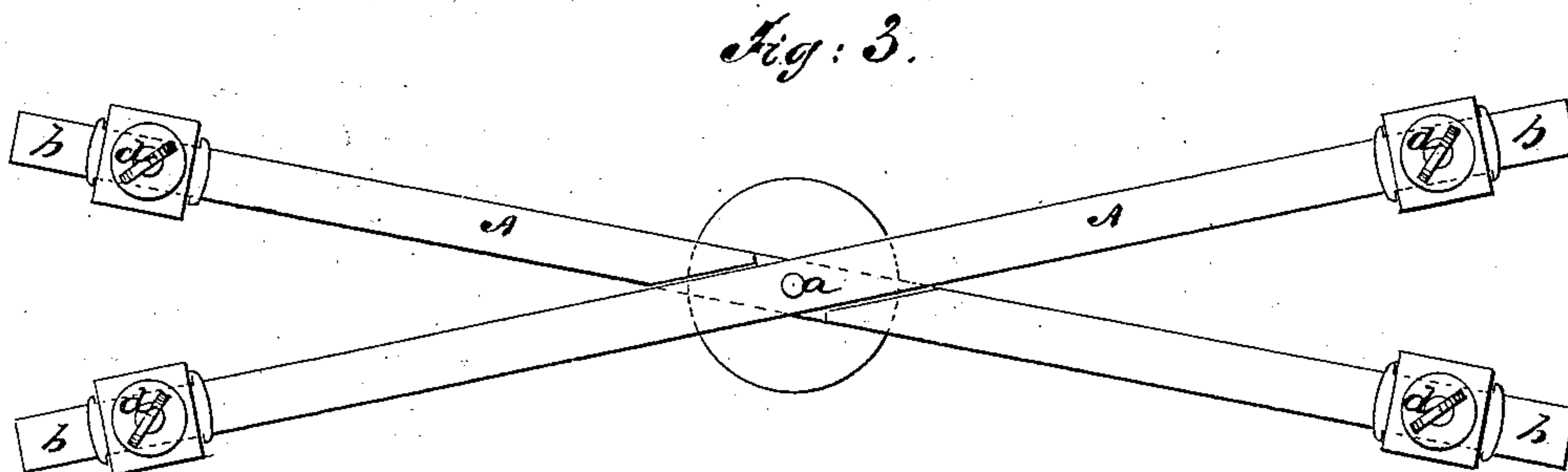
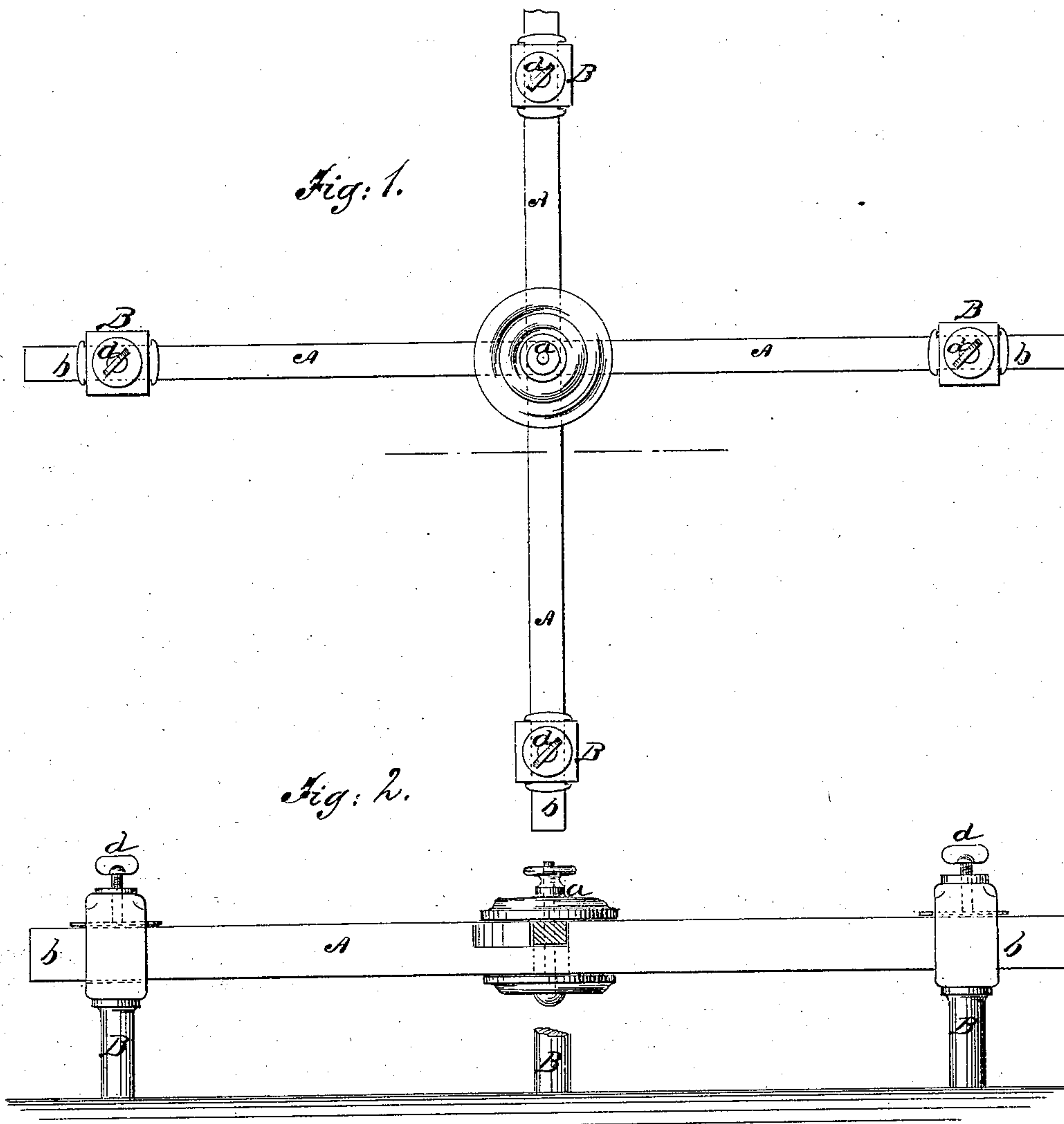


