

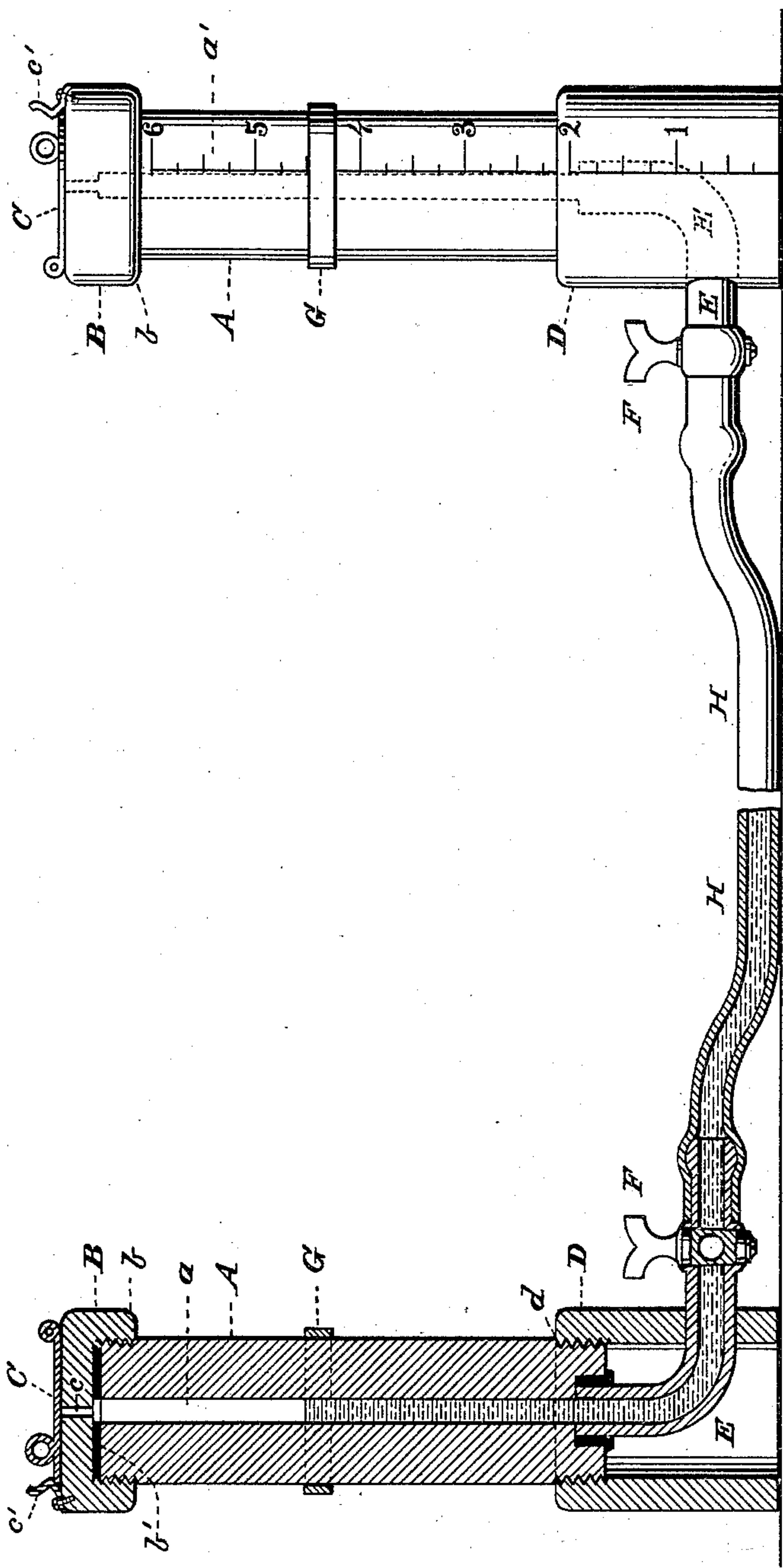
(No Model.)

E. R. CLOUGH & E. M. EASLEY.

LEVELING INSTRUMENT.

No. 397,695.

Patented Feb. 12, 1889.



WITNESSES,

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UNITED STATES PATENT OFFICE.

EDWIN R. CLOUGH AND EDWARD M. EASLEY, OF LEBANON, MISSOURI.

LEVELING-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 397,695, dated February 12, 1889.

Application filed May 16, 1888. Serial No. 274,050. (No model.)

To all whom it may concern:

Be it known that we, EDWIN R. CLOUGH and EDWARD M. EASLEY, citizens of the United States, residing at Lebanon, in the county of Laclede and State of Missouri, have invented certain new and useful Improvements in Leveling Apparatus; and we do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The drawing is a representation of this invention, and is partly a vertical section and partly a side view.

The invention relates to improvements in leveling devices; and it consists in the construction and novel combination of parts, as hereinafter set forth.

The object of the invention is to provide a water-level of simple construction that may be used for leveling foundation-walls, bridge-abutments, piles, and street-grading.

Referring to the drawing, A designates a glass tube having a longitudinal opening, *a*, through its center and provided on its outer surface with the graduated scale *a'*.

A metal cap, B, is provided with an internally-threaded flange, *b*, to engage the upper threaded end of the tube A, and a rubber packing, *b'*, is interposed between the end of the tube and the inner surface of the cap to render the joint water-tight. A small opening, *c*, through the cap B, registers with the opening *a* in the tube A to allow the air to escape when the device is in use. When the device is not in use, the opening *c* may be closed by the cover C, which is secured to the top of the cap B by a hinge and held down by a spring-latch, *c'*.

D is the metal base, secured to the lower end of the tube A in any suitable manner, but preferably by a thread engagement, *d*.

The base D should be sufficiently heavy to hold the tube A firmly in a vertical position.

An elbow-tube, E, communicates at its inner end with the opening *a* and extends outward through one side of the base, where it is provided near its end with a cut-off cock, F, designed to retain the liquid at any desired elevation within the opening *a*, or, when open, to allow the free passage of the liquid.

G is a spring-metal band adapted to be moved up and down on the tube A to mark the elevation of the water.

H represents a rubber or other flexible tube connected at one end to the outer end of the tube E and having its opposite end connected to a device similar in all respects to the one above described.

In operating or leveling with the instrument the openings *a* should be supplied with a sufficient amount of water or spirits and the tubes E H should be full and the cover C removed from the small opening. Under the well-known law of physics the liquid seeks its level in the respective tubes A, and the flexible tube H allows the said tubes to be widely separated to ascertain the level of distant points.

Having described the invention, what we claim is—

In a leveling-instrument, the combination, with metal base and the flexible connecting-tube, of the glass tubes having the longitudinal openings *a*, and having the graduated scale on the outer surface, the metal caps B, having the internally-threaded flange and the small opening *c*, the hinged cover C, the spring-latch, and the metal band, substantially as specified.

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

EDWIN R. CLOUGH.
EDWARD M. EASLEY.

Witnesses:

C. C. DRAPER,
L. A. MOORE.