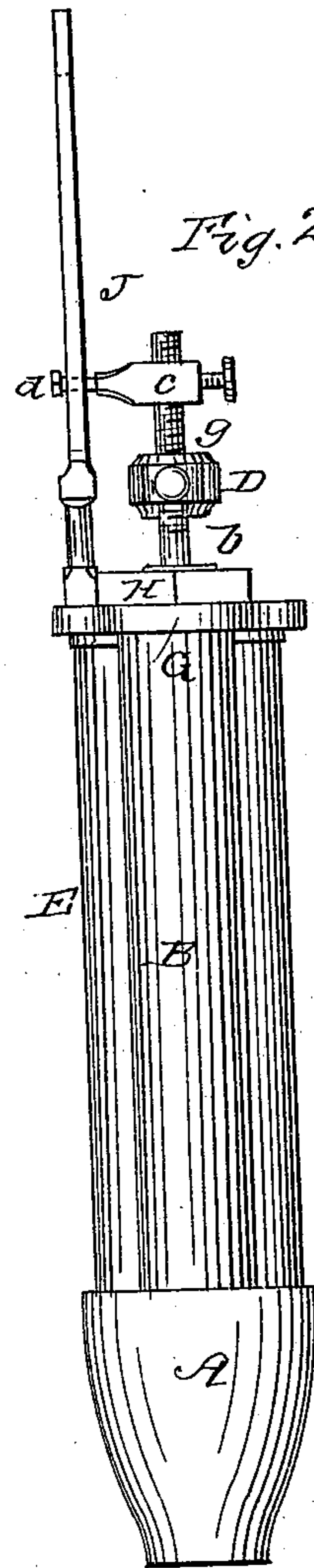
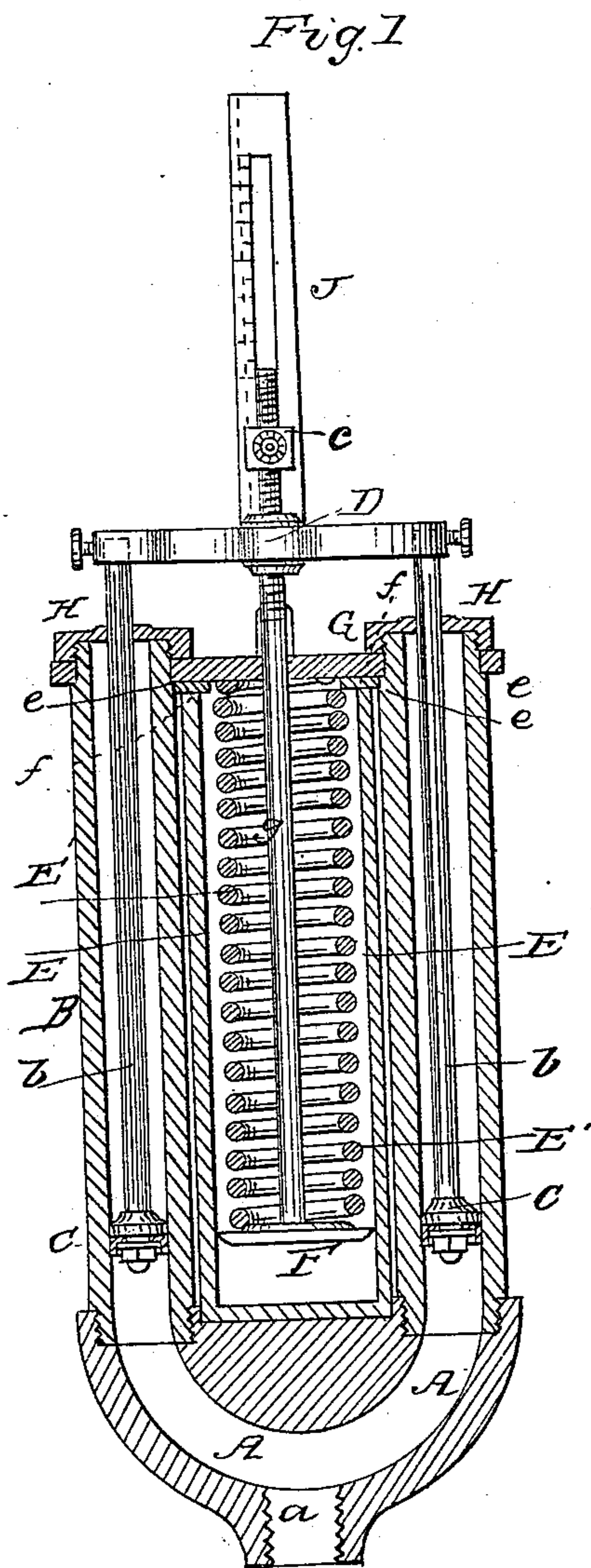


W. H. ALLEN.
Pressure Gage.

No. 28,724.

