

No. 682,472.

Patented Sept. 10, 1901.

J. LEMMON & J. H. COPE.

HEAT INDICATOR.

(Application filed Dec. 24, 1900.)

(No Model.)

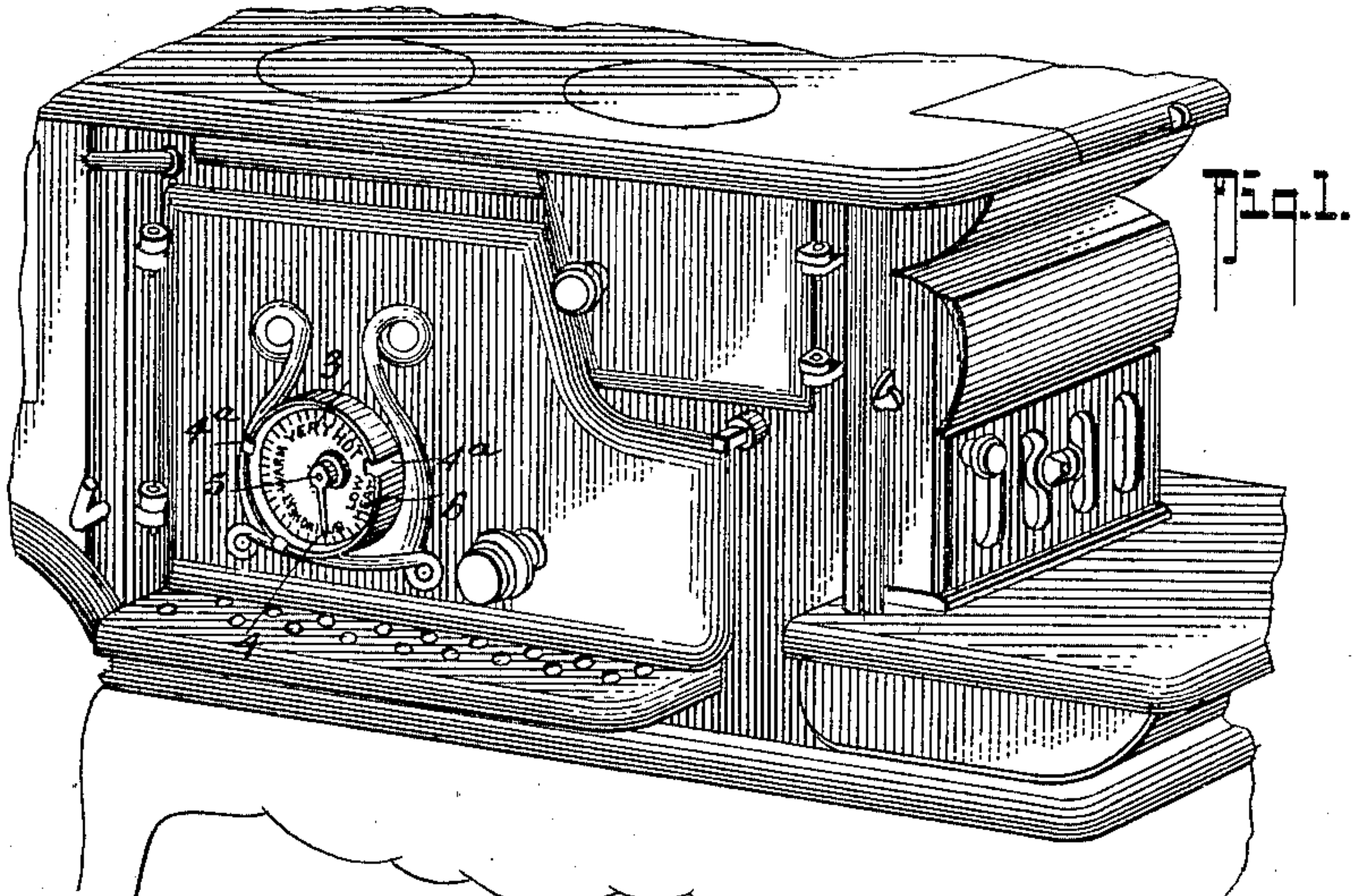


Fig. 1.

