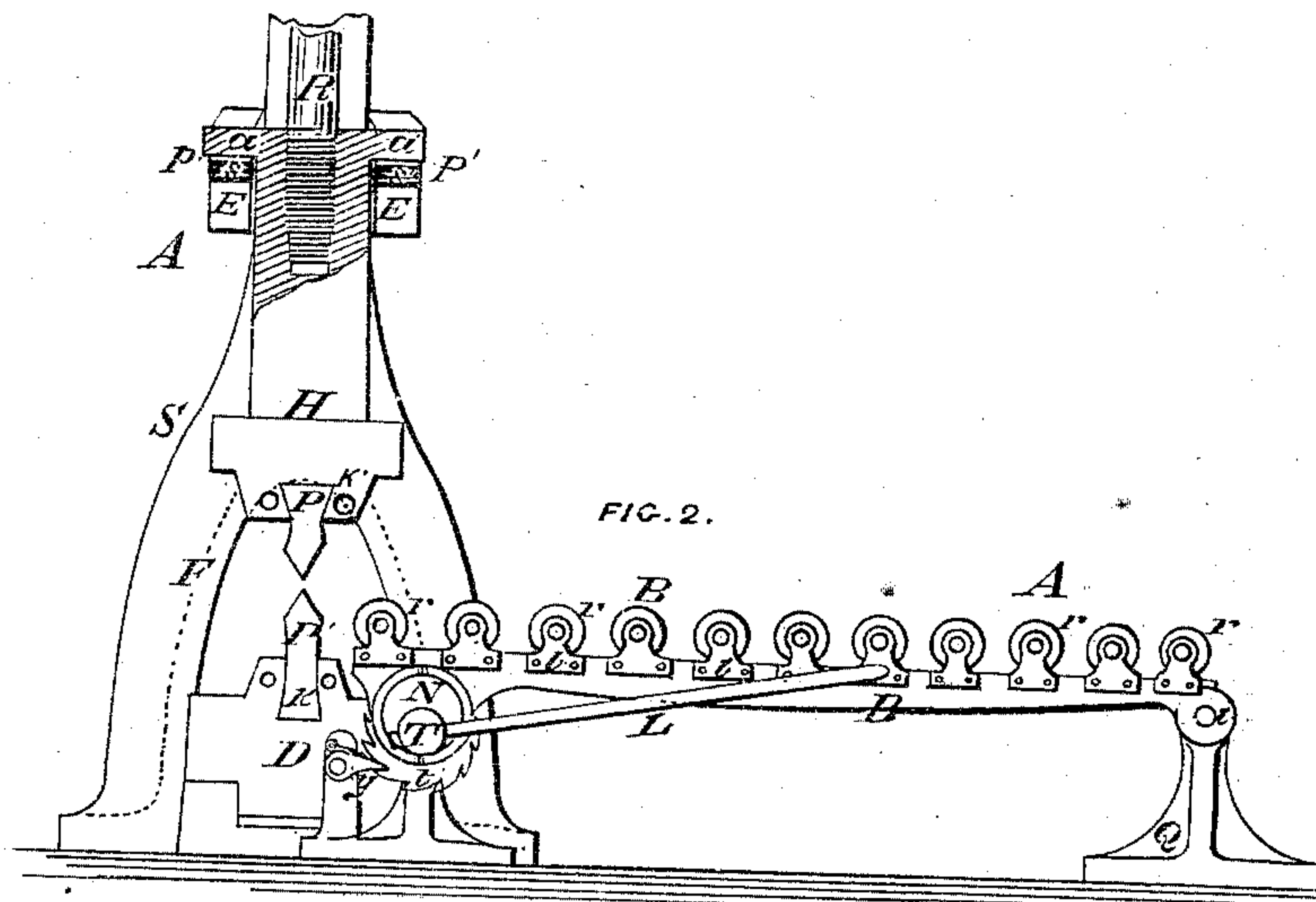
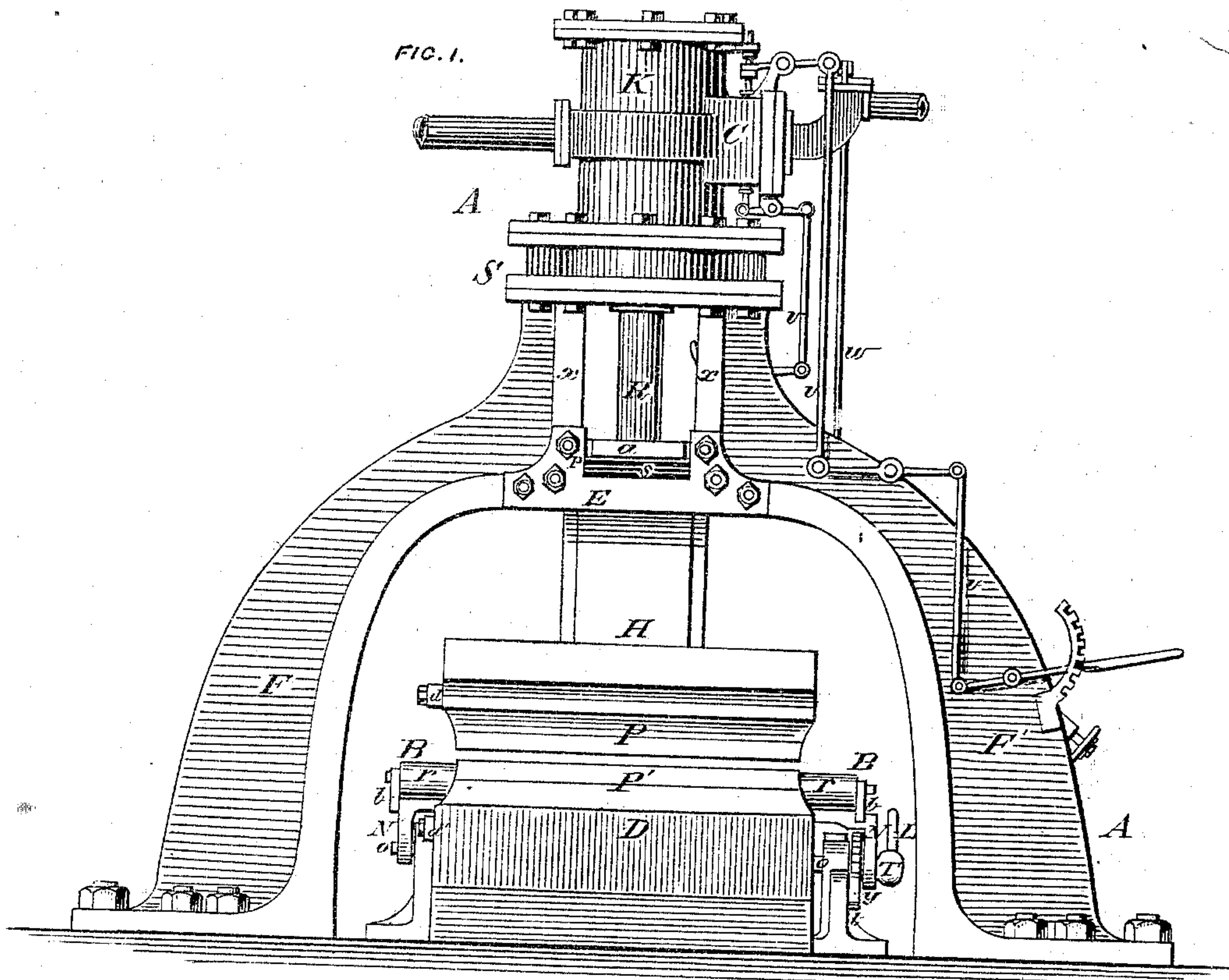


