

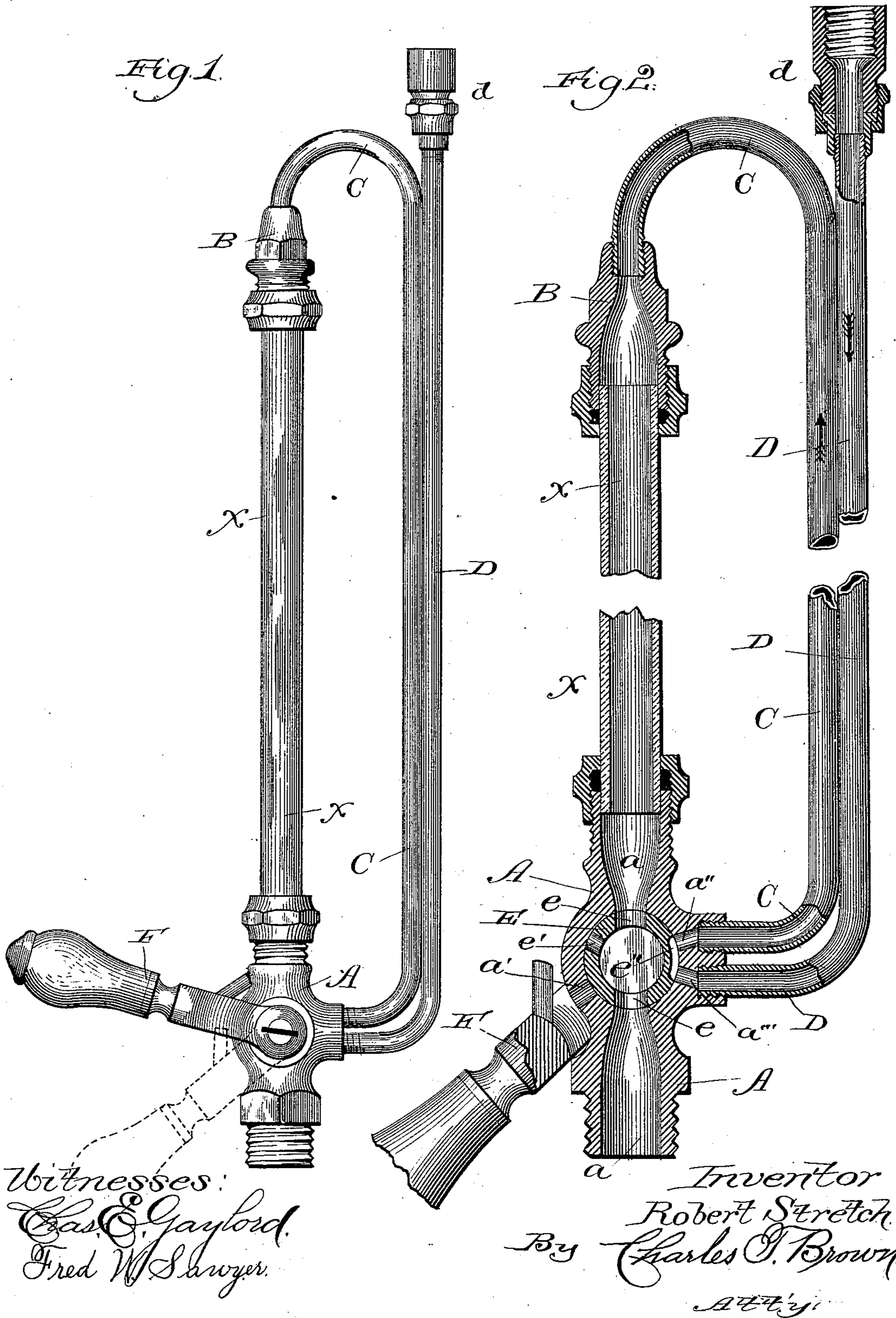
(No Model.)

2 Sheets—Sheet 1.

R. STRETCH.
STEAM AND WATER GAGE.

No. 350,510.

Patented Oct. 12, 1886.



Witnesses:
Chas. E. Gaylord.
Fred W. Sawyer.

Inventor
Robert Stretch.
By Charles T. Brown.
Att'y.

