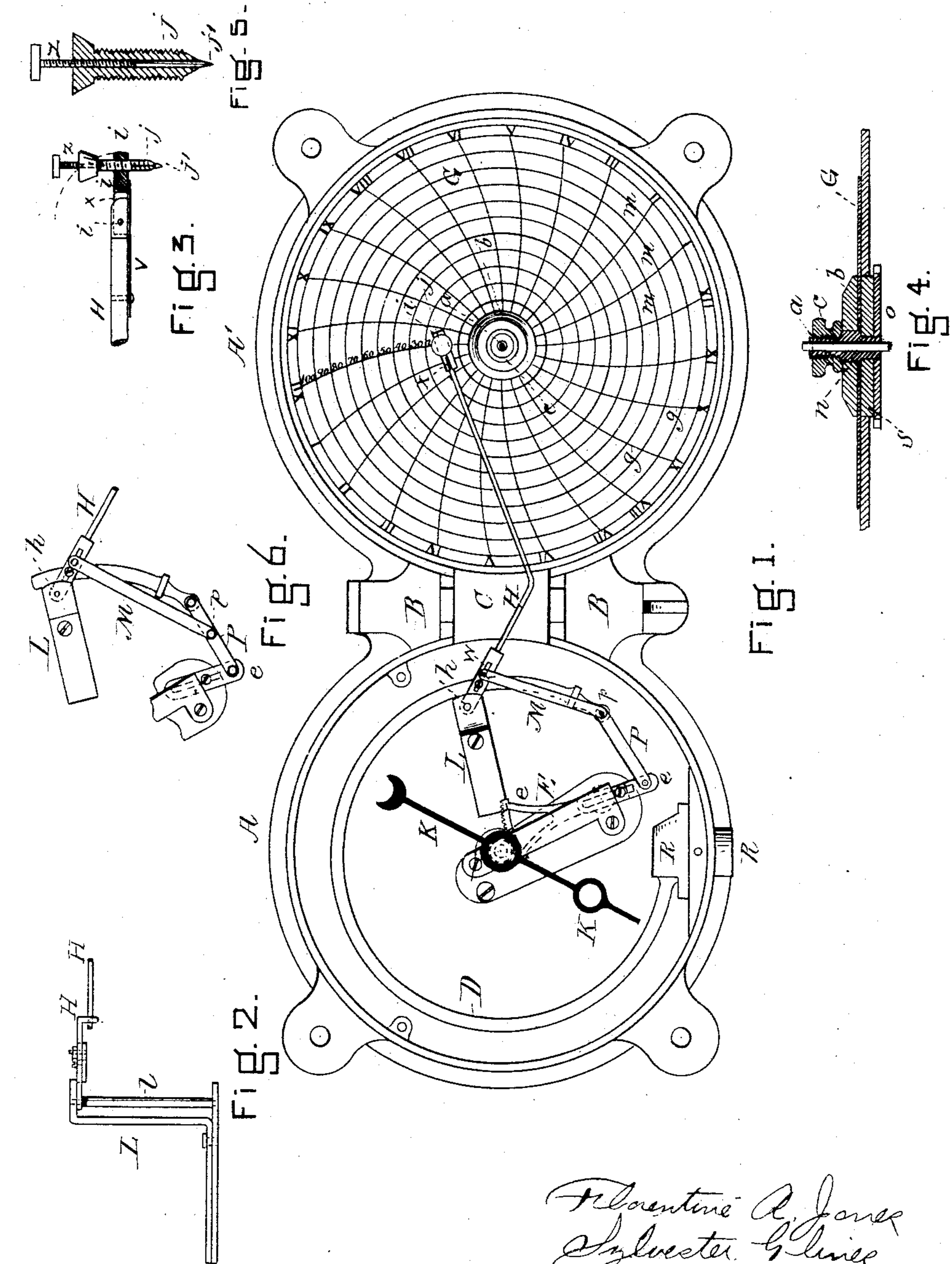


(No Model.)

F. A. JONES & S. GLINES.
RECORDING PRESSURE GAGE.

No. 287,684.

Patented Oct. 30, 1883.



WITNESSES

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UNITED STATES PATENT OFFICE.

FLORENTINE A. JONES, OF NEW YORK, N. Y., AND SYLVESTER GLINES, OF BOSTON, MASSACHUSETTS.

RECORDING PRESSURE-GAGE.

SPECIFICATION forming part of Letters Patent No. 287,684, dated October 30, 1883.

Application filed May 19, 1883. (No model.)

To all whom it may concern:

Be it known that we, FLORENTINE A. JONES, of the city, county, and State of New York, and SYLVESTER GLINES, of Boston, in the
5 county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Recording Pressure-Gages, of which the following is a specification.

Our invention relates to improved mechanism for the purpose of showing the extent and variations of pressure in steam-boilers, cylinders, or other vessels containing air, gas, liquid, or other fluids; and it consists more particularly in the construction and adaptation of
15 such mechanism in combination with the so-called "Bourdon" spring or its attendant mechanism, in a manner to show by marks or delineations upon a chart or dial the variations of pressure and a record of the same.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a plan view of our improved recording pressure-gage with the dial of the steam-gage removed. Fig. 2 is an enlarged side elevation of the standard L detached. Fig. 3 is a
25 detailed elevation of the pointer. Fig. 4 is a sectional view of the mechanism for holding the dial. Fig. 5 is an enlarged section of the pointer. Fig. 6 is a plan of a modification below described.

