

A. E. WHITTIER.
OVEN THERMOMETER.

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917,391.

Patented Apr. 6, 1909.

Fig. 1

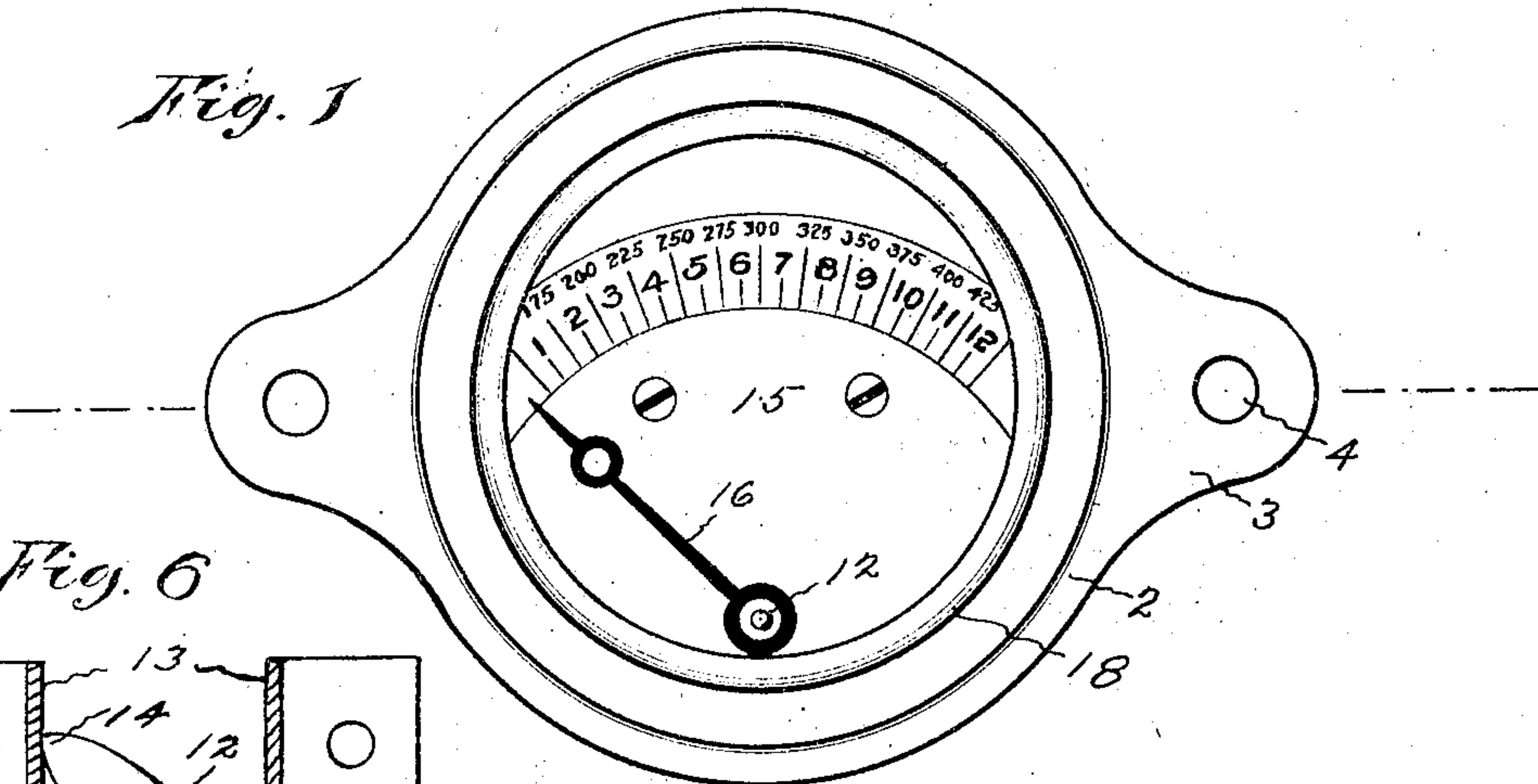


