(No Model.)

D. M. BARRINGER.

APPARATUS FOR ILLUSTRATING GEOLOGICAL FORMATIONS.

No. 477,633. Patented June 28, 1892.

FIG. 1.

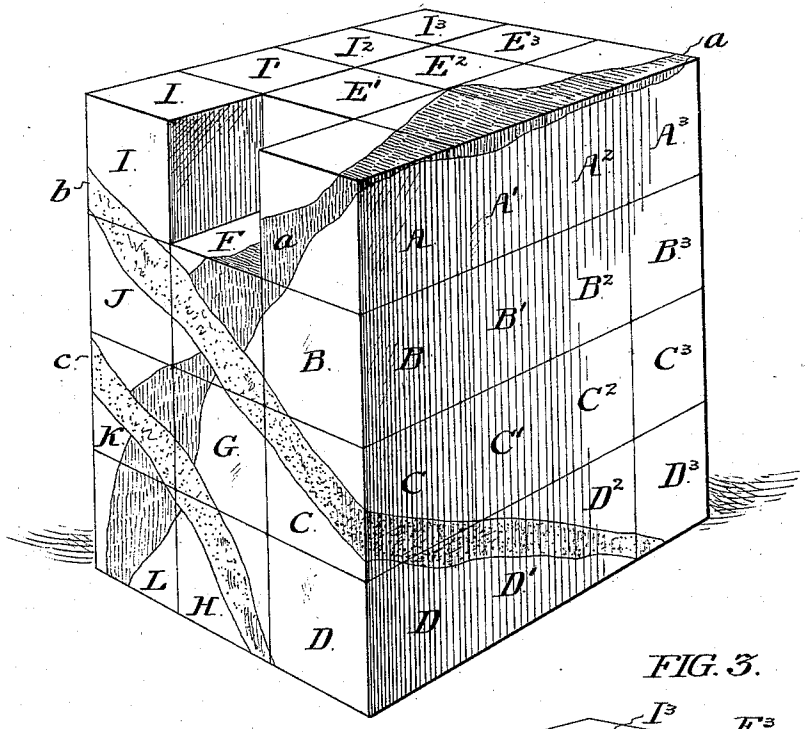


FIG. 2.

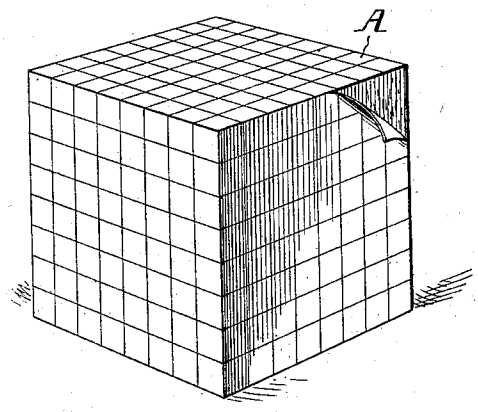
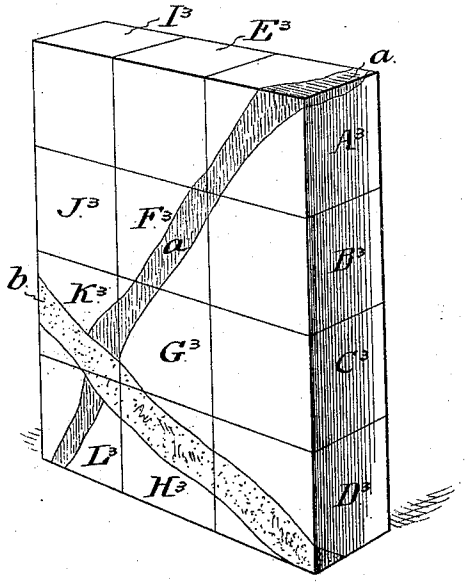


FIG. 3.



WITNESSES:

James H. Bell.

Victor Guilloz

INVENTOR

Daniel Morrau Barringer

By Hollingsworth & Maley

Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

DANIEL MOREAU BARRINGER, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR ILLUSTRATING GEOLOGICAL FORMATIONS.

SPECIFICATION forming part of Letters Patent No. 477,633, dated June 28, 1892.

Application filed June 15, 1891. Serial No. 396,284. (No model.)

To all whom it may concern:

Be it known that I. DANIEL MOREAU BARRINGER, of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Apparatus for Illustrating Geological Formations, whereof the following is a specification, reference being had to the accompanying drawings.

My invention, though available for educational purposes generally, is primarily intended for facilitating mining operations by reproducing graphically and upon a uniform scale the geological structure of ore-beds and surrounding strata, so as to exhibit to the practical operator in a highly convenient manner sections upon any of the three co-ordinate planes and at any desired intervals.

Heretofore in mining it has been customary to prepare sheets or maps illustrating different sections of the mine; but such maps, however elaborate and numerous, fail to present to the eye as quickly and with the same force the relations of the different strata as does the present invention, which I will now proceed to describe.

Broadly speaking, it consists in a group of uniform blocks, upon the sides of each of which are painted or otherwise drawn the outlines of successive sections of geological formations.

Figure 1 is a view in perspective of such a group, consisting of the blocks A B C D, &c. Fig. 2 is a view (on an enlarged scale) of an individual block in the preferred form which I employ and before the representation of the strata-section has been drawn upon it. Fig. 3 represents a sectional group separated from the main group of Fig. 1.

The most convenient blocks for the purpose are two-inch cubes of wood covered with "coordinate paper," which may be ruled, for instance, to eighths, as indicated in Fig. 2. The scale (which of course is arbitrarily taken) can thus readily be preserved throughout, and the pitch, thickness, and relative positions of the different strata having been determined by observation, the outlines of successive sections can readily be drawn upon the sides of the blocks. Thus, for instance, in the group represented by Fig. 1 a bed or stratum of iron ore is indicated at *a*, while *b* and *c* are dikes of eruptive material, whose location it may be important to note, and the residue of the surface of each block may be taken as representing the general surrounding rock or other formation constituting the hanging and foot walls. The cubes of the group being put together, as indicated in Fig. 1, let it be supposed that each block represents a cube of one hundred feet in the mine. If it be desired to quickly ascertain the condition and relations of the respective strata upon any of the three co-ordinate planes at a given section, the blocks can be lifted off or removed until the desired horizontal transverse or longitudinal plane is reached, which will then exhibit such section, and will, moreover, graphically present the condition of affairs not only at that point, but at the surrounding ones—a system of great practical convenience to the mining engineer in determining the course of his operations. Thus, for instance, Fig. 3 represents in perspective the layer of blocks, which together constitute one rear face of the total group shown in Fig. 1, and the vertical transverse section presented by the removal of this layer shows the condition of the different strata on that plane.

To prevent loss or accidental displacement of the blocks, it is convenient to have them numbered or otherwise marked in a definite series.

I am aware that it is not new to construct dissectible models for illustrating geological formations, the section-lines following the outlines of the strata themselves, or even in some cases transecting them, and I do not claim, broadly, such device. The purpose of my invention is to provide a simple means whereby sections upon successive co-ordinate planes, cutting the different strata at regular intervals, can be readily shown.

Having thus described my invention, I claim—

The combination of a series of uniform blocks having upon their respective sides the outlines of successive sections of given geological formation, substantially as set forth.

DANIEL MOREAU BARRINGER.

Witnesses:
JAMES H. BELL,
E. REESE.