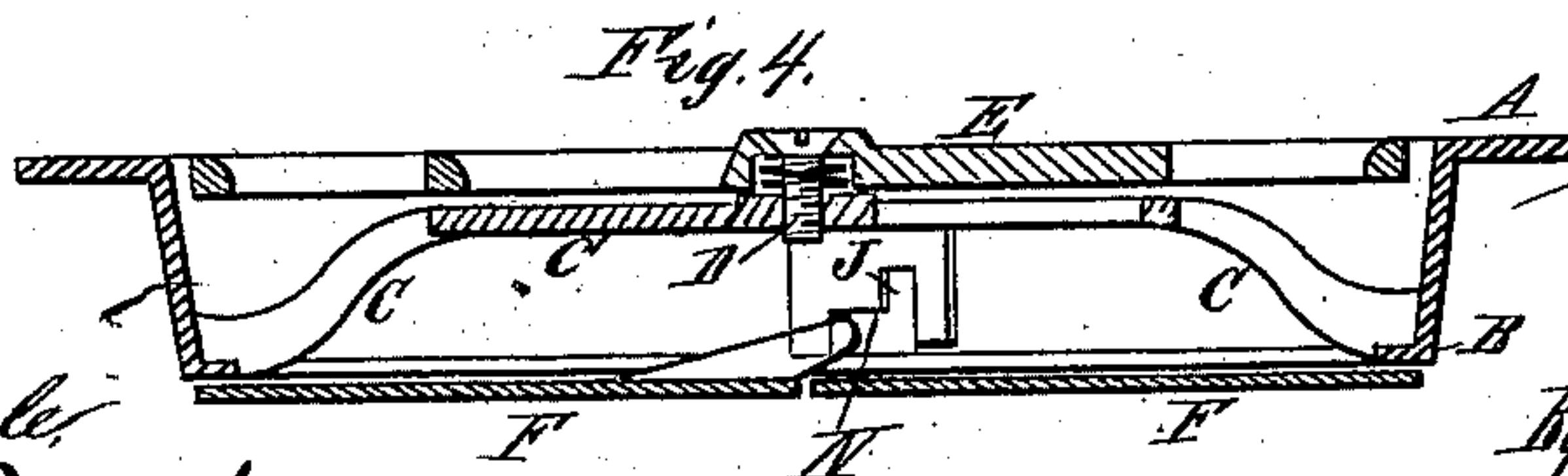
