

No. 670,999.

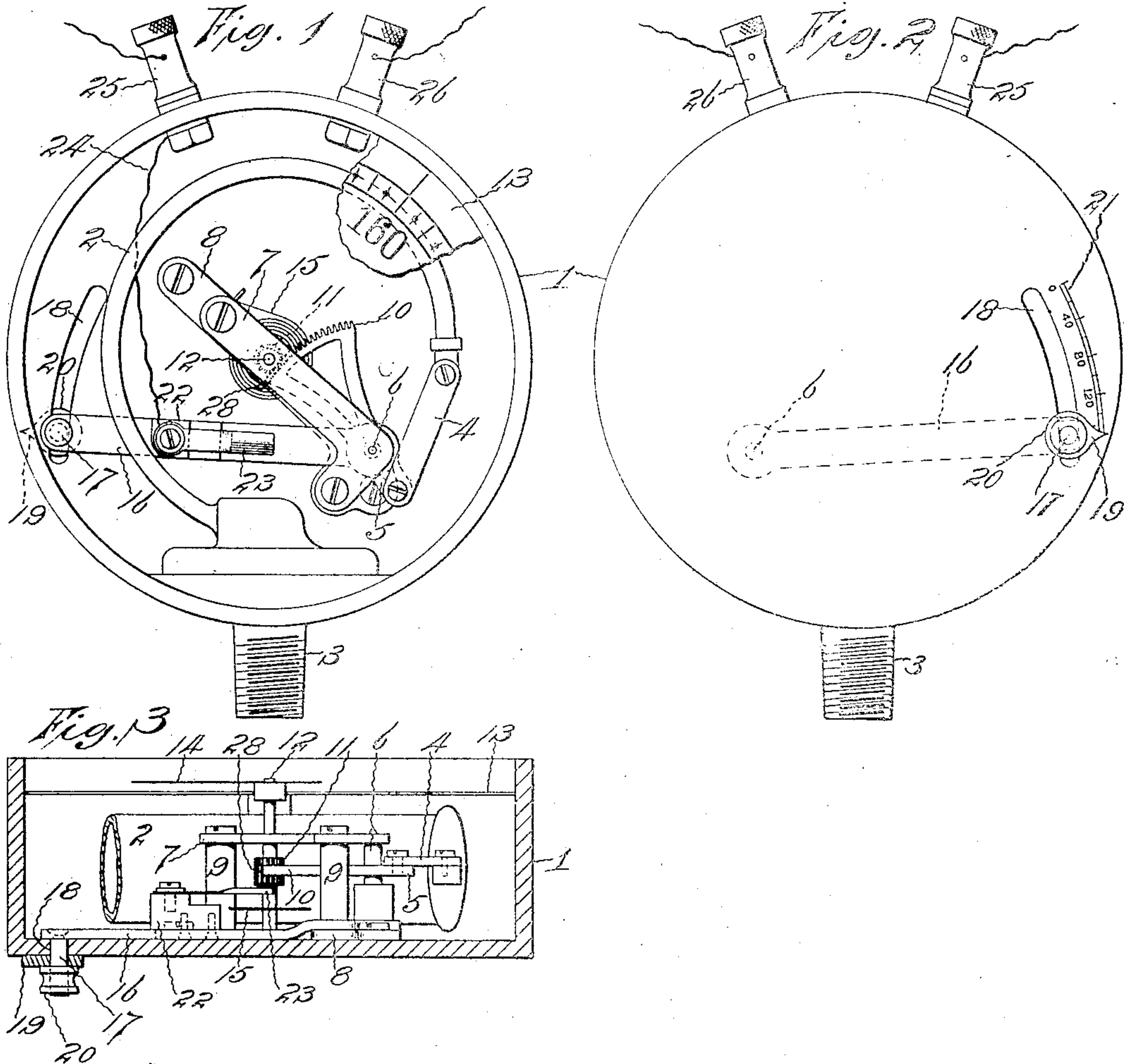
Patented Apr. 2, 1901.

A. J. PURINTON & L. W. SWEET.

PRESSURE GAGE.

(Application filed Jan. 3, 1900.)

(No Model.)



Witnesses:

F. G. Holcomb.

C. E. Dickland.

Inventors:

Arthur J. Purinton, &
Leonard W. Sweet &
Harry P. Williams att.

UNITED STATES PATENT OFFICE.

ARTHUR J. PURINTON AND LEONARD W. SWEET, OF WATERBURY, CONNECTICUT, ASSIGNORS TO THE MONARCH MANUFACTURING COMPANY, OF SAME PLACE.

PRESSURE-GAGE.

SPECIFICATION forming part of Letters Patent No. 670,999, dated April 2, 1901.

Application filed January 8, 1900. Serial No. 794. (No model.)

To all whom it may concern:

Be it known that we, ARTHUR J. PURINTON and LEONARD W. SWEET, citizens of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Pressure-Gages, of which the following is a specification.

The invention relates to a gage that is so constructed that should the pressure in a pipe, chest, boiler, or other receiver or chamber with which it communicates change to a predetermined degree an electrical circuit will be closed in the gage. This gage is particularly adapted for use with an engine-stop of the nature of that shown and described in United States Letters Patent No. 599,014, granted February 15, 1898, whereby when the circuit is closed in the gage the stop is caused to operate the valve with which it is connected, although it is adapted for use with a vacuum-breaker like that set forth in United States Letters Patent for a system for stopping engines, No. 635,080, granted October 17, 1899, for causing the vacuum to be broken when it changes to the predetermined point.

