

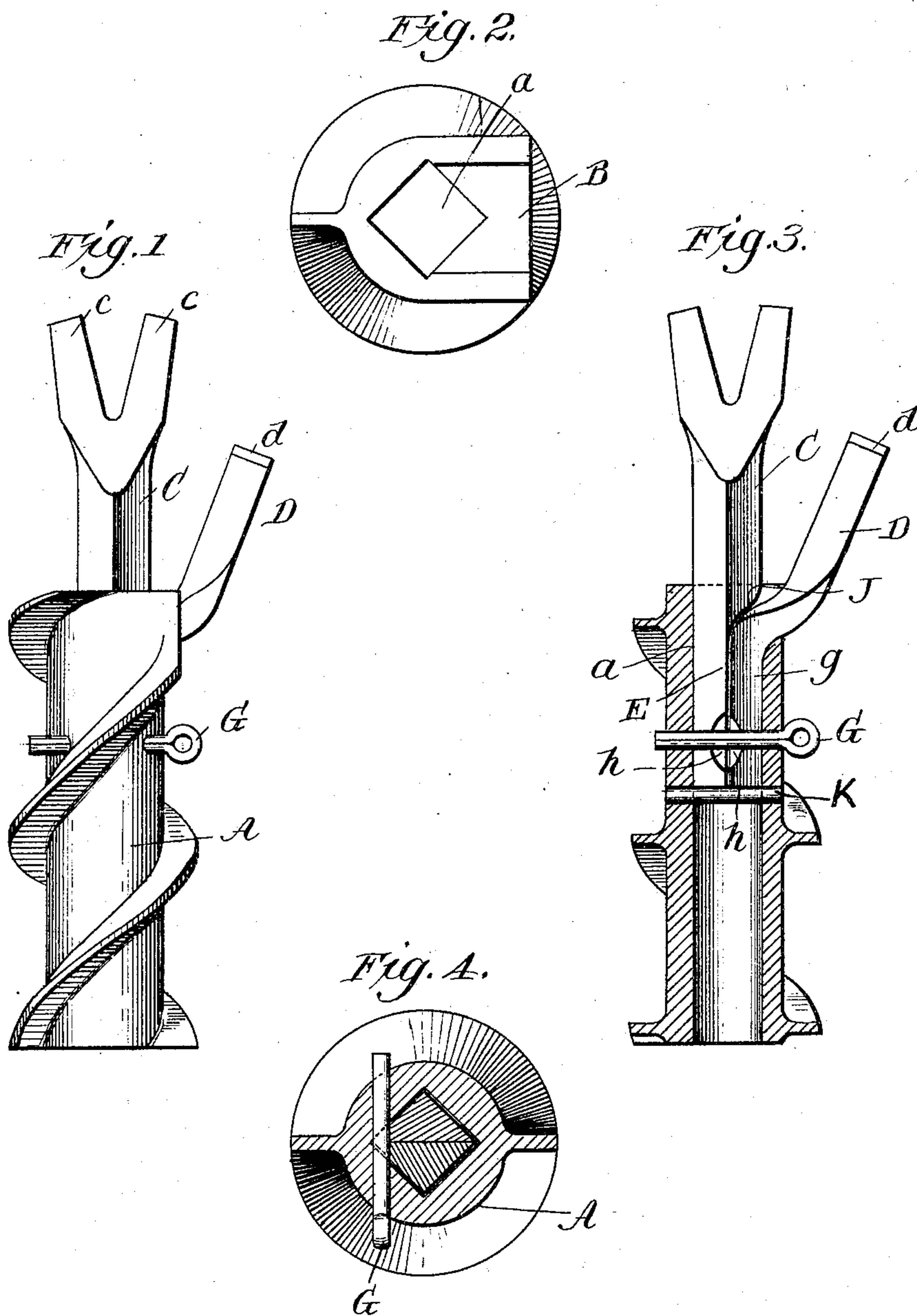
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PATENTED MAY 30, 1905.