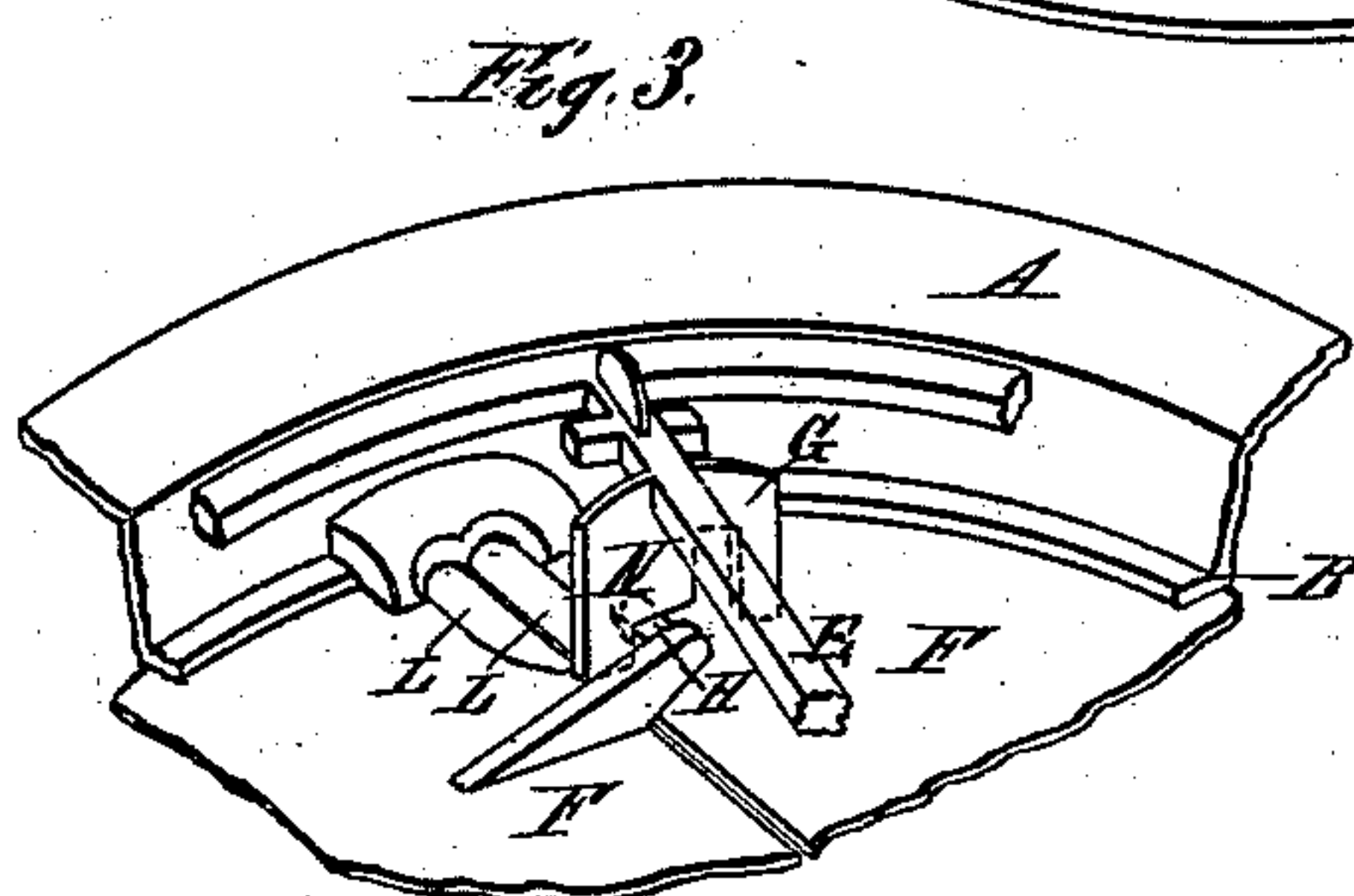
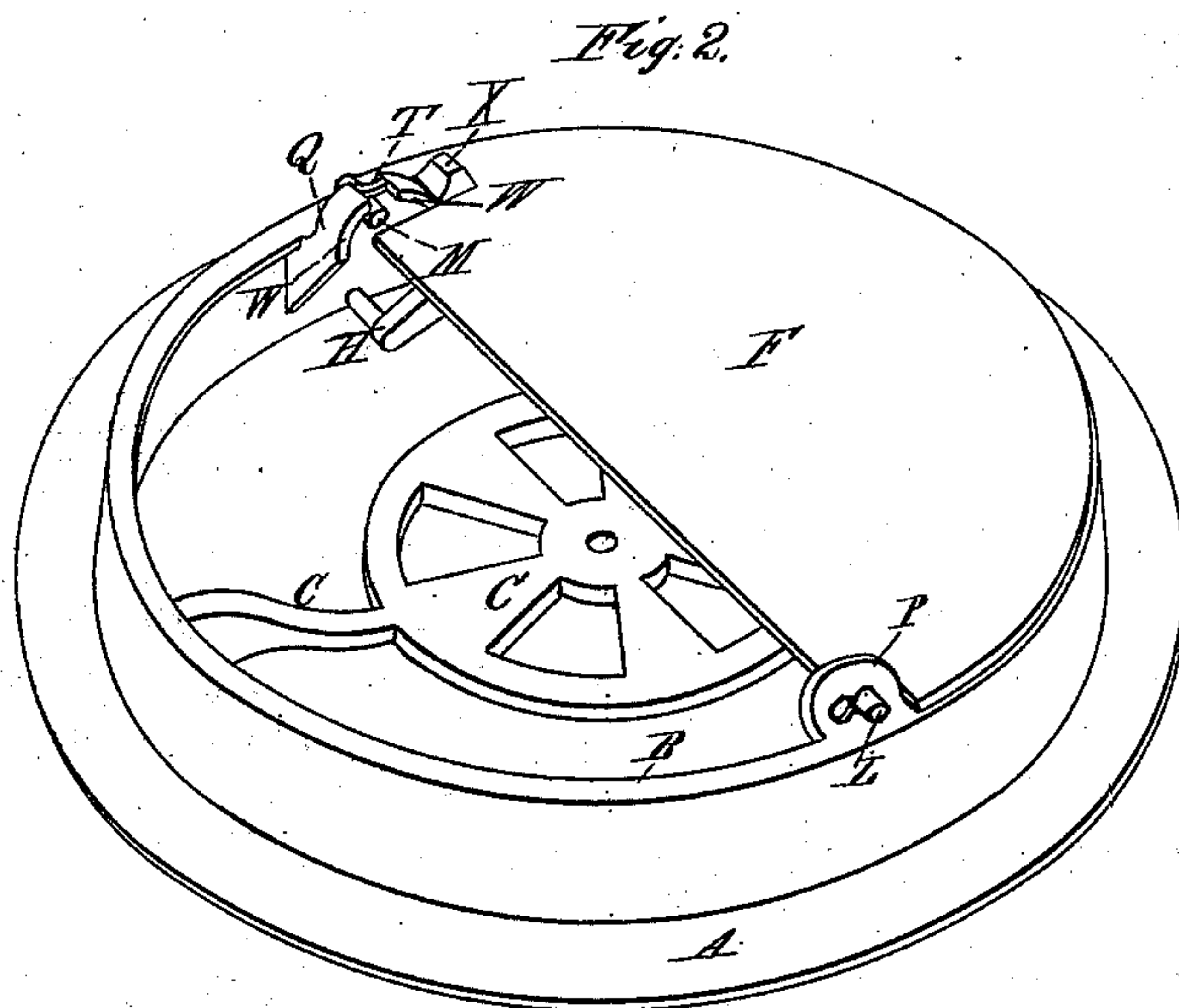
