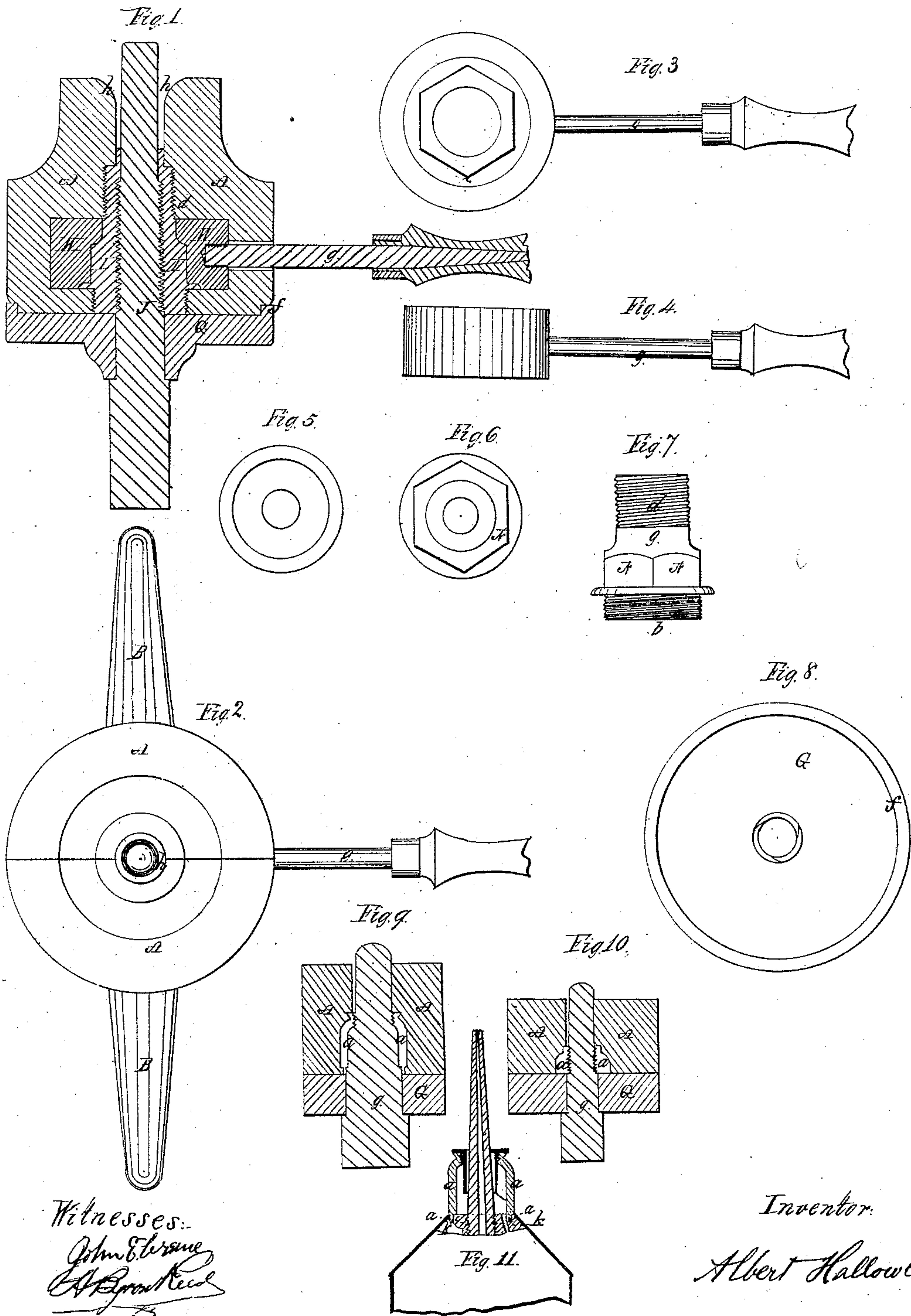


*A. Hollowell,*

*Molding Gas and Steam Fittings,*

*No 84,112,*

*Patented Nov. 17, 1868.*



Witnesses:  
*John E. Evans*  
*Wm. B. Reed*

Inventor:  
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# United States Patent Office.

ALBERT HALLOWELL, OF LOWELL, MASSACHUSETTS.

Letters Patent No. 84,112, dated November 17, 1868.

## IMPROVEMENT IN GAS AND STEAM-FITTINGS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ALBERT HALLOWELL, of Lowell, in the county of Middlesex, and State of Massachusetts, have invented certain new and useful Improvements in the Fittings which are Used in Connection with Gas and Steam-Pipes or Fixtures, or the pipes or fixtures which are used for conveying water or other fluids, and in the method or process of making such fittings, of which the following is a full, clear, and exact description, which will enable others skilled in the art to make and use my invention, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical central section of my improved apparatus, with a portion of a fitting, called a valve-stand, formed within.

