(No Model.)

C. M. JARVIS.

STOP COCK.

No. 540,166. Patented May 28, 1895.

Fig. 1.

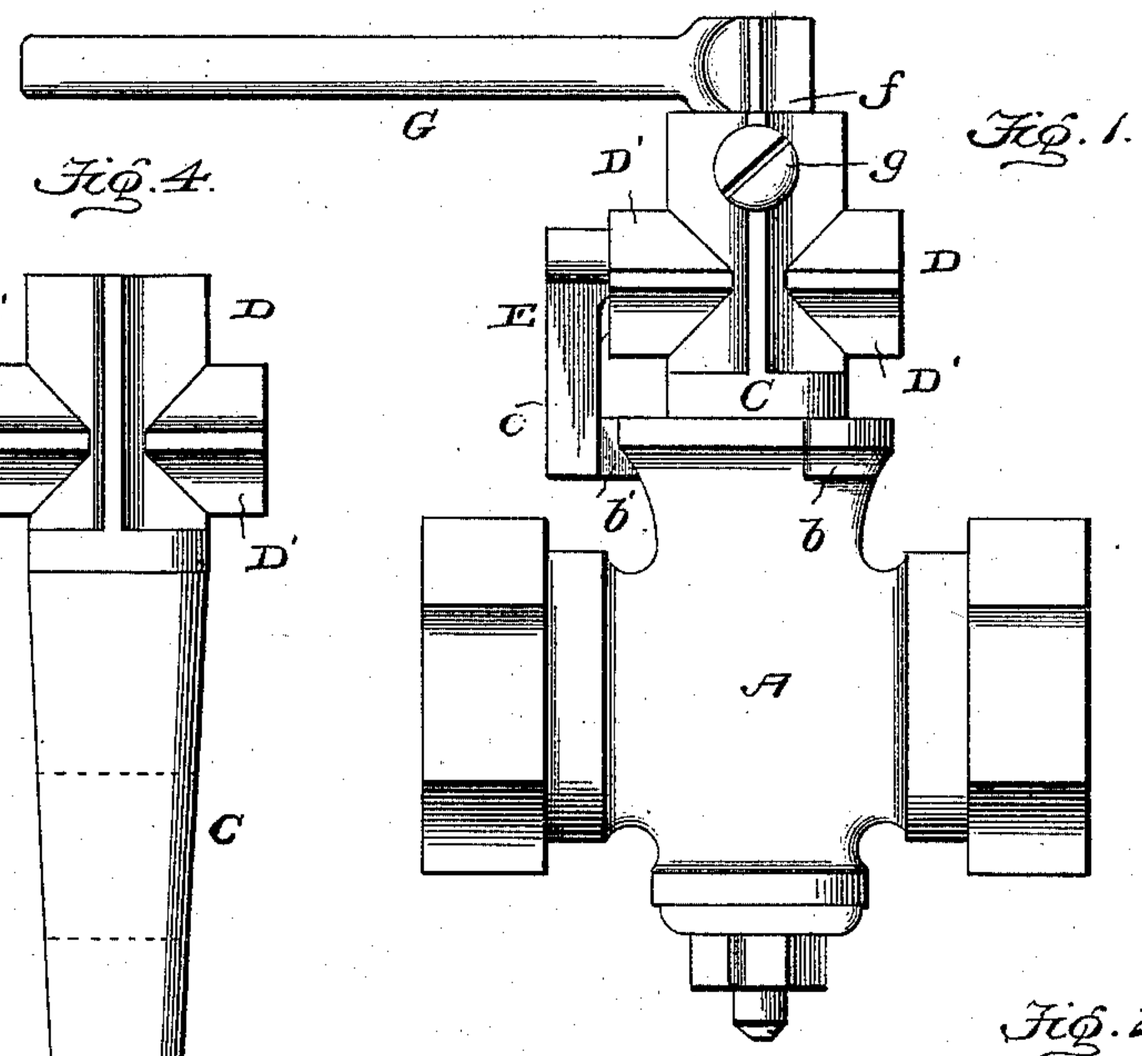

Fig. 4.

Fig. 2.