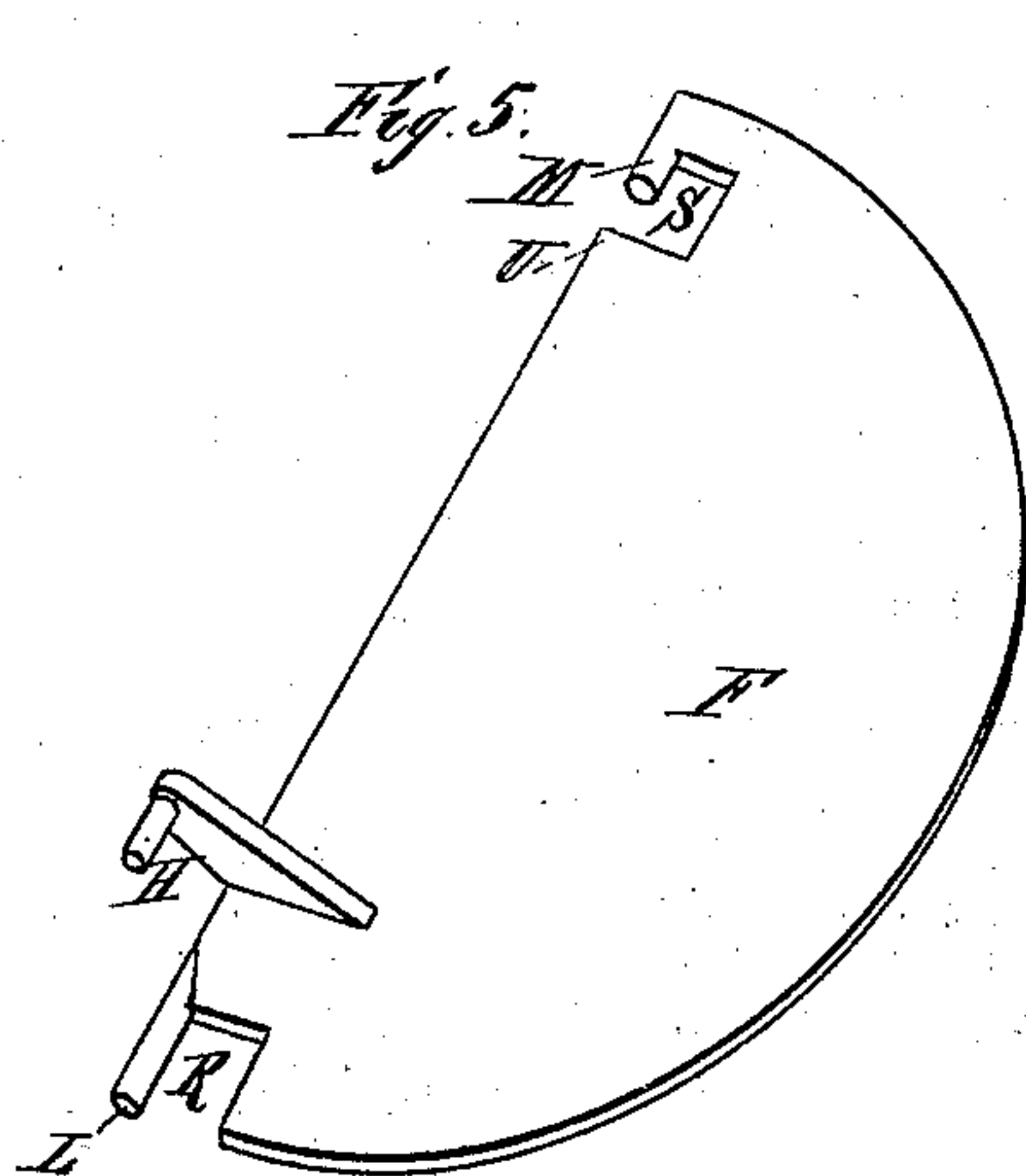
