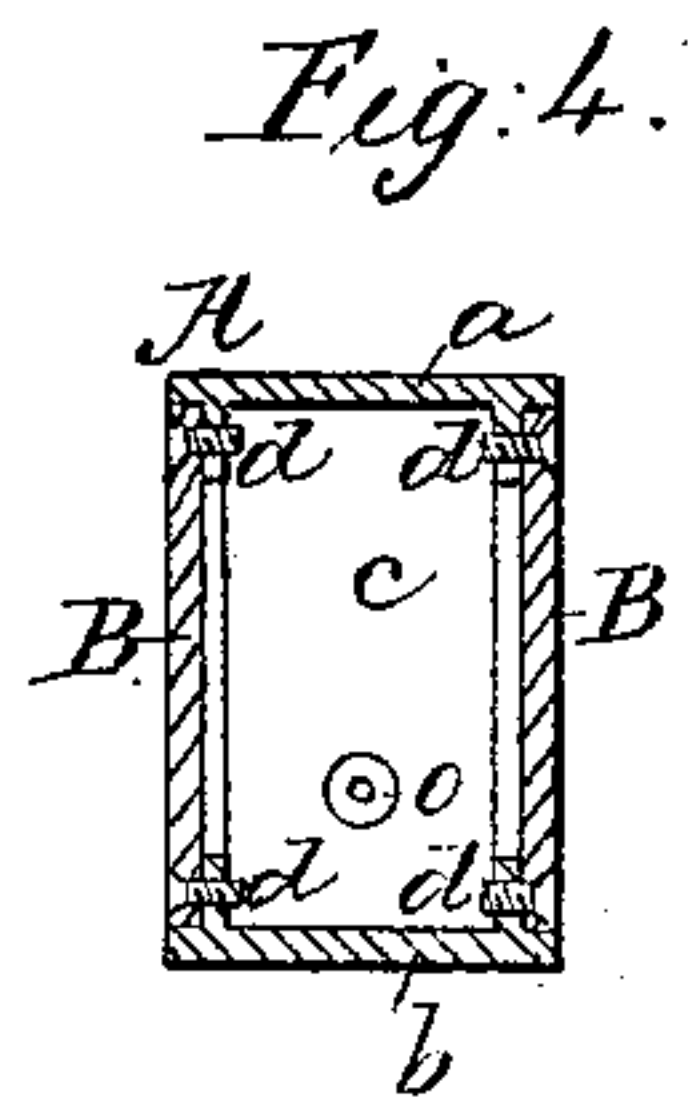