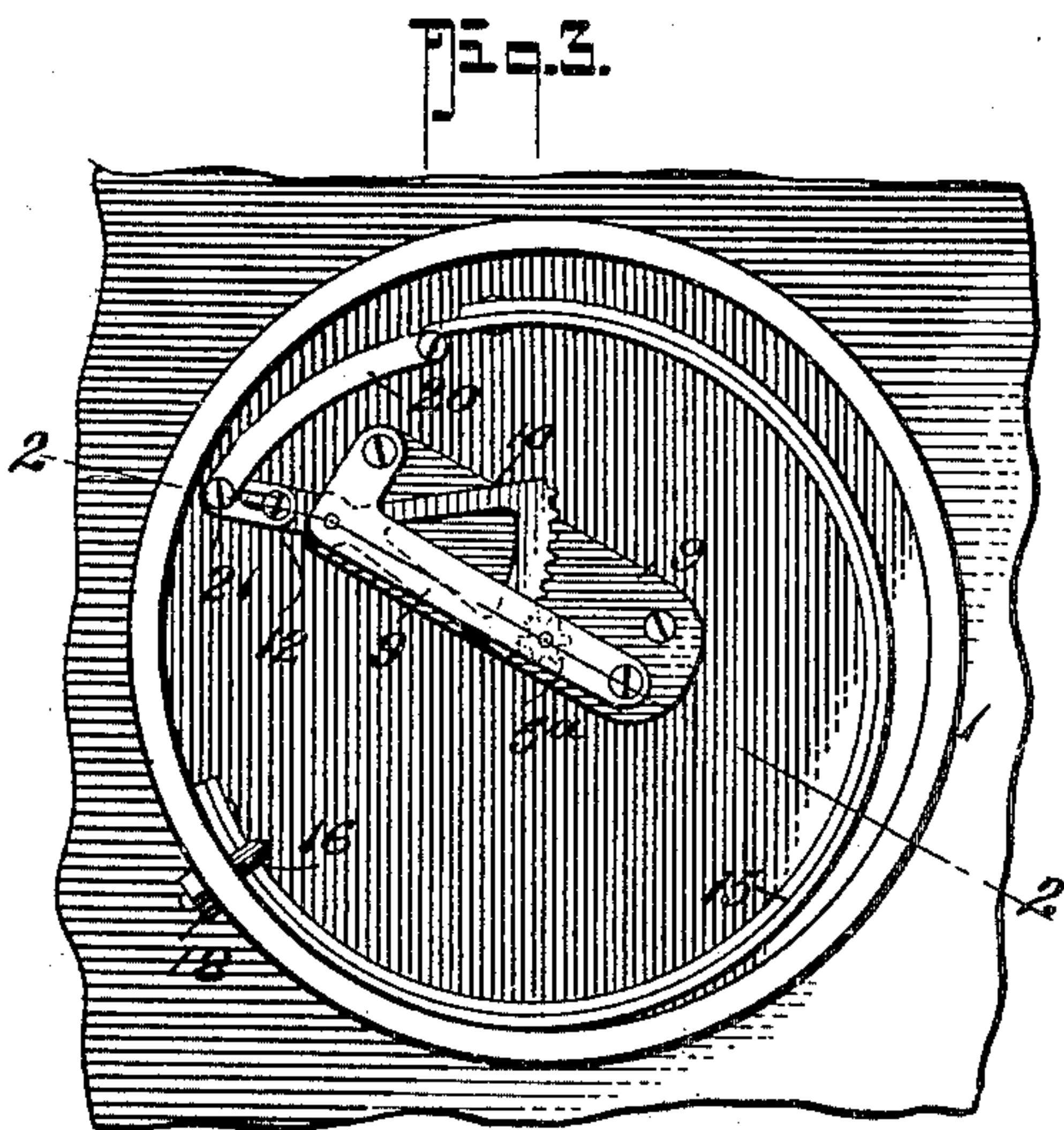


Fig. 2.