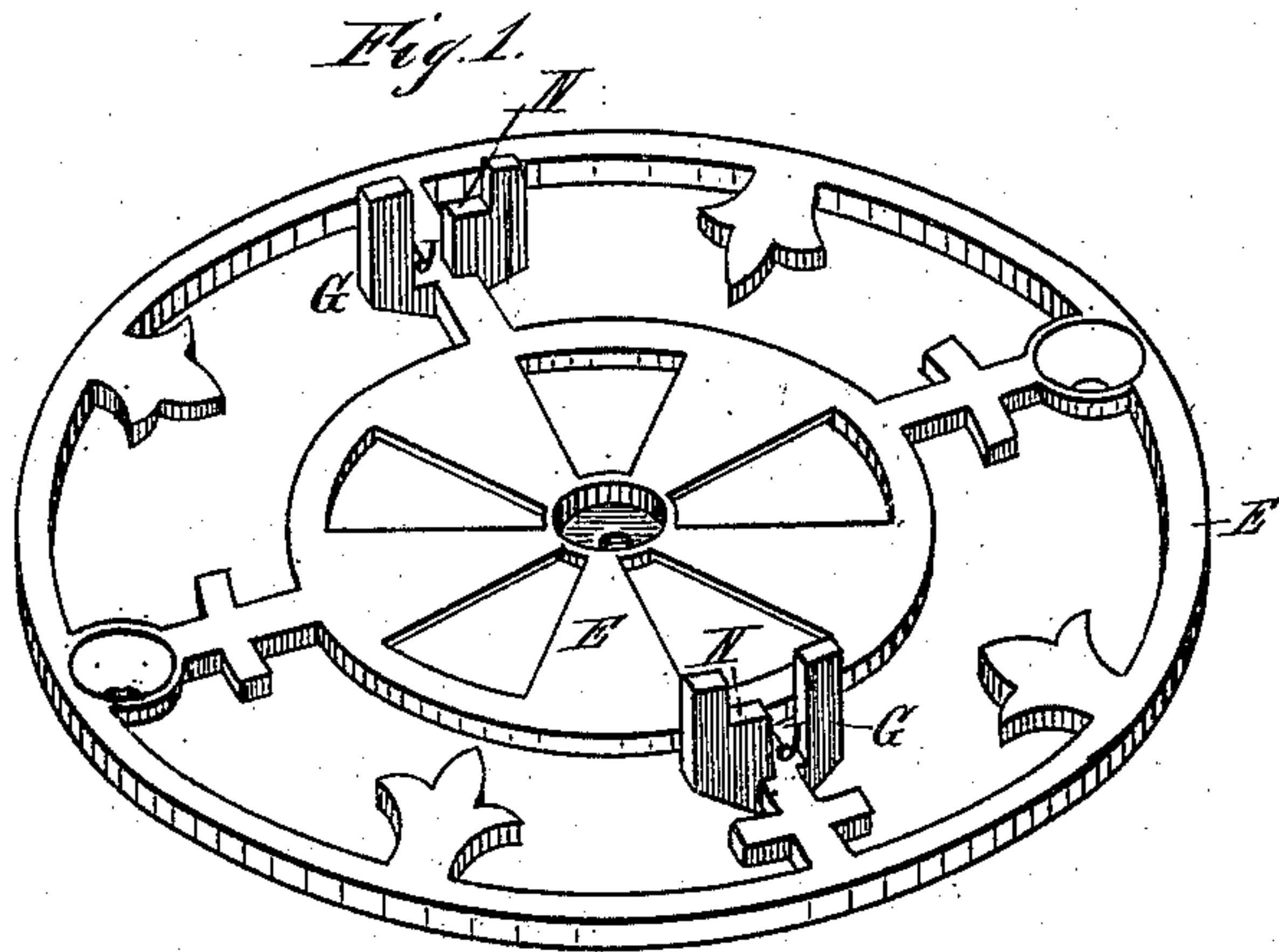