Fig. 6

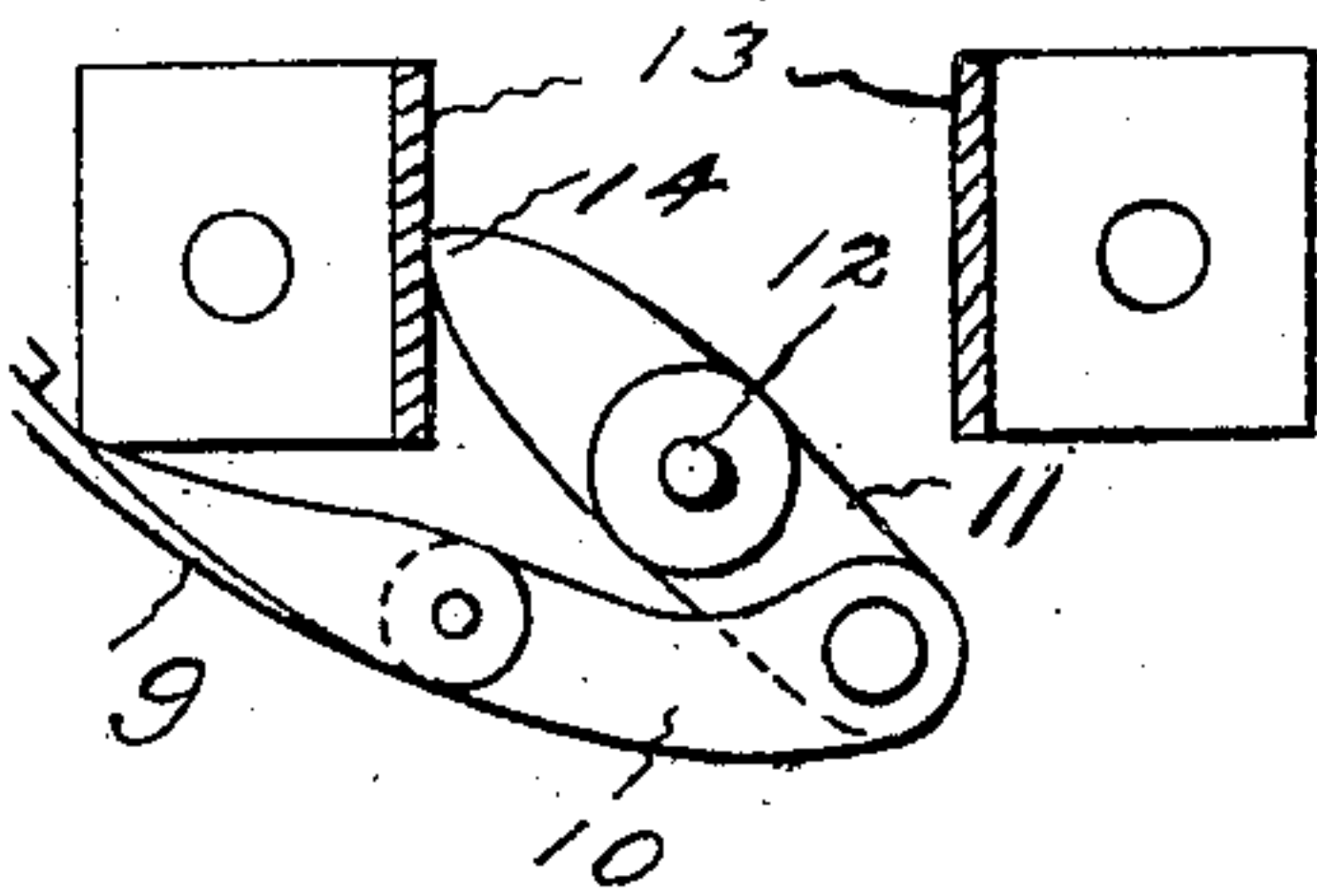


Fig. 2

