

H. COTTRELL.
Stone Sawing Machines.

No. 144,317.

Patented Nov. 4, 1873.

Fig. 1.

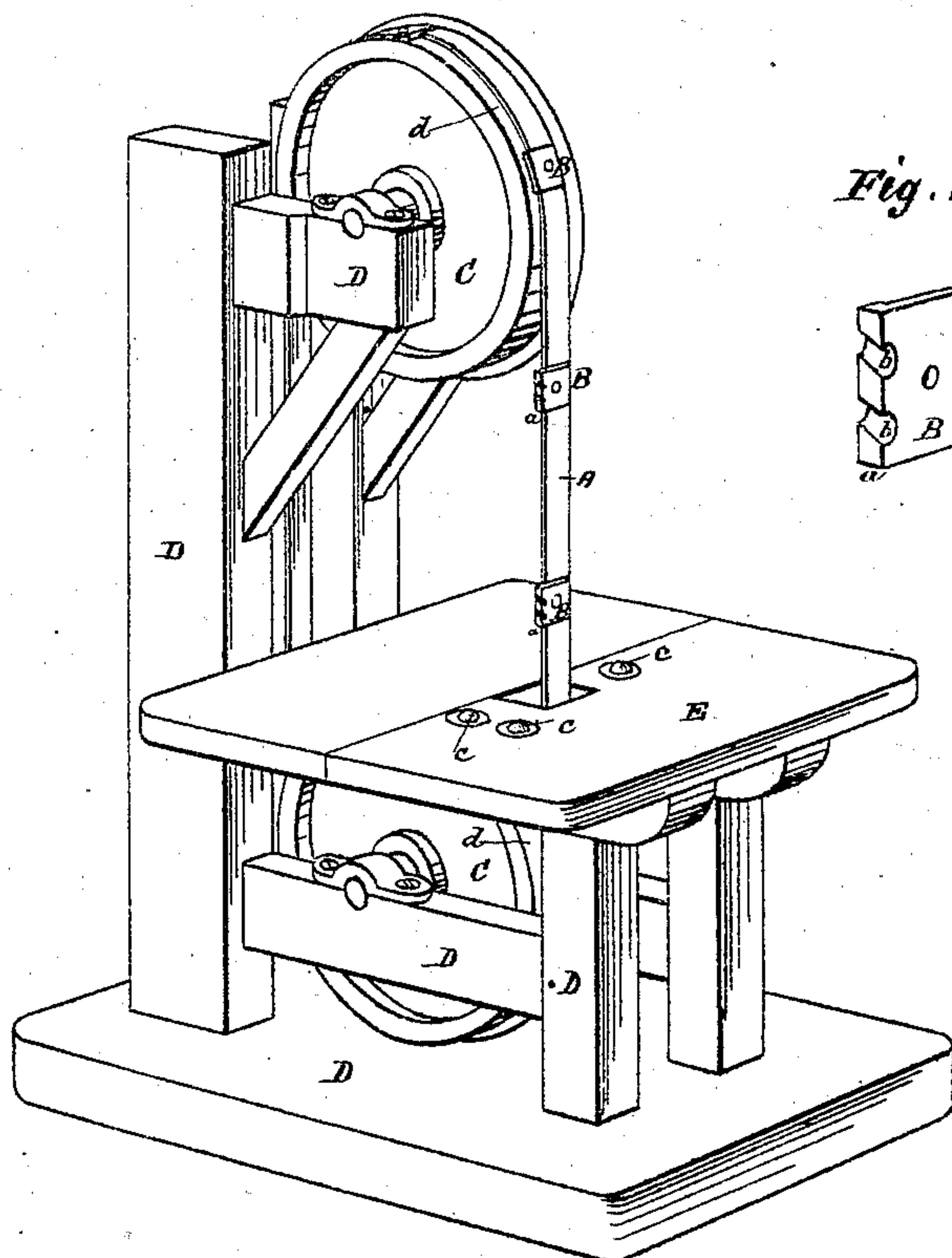


Fig. 2.