A represents one side of a circular box, connected to the other half, A', at B, having a recess at C for the accommodation of the connecting mechanism.

35 D represents a Bourdon spring, and E the ordinary mechanism of a steam-gage, consisting, essentially, of a segmental rack, e, pivoted near its rear end and meshing into a pinion carrying the pointer K.

40 P is a link connecting the spring D with the mechanism E, which gives movement to the pointer K, showing, in connection with a dial, the steam-pressure.

Except the arrangement of the boxes, the foregoing relates to a form of steam-gage in common use.

We will now proceed to describe the parts which relate to our invention and the arrangement of the same.

50 G is a dial, made of paper or other suitable

material, rotated by a clock-movement, and having upon its surface twenty-four radial curved lines, g, corresponding with the number of hours in a day, and a certain number of concentric circles, m, corresponding with the pressure indicated upon the dial of the steam-gage. 55

The dial-wheel o of the clock-movement is provided with a shouldered hub, n, and a circular disk, s, said hub having a threaded pivot, a, extending from it, above the surface of the disk b, above which is a button, c, screwed upon said pivot a, thus allowing of the changing of the dial with facility, it being held between the two disks by the friction caused by screwing the button c down upon the disk b. 65

Instead of the dial-wheel being provided with a pivot, it might have a threaded central hole, and the button c might have a pivot with a thread upon it to screw into the threaded hole in the dial-wheel, and thus press the disk b upon the dial, which may rotate once in twenty-four hours, or at a faster or slower speed, if desired. 70

H is a lever, crooked for convenience, and pivoted at h to the standard L, so as to freely swing back and forth. It is also provided at its free end with the vertically-pivoted holding-bar i, in which is placed the pencil or pointer holder j, provided with the pencil or pointer j', which is regulated and held in place by the screw or follower z. 80

v is a spring, one end of which is secured to the under side of the lever H, and the other end presses upwardly on the rear end of the bar i, thus having a tendency to hold the front end of said bar down, and hence hold the pointer on the dial. The bar is preferably pivoted to the lever H in the manner shown—viz., by slotting it and squaring the end of the lever, leaving a tongue, x, to enter the slot and hold the said bar, which may be turned back (upward) whenever it is necessary to change the dial. (See Fig. 3.) The standard L, into which is pivoted the long vertical rod l, Fig. 2, allows the lever H to swing freely, but without lost motion. 95

w is a slot near the rear end of the lever H, by means of which the connecting-rod M is attached thereto, at such a distance from the fulcrum as to insure any desired movement of 100

the said lever, the other end of said connecting-rod being pivoted at *p* to the Bourdon spring D. This rod M should be free, but not unduly so, to make its movement.

5 The operation is as follows: Steam or other fluid enters the hollow spring D through the hollow plug R, and the pressure acting on the inner surface of the spring causes it to expand or contract as the pressure is greater or
10 less, and this movement is communicated by means of the rod M to the lever H, thus causing the marker *j* at the end of the lever to vibrate with the movement of the spring, and with the pointer K upon the dial of the steam-
15 gage. The pencil *j'*, pressing lightly on the dial G, gives a delineation of the pressure, as indicated by the concentric lines *m* and figures, and the time at which any change has taken place in the pressure is shown by the relative
20 position of the indication or mark of the pencil and the curved lines *g*, and the figures, from one to twelve, at the ends of the curved lines, which indicate the hours, it being understood that the dial rotates once in twenty-four hours,
25 and is moved by a clock-work. (Not shown in the drawings, nor the cover of said clock-work.) It will thus be seen that an exact delineation or chart of the pressure and the time of any and all changes therein is shown upon
30 the dial G, which can be preserved for future reference.

It is not necessary that the connection with the spring D should be made in the exact manner described, nor at the particular point
35 shown, for a connection could be made at any point on a Bourdon spring, where the requisite movement can be obtained.

In the modification shown in Fig. 6 the rod M is pivoted to the link P, instead of to the
40 end of the spring, and it will readily be seen

that it could be pivoted to the rear end of the rack *e* with similar results.

We are aware that it is not novel to apply a pencil or pointer to the end of a lever in a recording pressure-gage; also, that neither a
45 threaded follower nor a pivoted pointer-bar is new in itself considered. The novelty of this portion of our invention consists in the combination of parts as arranged and constructed.

The value of this invention does not alone
50 consist in its being an additional safeguard to the lives and property of steam users, but it is of great practical value to all whose operations require an even, constant, and uniform degree of heat. 55

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a recording pressure-gage, the combination of the following elements, viz.: a Bourdon spring, a multiplying-lever, and suitable
60 intermediate mechanism, said lever bearing a delineating or recording device, whereby the extent and variations of pressure may be recorded, substantially as and for the purpose
65 set forth.

2. In a recording pressure-gage, the combination of the lever H, the pointer-bar *i*, pivoted at *i'* to said lever, the spring *v*, secured
70 rigidly at one end to the under side of said lever, and with its free end bearing against the rear under portion of said pointer-bar, the pointer *j j'*, and the threaded follower *z*, all arranged and constructed substantially as and for the purpose described.

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Witnesses:

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