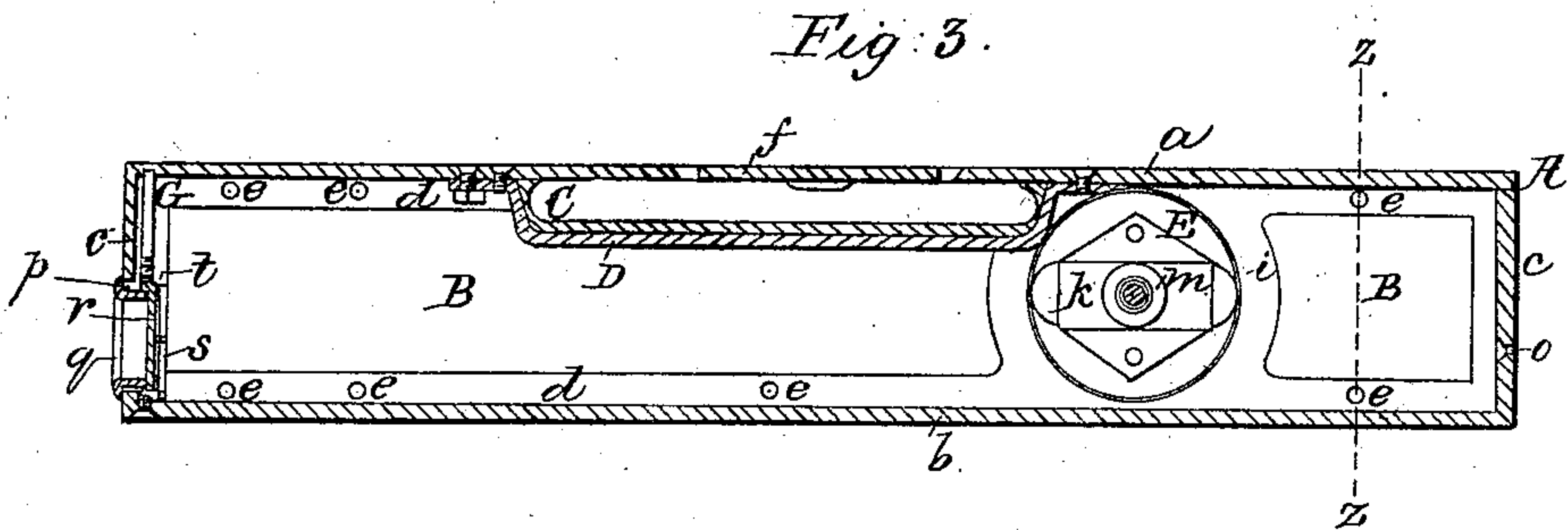
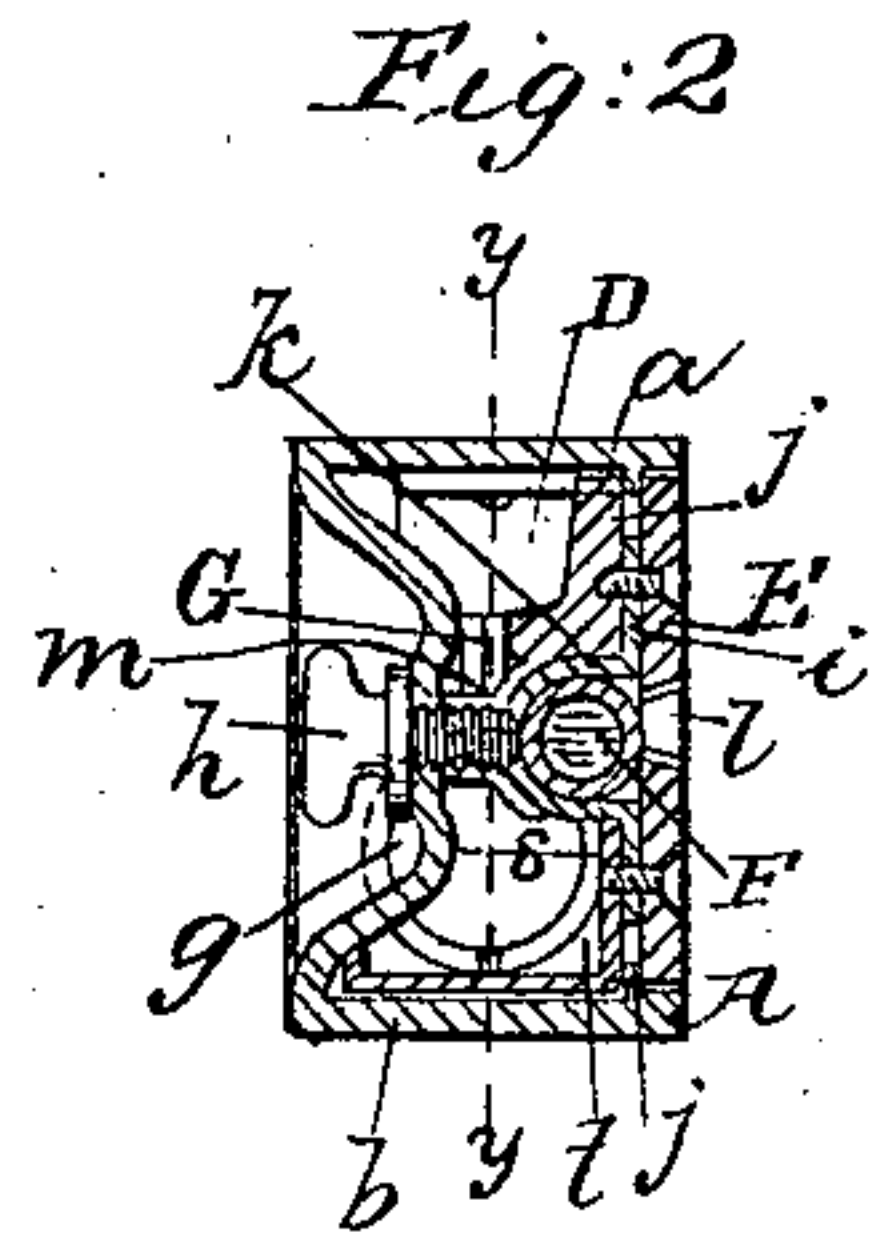