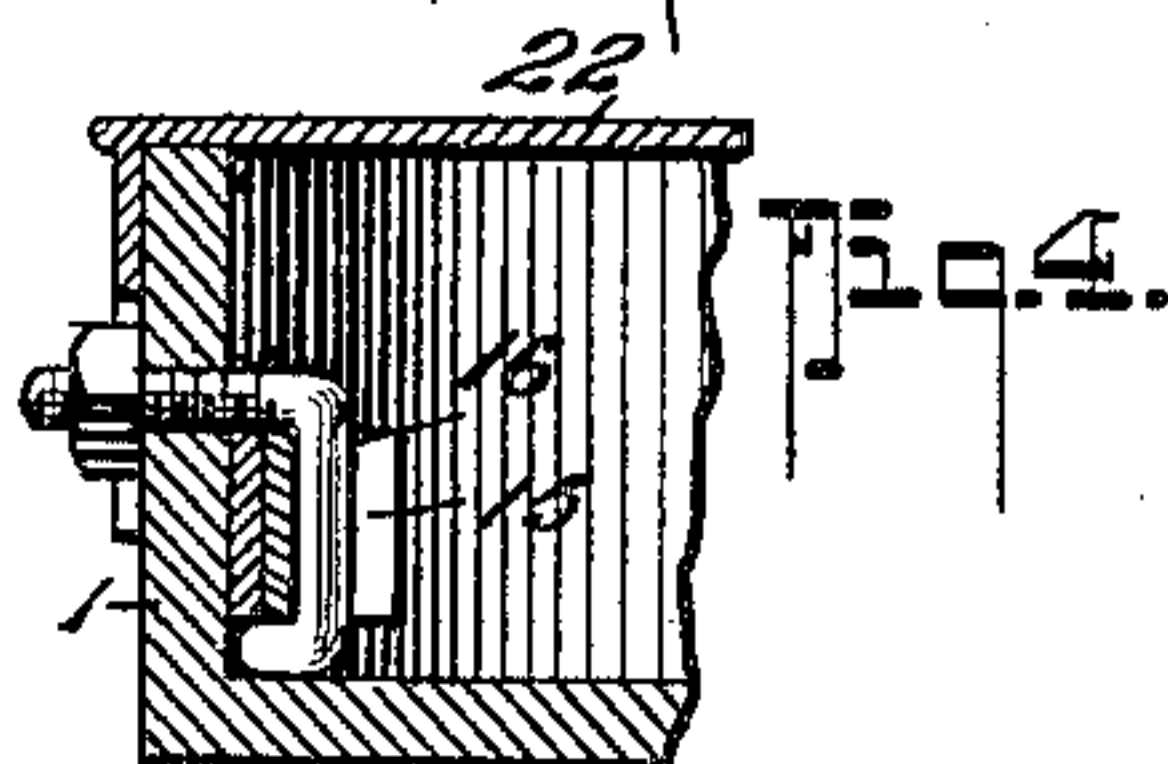


Fig. 3.

