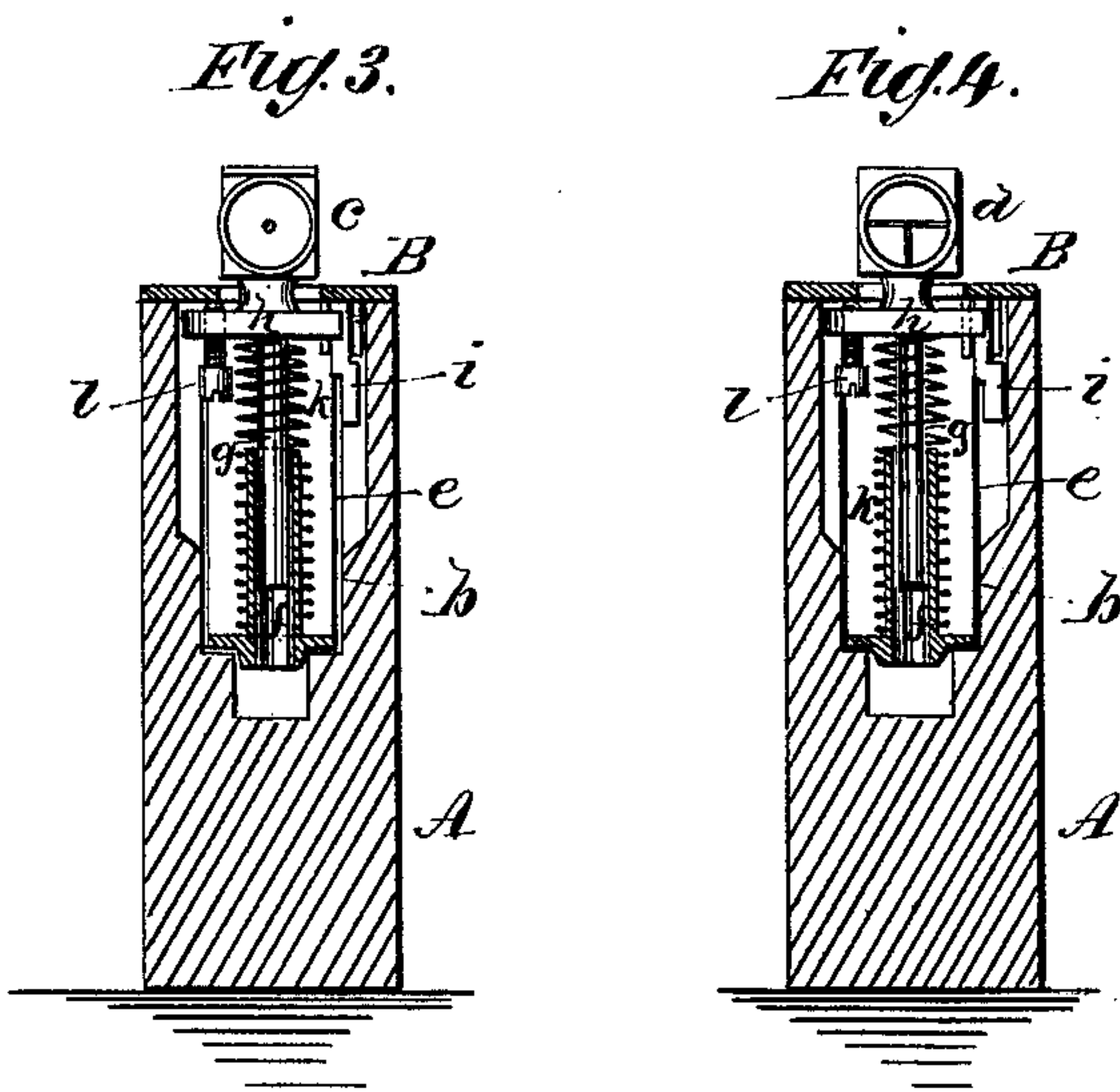
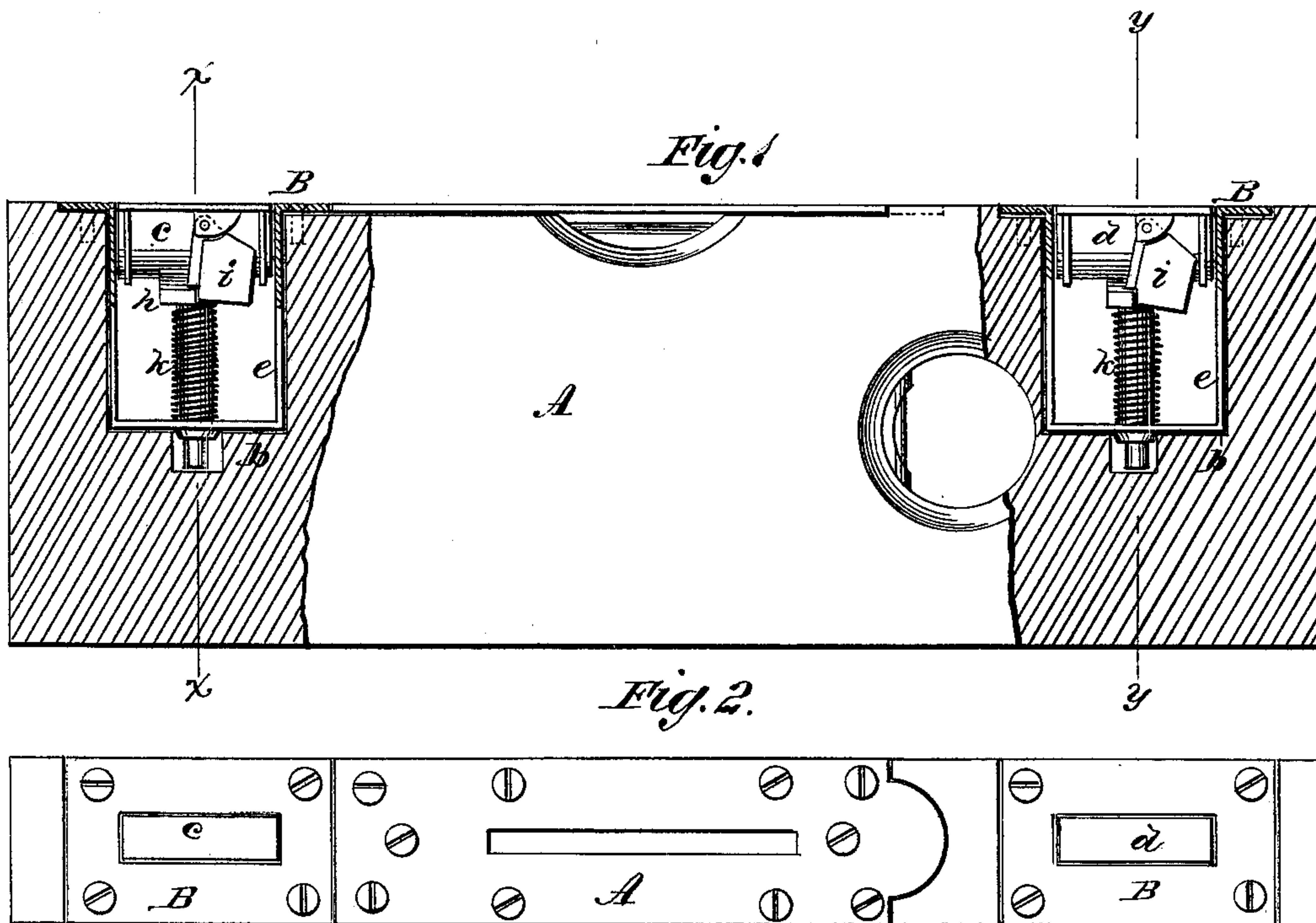


