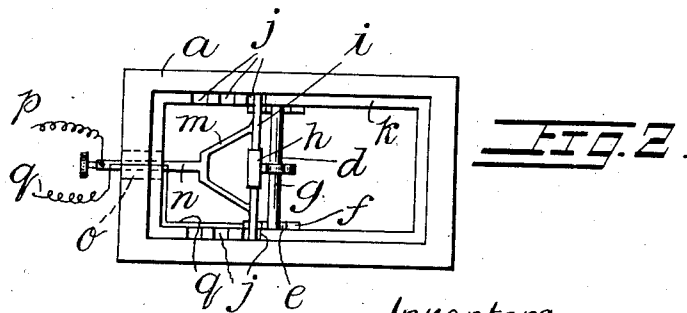
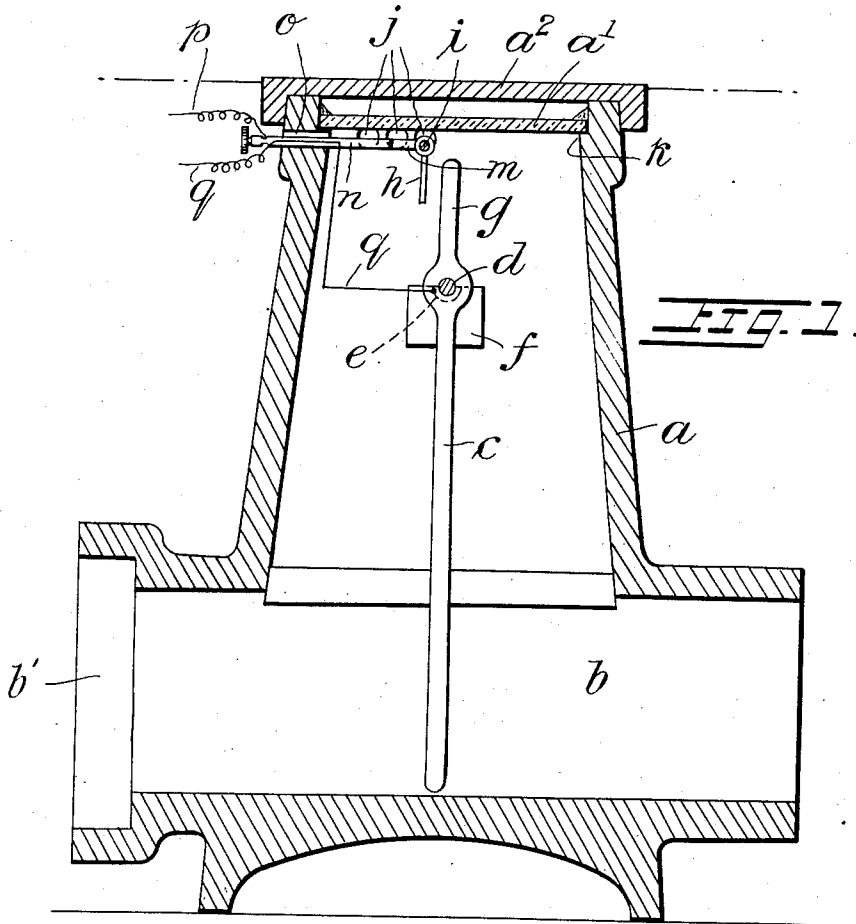


J. H. WOODINGTON & E. H. COLES.
 INDICATING DEVICE FOR DRAINS AND THE LIKE.
 APPLICATION FILED NOV. 7, 1913.

1,090,669.

Patented Mar. 17, 1914.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH HENRY WOODINGTON AND ERNEST HENRY COLES, OF CLEVEDON, ENGLAND.

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Specification of Letters Patent.

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Application filed November 7, 1913. Serial No. 799,785.

To all whom it may concern:

Be it known that we, JOSEPH HENRY WOODINGTON and ERNEST HENRY COLES, subjects of the King of Great Britain and Ireland, and residents of Clevedon, county of Somerset, England, have invented certain new and useful Improvements in Indicating Devices for Drains and the like, of which the following is a specification.

10 This invention relates to apparatus for indicating sewage accumulation and stoppages in drains and the like, and is primarily intended for use in ascertaining whether the intercepting traps in a drainage system are
15 free. It will however, be apparent that an apparatus constructed in accordance with the present invention is applicable to other like usages.

It is a known fact that the existence of a
20 block at the intercepting trap does not necessarily become evident in a short space of time: indeed it may not become evident at all. The existence of a block anywhere in a drain is first shown, unless the trap is specially exposed to view, by the drain not acting properly, as indicated by the sewage or the like remaining ponded, more or less, at
25 the surface of one or other of the visible traps of the drain, instead of freely passing away. Now, as the intercepting trap is usually the lowest point of a house drain, it follows that, before the existence of a block or stoppage becomes apparent in this way, sewage or the like must accumulate in the
30 whole length of the drain between said trap and the next lowest trap on the surface. That is to say, until the sewage or the like appears and remains visible at the surface, it is not evident from the ordinary use of the
40 drain that such drain is obstructed or that there is an accumulation of sewage in said drain. Further, it is also an established fact that not infrequently there is formed a block at the intercepting trap, and that the pressure of the accumulated sewage or the like, after rising in the drain and the inspection hole or chamber to a certain level, forces the obstruction before it and before it becomes evident from the use of the drain that the
50 same has become obstructed. Therefore, a given intercepting trap may be repeatedly blocked and the block repeatedly overcome by the pressure caused by the accumulation, and the existence of such a condition remain
55 altogether unsuspected. It follows, therefore, that many undesirable results may

arise from this unsuspected accumulation of—especially in household drainage—a decomposing mass of paper debris, excretal matter, solids and general sludge, but with
60 an apparatus in accordance with the present invention a timely indication of the presence of an accumulation is obtained and the danger therefrom obviated.

