

C. Morrill,

Level.

No. 63807.

Patented Apr. 16. 1867.

Fig 1

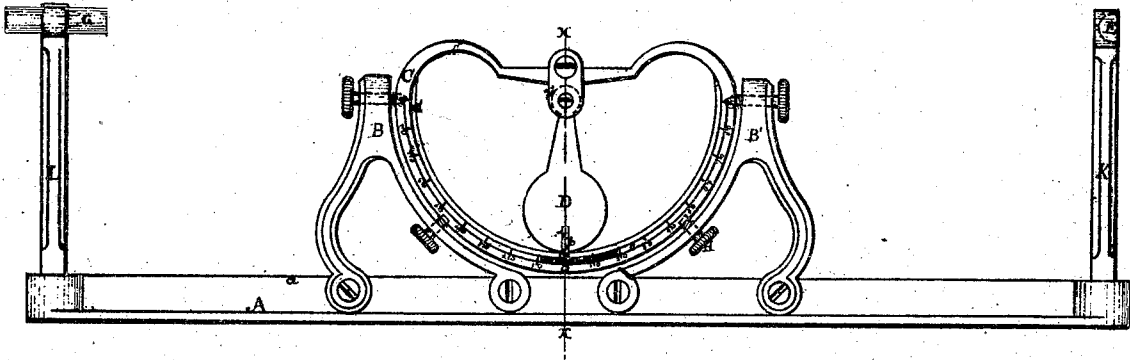


Fig 2



Fig 3

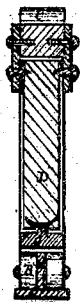
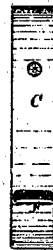


Fig 4



Witnesses { *O. M. Child* } *Chas. Morrill* } Inventor.
 { *Edw. Payson* }

United States Patent Office.

CHARLES MORRILL, OF NEW YORK, N. Y.

Letters Patent No. 63,807, dated April 16, 1867.

IMPROVEMENT IN PENDULUM-LEVELS AND SIGHTS COMBINED.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES MORRILL, of the city, county, and State of New York, have invented a new and useful Plumb-Rule, Level, and Globe-Sight Combined; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side elevation of my invention.

Figure 2 is a plane or top view of the same.

Figure 3 is a section taken on the plane of the line *x x*, fig. 1.

Figure 4 is an edge view of the swinging frame.

Similar letters of reference indicate like parts in all the figures.

My invention relates to an instrument in which is combined a plumb-rule for determining vertical lines, a level for determining inclinations or bevels, and a globe-sight for determining grades, planes, &c., &c.

The invention consists in the combination of a pivoted frame, carrying a swinging bob or pendulum, with a rule or stock; also in the combination with such plumb-rule of globe-sight; also in means for controlling the swinging frame.

A designates the stock of the instrument; and this is of metal, and has a plane face, and, for convenience, carries a central flange, *a*, to which are attached two arms B B', which latter project upward from the stock A. C is a frame, in the present instance heart-shaped, which is pivoted to, or hung between, two arms B in such manner as to allow it a swinging motion. The front of the semicircular part of this frame is graduated or divided off into degrees in the usual manner. From the upper part of the frame C there is pendent a swinging bob or pendulum, D, which is so hung that it will have a lateral play in the frame. Its lower end is weighted or made heavier than the other part of it; and this heavier part carries an index, *b*, which, when the bob is swung, runs along the scale *c*, and indicates the degree of inclination or bevel of the article upon or against which the instrument is placed. The bob is controlled, or prevented having other than a lateral motion, by a rib, *d*, extending along the inner side or surface of the frame C, on each side of which a portion of the bob slides. A set-screw, H, passes through one of the arms B, so that its point will rest in a recess, *f*, cut transversely across the frame C. This will allow the frame C to have a slight motion to and fro, and no more; but, when it is desired to give the frame a greater play, the point of the screw may be withdrawn from the recess *f*, when the frame will be entirely free. At one end of the stock A there is secured a standard, K, to which is affixed an eye-piece, E; and at the other end there is secured a standard, L, which carries a bead-sight, G. In this way the plumb-rule is provided with a globe-sight; and, where the use of such instrument is not required, the same can be removed.

The instrument answers the following purposes: First, an ordinary plumb-rule is provided; second, an equivalent for a spirit-level is provided; third, as an indicator of grades and inclines; fourth, the level of an inverted surface, such as the top of a door-way or window, may be ascertained by releasing the swinging frame, when it will assume a position exactly the reverse of that shown in the drawing, and thus indicate the degree of inclination of such surface.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a swinging frame, C, with a suitable stock, A, substantially as herein specified.
2. The combination of the swinging frame C, stock A, and arms B, substantially as herein specified.
3. The combination of the set-screw H with one of the arms B and swinging frame C, substantially as herein specified.
4. The combination of the globe-sight E G with the stock A and swinging frame C, substantially as and for the purposes herein specified.
5. The bob or pendulum D, with the graduated swinging frame C, when such bob is pivoted at its upper end to the upper part of said swinging frame, substantially as shown and described.
6. Providing the inner surface of the swinging frame C with a rib, *d*, and constructing the lower end of the bob or pendulum conformably thereto, for the purpose of allowing the bob or pendulum none but the required motion.

CHAS. MORRILL.

Witnesses:

O. W. CHILD,

EDWD. PAYSON.