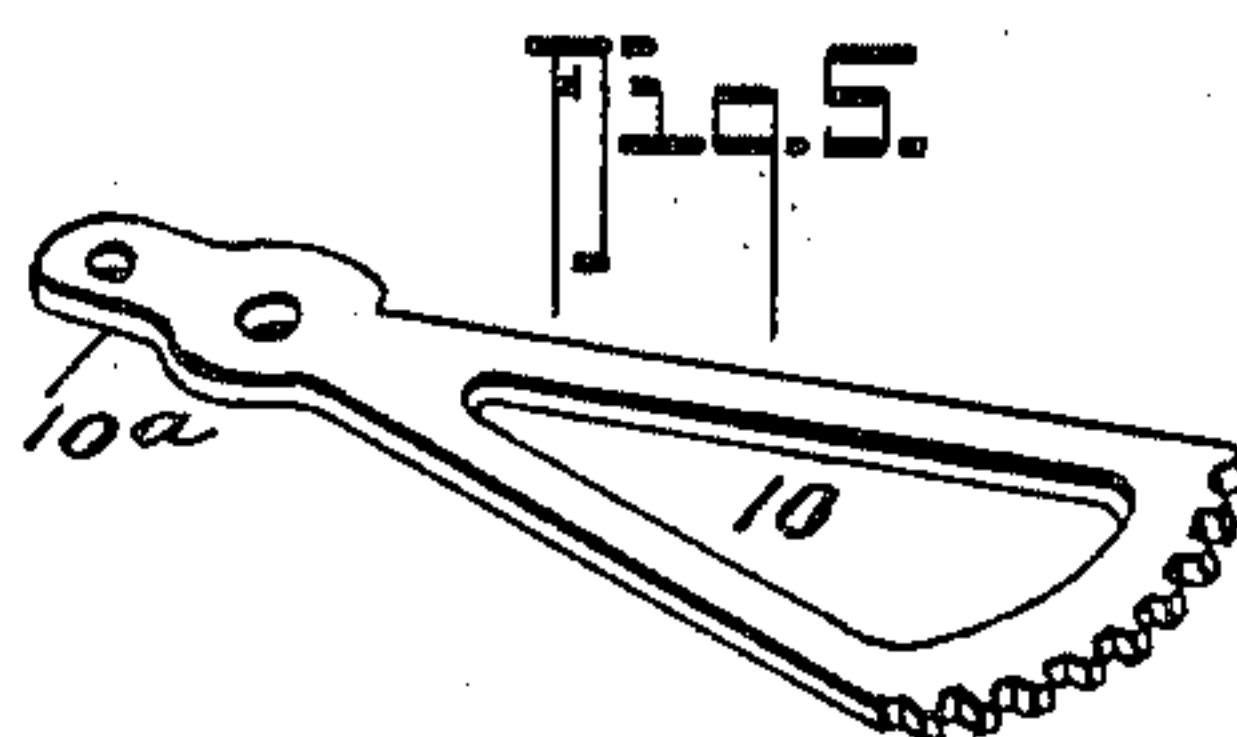


Fig. 4.

