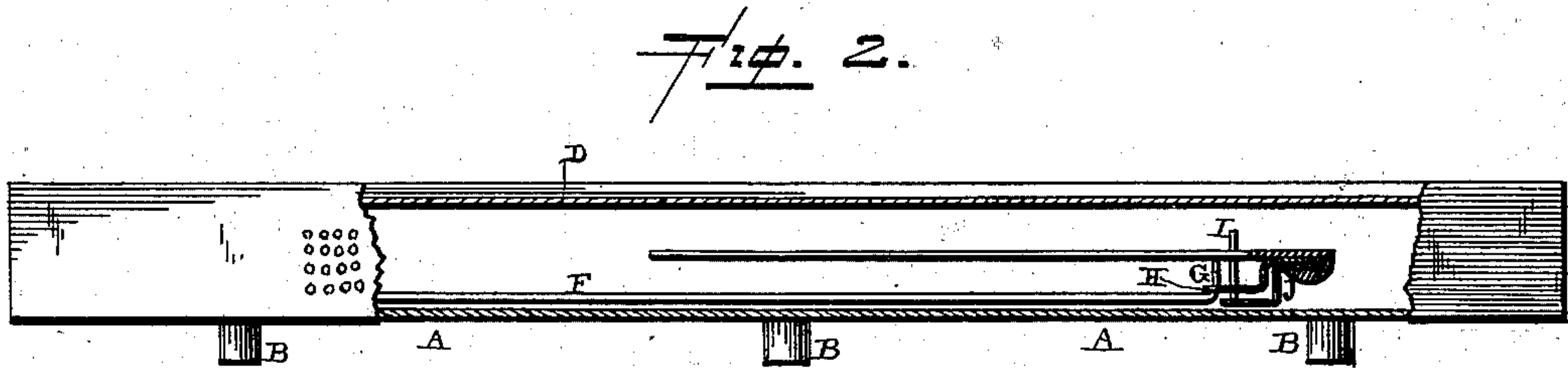
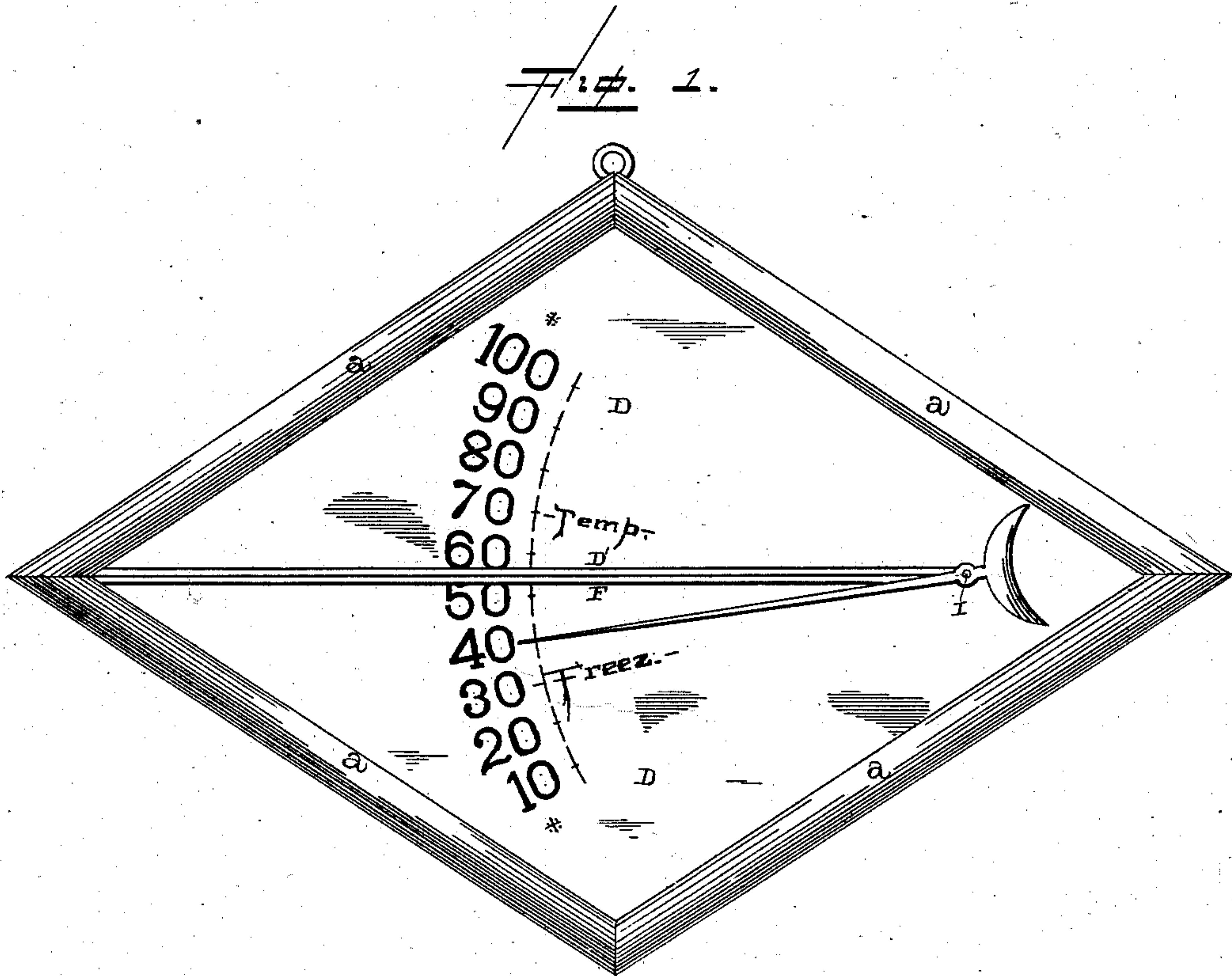


(Model.)

