No. 748,324. PATENTED DEC. 29, 1903.

C. WAMSLEY.

REGISTER.

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NO MODEL.

Fig. 1.

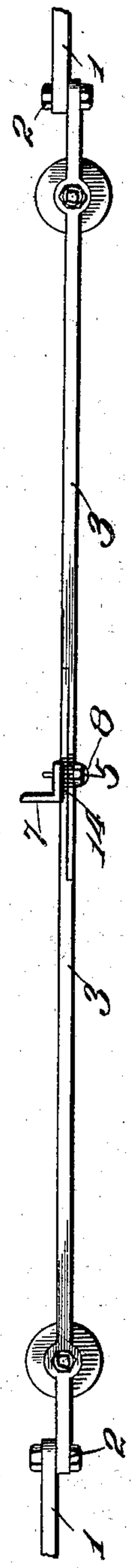
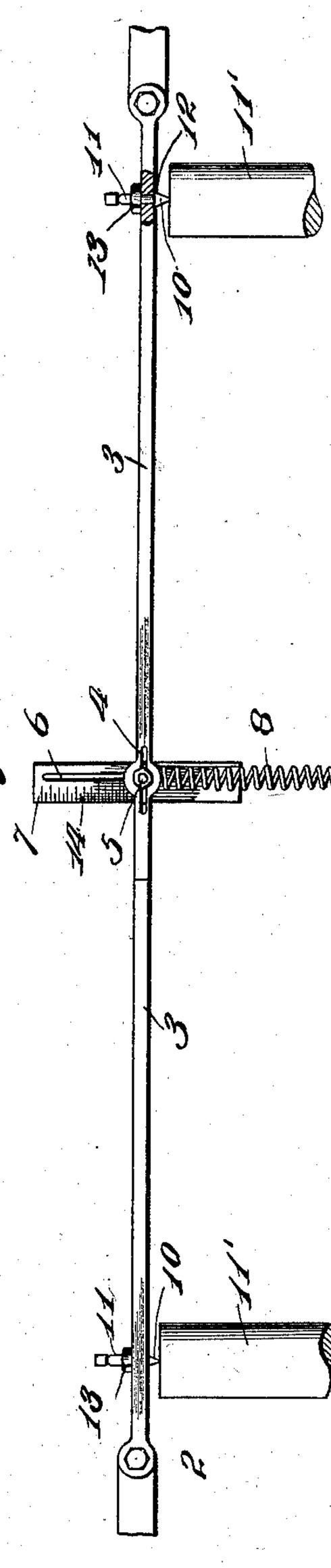
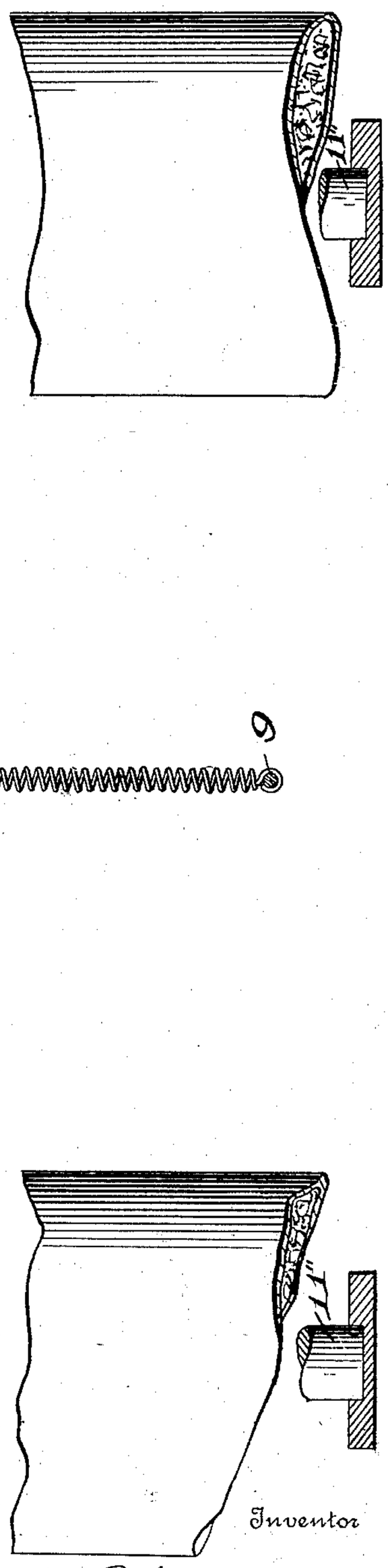


Fig. 2.





Inventor

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No. 748,324. Patented December 29, 1903.

UNITED STATES PATENT OFFICE.

CHARLES WAMSLEY, OF TACOMA, WASHINGTON, ASSIGNOR OF ONE-HALF TO GEORGE A. BROWNE, OF TACOMA, WASHINGTON.