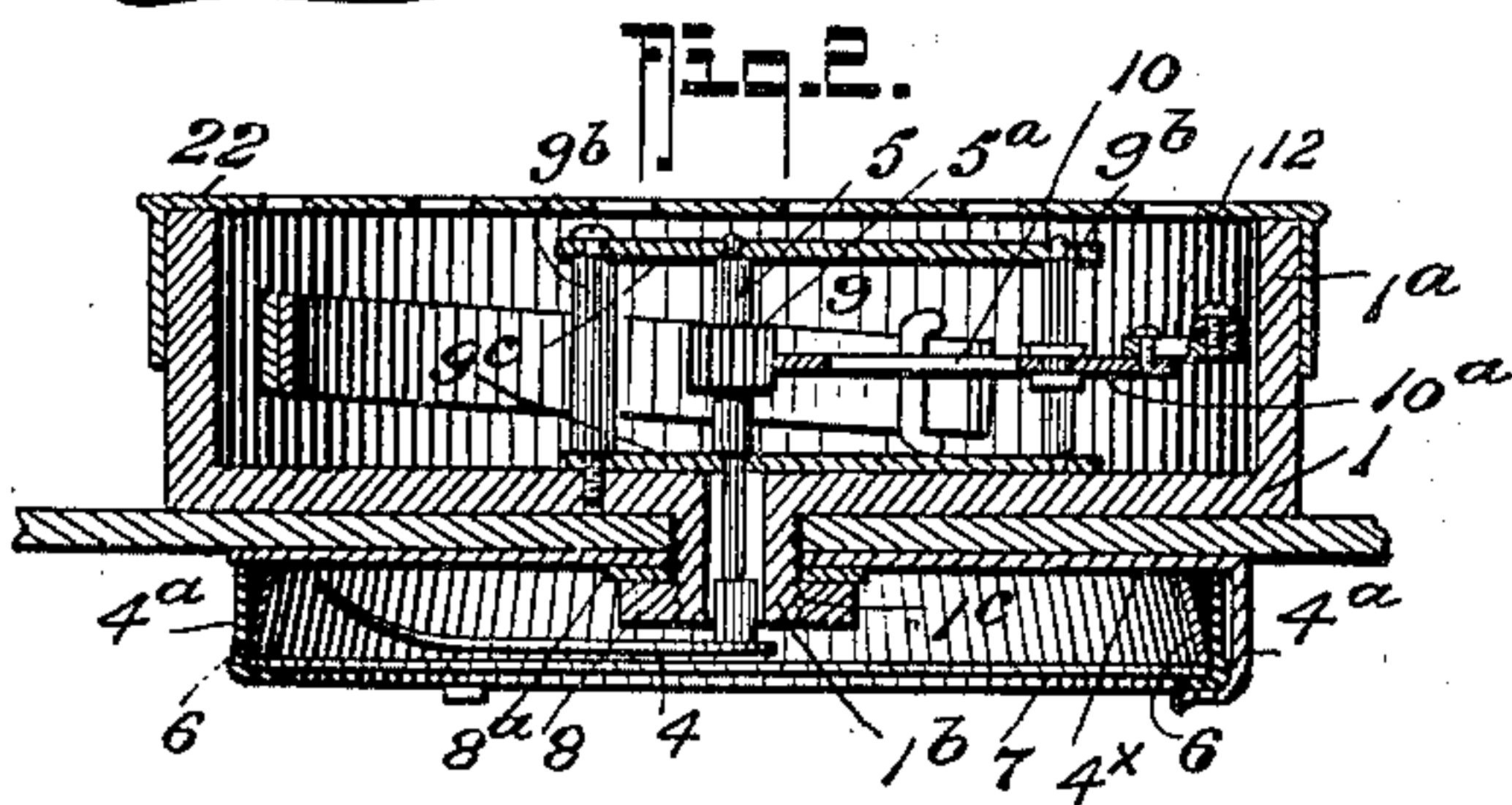


Fig. 5.