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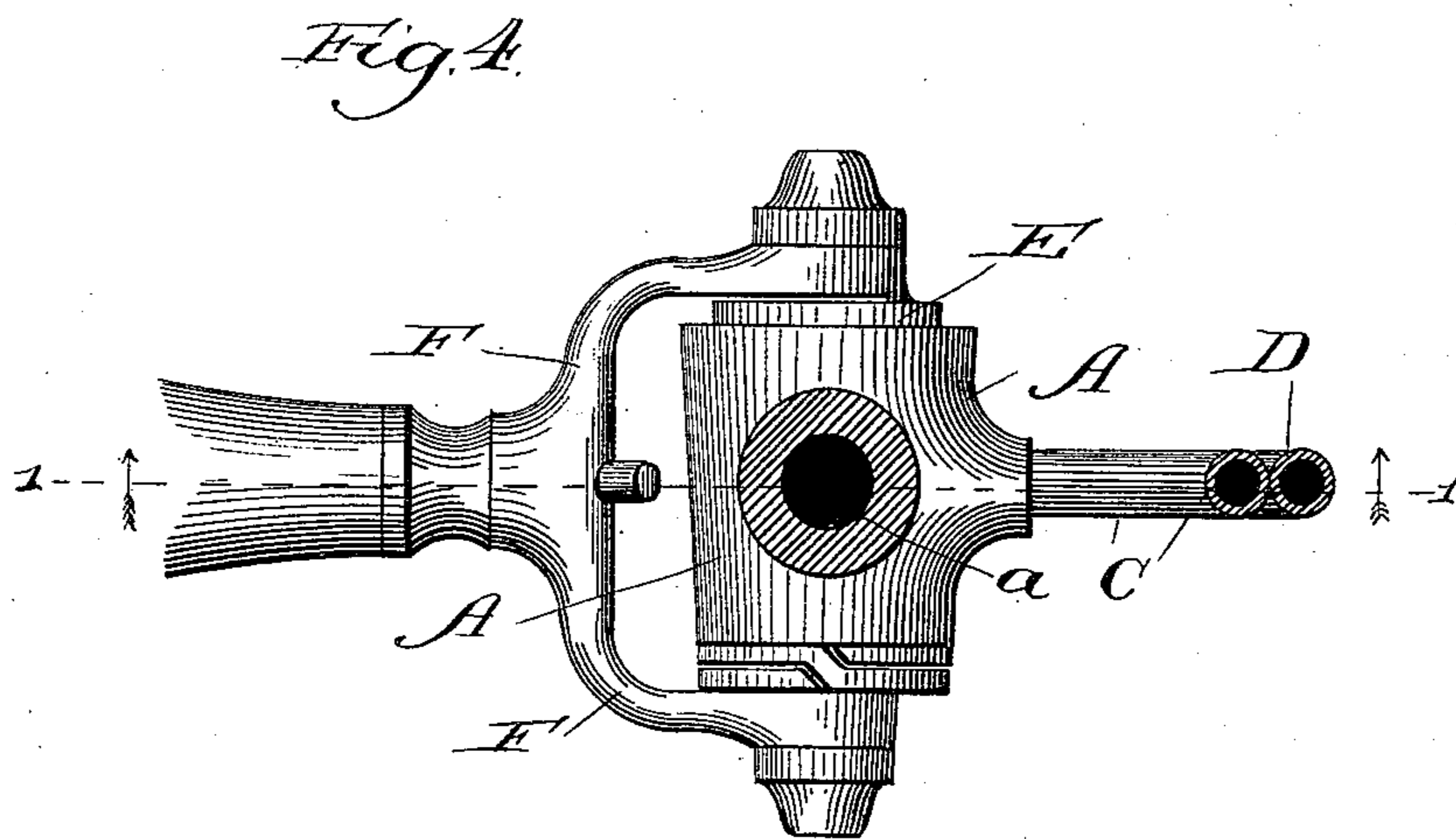