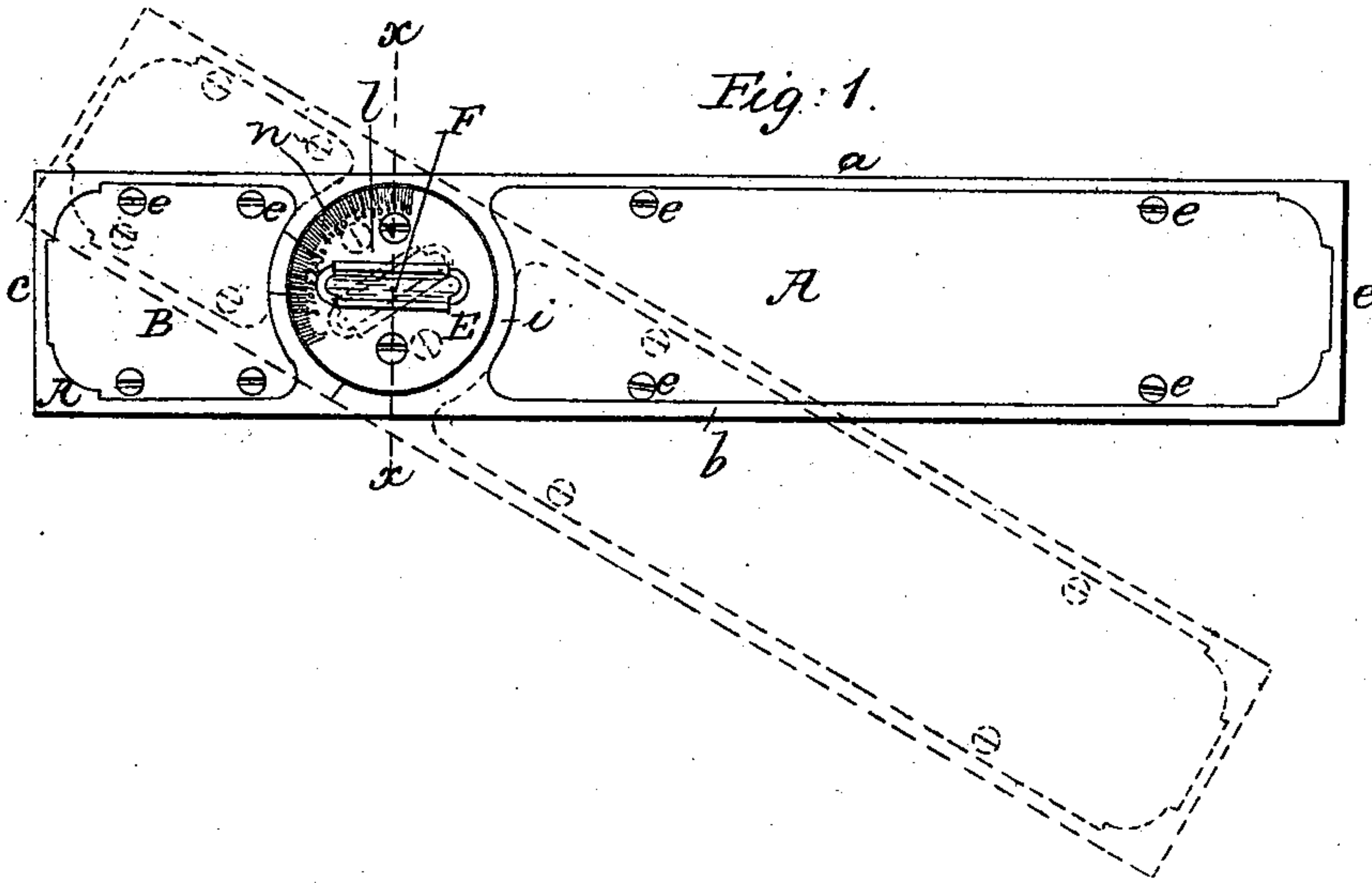


