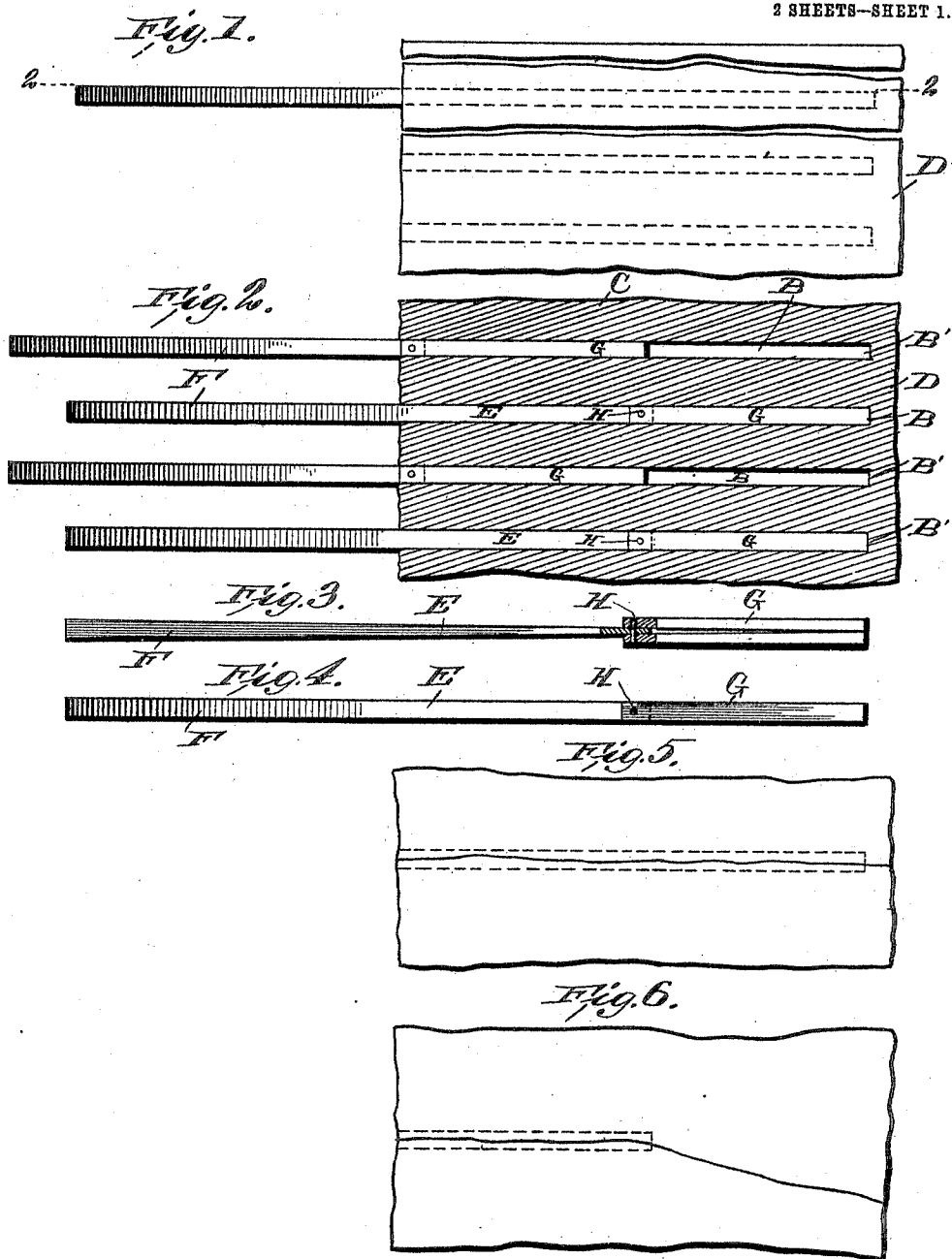


No. 820,849.

PATENTED MAY 15, 1906.

J. F. COPPS.  
METHOD OF SPLITTING STONE.  
APPLICATION FILED MAR. 17, 1906.

2 SHEETS—SHEET 1.



WITNESSES  
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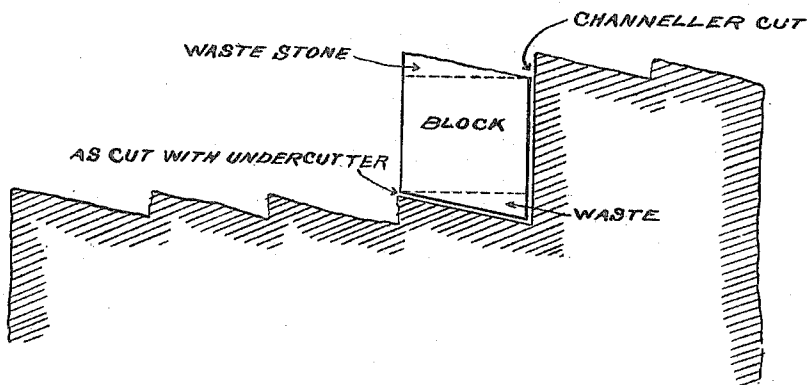
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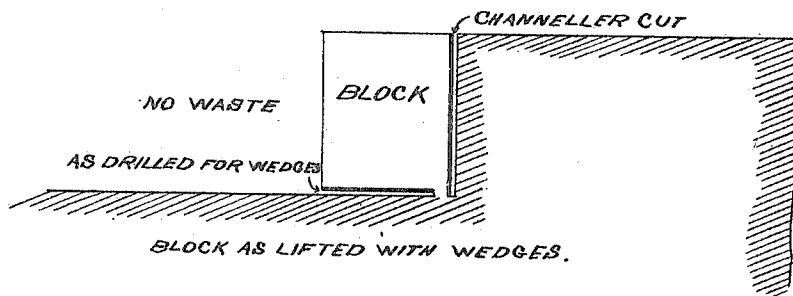
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2 SHEETS—SHEET 2.