For a clear understanding of the present
65 invention, reference is to be had to the following description and accompanying drawing which illustrates in sectional elevation (Figure 1) a practical mode of carrying out
70 said invention; and Fig. 2 shows a plan view (simply of the top)—cover removed, the device shown being particularly adapted for interposition in a drainage system on the main sewer side of an intercepting trap.

In said drawings, *a* is a vertically
75 ranged casing formed integral with or attached to a transverse channel or pipe *b* provided with spigot and socket or other suitably shaped ends *b'* shown horizontally disposed, which is arranged in axial continuation of the drain pipe, and thus may be inclined or curved according as the drain pipe
80 is arranged. A contact needle or indicator is pivoted by its spindle *d* and has one arm *c* extending through an opening into the channel or pipe *b* and in the path of the sewage, sludge or other fluid, while the other arm *g* projects upwardly within said casing. The
85 top of the casing *a* is provided with an hermetically sealed transparent cover *a'* and a closure lid *a''* preferably detachably arranged on the casing *a* on the ground level, indicated by dot and dash line.

In operation, and in the simplest manner,
95 when it is desired to ascertain the condition of the intercepting trap, drain or the like; a flush is made either by means of existing flushing apparatus or by otherwise passing a flow of water through the drain. If a free
100 and clear passage is presented the passing water will oscillate the needle or indicator and its movement will be apparent through the transparent cover *a'*, the closure lid *a''* having been removed. If, on the other
105 hand, an impediment is encountered, the water will percolate in small quantities or flow very slowly, failing to move the indicating arm to any appreciable extent or degree, so that one may readily judge the state of the drain by the performance of the indicating
110 arm.

In the preferable form shown, means are

provided whereby an audible or external ocular indication or record of the state or condition of the drain flow may be noted, said means being operated by the needle as above. It will be seen that the spindle *d* is mounted in metal liners *e* forming part of brackets or sockets *f* on the interior walls of the casing *a*. The lower part of the needle or indicator *c* extends into the channel or pipe *b* and in the path of the sewage, sludge or other fluid, while the upper part *g* projects upwardly within the casing and in line with a downwardly extending contact tongue *h* pivotally mounted on a transverse spindle *i* dropped into one or other of the oppositely arranged notches *j* formed in the internal flange *k* at the top of the casing *a*. This spindle *i* is carried by the forked arms *m* of a binding post rod *n* which passes through a slot or hole *o* formed in the internal flange *k* and in the wall of the casing, said hole *o* being of such a size that after the transverse spindle *i* of the forked arm *m*, and consequently the pivotally mounted tongue *h* carried by said spindle *i*, has been positioned in its correct notches *j*, said hole *o* is filled up with a suitable sealing medium, the arrangement of notches *j* allowing for a greater or less swing of the needle or indicator *c* before its upper end *g* comes into contact with the pivotally mounted tongue *h*, which contact closes an electric circuit, ringing a bell or giving other audible or external ocular indication or record of the state of the drain flow, one of the wires *p* of the circuit being connected to the end of the rod *n*, while the other wire *q* is connected to one of the beforementioned linings *e*. Any other suitable form of electrical or mechanical contact and indicating or recording means may be employed according to the uses or conditions which may obtain under different or varying circumstances.

It is obvious that if the drain be deeply situated the casing *a* would have to be of an elongated nature and the needle or indicating arm correspondingly lengthened. Further, the various constructional features may be substantially modified without departing from the invention; for instance,

the casing *a* may be of oval, rectangular, circular or other cross-section, the arm *c* formed with a spade-shaped extremity or any other shape easily acted upon by the sewage or like flow and the spigot and socket or other ends and general shape of the molding varied to suit practical and local requirements.

Having now described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:—

1. An indicating device for drains and the like comprising, in combination with a pipe section having a casing member, an adjustable binding post element extending within the casing member, and having forked arms and a spindle, a swinging contact tongue pivotally suspended from the central portion of said spindle, a contact needle pivotally hung within the casing member and having one end disposed in the passage way through the pipe section and the other end arranged to engage and disengage said swinging contact tongue, and electrical connections respectively with said binding post element and with said needle.

2. An indicating device for drains and the like comprising, in combination with a pipe section having a casing member provided with a plurality of supporting notches, a detachable plate arranged to cover said notches, an adjustable binding post element carrying a spindle retained in any of said notches, a contact tongue pivotally hung from said spindle, a contact needle pivotally hung within the casing member and having one end disposed in the passage way through the pipe section and the other end arranged to engage and disengage said contact tongue, and electrical connections respectively with said binding post element and with said needle.

In testimony whereof we have affixed our signatures in presence of two witnesses.

JOSEPH HENRY WOODINGTON.
ERNEST HENRY COLES.

Witnesses:

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