Figure 2 represents a top view of my improved apparatus, as it appears when ready to receive the melted metal, to form a valve-stand.

Figure 3 is a bottom-side view of a detached forming-die, H, seen in fig. 1.

Figure 4, an edge view of fig. 3.

Figure 5, is a bottom-end,

Figure 6, a top-end, and

Figure 7, a side elevation of one of the valve-stands I, seen in fig. 1.

Figure 8 is a plan or top view of the plate or disk G, and the central screw-core J, seen in fig. 1.

Figures 9 and 10 are central longitudinal sections of apparatus, forming parts *a*, which constitute the venting-chamber or top of an oil-can, a section of a portion of which and the parts *a* are shown in Figure 11.

This invention consists in making or forming finished fittings, which are called gas-fittings and steam-fittings, and of making or forming parts of such fittings, which, when combined, form whole fittings, and which are used for connecting pipes or fixtures for conveying gas, steam, water, or other fluids, and for controlling the action, pressure, or force of such fluids passing through such pipes or fixtures, by casting such finished fittings, or parts of fittings, in moulds, constructed and arranged substantially as hereinafter described.

This invention has for its object to materially cheapen or reduce the cost of steam, gas, and other fittings, and to render them less liable to corrosive action, and available for re-working after they are worn out, and at a trifling expense.

In making steam, gas, and other fittings, or parts of such fittings, (and as, in the present case, a stand, which forms part of a globe-valve, and which stand is an expensive and difficult part to finish in the common way of turning, filing, and cutting the external screws, and tapping the internal screw-threads accurately,) I first prepare a suitable mould, A, the inside of which, at the lower end, *b*, and at about the middle, *d*, has screw-threads cut, to form the screw-portion, *b* and *d*,

of the stand I. The rest of the external surface of such stand, including the nut-portion N, is formed by a die, H, fitted into a cavity in the mould, between the screw-portion *b* and *d*.

A screw-core, J, fitted and fastened to a disk or plate, G, passes upward through the die H and the mould, the lower end of which is closely fitted inside of a rib or flange, *f*, and squared and fitted to the top of the disk H, inside of the said rib, thus keeping all the parts in their proper central position.

The upper end of the screw-core J is reduced in diameter downward to a little below the top of the screw-portion *d*, so as to form a close, round bearing, and a guide for the valve-spindle, which is turned to fit the same.

When a fitting, or a part of a fitting, is to be cast or formed, (in the present case, a valve-stand,) the die H is placed within the mould A, the handle or a rod, *g*, passing in through a hole in the joint of the mould. The screw-core is passed upward through the centre, bringing the top side of the disk G and the bottom end of the mould into close contact. The mould is then clamped together, and melted metal poured in at the flaring annular gate *h*, around the top end of the screw-core J.

As soon as the fully-formed fitting is sufficiently cooled or hardened, the disk is rotated or turned, to withdraw the screw-core, the mould is parted, and the stand I is removed, with the die H, which holds it, and out of which it drops readily by a slight rap on the die, or by holding the die in the right position.

Each operation of casting and removing a perfectly-formed stand is performed in the same manner, as fast as cooling and pouring can be effected.

The mould should be of iron, or of some other metal which is harder or fusible at a higher degree of heat than the metal used for forming or casting stands or other fittings. Otherwise the mould might be injured by the highly-heated and fluid metal.

Handles B, at each side of the mould, are for operating or adjusting the parts when desired.

Another expensive and difficult fitting to make and finish is shown in figs. 9, 10, and 11. These moulds A are constructed and operated in about the same manner as in casting the valve-stand, only each of the portions *a*, which form parts of a venting-chamber or top to an oil-can, is cast in a separate mould, formed for that purpose, and, after being cast, one is placed in the end of the other, as shown in fig. 11, each portion being cast in a finished state, requiring no further operation to fit them for use, except the removal of the gate-portion *h*.

These parts *a* are applied to the top of an oil-can, and the space *k* filled with solder, which holds all the parts firmly together:

Either of the fittings, or parts of fittings, herein de-



scribed, or other fittings, can be made, by my improved method or process, at less than one-fourth, and some kinds of fittings at less than one-tenth, the cost of the same or similar fittings made by casting in sand, and by turning, filing, and otherwise finishing, and, for all ordinary purposes, they are quite as good as, or better than, any other I have ever seen.

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

The mould or moulds, constructed and arranged substantially as described, for the purpose of forming finished fittings, or parts of fittings, as and for the purpose specified.

ALBERT HALLOWELL.

Witnesses:

JOHN E. CRANE,  
A. BYRON REED.