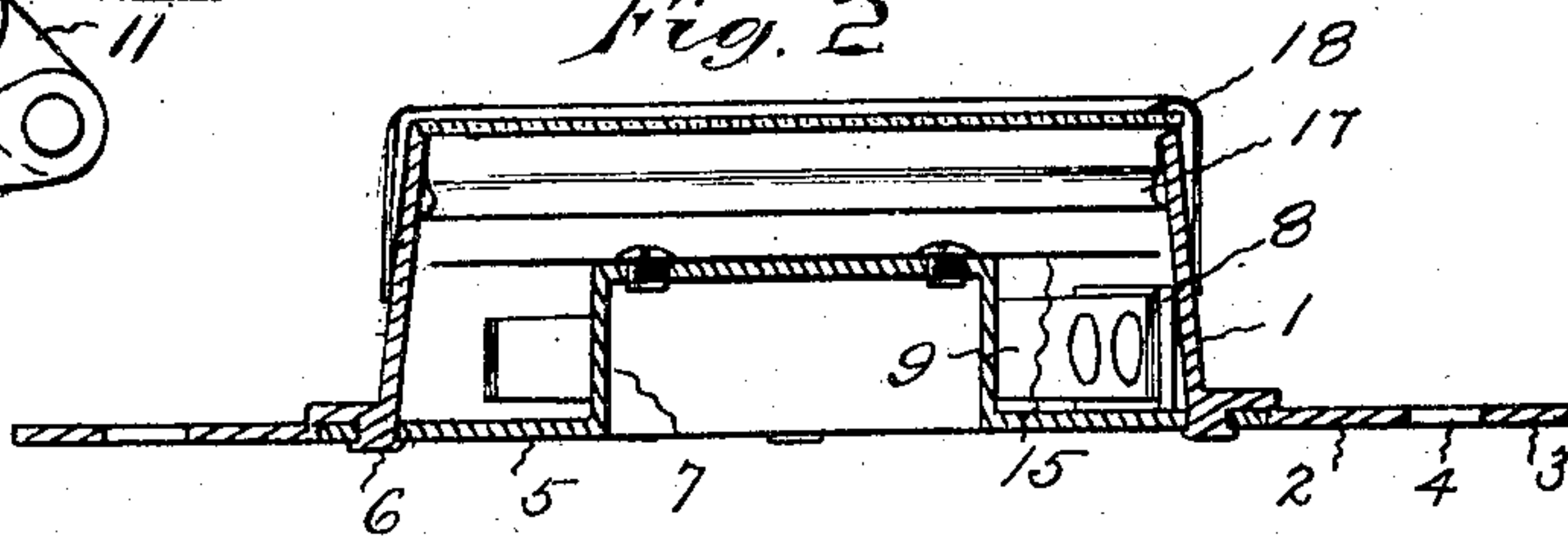


Fig. 3

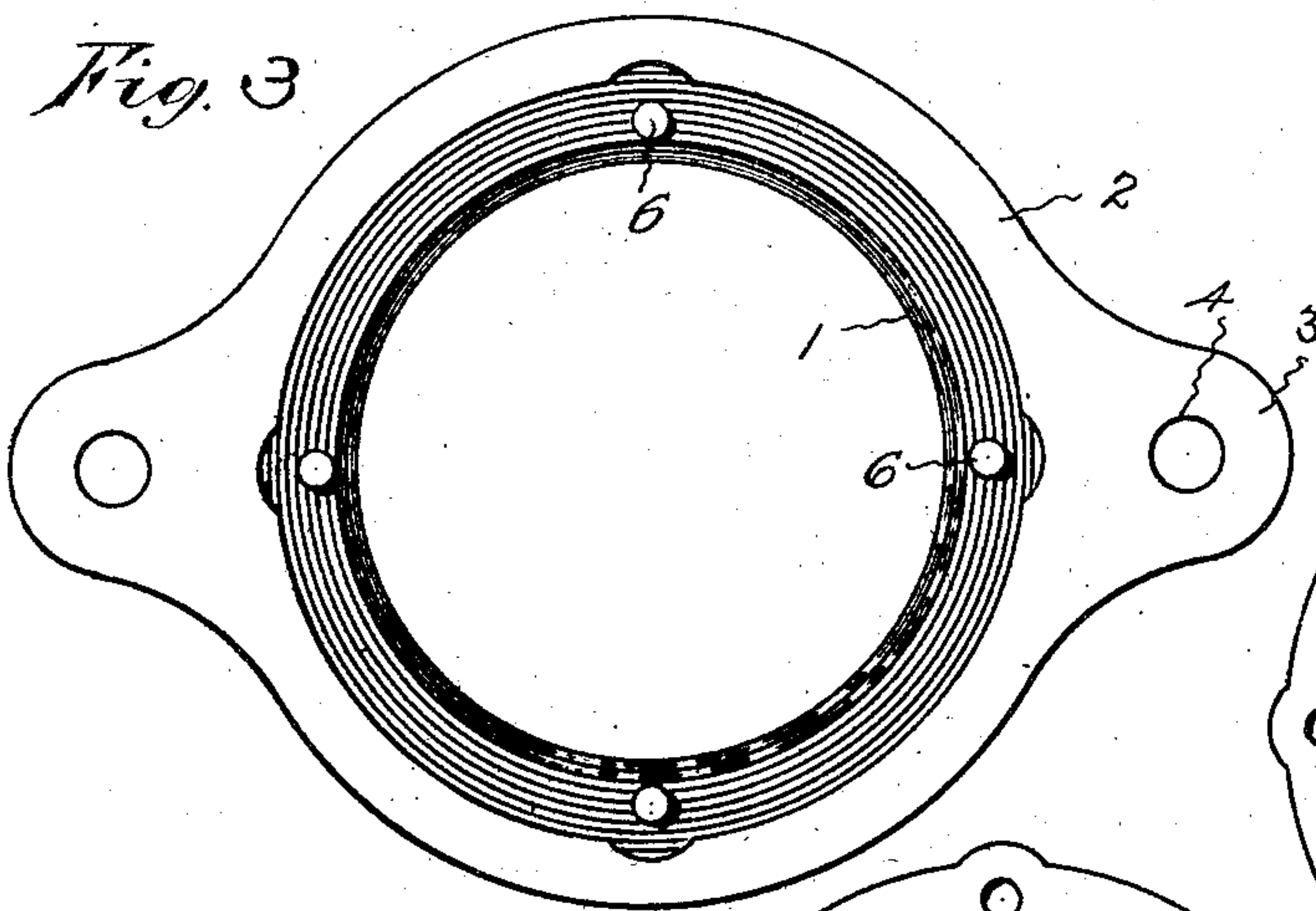


Fig. 4