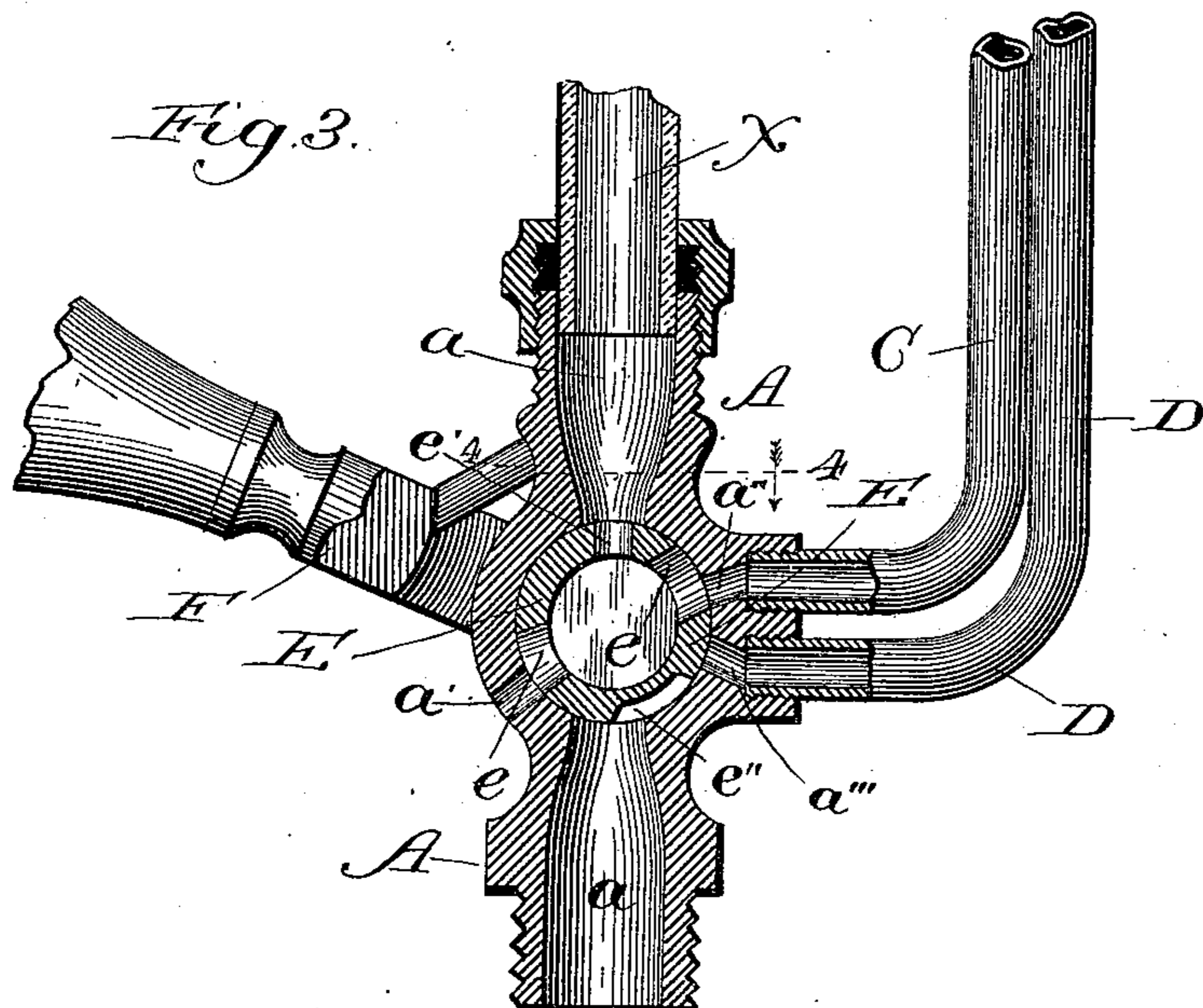
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Atty.