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SPECIFICATION forming part of Letters Patent No. 748,324, dated December 29, 1903.

Application filed November 3, 1902. Serial No. 129,918. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WAMSLEY, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Recorders; 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 appertains to make and use the same.

The present invention relates to improvements in indicators for showing the temperature of the contained material of heating-rolls for crushed rock; and the object in view is the provision of devices whereby the expansion of the rolls will indicate the temperature thereof, so that the same may be raised to and maintained at a given temperature for the desired length of time.

The invention consists in certain novel constructions, combinations, and arrangement of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a front elevation of an indicator embodying the features of the present invention. Fig. 2 represents a view in plan of the same.

Referring to the drawings by numerals, 1 indicates fixed parts, to each of which is pivoted, as at 2, an arm 3, the inner ends of said arms crossing and being slotted, as at 4, for receiving a connecting-pin 5, which pin also moves in a slot 6, formed in an angle or other suitable bar 7, fixed against movement. A spring 8 engages pin 5 and retains the same at one end of slot 6, with the arms 3 in line, the end of the spring 8 opposite pin 5 being secured to any fixed point 9. Each arm 3 is provided with a bearing-point 10, which is preferably the end of a bolt 11, formed with an engaging shoulder 12 on one side of the arm and a retaining-nut 13 on the other side thereof. It will of course be understood that the point 10 need not be formed from the bolt at all, but may be simply a lug projecting from the arm 3. Each point 10 engages a journal 11′ of a crushed-rock roll of the hollow type employed for baking crushed ore, such rolls being retained over a fire while being rotated for raising the temperature of the contained crushed rock.

In operation the rolls rotate while under the action of the heat and their longitudinal expansion moves their journals 11′ longitudinally, and thereby moves the points 10 and arms 3, swinging said arms upon their pivots 2 and moving the inner ends thereof longitudinally of the bar 7. Of course the rolls will be held against movement in one direction at one end, and thus free to expand at the other end, so as to have a positive action upon the indicating mechanism. The bar 7 may be formed with a graduated-scale edge, as at 14, for indicating the distance of movement of the arms 3, or the said bar may be provided with a single mark to indicate the distance said arm should swing when the crushed rock within the rolls has reached the proper height of temperature. It will be observed that by this simple arrangement of parts the temperature of the rolls will be indicated and may be controlled by observation of the movement of the pivot-pin 5 as the same travels in slot 6.

The rolls, supported by journals 11′ at one end, are provided with journals 11″ at their opposite end, each arranged in a bearing-block of any suitable type designed to prevent longitudinal movement of the journal and roller carried thereby.

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

1. In a device of the class described, the combination with a suitable journal of a roll, of a pivotally-mounted arm actuated by said journal, the free end of said arm being slotted, indicating means moving in said slot, means guiding said indicating means in its movement, and a cushion opposing the movement of said arm under the action of said journal.

2. In a device of the class described, the combination with a suitable journal of a roll, of a pivotally-mounted arm and a contact-point carried thereby engaging said journal, the free end of said arm being slotted, a pin moving in said slot, a spring engaging said pin for retaining said point in contact with the

journal and means for guiding the pin in its movement.

3. In a device of the class described, the combination with a suitable journal of a roll, of an arm pivotally mounted, means carried by said arm engaging said journal, a slot being formed longitudinally of said arm, a slotted bar, a pin extending through the slot in said arm and engaging the slot of said bar, and means retaining the engaging element of said arm in contact with said journal.

4. In a device of the class described, the combination with revolubly-mounted rolls and journals therefor, of pivotally-mounted overlapping arms extending past said journals, indicating means carried by and connecting said arms, means carried by said arms engaging said journals, and means for maintaining such engagement.

5. In a device of the class described, the combination with suitable revolving rolls and journals therefor, of pivotally-mounted arms having their free ends overlapped, and each of said arms being slotted, a pin extending through the slots of said arms and connecting the arms together, means for guiding said pin, means carried by said arms engaging said journals, and means for maintaining such engagement.

6. In a device of the class described, the combination with a suitable journal of a roll, of a pivotally-mounted arm, a contact-point carried thereby engaging said journal, a slidably-mounted pin carried by the free end of said arm, a fixed bar formed with a slot into which said pin projects, and means for engaging the free end of said arm for retaining the contact-point in engagement with the journal.

7. In a device of the class described, the combination with suitable journals of rolls, of arms pivotally mounted and having their free ends crossed and slotted, a fixed bar at the point of crossing of said arms also slotted, a pin passing through the slot of each of said arms and the slot of said bar, contact-points carried by said arms engaging said journals, and a spring engaging the free ends of said arms for retaining the contact-points in engagement with the journals, substantially as described.

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

CHARLES WAMSLEY.

Witnesses:
C. M. FRENCH,
GEO. A. BROWNE.