H. S. SHEPARDSON.

Spirit Level.

No. 44,225.

Patented Sept. 13, 1864.



Witnesses.
J. W. Coombs.
J. M. Reed.

Inventor.
H. S. Shepardson
per M. M. C.
Attys.

UNITED STATES PATENT OFFICE.

H. S. SHEPARDSON, OF SHELBURNE FALLS, MASSACHUSETTS.

IMPROVEMENT IN SPIRIT-LEVELS.

Specification forming part of Letters Patent No. 44,225, dated September 13, 1864.

To all whom it may concern:

Be it known that I, H. S. SHEPARDSON, of Shelburne Falls, in the county of Franklin and State of Massachusetts, have invented a new and Improved Spirit-Level and Bevel; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, a transverse vertical section of the same, taken in the line *x x*, Fig. 1; Fig. 3, a longitudinal vertical section of the same, taken in the line *y y*, Fig. 2; Fig. 4, a transverse vertical section of the same, taken in the line *z z*, Fig. 3.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in a novel manner of constructing the body or stock of the implement or device, whereby the same is prevented from warping or springing and at the same time a light frame obtained.

The invention also consists in a novel manner of arranging the adjustable spirit-bulb, whereby the same may be adjusted with the greatest facility and retained firmly in the desired position.

The invention further consists in an improved arrangement of a cross-wire sight, whereby the same may be readily adjusted higher or lower, as occasion may require.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

The body or stock of the implement is composed of metal and wood. The metal portion (designated by A) is cast in one piece, and is of rectangular form, and comprises the top *a*, bottom *b*, and ends *c c* of the stock, and said metal portion is cast with flanges *d* at its inner surface, to receive screws *e*, by which the wooden sides B are secured to A. The flanges *d* are a trifle inward from the edges of the part A, so that the exterior of the wooden sides B may be flush with the edges of A, as shown clearly in Fig. 4.

To the upper side, *a*, of the metal part A of the implement there is secured a spirit bulb, C, a slot, *f*, being made in *a* to expose the

bulb. (See Fig. 2.) The bulb C is fitted in a metal case, D, which is screwed to the under side of the top *a* of the part A.

At one side of the metal part A there is an upright portion, *g*, the exterior of which is of concave form, as shown in Fig. 2, and through the center of *g* a thumb screw, *h*, passes, the concave form of *g* preventing the screw *h* from projecting beyond the side of the device. At the other side of A, and directly opposite to *g*, there is an upright portion, *i*, which has a circular opening made in it to receive a circular disk, E, the edge of the latter bearing against a shoulder, *j*, at the edge of the opening. (See Fig. 2.) To the back of the disk E there is secured the case *k* of a spirit-bulb, F, a slot, *l*, being made in the disk E to expose the bulb. (See Figs. 1 and 2.) The thumb-screw *h* passes into a nut, *m*, at the back of the case *k* of the bulb F, and by screwing up *h* the disk E may be firmly secured in position, and by unscrewing *h* the disk may be turned to any desired point. The exterior of the disk E is graduated, as shown at *n*, to admit of the spirit bulb F being set to any desired angle relatively with the top and bottom of A. By means of this adjustable bulb F any required bevel may be obtained. In Fig. 1 the bulb F is represented adjusted, in red, to obtain an inclination of thirty degrees. There is a wooden side, B, at each side of the portions *g i*, and the latter have flanges for the adjoining ends of the sides B to bear against.

In one end, *c*, of the metal part A of the device there is an opening, *o*, and in the opposite end there is made an opening, *p*, of elliptical form, in which a tube, *q*, is fitted, having a glass, *r*, at its inner end, over which cross-wires *s* are fitted or placed to form a sight. The inner end of the tube *q* has a square frame, *t*, attached to it, in which the glass *r* is fitted, and into the upper end of this frame a screw, G, works, said screw passing through the top *a* of the metal part A of the body or stock of the implement. By turning the screw G the tube *q* may be raised and lowered, and the wire sight *s* consequently adjusted as desired, the elliptical form of the opening *p*, in which the tube *q* is fitted, admitting of a vertical movement of said tube. This cross wire

sight is useful for leveling and grading purposes, and the adjusting of the sight *s* admits of the level being always kept correct.

By constructing the body or stock of the implement as shown it is prevented from warping, and at the same time may be constructed light and be very strong and durable. By having the thumb-screw *h* fitted within the concave *g* it is kept entirely out of the way and prevented from coming in contact with adjoining or surrounding objects.

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

Constructing the frame of the instrument of metal, with a thin siding of wood to protect the interior arrangement from dust and injury.

H. S. SHEPARDSON.

Witnesses:

F. R. PRATT,

W. H. MAYNARD.