O. PICKERING.
Level.

No. 198,311.

Patented Dec. 18, 1877.



WITNESSES:

Francis McArthur.
J. H. Scarborough.

INVENTOR:

O. Pickering.
BY Mumford

ATTORNEYS.

UNITED STATES PATENT OFFICE.

OLIVER PICKERING, OF NEEDHAM, MASSACHUSETTS.

IMPROVEMENT IN LEVELS.

Specification forming part of Letters Patent No. **198,311**, dated December 18, 1877; application filed November 14, 1877.

To all whom it may concern:

Be it known that I, OLIVER PICKERING, of Needham, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Levels, of which the following is a specification:

Figure 1 is a side elevation of my improved level, partly in section. Fig. 2 is a plan view. Fig. 3 is a transverse section taken on line *x x* in Fig. 1; and Fig. 4 is a transverse section taken on line *y y* in Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention consists in the combination of movable sights with a common level in such a way that they may be thrown out into position for use, or retracted, so that the level may be used in the ordinary way.

In the drawing, A is a level of the ordinary form, having in one of its edges, near each end, mortises *b*, in which are placed the sights *c d*. With the exception of the sighting-apertures the sights are alike.

To a plate, B, which is attached to the edge of the level, a casing, *e*, is fixed, which extends into the mortise in the edge of the level.

To the bottom of the casing *e* a tube, *f*, is attached, which projects toward the plate B. A rod, *g*, is fitted to this tube and attached to a cross-bar, *h*, and the sights *c d* are secured to the cross-bar *h*, and when in use project through a rectangular aperture in the plate B.

The outward movement of the sights is limited by a screw, *l*, that passes through one end of the bar *h*, and bears against the plate B.

Between the bottom of the casing *e* and the cross-bar *h*, and around the tube *f* and rod *g*, there is a spiral spring, *k*, which is capable of projecting the sights from the casing, and holding them in the position in which they are used.

A weighted pawl, *i*, is pivoted between ears

that project from the under surface of the plate B; and when the sights *c d* are depressed this pawl engages the cross-bar *h* and retains the sights in the mortises *b*.

When the sights are to be used the level is placed in an inclined or vertical position and the sights are slightly depressed, when the pawls will drop from the cross-bars and the sights may be allowed to project through the aperture in the plate B.

The sight *c* has a small central aperture, and the sight *d* has a diametrical horizontal wire and a perpendicular wire, which intersect the horizontal wire centrally. The sights are adjusted to the level by the screws *l*.

This device is more particularly designed for running lines and laying out plats where only approximate accuracy is required. It is useful in ditching, fencing, laying out cellars, &c., and may be used, in connection with a common carpenter's square, for many purposes, by placing it on the flat face of the square and adjusting it to the required angle.

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

1. The combination of the spring-supported sights *c d* with the level A, as herein shown and described.

2. The sights *c* or *d*, mounted on a rod, *g*, guided by the tube *f* and the spring *k*, in combination, as herein shown and described.

3. The combination of the weighted pawl *i* with the sight *c* or *d*, as and for the purpose specified.

4. The combination of the adjusting-screw *l* with the movable sights, as herein shown and described.

OLIVER PICKERING.

Witnesses:

SIMEON GROVER,
EMERY GROVER.