

C. A. WILSON.

Steam Gage.

No. 53,721.

Patented April 3, 1866.

Fig. 1.

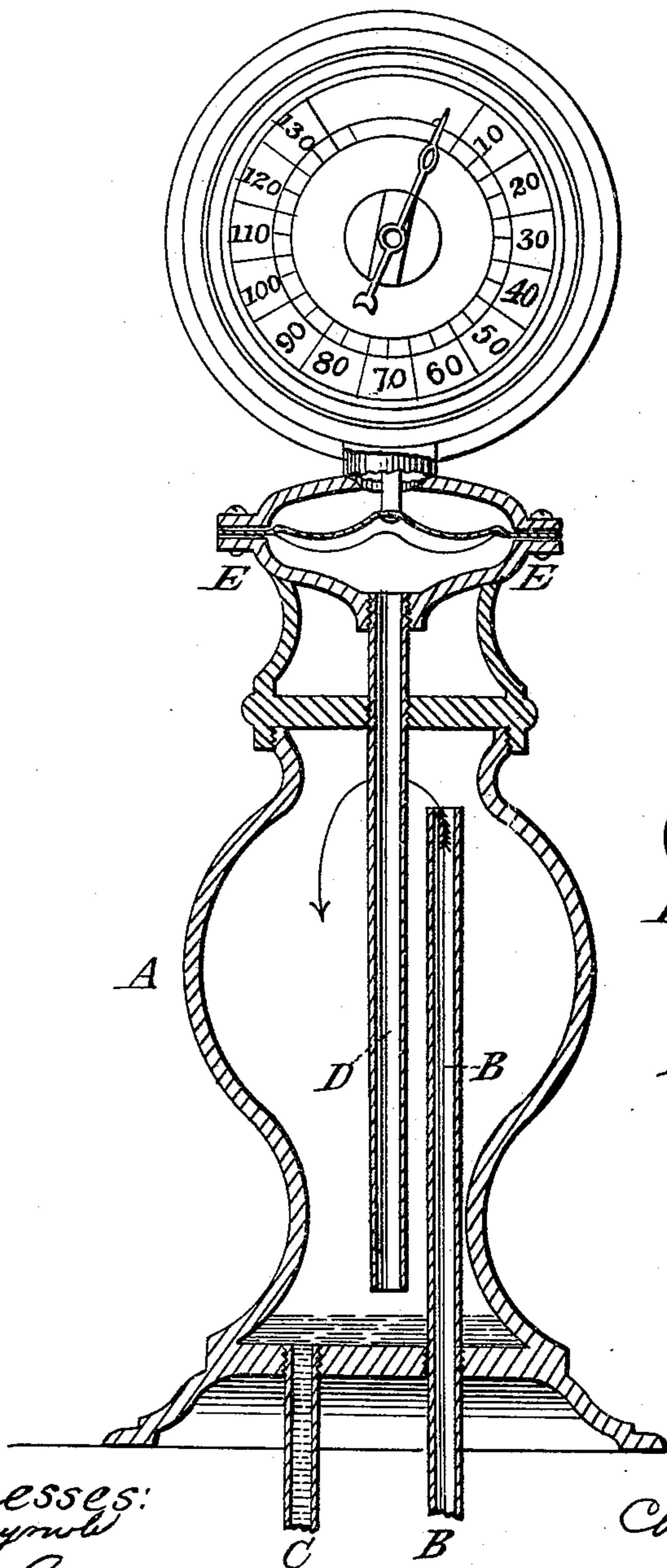
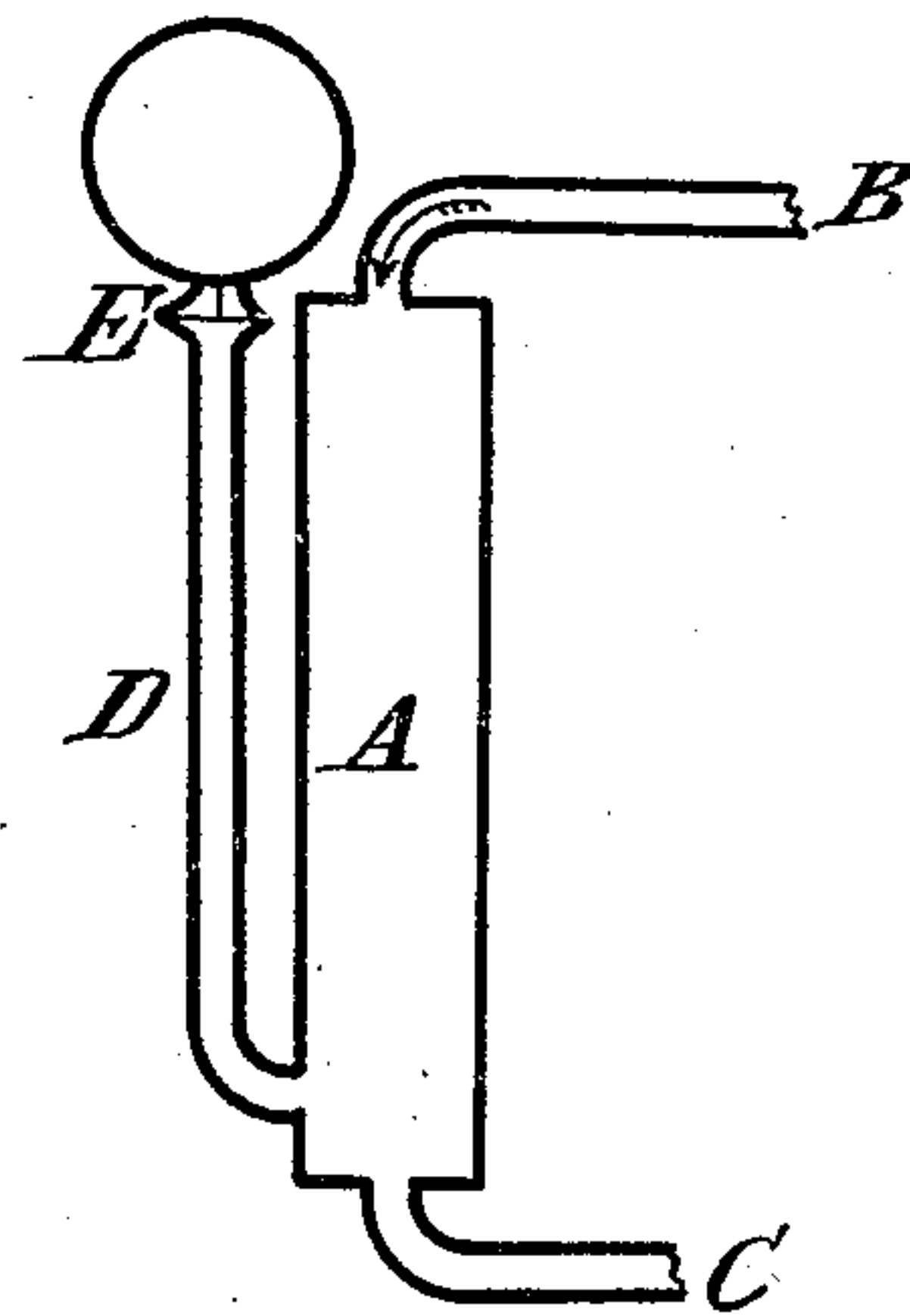