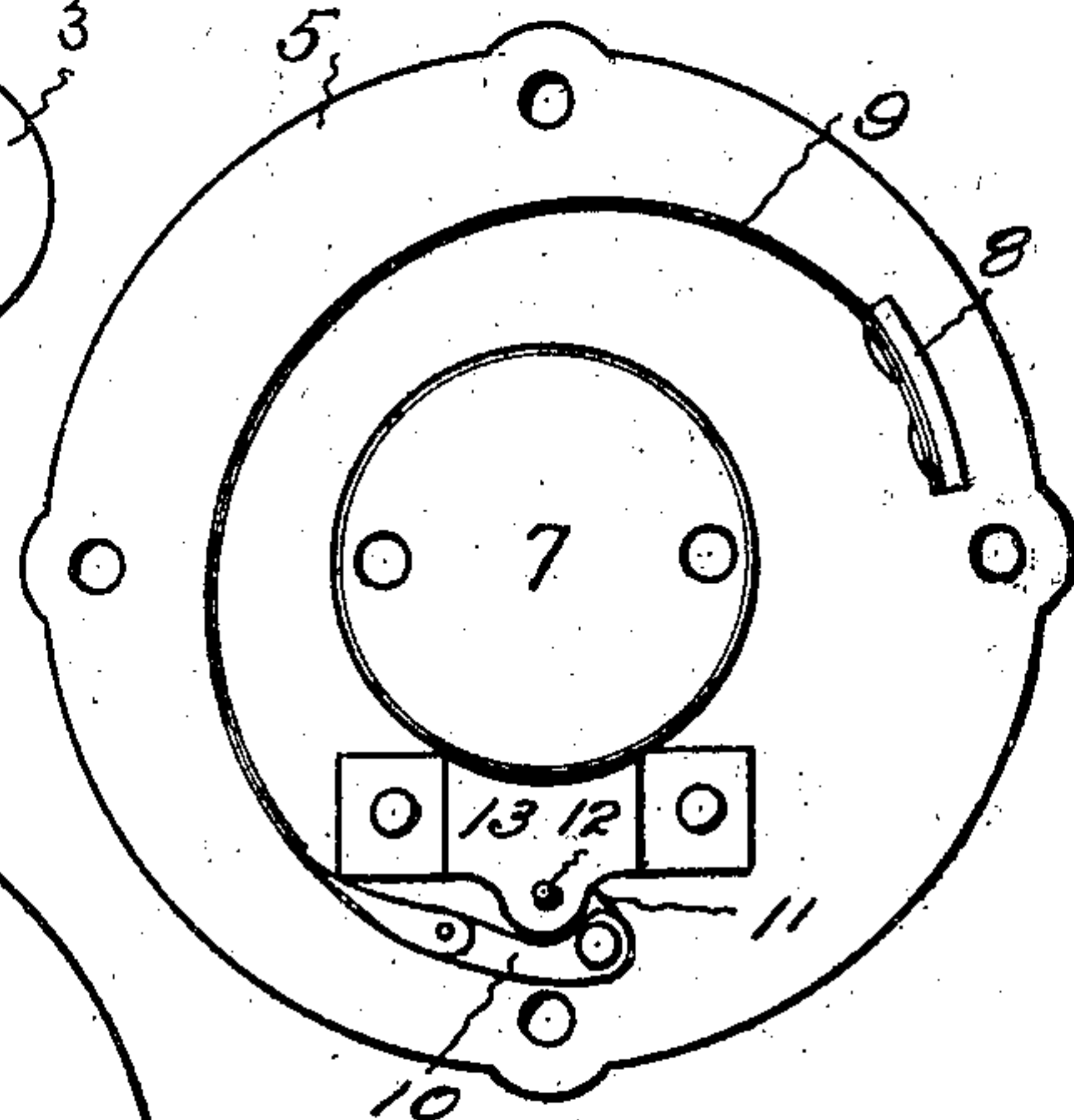
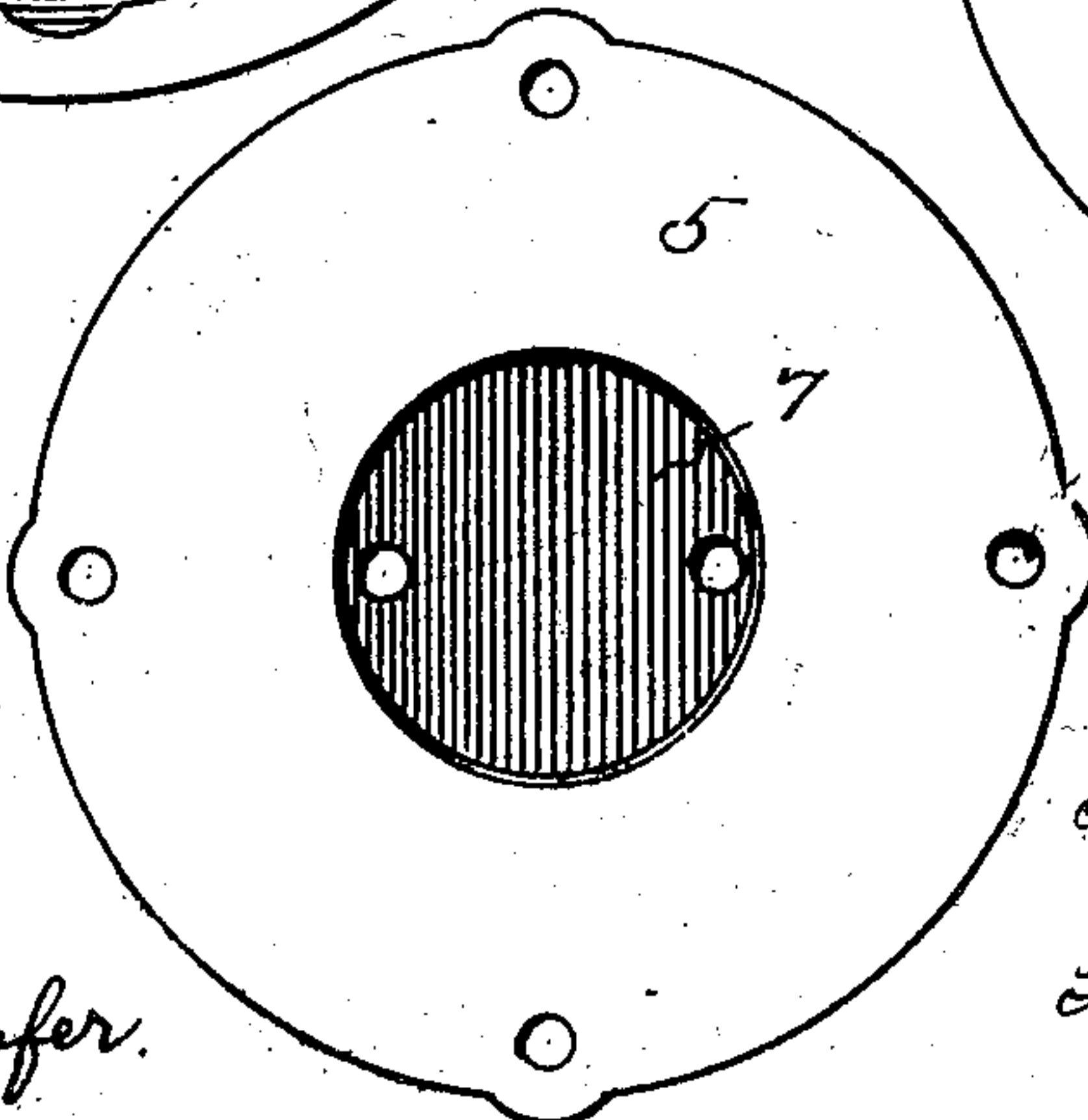


