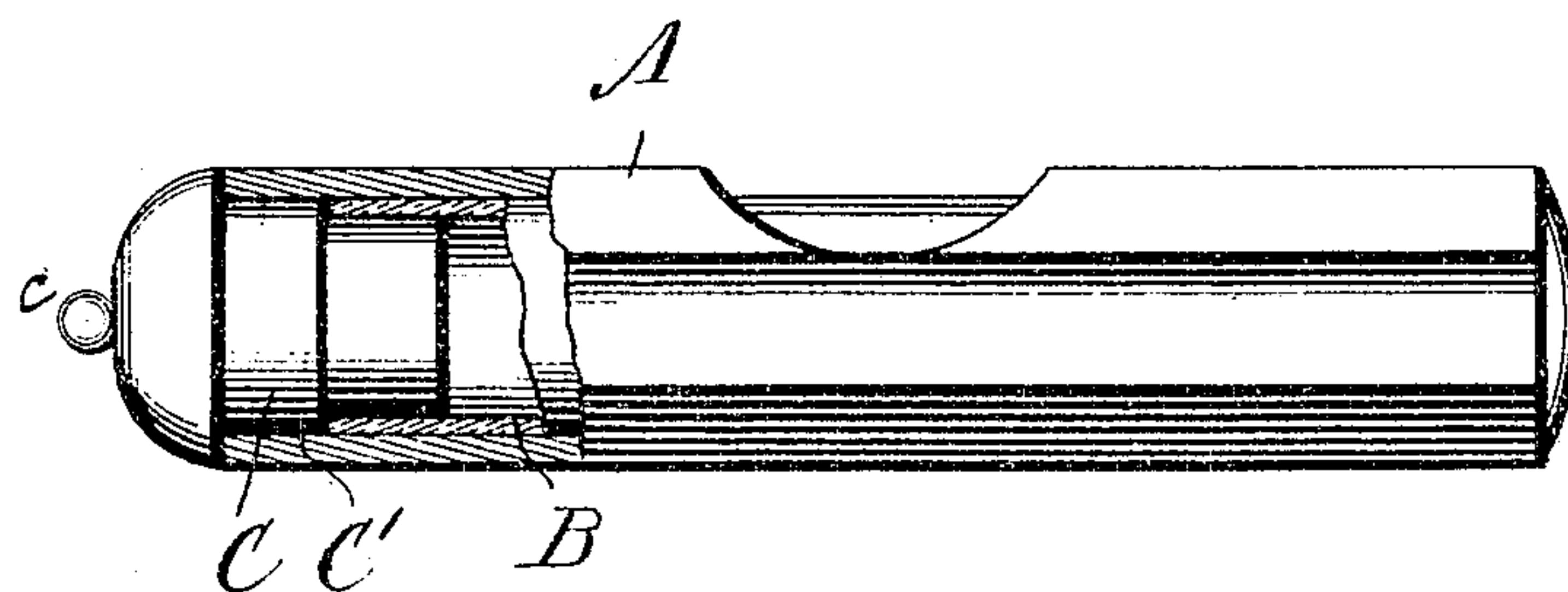


No. 784,418.

PATENTED MAR. 7, 1905.

H. N. NORTHOFF.
SPIRIT LEVEL.

APPLICATION FILED MAY 13, 1901. RENEWED JAN. 23, 1905.



WITNESSES:

Wm. F. Doyle.
H. C. Barry

INVENTOR

Henry N. Northoff

UNITED STATES PATENT OFFICE.

HENRY N. NORTHOFF, OF SAN FRANCISCO, CALIFORNIA.

SPIRIT-LEVEL.

SPECIFICATION forming part of Letters Patent No. 784,418, dated March 7, 1905.

Application filed May 13, 1901. Renewed January 23, 1905. Serial No. 242,415.

To all whom it may concern:

Be it known that I, HENRY N. NORTHOFF, a citizen of the United States, residing at the city of San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Spirit-Levels; 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.

My invention relates to all kinds of spirit-levels.

My object is to provide an improved, simple, and convenient as well as durable instrument of this class.

To these ends the novelty consists in the construction, combination, and arrangement of same, as will be hereinafter more fully described, and particularly pointed out in the claim and the accompanying drawing.

In the accompanying drawing the same reference characters indicate the same parts of the invention.

The figure represents a spirit-level, one end being in section to show my improvement.

A represents the body of the level, or, in my invention, the casing, consisting of a tubular piece open on one end for the purpose to receive the inserted glass tube B.

B represents the glass tube in the usual form of a vial and is inserted, as usual, in the casing, leaving the open end to coincide with the open end of the casing A.

The stopper consists of the body C, which enters the tube B and has a handle *c*. The body of the stopper C will fit with the upper

end in the case A and with this lower end in the tube B.

The operation will be as follows: After filling the glass tube B with the liquid in such a way as to secure the bulb the stopper C will be inserted air-tight in the tube B and the tube B inserted in the hollow of casing A, the upper part of the stopper fitting in case A, the lower part closing up air-tight the tube B, therefore producing an air-tight joint between the stopper C, the tube B, and the case A.

Although I have specially described my invention with regard to the construction and relative arrangement of the several elements, I do not desire to be confined to the same, as such changes or modifications may be made as clearly fall within the scope of my invention without departing from the spirit thereof.

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

An improvement in spirit-levels consisting in combination of a casing A, and the removable spirit-tube B, having an open end, to be filled with a suitable liquid, the open end of the tube B being closed with a removable stopper C of such shape as to fit with its upper part closely in the case A and with its lower part to fit closely in the spirit-tube B to make an air-tight joint substantially as described.

In testimony that I claim the foregoing as my own invention I have affixed my signature in the presence of two witnesses.

HENRY N. NORTHOFF.

Witnesses:

O. F. MELDON,

ALBT. M. ARMSTRONG.