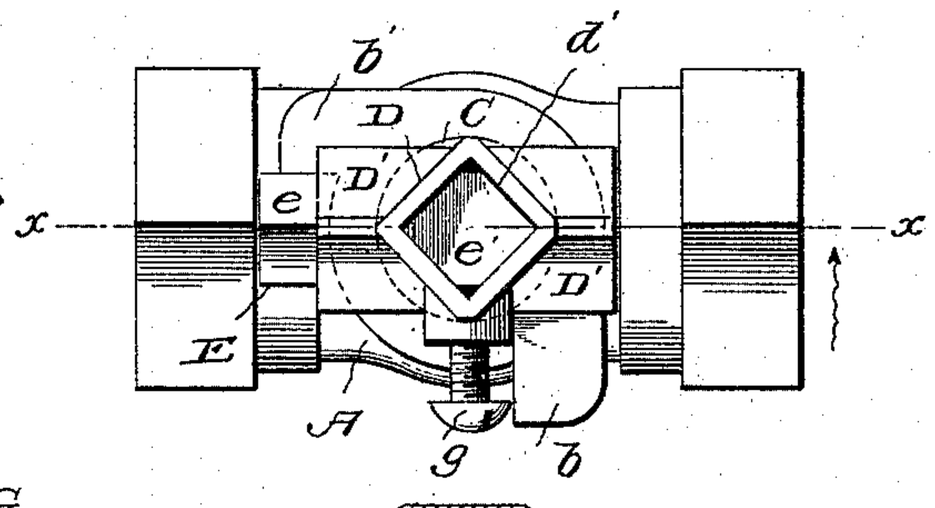

Fig. 5.

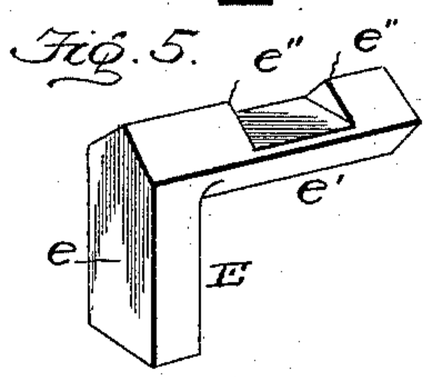

Fig. 3.