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES A. WILSON, OF CINCINNATI, OHIO.

IMPROVEMENT IN STEAM-GAGES.

Specification forming part of Letters Patent No. 53,721, dated April 3, 1866.

To all whom it may concern:

Be it known that I, CHARLES A. WILSON, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Steam-Gages; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

This improvement is designed especially for the class of steam-pressure gages which employ a flexible diaphragm, which, having one side of it presented to the direct pressure and contact of the steam, is connected on its opposite side with a pointer or index; and my invention consists in a provision which, while securing the full effective pressure, prevents the direct contact of the steam and water of condensation with the said diaphragm.

Figure 1 is an axial section of the preferred form or type of my improvement. Fig. 2 shows a modification thereof.

A is an air-chamber which receives steam direct from the boiler through a pipe, B, which, entering the lower part of said chamber, passes up and discharges into said chamber near the upper part of the same.

C is a pipe for conveying water of condensation back into the boiler. D is a pipe which, commencing near the bottom of the chamber, communicates the steam-pressure through the medium of its contained column of air to the lower compartment of the diaphragm-chamber E.

The superior levity of the steam will at all times restrict it to the upper part of the chamber A, and entirely out of reach of the mouth of the pipe D, while any particles of water

arising from condensation descend by their gravity and escape at the pipe C.

The air, which naturally mingles with steam, will always maintain the normal preponderance of air in the chamber A notwithstanding any slight leakage that may occur in protracted use. By means of the above provision the deleterious contact of steam and moisture with the diaphragm is wholly and permanently avoided.

I have selected to illustrate my invention this device, which a trial test has proved to be efficient, but do not desire to restrict myself to the precise arrangement above described so long as the essential features of the invention are attained by means substantially equivalent, the principle involved being susceptible of embodiment in various ways. For example, a cheaper form of my improvement may be attained, as shown in Fig. 2, in which the parts corresponding in function to those in Fig. 1 are marked by the same letters.

I claim herein as new and of my invention—

The air-chamber A, whose upper part communicates by a pipe, B, with the boiler steam-space, while its lower part communicates by a pipe, D, with the diaphragm-chamber of a steam-pressure gage, and its extreme bottom by a pipe, C, with the boiler water-space, or devices substantially equivalent, for the purpose set forth.

In testimony of which invention I hereunto set my hand.

C. A. WILSON.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.