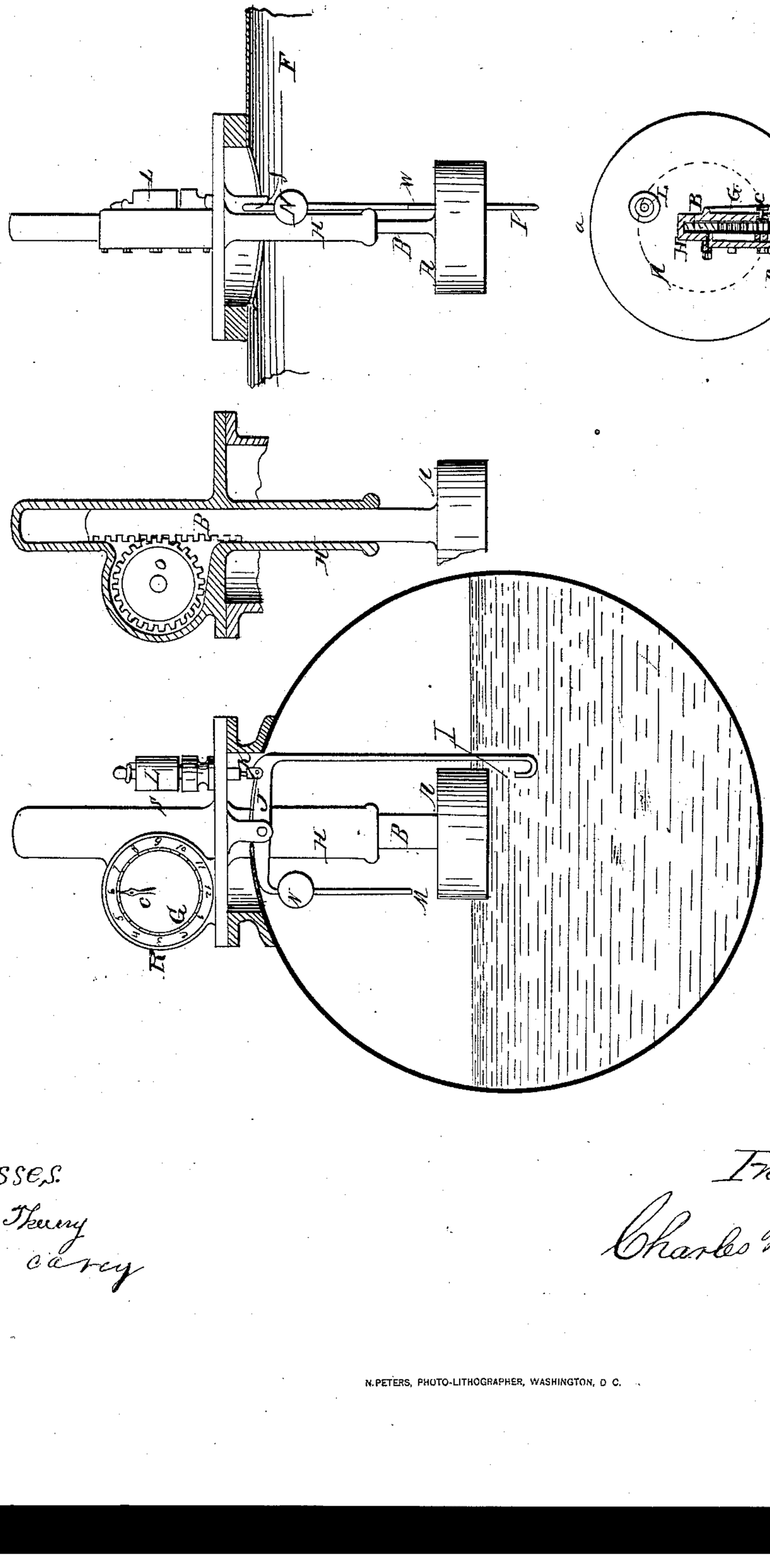
C. H. Carey,

Steam-Boiler Indicator.

No. 41,480. Patented Feb. 9, 1864.



Witnesses.

James Henry

O a Carey

Inventor

Charles H Carey

UNITED STATES PATENT OFFICE.

CHARLES H. CAREY, OF DETROIT, MICHIGAN.

IMPROVEMENT IN WATER-INDICATORS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **41,480**, dated February 9, 1864.

To all whom it may concern:

Be it known that I, CHARLES H. CAREY, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful machine, entitled "Low and High Water Alarm and Water Indicator," for giving alarm when the water in a steam-boiler is getting too low or too high, and indicating the intermediate heights of water (between low and high water) in the same boiler; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a front elevation; Fig. 2, a vertical section; Fig. 3, a side elevation, and Fig. 4 a horizontal section.

The subject of my invention is an apparatus consisting of a double lever, float, rack, and pinion, index, and whistle, constructed and operating as hereinafter explained, to indicate the height of water in a steam-boiler and sound an alarm in the event of it reaching a dangerously low or high level.

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

I construct my float A (see the accompanying drawings) in the usual manner, and attach the same to a rack, B, which may be either solid or perforated in its length like a tube, for the purpose of admitting steam into said float to prevent its collapse. The up-and-down motion of said float and rack is communicated to the hand C, through the pinion D. Thus the position of the water E in the boiler F may be read on the dial-plate G at any time said boiler is in operation. Said float, being guided in its fluctuations by said rack fitting loosely and sliding in a guide, H, (such as represented, or its equivalent,) will impart its downward motion to the extremity I of double lever J, thereby opening the valve K, connected with said double lever by a loose joint, by which operation the whistle will sound the alarm whenever said float is brought in contact with said extremity of lever by the water in said boiler getting too low. Should the water and said float rise in the boiler it might do so until said float should strike the end M of said double lever, opening said valve and sounding the alarm at high water, thereby calling the attention of the attendant in case of neglect or absence. The weight N will cause said valve to close again the moment the obstacle is removed. The range of variation in the amount of water in the boiler to be tolerated without notice from the alarm is regulated by the vertical distance between the extremities of said double lever.

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

The combination of the double lever J I M, float A, rack B, pinion D, index C, and whistle K L, constructed, arranged, and operating substantially in the manner and for the purposes set forth.

CHARLES H. CAREY.

Witnesses:

JAMES THIERRY,

C. A. CAREY.