S. TUTTLE, Jr.
Hot-Air Register.

No. 225,085.

Patented Mar. 2, 1880.



Witnesses:

Chas. H. Searle,

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UNITED STATES PATENT OFFICE.

SILAS TUTTLE, JR., OF BROOKLYN, NEW YORK.

HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 225,085, dated March 2, 1880.

Application filed September 25, 1879.

To all whom it may concern :

Be it known that I, SILAS TUTTLE, Jr., a resident of Brooklyn, Kings county, and State of New York, have invented new and useful
5 Improvements in Hot-Air Registers, of which the following is a specification.

This invention consists of a contrivance of the sliding device which operates the valves or fans, whereby it also locks and unlocks
10 them at the same time that it is operated to open and close them.

It also consists of an improvement in the arrangement of the pivot-bearings of the frame for the pivots of the fans, and of said pivots
15 in relation thereto, whereby the method or plan of securing the fans without screws, caps, or other detachable pieces may be applied to registers in which the fans are connected from the back, and so as to close against the back
20 of the frame.

Figure 1 is a perspective view of the inside of the middle portion of the front of the register, to which the lugs for operating the fans are attached, and which is made to turn forward and backward on a center pivot for operating said lugs, as here shown, or it is made to slide, as preferred. Fig. 2 is a perspective view of the back of the register, with one of the fans removed. Fig. 3 is a section of the register, in perspective, with the aforesaid
30 movable front portion removed. Fig. 4 is a central transverse section of the register, and Fig. 5 is a perspective view of one of the fans detached from the register.

A represents the front rim of the frame; B, the back portion of the same, and C the bars supporting the center pivot, D, on which the front E is pivoted, for moving forward and backward to operate the valves or fans F by means
40 of the slotted lugs G on it and the crank-pins H on the fans, the said pins being arranged in the slots J, so that the movement of the lugs forward and backward a short distance causes the valves to open and close by turning them
45 about a quarter of a revolution on the pivots L and M.

The arrangement thus far described is not new, and is not what I claim; but in connection therewith I arrange the notches N in the
50 lugs G on that side of the slot J that acts against the pin H when closing the fan, and

make them of such depth with relation to the pins that when the fan is closed the pins will escape from the slots J into said notches, allowing the lugs G to move on after the pins
55 stop until the bottoms of the notches pass over the pins, whereby they lock the fans closed, as clearly shown in Figs. 3 and 4. When the lugs G are turned the other way to open the fans the pins H remain at rest until the notches
60 N pass from over them and the slots J take their places; then the parts of the lugs opposite to the notches N move the pins and open the fans. Thus I make the opening and closing devices self locking and unlocking merely
65 by means of the notches N, arranged in the relation described to the lugs G, slots J, and pins H.

The arrangement of the fan-pivots and their bearings P Q, for enabling the fans to be applied so as to close against the back B of the frame, and at the same time be secured without any detachable fittings or pieces, is as follows: At one end the fans are notched at R to allow the pivots L, of ordinary form, to enter
75 the perforated bearing lug or ear P and permit the fans to project over the face of the rim B, and at the other end the fans have the L-shaped notch S in advance and inside of the pivots M, which point in the same direction
80 as pivots L, allowing them to enter bearing Q at the same time that pivots L enter bearings P; but in order that they may so enter, and yet be permanently secured against working backward after being entered, the bearing-piece Q has a notched portion, T, at the center of the top or most prominently projecting portion from the rim B, to allow the corner U of the fan to drop in and enable the pivots to fall into line with the holes. The
90 wider portions W of the bearing-piece Q then act against the wall of notch S, so as to prevent the pivots from sliding back out of their bearings, and the lugs X on the fans prevent the fans, by contact with each other when the
95 fans are opened, from swinging far enough to enter notches T and letting the pivots escape from the bearings. The pivots are first entered in the bearings before the operating device E G is applied, which allows the fans to
100 be swung as far back or as much beyond the open position as necessary for so entering the

bearings; but after said device is applied both fans swing only to the central position, where the lugs X meet and prevent the escape of the fans past the wide parts W of the bearing Q into the notch T.

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

1. The sliding piece G, which opens and closes the fans, having the notch N arranged in the relation to the slot J in said piece and the pin H on the fan or valve described, whereby it also locks and unlocks the fans, substantially as described.

2. The combination of the fans having the pivots L M, notches R S, and the lugs X with the pivot-bearing Q, having the wide portions W and narrow or notched portion T, and with pivot-bearing P, said bearings being formed on the back B of the register-frame, substantially as described.

SILAS TUTTLE, JR.

Witnesses:

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