UNITED STATES PATENT OFFICE.

ROBERT STRETCH, OF CHICAGO, ILLINOIS.

STEAM AND WATER GAGE.

SPECIFICATION forming part of Letters Patent No. 350,510, dated October 12, 1886.

Application filed May 12, 1886. Serial No. 201,901. (No model.)

To all whom it may concern:

Be it known that I, ROBERT STRETCH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Steam and Water Gages, of which the following is a full and complete description.

My invention relates to that class of steam and water gages by which the height of water in a boiler to which the gage is attached is indicated in the glass tube forming a part of said gage; and the object of my invention is to obtain a gage in which the height of said water will at all times be indicated, and the gage not liable to become stopped or clogged by foreign substances in the water in said boiler and gage, whereby a false register will be indicated. The manner in which I obtain these results is in so constructing my improved steam and water gage, as is hereinafter more fully described, to produce a straight water-way therein for the water passing from the pipes connecting it with the boiler into and throughout the same when in operation.

I have illustrated my invention by the drawings accompanying the same, and forming a part thereof, in which—

Figure 1 is an elevation of my improved steam and water gage. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a longitudinal sectional view of a portion of said gage. Fig. 4 is a plan view on line 4 4 of Fig. 3.

Like letters refer to like parts throughout the several views.

X is an ordinary glass tube used in steam and water gages.

A is a coupling connected at the lower end thereof with the boiler by suitable pipe, and at the other end thereof with glass tube X, and having therein the stop-cock used by me in my invention, and the steam-pipes hereinafter more fully described.

a a is the main way or hole through coupling A. Way *a a* is opened or closed by stop-cock E.

a' is a way through coupling A into or toward the center thereof, forming a dripway.

a'' and *a'''* are also ways or holes through coupling A into or toward the center of said coupling.

B is the coupling, placed at the upper end

of glass tube X, and also connected with steam pipe or way C.

C is a steam-pipe forming a steamway connecting at one end with coupling B and at the other end with coupling A.

D is a steam-pipe connecting at its lower end with coupling A, and having placed at the upper end thereof coupling *d*. Connection is made between steam-pipe D and the boiler, from coupling *d* to a suitable point in or about said boiler to permit steam to enter said pipe D from said boiler.

E is a stop-cock placed in coupling A, and operated by means of a handle, as F.

e e are ways through stop-cock E. *e'* is also a way through stop-cock E, into or toward the center thereof, and communicating with way *a*.

e'' is a depression or groove in the periphery of stop-cock E, forming a way between ways *a''* and *a'''* when stop-cock E is in the position illustrated in Fig. 2.

The manner in which my improved steam and water gage operates is as follows: Connection is made from the lower end of coupling A with the boiler at a suitable point in said boiler to permit water to enter or be forced into coupling A. Coupling *d* is, as hereinbefore stated, connected with the boiler at a suitable point to allow steam to enter said coupling *d* and steam-pipe D. Stop-cock E is then placed in the position illustrated in Figs. 1 and 3. Steam from the boiler is thus permitted and does enter pipe D and coupling A as far as stop-cock E, and water may enter way *a* in said coupling as far as said stop-cock E. The stop-cock E may then be turned, as illustrated in Fig. 2. Way *a a* in said coupling A and way *e e* in stop-cock E are thus brought in position to form a continuous way through said coupling and into glass tube X, and water from the boiler is thus allowed to enter said tube in a straight line through said ways. At the same time ways *a'' a'''* are connected by means of groove or way *e''* on the periphery of stop-cock E, and steam from pipe D is allowed to pass through said ways and into steam-pipe C and coupling B and tube X above the water in said tube, and resting upon said water, thereby maintaining the same in like position as is the water in said boiler. So long as stop-cock E remains in this position free ac-

cess is allowed for the passage of the water and steam from said boiler, in the manner above described, to tube X. When it is desired to cut off from said tube X such steam and wa-
 5 ter, stop-cock E is again turned to the first-named position, illustrated in Figs. 1 and 3. Ways a'' and a''' are thus closed and the admission of steam to pipe C from pipe D cut off. At the same time way a in the lower portion
 10 of coupling A is closed by said stop-cock E and the passage of water from the boiler through said coupling A into tube X cut off. Ways e are brought, the one in juxtaposition to way a' and the other to way a'' in said coupling A.
 15 Way e' is brought in juxtaposition with way a in the upper portion of coupling A. The water in tube X at the time of the turning of said stop-cock, as last above named, is thus allowed to pass through way e' into stop-cock E, and
 20 from said stop-cock through dripway e'' out of said coupling, and at the same time the steam in pipe C as it condenses may pass from said pipe through way e into dripway e' and escape from the same.

Having thus described my invention, what I 25 claim, and desire to secure by Letters Patent, is—

1. In a steam and water gage, a coupling having a stop-cock placed therein, with ways in said coupling and stop-cock, forming when 30 open a straight way for the passage of water into one end of the glass tube used in said gage, in combination with steam-pipes forming a way into the other end of said glass tube, said steamway being opened and closed in the move- 35 ment of said stop-cock by a groove or depression on the periphery of the same, all substantially as described, and for the purposes set forth.

2. In a steam and water gage, the combination of coupling A, having ways $a a' a'' a'''$, 40 with stop-cock E, having ways $e e' e''$, glass tube X, and pipes C and D, all substantially as described, and for the purpose set forth.

ROBERT STRETCH.

In presence of—

FLORA L. BROWN,
 CHARLES T. BROWN.