Fig. 5



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OVEN-THERMOMETER.

No. 917,391.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT E. WHITTIER, a citizen of the United States, residing at Bristol, in the county of Hartford and State of Connecticut, have invented a new and useful Oven-Thermometer, of which the following is a specification.

This invention relates to those devices which are designed to be attached to the walls of ovens of wood, coal, gas, oil and electric stoves and ranges for the purpose of indicating the temperature of the atmosphere in the interior so that baking, roasting and other cooking may be done with certainty and exactness, and with a saving of time and fuel.

The object of this invention is to provide a metallic thermometer for such purposes which has few parts and is simple to construct, and which is very sensitive, accurate, and protected against injury.

Figure 1 of the accompanying drawings shows a front view of an oven thermometer which embodies the invention. Fig. 2 shows a diametrical section of the same thermometer. Fig. 3 shows a rear view of the casing. Fig. 4 shows a front view of the back plate or base and the thermometric mechanism. Fig. 5 shows a rear view of the base. Fig. 6 is a detail on larger scale, showing the hand spindle, the stop block carried by the spindle, the end of the thermometric arm and the link which connects the arm with the stop block.

The casing of this device, which is desirably formed of cast malleable iron, that is cheap, strong and porous for heat, has an annular body 1 with a flange 2 extending outwardly from its rear edge and ears 3 that project from the flange and are provided with perforations 4 for the passage of the screws, bolts or rivets, by means of which the device is fastened in an opening in the wall or door of the oven of a stove, range or other baking chamber.

The rear of the casing is rabbeted and fitting therein is the back plate or base 5 which is provided with perforations for receiving the lugs 6, which are preferably cast integral with the casing and, when the parts are assembled, are headed over on the outside of the base. The base has a recess opening to the rear and this provides a forwardly extending hub 7. Secured to an ear 8, that is preferably cast integral with the base, by rivets or otherwise, is the end of a bi-metallic

thermometric arm 9. This thermometric arm which is formed as usual of two strips of metal having different co-efficients of expansion when heated, such as copper and steel, tightly fastened together, is curved around the hub. The free end of the thermometric arm is hinged to a short link 10 which is hinged to the outer end of a block 11 that is mounted on and secured to the spindle 12 which has a bearing back of the block in the base and is supported in front of the block by a bridge 13. The inner end 14 of this block is arranged to engage with the sides of the bridge and form a stop positively limiting the movements of the block and the spindle when they are turned by the expansion and contraction of the thermometric arm.