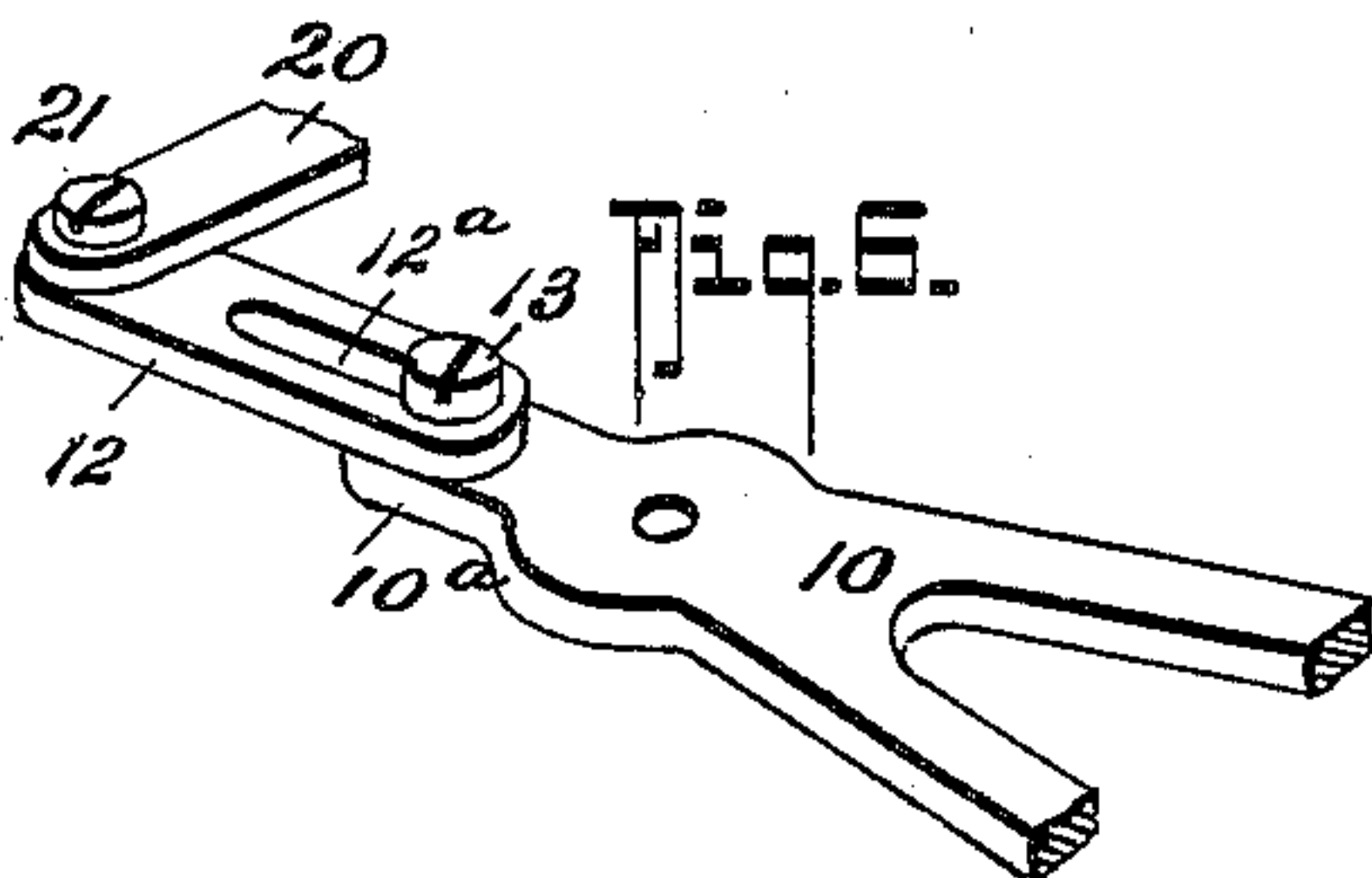


Fig. 6.

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JOHN LEMMON AND JAMES H. COPE, OF COLERAIN, OHIO.

HEAT-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 682,472, dated September 10, 1901.

Application filed December 24, 1900. Serial No. 40,916. (No model.)

To all whom it may concern:

Be it known that we, JOHN LEMMON and JAMES H. COPE, residing at Colerain, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Heat-Indicators, of which the following is a specification.

Our invention relates to improvements in that type of heat-indicators or oven-thermometers in which a bimetal member is employed, the expansion and contraction of which serves to shift an indicator-finger visible on the outside of the oven over a dial-plate to designate the thermic condition of the oven-chamber.

Primarily our invention seeks to provide an appliance of the character described of a very simple and economical construction which can be readily applied to an oven-door and which will effectively serve for its intended purposes.

Our invention comprehends a novel correlation of the bimetallic ring and the vibratory segment-gear, whereby the said ring can be conveniently adjusted to act quickly or slowly, as conditions may make desirable, it also including in its make-up a simple pivotal adjustment connection for joining the expansible or movable end of the ring with the vibratory gear member.

In its subordinate features our invention consists in certain details of construction and peculiar combination of parts, all of which will hereinafter be fully explained, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a face view of an oven-door having our improvement applied. Fig. 2 is a horizontal section of the same on the line 2 2 of Fig. 3. Fig. 3 is a rear elevation of the same, the cap-plate being removed. Fig. 4 is a detail cross-section on the line 4 4 of Fig. 3. Fig. 5 is a detail view of the vibratory gear member, and Fig. 6 is an enlarged detail view of the adjustable member for joining the free end of the expansible member or ring with the segmental gear.

