

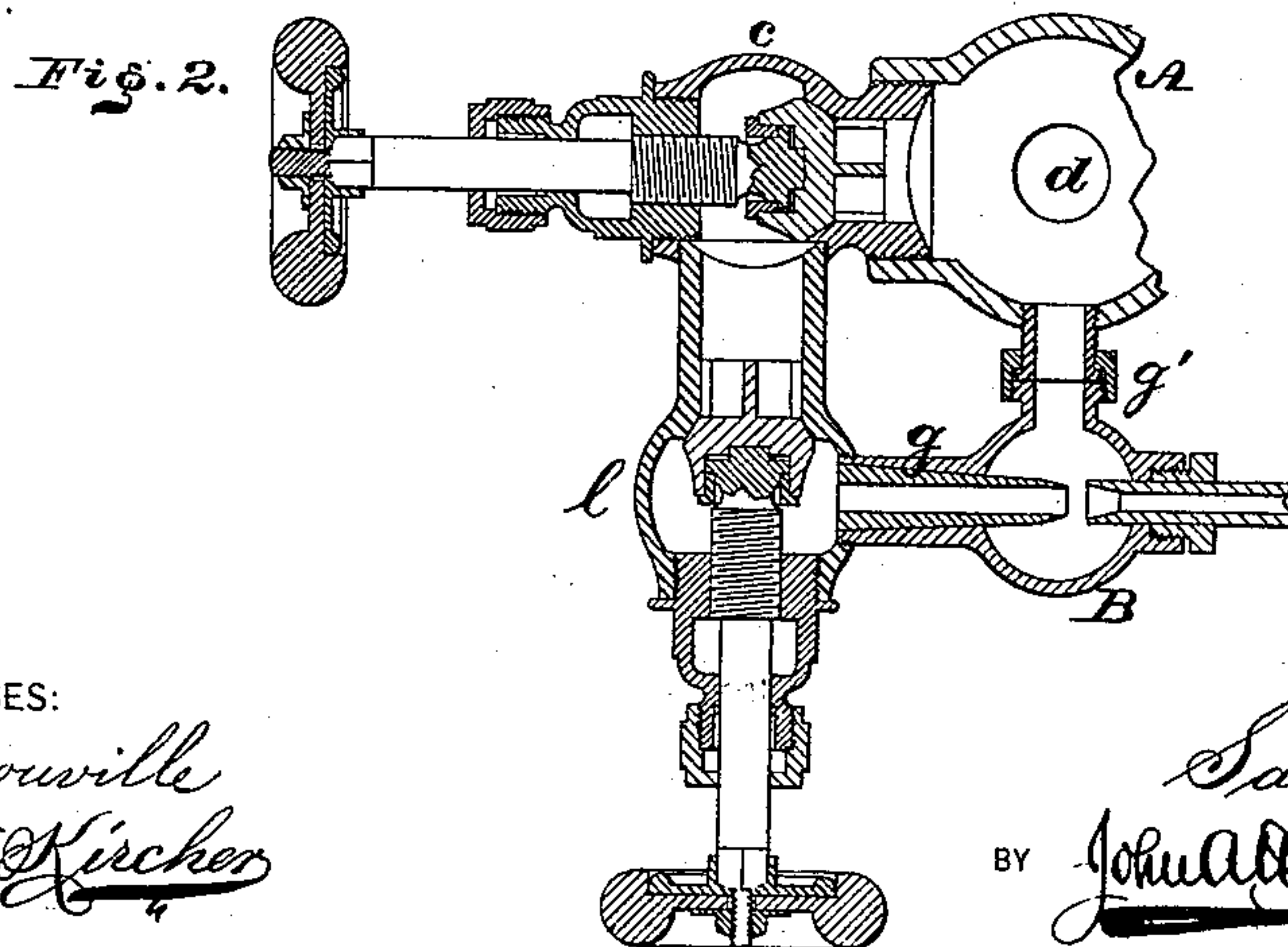
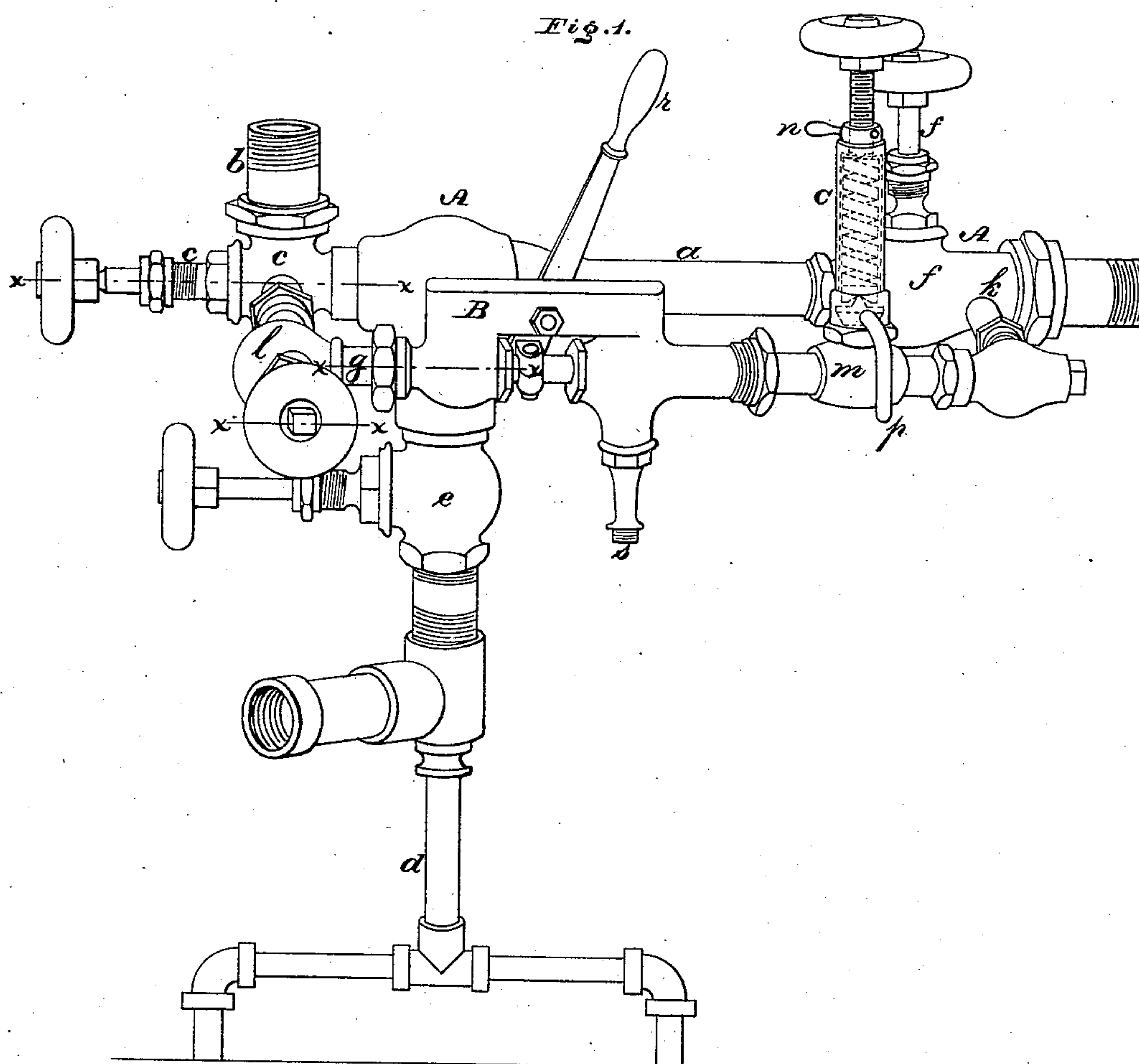
(No Model.)