The object of the invention is to provide a simple instrument of this nature with electrical terminals adjustably arranged to be so set that electrical contact will be made and the circuit closed in the gage at the exact desired pressure.

In the forms of the invention illustrated there is one electrical conducting-terminal that is moved by the movement of the curved pressure-tube of the gage as the pressure changes, and there is another electrical conducting-terminal that is adjustably fixed with relation to the movable terminal, which terminals are so located that when the pressure varies from the desired amount the movable terminal is carried opposite the adjustably-fixed terminal, causing them to make contact and close the circuit, so the stop or vacuum-breaker in the circuit will be set in operation, as more particularly hereinafter described, and pointed out in the claims.

Figure 1 of the accompanying drawings is a front view of a gage that embodies the invention with the cover, hand, and most of

the dial omitted. Fig. 2 is a view of the back of the same gage. Fig. 3 is a side view of this gage with the case and pressure tube cut in section.

In the circular case 1 is an ordinary curved pressure-tube 2, the fixed end of which is adapted to be connected by a nipple 3 with a pipe, chest, boiler, or other receiver or chamber in which there is fluid-pressure to be controlled. The free end of the tube is connected by a link 4 with a lever 5, mounted upon an arbor 6, that is held by plates 7 and 8, which are connected by posts 9 and secured to the back of the case in any desired manner. The lever 5 has a segmental rack 10, the teeth of which mesh with the teeth of the pinion 11, that is mounted upon the arbor 12. This arbor outside of the indexed dial 13 bears an indicating-hand 14, and inside of the dial one end of a spring 15 is attached to the arbor for returning the hand toward zero in opposition to the movement effected by the straightening of the tube as the pressure changes.

In the form of the invention illustrated an arm 16 is pivoted upon the lower end of the arbor 6. The free end of this arm has a stud 17, that extends through a slot 18 in the back plate of the case, which stud is provided with a pointer 19 and a nut 20. On the outside of the back of the case, adjacent to the slot and in position to cooperate with the pointer, is a scale 21. The arm and pointer may be clamped by tightening the nut; but when the nut is loosened the pointer and arm may be moved and set as desired.

A block 22 of insulating material is attached to the arm inside of the case, and mounted upon this block is a yielding conducting-finger 23. This insulated finger, which forms the adjustably-fixed terminal of the circuit in the gage, is connected by insulated wire 24 with a binding-post 25, which is insulated from the case. The binding-post 26 is in electrical connection with the case, and when the pin 28, projecting from the segment 10, which pin forms the movable terminal, engages the finger 23 an electrical connection is made through the parts from one binding-post to the other.

When the nut on the back which clamps the arm in position is loosened, the arm may be swung to bring the finger-terminal in such position that the pin-terminal will engage 5 with it and close the circuit when the pressure reaches the degree indicated by the pointer.

This gage may be connected with a steam-pipe or a steam chest or cylinder and the arm 10 set so that should the pipe burst, the chest crack, or the cylinder-head blow out and it became desirable to shut off the steam and stop the engine the reduction of pressure due to the accident would cause the movable terminal to engage the adjustable terminal and 15 close the circuit and cause the stop to shut the throttle-valve.

This apparatus can of course be connected with a bell or other apparatus besides an automatic valve-closing apparatus and vacuum-breaker, and the terminals may be so adjusted that contact will be made and the apparatus set in action either when an undue rise in pressure occurs or a sudden fall in pressure 25 takes place.

This apparatus is very simple, and it is readily adjusted so as to operate accurately when the emergency arises.

We claim as our invention—

30 1. A pressure-gage having a case, a pressure-tube, an electrical terminal moved by the variations of the tube, a binding-post in electrical connection with the movable terminal, a pivoted arm bearing an insulated terminal within the case, a stud projecting from 35 the arm through a slot in the back plate of the case, a clamp-nut on the outside of the

back plate for fixing the stud in position, and an insulated binding-post in electrical connection with the insulated terminal on the 40 pivoted arm, substantially as specified.

2. A pressure-gage having a case, a pressure-tube, an electrical terminal moved by the variations of the tube, a binding-post in electrical connection with the movable terminal, 45 a pivoted arm bearing an insulated terminal within the case, a stud projecting from the arm through a slot in the back plate of the case, a pointer movable with the stud and a scale on the back of the case adjacent to 50 the slot in position to cooperate with the pointer in indicating the position of the insulated terminal on the arm, substantially as specified.

3. A pressure-gage having a case, a pressure-tube, a link connected with the free end of the pressure-tube, a lever connected with the link, a segmental rack connected with the lever, a pinion mounted on the pointer-arbor and engaged by the rack, a circuit-terminal connected with the rack, a binding-post in electrical connection with the terminal on the rack, a pivoted arm bearing an insulated terminal within the case and having 60 an end extending through the back plate of the case, and an insulated binding-post in electrical connection with the insulated terminal, substantially as specified. 65

ARTHUR J. PURINTON.
LEONARD W. SWEET.

Witnesses:

ERNEST S. BENTON,
ALICE S. HUDSON.