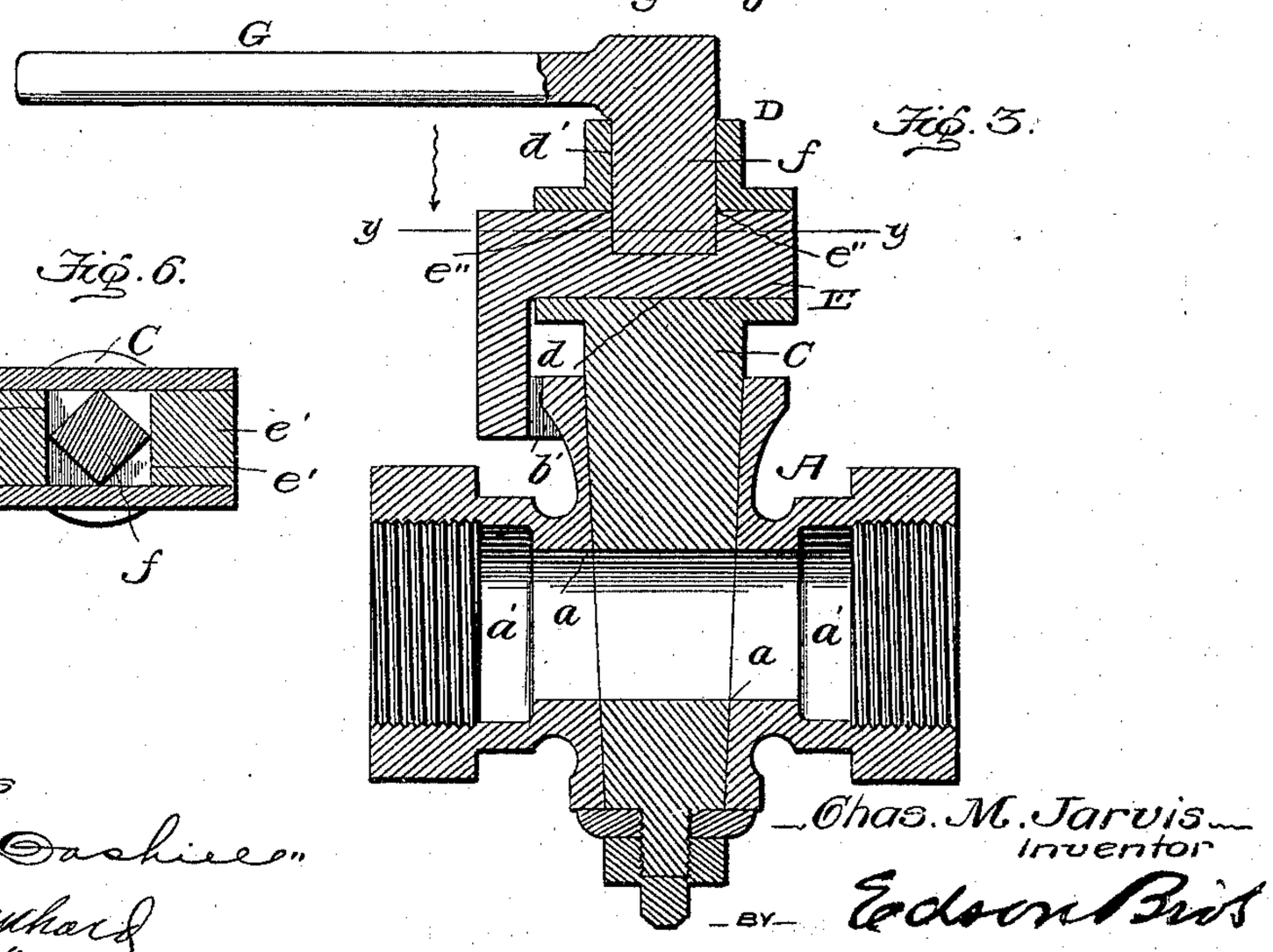

Fig. 6.

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UNITED STATES PATENT OFFICE.

CHARLES M. JARVIS, OF ERIE, PENNSYLVANIA.

STOP-COCK.

SPECIFICATION forming part of Letters Patent No. 540,166, dated May 28, 1895.

Application filed February 26, 1895. Serial No. 539,776. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. JARVIS, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Stop-Cocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in stop cocks of that class which are known to those skilled in the art as "turning plugs" and which employ means for limiting the rotation of the plug to its opened or shut off positions.

The object of the present invention is to provide an improved cock in which the plug is constructed to form sockets adapted to receive a detachable stop and a removable handle, which stop and handle are interlocked one with the other in a manner to hold both parts on the plug and to prevent removal of the stop without first detaching the handle. By this construction, the stop can be replaced, at a trifling expense, by a new part when it shall have become broken or damaged to such an extent as to prevent further use or repair thereof; and a further advantage of this construction is that the shell and stop can be reversed to adapt the cock to be used either as a right or left hand stop cock.

The invention, therefore, consists in the novel construction and combination of parts which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment of my invention in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a plan view. Fig. 3 is a vertical sectional view on the plane indicated by the dotted line *x x* of Fig. 2. Fig. 4 is a detail view of the plug detached from the body of the cock. Fig. 5 is a detail perspective view of the stop, also removed from the plug. Fig. 6 is a detail horizontal sectional view on the plane indicated by the dotted line *y y* of Fig. 3.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates the body or shell of my stop-cock, which body is provided with the usual tapered seat, *a*, at right angles to the fluid-way or passage, *a'*; and at its upper end, this body is provided with the spaced stop-shoulders or lugs, *b*, *b'* which are cast or formed as an integral part of the body.

The plug, C, of the cock is ground or otherwise produced in a manner familiar to those skilled in the art to fit snugly in the tapered seat, *a*, in the body. In general, this plug C is similar to the plugs of the ordinary cocks; but the upper part of the plug where it protrudes beyond the body is constructed in a peculiar way to receive the detachable stop, E, and the detachable handle, G.