S. RUE.

APPARATUS FOR TESTING BOILERS.

No. 251,467.

Patented Dec. 27, 1881.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR TESTING BOILERS.

SPECIFICATION forming part of Letters Patent No. 251,467, dated December 27, 1881.

Application filed September 2, 1881. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL RUE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Testing Boilers, which improvement is fully set forth in the following specification and accompanying drawings, in which—

10 Figure 1 is a perspective view of the apparatus embodying my invention. Fig. 2 is a horizontal section thereof on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

15 My invention consists of the combination of two instruments operated successively, one adapted for filling a steam boiler or generator with water and the other for creating pressure thereon, whereby the boiler may be tested by the employment of warm water and with a continuous even pressure without shock or jar, as will be hereinafter fully set forth.

Referring to the drawings, A represents an apparatus for supplying steam-boilers with water, consisting of the tube *a*, having a steam-connection, *b*, steam-valve *c*, water-connection *d*, water-supply valve *e*, and stop and check valve *f*.

30 B represents an injector, which is connected at the forward end to a branch, *g*, communicating with the steam-connection *b* of the instrument A, and to a branch, *g'*, communicating with the body of the apparatus A near the place of connection of the supply-valve *e*, and 35 at the rear end to a branch, *k*, which communicates with said instrument A adjacent to the connection *k* with the boiler. The forward connection of the injector is provided with a steam-valve, *l*, and the rear connection with a check-valve, *m*, and any form of injector may be employed, the one preferred being that for which Letters Patent have been granted to me.

45 C represents a safety-valve, which is connected to and communicates with the rear connection of the injector, and provided with a check-nut, *n*, for its stem and an overflow, *p*.

The operation is as follows: In order to fill the boiler the injector is closed and the stop

and check valve *f* opened to full extent. The water-supply valve *e* is now fully opened and 50 the steam-valve *c* gradually opened to full extent. The instrument A is now in operation and the boiler will be filled with warm water, which being accomplished, the stop and check valve *f* and steam-valve *c* are closed. To put 55 pressure on the boiler the safety-valve C is opened to full extent, and the lever *r* of the injector placed to about a perpendicular position, thus partly opening the injector and admitting water from the instrument A to the injector. 60 When water appears at the overflow *s* of the injector the steam-valve *l* is gradually opened to full extent, and if steam or water shows at said overflow *s* the injector requires to be adjusted by moving the lever *r* to the right or 65 left, as may be required, until the proper amount of water is adjusted or admitted in proportion to the steam that forces it into the boiler. The safety-valve C is screwed down to the desired pressure and locked by the check- 70 nut *n*, and when the test-pressure to which the boiler is to be subjected is attained by the water forcibly injected into the boiler, it being shown by the gage or safety-valve employed on the boiler, said pressure is also indicated 75 and regulated by the valve C when the water escapes at the overflow *p*.

It will be seen that after the boiler is once filled entirely with water, if any leaks occur the water is forced into the boiler under a continuous and even pressure without shock or jars, and that the device is simple, inexpensive, and reliable.

Having thus described my invention, what I claim as new, and desire to secure by Letters 85 Patent, is—

The boiler-testing apparatus consisting of the feed-water instrument A and the injector B, with connecting-pipes, said instrument and injector being successively operated by steam, 90 substantially as and for the purpose set forth.

SAMUEL RUE.

Witnesses:

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