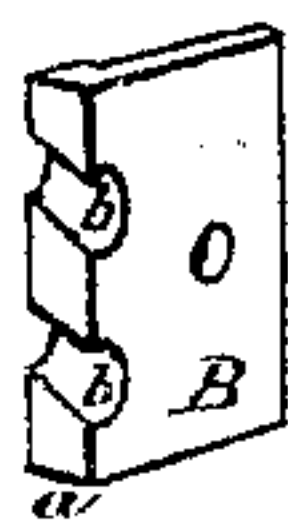
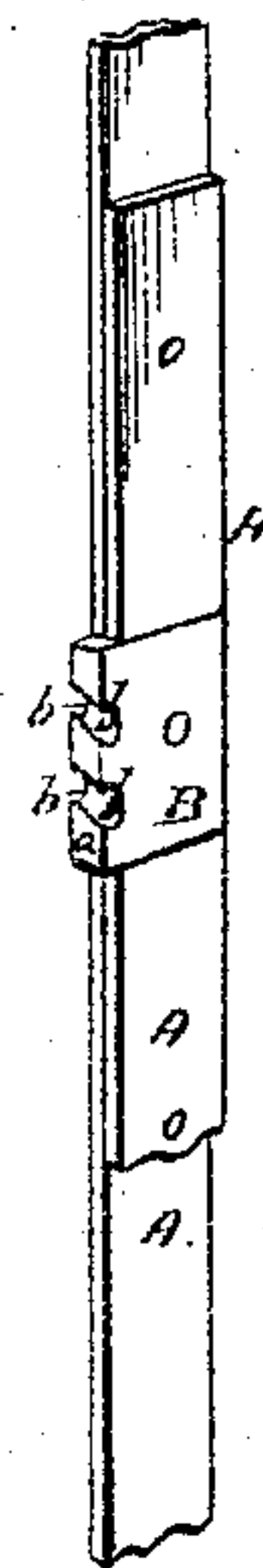


Fig. 3.



Witnesses;

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UNITED STATES PATENT OFFICE.

HERBERT COTTRELL, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN STONE-SAWING MACHINES.

Specification forming part of Letters Patent No. 144,317, dated November 4, 1873; application filed May 8, 1873.

To all whom it may concern:

Be it known that I, HERBERT COTTRELL, of the city of Newark, county of Essex, State of New Jersey, have invented certain Improvements in Stone-Sawing Machines, of which the following is a specification:

My invention relates to a series of sections or pieces of steel, in which are partly embedded carbons or black diamonds, presenting a projecting cutting-surface in the ordinary manner, in combination with a running endless metallic band, passing over rapidly-revolving pulleys above and below, constructed and operating in a manner similar to the well-known "band-saws" for working in wood, the steel sections, armed with carbons, taking the place of teeth at intervals, and the pulleys being covered upon the surface coming in contact with the band with a yielding or elastic substance, to protect the sections and carbons from contact with and wear upon the pulleys.

The high velocity attained by this method enables the execution of many times the amount of work obtained by any other plan for using the diamond in connection with saw-blades.

The motion of the saw being in one direction only, the tendency is to press the carbons more firmly in their sockets, and does away with the liability of their becoming loosened and falling out, as in reciprocating saws.

In the accompanying drawing the manner in which my invention is or may be carried into effect is clearly represented.

Figure 1 is a perspective view of a machine embodying my improvement. Figs. 2 and 3 are views of details hereinafter described.

The endless metallic band, hereinbefore referred to, is shown at A, Fig. 1. To it are attached, at intervals, metallic sections or pieces of steel B, provided on the edge *a*, which projects beyond the edge of the band, with sockets *b* for reception of the carbons, which are partially embedded therein, so as to project beyond the front of the edge *a*, and thus constitute, when the band is in motion, a cutting-edge. The sockets *b* are inclined in such position that the revolution of the band will tend to force the carbons more firmly therein.

The steel sections B are preferably formed

as shown in Fig. 2, the edge *a* projecting beyond the face of the section which is next to the band, so that when the section is applied to the band its said edge *a* will overlap the edge of the band, as indicated.

In Fig. 3 I have represented a way of making the band of uniform thickness, thus enabling it to pass between guides for the purpose of steadying it. In the band shown in Fig. 1 the sections project from the outer surface of the band; but in the one now under consideration, the band is in substance formed of two series of metallic strips, placed face to face and fastened together, the carbon sections being set in between the adjoining ends of the strips of one series, so that they will be flush with the faces of these strips.

The band, with its carbon sections, is designed to run over upper and lower pulleys, C, supported by suitable framing D, which also carries a horizontal table, E, intermediate between the pulleys. The front vertical part of the band passes down through the table, as indicated in Fig. 1.

In order to facilitate the movement of the stone in any desired direction on the table, friction rollers or balls *c* are provided on the upper face of the table, held in suitable sockets, and projecting somewhat above the surface of the table, so that the stone can rest on them.

The peripheries of pulleys C are covered, as indicated at *d*, with leather, vulcanized rubber, or other elastic or yielding substance, for the purpose hereinbefore mentioned.

What I claim, and desire to secure by Letters Patent, is—

1. The above-described endless metallic running band, in combination with sections or pieces of steel placed at intervals in the edge of said band, in which sections of steel carbons are partly embedded, and present a projecting cutting-surface, substantially as set forth.

2. The endless metallic running band with carbon-armed sections, in combination with upper and lower pulleys, the periphery of which is covered with a yielding or elastic substance, substantially as and for the purposes set forth.

HERBERT COTTRELL.

Witnesses:

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H. C. CONDIT.