Patented June 19, 1860.



WITNESSES
Chas Hughes
Wm Livingston

INVENTOR
W. H. Allen

UNITED STATES PATENT OFFICE.

WM. HENRY ALLEN, OF BROOKLYN, NEW YORK.

STEAM-PRESSURE GAGE.

Specification of Letters Patent No. 28,724, dated June 19, 1860.

To all whom it may concern:

Be it known that I, WILLIAM HENRY ALLEN, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and Improved Pressure-Gage for Steam, Water, or other Fluids; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a central vertical section of the gage. Fig. 2 is a side view at right angles to Fig. 1.

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

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, represents a hollow base piece having an opening *a*, in the bottom for connection with a steam or water pipe or with any apparatus containing fluid whose pressure is to be gaged and having two screwed openings in the top into which are tightly screwed two parallel upright cylinders B, B, each of which is fitted with one of two packed pistons C, C, whose rods *b*, *b*, pass upward through the tops of the cylinders and are connected securely above the cylinders with the cross head D.

E, is the spring box which may be made of metal or other material but preferably of glass erected upon the base piece A, between the two cylinders B, B, and containing the loosely fitted piston F, whose upright rod *g*, is screwed into or otherwise secured to the cross head D, the said rod also projecting upward some distance above the cross head for the purpose of attaching the block *e*, which carries the pointer *d*.

G is a plate having a hole provided in it for the passage of the piston rod *g*, and two holes for the reception of the upper ends of the two cylinders B, B, upon which are provided shoulders *e*, *e*, for the said plate to rest on. The spring box E, reaches nearly to the said plate G, and has a gasket *f*, of leather or other moderately soft material to serve as a packing between it and the said plate. This gasket is only necessary when the spring box is made of glass, its purpose being to protect the margin of the mouth of the said box, and if the said box is of metal the said plate may rest directly upon it.

H, H, are two caps screwed tightly on to

the upper portions of the cylinders B, B, which project upward through the plate G, and serving to confine the said plate to the shoulders *e*, *e*, of the cylinders and as guides to the piston rods *b*, *b*, the said caps having holes provided in them for the said rods to work easily through.

E' is the spring of spiral construction applied within the box E, between the piston F, and the plate G, and surrounding the rod *g*. When this spring is in its normal condition it holds the pistons in such a position that the attached pointer *d*, is opposite to the zero mark on the fixed upright scale J, which is erected upon the plate G.

I propose to fill, or partly fill the spring box E, E, with oil for the prevention of the rusting of the spring which being inclosed within the box is isolated from the heating and corroding action of the steam when the gage is used for that fluid, or isolated from the heat when the gage is used for any other fluid at a high temperature.

The action of the gage is as follows: The steam or other fluid pressing equally against the lower surfaces of both the pistons C, C, forces them upward and overcomes the pressure of the spring in a greater or less degree as its pressure is greater or less and so brings the index *d*, to a higher or lower point on the scale J, and indicates thereon the pressure of the steam or other fluid, and the spring and its piston F, and piston rod *g*, being midway between the two pistons C, C, is acted upon directly by the pressure on the said pistons without any tendency to rocking or distortion.

What I claim as my invention and desire to secure by Letters Patent is:

1. The combination of the two cylinders B, pistons C, C, and adjustable cross head D, with the central indicating rod *g*, spring E', and spring box E, E, in the manner and for the purpose herein shown and described.

2. The arrangement and combination of the caps H, H, in combination with the plate G, and cylinders B, B, as shown and described so that said caps will serve to cover the cylinders B, B, to guide the piston rods *b*, *b*, and also to confine the plate G, all as set forth.

W. H. ALLEN.

Witnesses:

WM. THOMPSON,
CHAS. HUGHES.