In its practical construction our improved heat-indicating appliance consists of a hollow circular casting formed with an inner or base plate 1 to seat against the inner face of the

oven-door, as clearly shown in Fig. 2, and an annular inwardly-extending rim or flange 1^a, which incloses the expansion-ring and the gear and gear-shifting devices presently referred to. The casting-plate 1 is centrally apertured and formed with an outwardly-tending tubular hub 1^b, adapted to extend through an opening 2 in the oven-door, the outer end of the said hub being externally threaded, as at 1^c.

3 designates a dial-plate, upon which are delineated the words "Very hot," "Warm," "Baking heat," and "Low heat," and 4 indicates a dial-finger mounted on the rock-shaft 5, the peculiar arrangement of which and its coöperation with the shifting devices will be presently described.

The dial-plate 4^x has a number of outwardly-projecting clips 4^a, which hold the bezel securing ring 6 and the glass plate 7 secure on the dial, and the said dial is held fast on the outside of the oven-door by a threaded nut and washer 8 8^a, which engages the threaded extremity of the hollow casting hub, as clearly shown in Fig. 2. The rock-shaft 5 extends through the tubular hub and projects into the casing 1, it being journaled in a metal frame 9, made fast to the base-plate of the casting 1. The frame 9 consists of base-pieces 9^c, made fast on the outer ends of the posts 9^b. The shaft 5 carries a pinion 5^a, that meshes with the teeth of the segment 10, fulcrumed on a post 9^b, forming a part of the frame 9. The member 10 has a heel-piece 10^a, upon which is slidably mounted an adjusting-link 12. This link 12 has a longitudinal slot 12^a, whereby it can be set close to or away from the fulcrum-point of the vibrating gear, a headed screw 13, fixedly held on the member 10, engaging the slotted part of the member 12, as clearly shown in Fig. 3.

15 designates the bimetal ring, composed of two metals—for example, brass and steel—having different or unequal expansive qualities. One end of the ring 15 is adjustably secured to the casing-rim by means of a clip 16, the shank of which passes through the casing-rim and is drawn tight by a draw-nut 18, which engages the threaded end of the said shank. By connecting one end of the ring 15 to the casing in the manner described and shown the diameter of the ring can be

reduced or expanded to aid in properly adjusting the said ring to the condition desired. To the free end of the ring 15 is pivoted the end of a link 20, the other end of which engages a wrist-pin 21, extending up from the outer end of the adjustable member 12.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the complete operation and advantages of our invention will be readily understood, it being manifest that as the temperature in the oven varies and the expansibility of the ring 15 changes accordingly the dial-finger will shift over the dial and indicate the condition of the oven-heat.

To protect the gear mechanism, a perforated shield 22 is fitted over the casing-rim, as shown.

We are aware that heat-indicators involving the general features of our improved appliance have heretofore been provided. Our improvement, however, differentiates over what has heretofore been provided in this line, so far as we know, in the simplified construction of the casing, the manner in which the same is secured to the oven and in which the dial is held, and the manner in which both ends of the bimetal ring are adjustably joined, one end to the casing-ring and the

other to the vibrating gear, particularly the latter, which includes the sliding member 12.

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

In an oven-thermometer, a casing provided with a central tubular hub, externally threaded at its outer end, a nut on said threaded end, a plate in the frame, pins projecting from said plate, a rock-shaft extending through said plate, a second plate carried by said pins and sustaining the rock-shaft, a segment located between said plates, and carried by one of said pins, having a heel, a link having a longitudinal slot, a screw passing through said slot, a second link pivoted to the other one, a two-part metallic ring pivoted to said second link, an L-shaped clip engaging said ring and having a threaded shank projecting through said casing, a nut on said shank, a perforated plate covering the inner end of the casing, a dial, and a pointer connected to said rock-shaft.

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