H. A. MILES.  
Surface Tries.

No. 153,102.

Patented July 14, 1874.



Witnesses:  
*W. Lovell*  
*H. L. Mattenberg*

Inventor:  
*Harmon A. Miles*  
per *[Signature]*  
*act.*

# UNITED STATES PATENT OFFICE.

HARMON A. MILES, OF CONCORD, NEW HAMPSHIRE, ASSIGNOR TO HIMSELF AND GEORGE T. COMINS, OF SAME PLACE.

## IMPROVEMENT IN SURFACE-TRIES.

Specification forming part of Letters Patent No. **153,102**, dated July 14, 1874; application filed June 2, 1874.

*To all whom it may concern:*

Be it known that I, HARMON A. MILES, of Concord, in the county of Merrimack and State of New Hampshire, have invented a new and useful Surface-Try; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, making part of this specification.

This invention is an instrument for the use of stone-masons and others, that they may ascertain whether or not the surface of the stone they are working is true; and the invention consists in a surface-try consisting of two cross-arms pivoted together, and four adjustable bearing-legs whereby the "trueness" of a surface, or its "untrueness" may be ascertained.

The desirability of having some accurate means of ascertaining the condition of a surface as to its trueness, has been recognized by stone-cutters, and others. The old methods of using two strait-edges, or relying upon the eye, are not always satisfactory, and besides requires considerable experience and time to produce anything like satisfactory results. It is believed that my invention will enable stone-cutters, and others, to determine with the utmost accuracy, whether or not the bevel of a stone or other surface is perfectly true.

In the accompanying sheet of drawings, Figure 1 is a plan or top view of my invention with beams extended; Fig. 2, a side view of same, partly in section; and Fig. 3, a plan or top view, showing beams closed.

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

A A represent two bars or beams, made either of wood or metal. These beams are joined together, and fitted at their centers in such manner as to bring their upper and lower edges flush with each other, and also so that they may be moved around a pivotal-pin, *a*, which passes through them, and holds them together, so that the angles at which the two beams cross each other may be changed, if desired. Fitted to the ends *b* of the beams A, are supporting points or legs B. These legs are exactly of the same length,

and their lower ends are made perfectly true. The upper end of each of said legs has formed in it a slot in which are received the ends of the beams A, so that the legs may be moved toward or from the center of the beams, as desired, and they are held in the required position by set-screws *d*.

My try being constructed substantially as I have above described, it is operated by placing it upon the surface, the trueness of which it is desired to try, and grasping it with the hand around the center, when, if the surface is untrue, a slight motion of the hand will cause it to "wobble," for the reason that the four supporting-legs B will not bear evenly. This wobbling can be felt at once, and also be heard, indicating that the surface is untrue, and discovering where the fault is, and also the extent of the untrueness. In this way the instrument may be passed over the whole surface, discovering untrueness wherever it exists. When the surface, however, is true, the four bearing-legs having a bearing in the same plane, no vibration or wobbling is possible.

If the surface is a smaller one than will permit the four bearing-legs B to rest thereon, when secured to the extreme ends of the beams, they may be moved toward the center of the beams, (where they cross each other,) and retained in that position by the screws *d*, so that the instrument may be operated on large or small areas with the same facility.

When not in use, the beams A may be brought together until they are nearly parallel, so that the instrument may be readily transported without liability of breakage, and occupying but small space.

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

A try for ascertaining the trueness of surfaces, composed of two cross-beams and four supporting-legs, substantially as described.

HARMON A. MILES.

Witnesses:

JOHN H. ALBIN,  
H. L. WATTENBERG.