J. G. SMITH.
THERMOMETER.

No. 282,390.

Patented July 31, 1883.



— Witnesses. —

Louis F. Gardner
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UNITED STATES PATENT OFFICE.

JOSEPH GRANDISON SMITH, OF QUINCY, ILLINOIS.

THERMOMETER.

SPECIFICATION forming part of Letters Patent No. 282,390, dated July 31, 1883.

Application filed January 16, 1883. (Model.)

To all whom it may concern:

Be it known that I, J. GRANDISON SMITH, of Quincy, in the county of Adams and State of Illinois, have invented certain new and useful
5 Improvements in Thermometers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being
10 had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in thermometers which are intended especially for use in the house; and it consists, first, in
15 a diamond-shaped case, so that the hand or pointer will be given a large area or space through which to sweep; second, in the combination of a steel and a brass rod, which are united together and secured at one end to the
20 back of the frame, and which have attached to their free ends a suitable curved or bent wire for operating the pointer by the expansion or contraction of the rods; third, in the peculiar construction of the pointer, whereby it is
25 adapted to be operated by the expansion and contraction of the compound rod, all of which will be more fully described hereinafter.

The object of my invention is to construct a thermometer in which the pointer moves back
30 and forth over a dial on which the numbers are marked in large figures, and thus indicate at a glance, even from a considerable distance, exactly what the temperature of the room is.

Figure 1 is a plan view of my invention complete. Fig. 2 is a longitudinal section of the
35 same, taken to one side of the center.

A represents a metallic diamond-shaped case, which is provided with suitable feet, B, to hold it above the support upon which it is
40 placed, and to keep the frame out of contact with the wall when it is hung up, and which will be provided with a suitable ear, so that it can be hung up against the wall. Through the side of this frame will be made suitable
45 holes or perforations, so that the changes in the temperature will affect the hand more quickly. This case is made diamond-shaped, so that when the hand or pointer is pivoted at one corner its longest end will have the greatest
50 possible space through which to sweep, and at the same time allow a considerable length to

be given to the compound rod by which it is operated. Were the case made square, the compound rod could not be made long enough, and hence it would not be as accurate where
55 the changes are but slight. The bottom of the frame is made of sheet metal, and which has its edges turned up for supporting the glass D. A suitable metallic frame, *a*, of any desired ornamental design, is slipped over the
60 edges of the frame and made to catch over the top of the glass, so as to hold it in place. Soldered to the frame in one corner are the two rods D' F, one of which is made of brass and the other of iron or steel, and these two
65 rods are supported together, so as to form practically one. These two rods have different degrees of expansion, and are soldered together, so one will act as a check upon the other. Soldered to the end of this compound
70 rod is the small L-shaped rod or wire G, which catches between the forked or U-shaped piece of wire H, that is connected to the pointer. Soldered to the bottom of the frame is the pivotal rod or standard I, upon which the
75 pointer is placed. This pointer consists of the long finger which sweeps over the dial, and the crescent-shaped enlargement which forms its shorter end. Either secured to the one side of its shorter end or doubled back upon itself
80 is the strip J, which is bent as shown, and which forms the lower pivot upon which the pointer turns. Between this strip or bent-back portion is placed the U-shaped wire, which extends forward over the pivotal wire or
85 standard and receives the L-shaped wire between its upper ends, so that there is no lost motion between the parts. The enlarged or crescent-shaped portion of the pointer is weighted at its under side, so as to serve as a
90 counter-weight and cause it to have a tendency to bear up against the under side of the compound rod, and thus prevent the rod from sinking from its own weight down upon the bottom of the case. The counter-weight on the
95 index causes one prong of the U-shaped wire attached to the index-hand to press against the hook of the L-shaped wire attached to the free end of the double bar, thereby causing the index-hand to rise and fall with the corresponding
100 motion of the double bar without any play or lost motion between the parts. As the

pivotal standard passes through both the strip which is secured to the under side of the pointer and up through the pointer itself, the pointer is free to turn in either direction upon its standard, so as to sweep back and forth over the dial. As the compound rod is caused to expand by the heat as it lengthens out, the L-shaped piece attached to its end bears against one of the U-shaped wires or prongs, which is attached to the pointer at its rear end, and thus sends the pointer around toward the high figures of the scale. As this rod contracts, the L-shaped piece upon its end strikes against the other one of the U-shaped wires and causes the pointer to move toward the lower figures of the scale.

By means of the construction above described a very tasty and ornamental thermometer is produced, which is especially adapted for use in parlors and hot-houses, and in which the range of the pointer can be seen from a considerable distance. It is also specially adapted as an advertising medium; for upon its large face can be placed advertisements of all kinds.

Having thus described my invention, I claim—

1. In a thermometer, the combination of a diamond-shaped case with a pointer which is pivoted near one of the corners thereof, so that the longer end of the pointer will have the largest possible range or play, substantially as described.

2. A diamond-shaped frame for a thermometer, composed of the metallic frame A, having its edges turned up to form a support for the glass, and a metallic frame to catch over the main frame and glass, substantially as described.

3. A pointer in a thermometer, weighted upon its shorter end, in combination with the U-shaped wires which are secured to the under side of the pointer, the strip which forms the lower bearing for the pointer, and the compound rod provided with an L-shaped connection for catching between the U-shaped wires, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH GRANDISON SMITH.

Witnesses:

CHARLES SMITH,
RICHARD JANSEN, Jr.