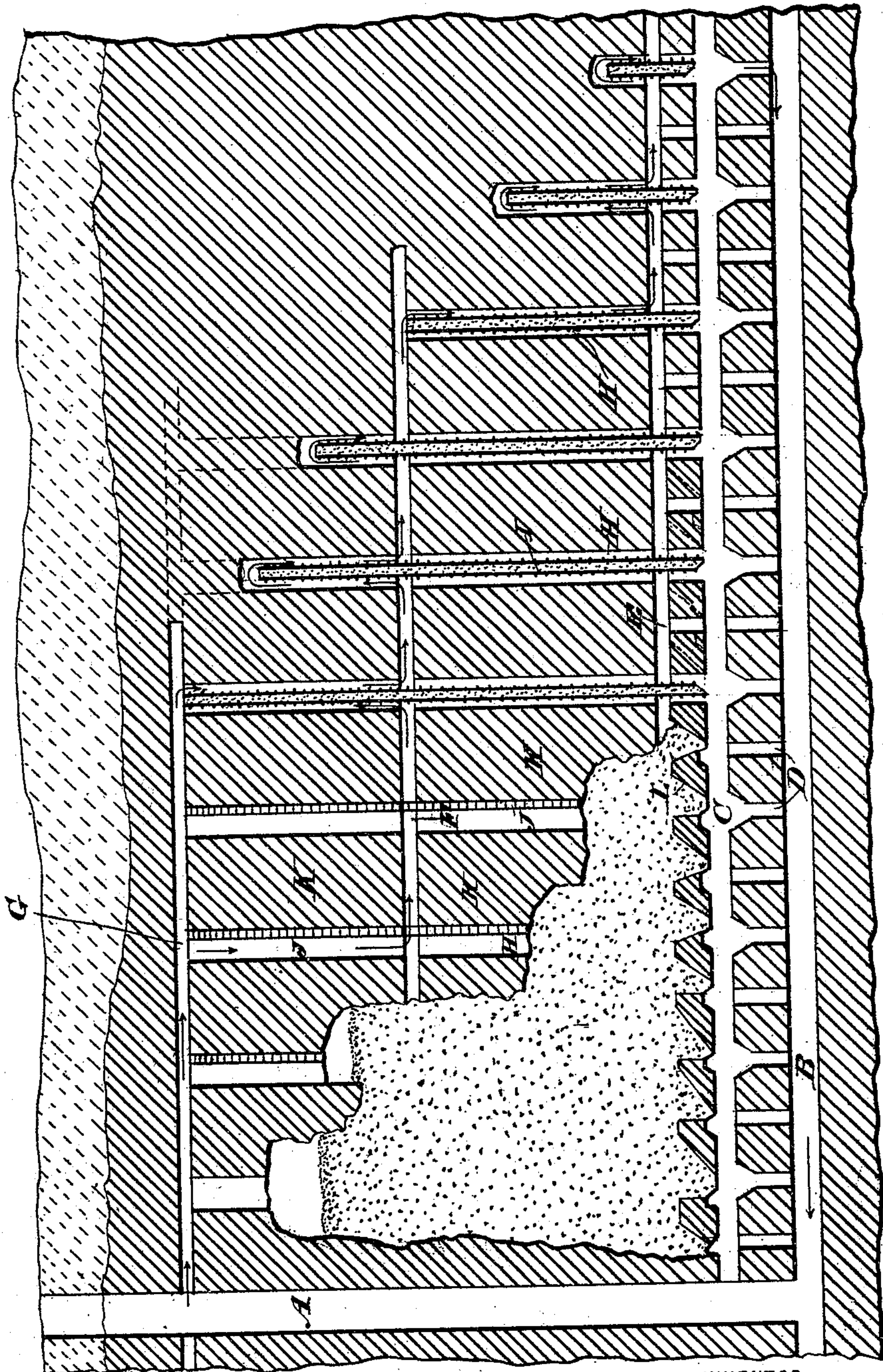


(No Model.)

P. C. FORRESTER.
METHOD OF MINING COAL.

No. 473,734.

Patented Apr. 26, 1892.



WITNESSES:

H. Walker
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PETER C. FORRESTER, OF WILKESON, WASHINGTON.

METHOD OF MINING COAL.

SPECIFICATION forming part of Letters Patent No. 473,734, dated April 26, 1892.

Application filed November 27, 1891. Serial No. 413,242. (No model.)