*Fig. 7.*



*Fig. 8.*



WITNESSES

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# UNITED STATES PATENT OFFICE.

JAMES FRANCIS COPPS, OF ALBERENE, VIRGINIA.

## METHOD OF SPLITTING STONE.

No. 820,849.

Specification of Letters Patent.

Patented May 15, 1906.

Original application filed January 11, 1906, Serial No. 295,558. Divided and this application filed March 17, 1906. Serial No. 306,564.

*To all whom it may concern:*

Be it known that I, JAMES FRANCIS COPPS, a citizen of the United States, and a resident of Alberene, in the county of Albemarle and State of Virginia, have made certain new and useful Improvements in Methods of Splitting Stone, of which the following is a specification.

My invention is an improvement in the splitting of stone; and it consists in the method as will be hereinafter described and claimed.

This is a divisional application of my former application, Serial No. 295,558, filed January 11, 1906.

In the drawings, Figure 1 is a top plan view, partly broken away, illustrating the practice of my invention. Fig. 2 is a vertical section on about line 2 2 of Fig. 1. Fig. 3 is a detail side view, and Fig. 4 a detail top plan view, of one of the sectional wedges. Fig. 5 is a side view illustrating the break formed in the practice of my invention. Fig. 6 is a side view illustrating the break produced in the ordinary method of splitting stone. Fig. 7 is a view illustrating the waste experienced in quarrying stone in the ordinary manner, and Fig. 8 illustrates the manner in which waste is avoided by the practice of my invention.

Ordinarily in breaking stone with wedges the wedges are arranged to operate in the outer ends of the holes drilled in the body of rock, and in such case the stone usually splits with a downward course, as indicated at A in Fig. 6, and there is much waste of rock as well as the inconvenience resulting from facing the stone off level. By my invention I form the drill-holes B nearly through the body C of stone to be split, the said body of stone usually being separated at its back D from the mass of stone by a channel cut by any suitable means, and the inner end walls B' of the holes B forming a stop to limit the insertion of the wedge in the use of the invention.

In practice I prefer in splitting off a horizontal slab, as illustrated in Figs. 1 and 2, to arrange the wedges to operate at the opposite ends of the adjacent drill-holes, so that one wedge will operate in the extreme inner end of its drill-hole and the wedge in the next drill-hole will be at the outer end of its drill-hole, and so on throughout the series, so that the splitting action is exerted at the opposite ends of the adjacent drill-holes, whereby I

am able to get an even lifting action on the slab which it is desired to split from the body or rock and the line of division will be approximately horizontal throughout. This is illustrated in Fig. 2, in which the lower wedge operates in the extreme inner end of its drill-hole, the next upper wedge in the outer end of its drill-hole, the next wedge in the inner end of its drill-hole, and so on throughout the series, so that as the stone is split the splitting will be effected in approximately a straight plane. In securing this result it will be noticed I form a series of holes having generally the same direction longitudinally and arranged approximately in a common plane, the holes extending nearly through the body of stone to be split and a splitting force being subsequently exerted in the direction in which it is desired to separate stone, such splitting force being exerted in the extreme inner or closed ends of some of said holes and in the extreme outer or open ends of some adjacent holes whereby to secure a splitting of the body of stone in approximately a straight plane.

In Figs. 1, 2, 5, and 6 I illustrate the splitting of the stone in approximately a horizontal plane. Manifestly the same advantageous results may be secured by my improvement in splitting stone in approximately a vertical plane. The wedges E preferably include the tapered plug F, the tapered feathers G and a wire H forming a breakable connection between the smaller ends of the plug F and the smaller ends of the feathers G, so the plug and feathers will be united for convenience in applying the wedges and inserting the feathers to the extreme inner ends of the drill-holes, as shown in Fig. 2, and which wire will be broken by the initial blow upon the plugs F in driving the same to split the stone. This breakable connection not only facilitates the insertion of the wedges as desired, but also provides for its manipulation to permit the turning of the feathers to secure their operation either vertically or horizontally, as may be desired in the practical use of the invention.

In practice the feathers G may, combined with the plug, be circular, octagonal, or of other suitable shape in cross-section.

The wedges are not claimed herein but form the subject-matter of a separate application for patent, Serial No. 295,558, filed by me January 11, 1906.

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

5 The herein-described method of splitting stone, which consists in forming a series of holes having generally the same direction longitudinally and arranged in approximately a common plane, the holes extending  
10 and subsequently exerting a splitting force in the direction in which it is desired to separate

the stone, such splitting force being exerted in the extreme inner or closed ends of some of the holes and in the extreme outer or open ends of some adjacent holes whereby to secure a splitting of the body of stone in approximately a straight plane. 15

JAMES FRANCIS COPPS.

Witnesses:

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G. F. COMPTON.