From the upper solid end of the plug C rises the extension, D, and from the sides of this extension project the short arms, D', D', all of which are cast in a single piece with the plug. The arms, D', D', are in line with each other, and through the arms runs a passage which forms a seat, *d*, for the horizontal arm of the angular stop, E. The extension D is made hollow, and its upper end forms a socket, *d'*, in which is fitted the stud, *f*, on the handle G. In the drawings I have shown the seat *d* and the socket *d'* as being square or polygonal in cross section, to receive the angular stop E and the stud of the handle which correspond in form to the seat *d* and the socket. While this shape of the parts is advantageous in that the stop E and handle G are prevented from rotating in the seat and socket, respectively, yet I do not strictly confine myself to this particular shape because I am aware that the parts can be made round or of other desired shape without departing from the spirit of my invention.

The angular stop E is made in a single piece of right angled form, thus producing two arms, *e*, *e'*, the horizontal arm *e'* being somewhat longer than the vertical arm, *e*. This horizontal arm, *e'*, of the stop is fitted in the seat, *d*, on the plug, and the arm, *e*, depends from the seat between the stop lugs *b*, *b'* on the body, said lugs lying in the path of the arm *e* so as to limit the movement thereof in either direction, whereby the rotary move-

ment of the plug is confined to a quarter of a revolution and the plug is prevented from moving past its shut off, or turned on, position.

The horizontal arm, *e*, of the stop is provided in its upper edge with a recess, forming the spaced shoulders, *e''*, and when the arm, *e*, is properly fitted in the seat, *d*, in the plug, the recess thereof aligns or coincides with the vertical socket *d'* in the extension, D, whereby the lower end of the lug, *f*, is adapted to fit into the recess, between the shoulders, *e''*, and to confine the stop E against movement in the seat, *d*, of the plug. This handle, G, is held in the socket, *d'*, by means of the set screw, *g*, which works in a threaded aperture in the extension, D, and has its inner end arranged to bind against the lug, *f*, of the handle.

It will be noted that the handle is locked in the socket, *d*, of the plug, and that the lug of the handle locks the stop against displacement in its seat in said plug; but if the stop should become broken, it can be easily removed by releasing the set screw, detaching the handle, and withdrawing the stop from the seat, after which a new stop can be placed in position at a small cost.

In operation, the vertical arm, *e*, of the stop abuts against the shoulder, *b*, when the plug is turned to cause its passage to align with the fluid way or passage, *a'* in the body; but when the plug is turned, by the handle, G, to close the passage *a'*, the vertical arm *e* of the stop abuts against the other lug, *b'*, thereby limiting the turning movement of the plug in either direction.

It will be noted that the stop can be fitted from either side of the seat, *d*, and the stop-cock can thus be used either as a right hand cock or as a left hand cock, the stop being reversible at will, as will be readily understood.

I am aware that the form of the stop E can be modified by a skilled mechanic without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The plug provided with the transverse socket, *d*, and a vertical socket *d'*, combined with a body having spaced stops, an angular stop fitted in the transverse socket *d*, and a handle fitted in the vertical socket, substantially as and for the purposes described.

2. The combination with a body having stops, of a plug having its large end protruding beyond the body and provided with the intersecting transverse and vertical sockets, an angular stop having its horizontal recessed arm fitted in said transverse socket and its vertical arm arranged to play between the stops, a handle fitted in the vertical socket and in the recessed arm of the angular stop, and a clamp acting on the handle to hold the same detachably in the plug socket, substantially as and for the purposes described.

3. The plug provided with the enlargement D, D', which is recessed to produce the angular transverse and vertical sockets *d*, *d'*, which intersect one another, in combination with stops on a body or shell, the angular stop, E, having its horizontal recessed arm *e'* fitted in the transverse socket *d'* to bring its recess in line with the vertical socket *d*, a handle provided with a stud *f* which fits in the vertical socket *d'* and the recess of the arm *e'*, and a screw which binds against the stud *f*, for the purposes described, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES M. JARVIS.

Witnesses:
C. B. HAYES,
H. OPPENHEIMER.