To all whom it may concern:

Be it known that I, PETER C. FORRESTER, of Wilkeson, in the county of Pierce and State of Washington, have invented a new and Improved Method of Mining Coal, Ore, &c., of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved method of mining coal, ore, and the like in a very simple, quick, and effective manner without any danger whatever to the miners and without loss of lumber used in building the cuts.

The improved method consists of first forming in the vein a series of vertical cuts and horizontal cuts or drifts or cross-cuts intersecting with the said vertical cuts and then undercutting or blasting from below the pillars of material formed between the cuts and cross-cuts.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which the figure is a sectional side elevation of a coal-field mined according to my method.

In order to carry my method into effect, I form in the vein or adjacent to it a vertical shaft A, from the bottom of which extends horizontally a gangway B, and a short distance above the same is arranged an air-passage C, opening at one end into the vertical shaft A and connected at suitable intervals by chutes D with the gangway B. Above the air-passage C is formed a series of cross-cuts E, F, and G, located one above the other and suitable distances apart, the said cross-cuts forming air-shafts and opening into the main or vertical shaft A.

Above the air-passage C is cut into the vein of coal or ore a series of vertical cuts H, in which is formed a partition or dividing-wall I, made of boards or other material and filled with coal, ore, or the like, so that air can travel up one side of the wall over the top and down the other side back into the air-way or passage C. When the cuts H are extended upward into the next air cross-cut F, then air is supplied from the latter, so that

on further upward working of the cuts and filling up of the wall I air passes up from this cross-cut on one side of the wall I and down on the other side, as is plainly shown in the drawing. The cut H finally extends into the uppermost cross-cut or air-passage G, after which the wall I is removed and a ladder J or other means for ascending is placed in the vertical cut. When this has been accomplished, the miners undermine or blast the pillars or blocks K of coal, ore, or the like formed between the several cuts H, the operation being continued from below upward. In blasting the pillars or blocks K from underneath the loosened material falls downward and can be readily removed through the chutes D into the gangway B, and from the latter to the main shaft A to be hauled to the top of the mine.

It is understood that undercutting or blasting of the pillars or blocks K commences above the lowermost cross-cut E, the latter discharging by beveled chutes L into the gangway-chutes D, as is plainly illustrated in the drawing. It will be seen that in blasting or undercutting the blocks or pillars K the gases, dust, and the like arising from the blasting can readily travel up the cuts H into the cross-cuts or air-passages F and G to escape. When a blast is to be fired, the miner can readily ascend the respective ladder J in the nearest cut H, so as to be in a place of safety when the explosion takes place farther below. Thus it will be seen that the miner is not at all subjected to the obnoxious gases arising in blasting or undercutting and can always go to a place of safety whenever a blast is fired.

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

1. The herein-described method of mining, consisting of forming in the vein a series of vertical and horizontal intersecting cuts or shafts and then undercutting or blasting from below the pillars or blocks formed between the said intersecting cuts, substantially as shown and described.

2. The herein-described method of mining, consisting of first forming a main vertical shaft, then a series of horizontal cuts or shafts leading from the said main shaft, and then forming a series of vertical cuts intersecting

the said cross-cuts or shafts, so as to form blocks or pillars, substantially as shown and described.

3. The herein-described method of mining, consisting of first forming a main vertical shaft, then a series of horizontal cuts or shafts leading from the said main shaft, and then forming a series of vertical cuts intersecting the said cross-cuts or shafts, so as to form blocks or pillars, and building a partition-wall in each breast to form an air-passage leading up one side of the partition-wall and down the other to connect with the next lowermost cross-cut or air-shaft, substantially as shown and described.

4. The herein-described method of mining, consisting of first forming a main vertical shaft, then extending a series of horizontal cuts or air-shafts from the said main shaft, then connecting a series of vertical cuts to intersect with the said cross-cuts or air-shafts, and then emptying said vertical cut, substantially as shown and described.

5. The herein-described method of mining,

consisting of first forming in the vein a main shaft, then extending a gangway from the bottom of the said shaft, then forming a series of cross-cuts or air-shafts in the vein and leading from the said main air-shaft, and then building a series of vertical partition-walls intersecting with the several air-shafts or cross-cuts, substantially as shown and described.

6. The herein-described method of mining, consisting of first forming in the vein a main shaft, then extending a gangway from the bottom of the said shaft, then forming a series of cross-cuts or air-shafts in the vein and leading from the said main air-shaft, then building a series of vertical partition-walls intersecting with the several air-shafts or cross-cuts, and then connecting the lowermost air-shaft by chutes with the said gangway, substantially as shown and described.

PETER C. FORRESTER.

Witnesses:

GEO. H. TARBELL,
N. B. WHITLEY.