Fastened by screws or otherwise to the front face of the hub that projects forwardly from the base is a dial 15, stamped or otherwise marked upon which, in the arc of a circle, is a scale, preferably provided with the numerals from 1 to 12, and also numerals indicating various degrees of temperature. The spindle which bears the stop block that is connected with the thermometric arm extends through a perforation near the lower edge of the dial, and mounted on the spindle is a hand 16 which points to the scale and indicates the various degrees of temperature when the device is in use. It is preferred to insert a trimming band 17 of brass or other metal in the outer end of the casing, and place a glass cover over the band and hold it in place by a flanged ring 18 for protecting the dial and hand.

This device has very few operating parts and these parts are exceedingly simple to manufacture and assemble. The casing and base are preferably formed, as stated, of thin cast malleable iron so that they are strong and yet they are porous and very good conductors of heat. The recess on the inside of the base forms a chamber into which the heated air of the oven circulates in such manner that the heat is absorbed by the base and conducted to the thermometric arm and not reflected, as it is with a base formed with a smooth flat surface of rolled or stamped sheet metal. The hub provided by the recess in the base projects well into the interior and the thermometric arm is curved around the hub in such manner that heat is rapidly and quickly radiated from the side wall to the inside strip of the bi-metallic thermometric

arm, and this, practice has demonstrated, has resulted in providing a thermometer which is exceedingly accurate and sensitive, both when the temperature is rising and falling in the oven of the stove or range to which the device is applied.

The invention claimed is:

1. An oven thermometer having a casing, a reëntrant base attached to the casing, a dial bearing a scale, attached to the base, a curved bi-metal thermometric arm within the casing, a spindle extending through the lower edge of the dial, a block secured to the spindle, a link connecting the thermometric arm and the block, and a hand mounted on the spindle and pointing toward the scale, substantially as specified.

2. An oven thermometer having a casing, a base attached to the casing, a hollow hub projecting from the base into the casing, a thermometric arm secured to the base and encircling the hub, a spindle, a block carried by the spindle, a link connecting said block and the thermometric arm, a dial bearing a scale, said spindle extending through the lower edge of the dial, and a hand mounted on the spindle and pointing to the scale, substantially as specified.

3. An oven thermometer having a recessed base open at the back, a thermometric arm encircling the recessed part of the base, a spindle, a block carried by the spindle, a link connecting said block and the thermometric arm, a dial bearing a scale, said spindle extending through the lower edge of the dial, and a hand mounted on the spindle and pointing to the scale, substantially as specified.

4. An oven thermometer having a base, a hollow hub projecting forwardly from the base, a thermometric arm encircling the hub, a spindle, a block carried by the spindle, a link connecting said block and the thermometric arm, a dial bearing a scale, and a hand

mounted on the spindle and pointing to the scale, substantially as specified.

5. An oven thermometer having a base, a thermometric arm attached to the base, a spindle, a block carried by the spindle, a link connecting said block and the thermometric arm, a dial bearing a scale, said spindle extending through the lower edge of the dial, and a hand mounted on the spindle and pointing to the scale, substantially as specified.

6. An oven thermometer having a base, a thermometric arm secured to the base, a bridge attached to the base, a spindle mounted on the base and supported by said bridge, a block carried by said spindle and adapted to limit its movement, a link connecting said block and the thermometric arm, a dial bearing a scale, and a hand mounted on the spindle and pointing to the scale, substantially as specified.

7. An oven thermometer having an annular casing with supporting ears, a base secured to the rear of said casing, a curved thermometric arm secured to the base, a spindle mounted on the base, a block carried by said spindle, a link connecting said block and the thermometric arm, a dial bearing a scale, and a hand mounted on the spindle and pointing to the scale, substantially as specified.

8. An oven thermometer having a base, a recessed hub extending forwardly from the base, a dial bearing a scale secured to said hub, a thermometric arm secured to the base and encircling said hub, a spindle extending through the dial, a link connecting said spindle and thermometric arm, and a hand mounted on the spindle and pointing to the scale, substantially as specified.

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