G. H. BITTENBENDER.

BIT OR CUTTER FOR COAL OR ROCK MINING DRILLS.

APPLICATION FILED JULY 19, 1904.



Witnesses
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GEORGE H. BITTENBENDER, OF PLYMOUTH, PENNSYLVANIA.

BIT OR CUTTER FOR COAL OR ROCK MINING DRILLS.

SPECIFICATION forming part of Letters Patent No. 791,001, dated May 30, 1905.

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To all whom it may concern:

Be it known that I, GEORGE H. BITTENBENDER, a citizen of the United States of America, and a resident of Plymouth, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Bits or Cutters for Coal or Rock Mining Drills, of which the following is a specification.

My present invention relates to a new and improved bit or cutter for use in cutting coal, rock, and the like. The object is to simplify and perfect the construction of a device of this character whereby it may be made very simply and yet may be extremely effective in its operation; and the invention therefore consists, essentially, in the construction, arrangement, and combination of parts, substantially as will be hereinafter described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a side view of my improved coal-drill. Fig. 2 is an end view with the bits removed. Fig. 3 is a longitudinal section. Fig. 4 is a cross-section.

Similar characters of reference designate corresponding parts throughout the different figures of the drawings.

A denotes the shank of the drilling-tool, having thereon a spiral rib. At the end of the tool A is a square socket *a*, and at the extreme end of the socket *a* there is a lateral recess B, communicating with said socket.

C denotes the main bit, having, preferably, two cutting-points *c c*, the outer end of the bit C being bifurcated for this purpose, while the main portion of the bit C, which lies within the socket *a*, is made square or angular to correspond to the shape of the socket *a*. Obviously the socket *a* instead of being square may have an angular form, and in this case the shank of the bit C will be made correspondingly angular, so that it may be seated in the socket *a* non-rotatively. The shank of this main bit C has its inner portion attenuated or diminished in cross-section at E, half of the material being substantially removed at this point, so that it will occupy only a small space within the socket *a*. This attenuated portion of shank E extends from the inner end of said shank

E to a point near to the outer end of the socket *a*.

D designates a lateral auxiliary bit which is shorter than the main bit and preferably has only a single cutting-point *d*. This bit D lies in an inclined direction outside of the socket-recess B and is curved within the socket B and then within the shank A or the socket *a*. The bit D has a section *g*, which lies parallel to the diminished portion of the bit C and is angular, so that in conjunction with the part E the two will fill the square or angular socket *a*. A single pin G, being preferably a spring-pin or some other suitable securing device, passes through the inner portion *g* of the bit D and also through the diminished portion E of the bit C for the purpose of holding both the bit devices in position in the socket end of the shank A, all as clearly represented in Fig. 3. The inner end of the socket *a* is formed by means of a rigid pin, lug, shoulder, or other fixed point K.

Various modifications in the precise form, shape, and arrangement of the various parts may be made without departing from the invention. Further, it will be noted that the part *g* and the part E are provided with recesses *h*, cut in the side thereof to receive the spring-pin G. The cutting away of the side of the main bit C at the point J, so as to reduce the cross-section thereof into the inner portion E, there being a curved shoulder at this point, enables the two bits C and D to be effectively placed within a much smaller socket than would otherwise be the case and permits the cutting-points of the bits to be so located that they will do the best possible work when the drill is in operation.

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

In a bit or cutter for coal or rock drills, the combination with the main shank formed with a spiral rib thereon, and having an angular socket therein, adjoining which is a lateral recess, of a main bit having a cut-away shank so that substantially one-half of the shank occupies a position in the socket, and an auxiliary bit having a portion within the socket lying alongside of the cut-away shank of the

main bit and having substantially the same shape and size as said cut-away shank, so that the two portions of the bit that lie within the socket are of substantially the same angular
5 form, said auxiliary bit having a curved portion occupying the aforesaid lateral recess, and means for holding the two bits in the tool.

Signed at Plymouth, Pennsylvania, this 22d day of June, 1904.

GEORGE H. BITTENBENDER.

Witnesses:

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