L. DUTERTRE.
Stone-Cutting Machines.

No. 158,691.

Patented Jan. 12, 1875.



WITNESSES:

Elbridge F. Arnold,
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Per Atty.
Lionel Vireas

UNITED STATES PATENT OFFICE.

LOUIS DUTERTRE, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN STONE-CUTTING MACHINES.

Specification forming part of Letters Patent No. **158,691**, dated January 12, 1875; application filed September 7, 1874.

To all whom it may concern:

Be it known that I, LOUIS DUTERTRE, of the city and county of San Francisco, State of California, have invented an Improvement in Stone-Cutting Machines, of which the following is a specification:

My invention relates to an improvement in a cobble-stone-facing machine, patented by me August 26, 1873, wherein an apparatus on the same principle is adapted for the cutting of granite and other kinds of stone blocks. This I accomplish by employing a modified form of steam-hammer provided with broad cutting knives or chisels, and attaching thereto, near the anvil, an adjustable table with rollers arranged so that blocks of stone may be gradually slid thereon to these knives, and raised or lowered to the most advantageous position for the cutting operation.

Figure 1 is a longitudinal vertical elevation of an apparatus fitted with attachments embodying my invention. Fig. 2 is a portion of a side or end view of Fig. 1, showing the adjustable table or platform, and upper part of the hammer-block, in section.

With reference to the drawing, A A is the stone-cutting machine, provided with the several parts or attachments embodying my invention, and consist of a steam-hammer, S, modified so as to be adapted to the cutting of blocks of stone, valve-lever, and steam-rods *v v w*, respectively, steam-chest for valve C, hammer-block H, piston-rod R, cylinder K, anvil D, and frame-pieces F F', together with an adjustable table, B B, to be hereinafter described.

The hammer-block H is shaped like an inverted T, the bottom part being much wider than the portion that slides between the slide-bars *x x*, so as to admit of a very broad knife or chisel, P, being fitted to it by means of its dovetailed part *k'* being slid into a correspondingly-constructed groove, as shown in Fig. 2. The anvil D is also fitted in a similar manner with an equally broad lower knife, P', the edges of both knives being so set as to be opposite to one another, and in the same plane, and are locked into their respective places by adjustable plates *d d'*, so as to prevent any movement of these knives during the concussion occasioned by the strokes of

this hammer. The block H is provided also at the top with two short arms, *a a'*, which, at the end of each stroke of the hammer, impinge directly on india-rubber springs *s s'*, protected by upper plates *p p'*, and resting on brace-pieces E E', which serve also to bind together and strengthen the frames F F'.

Close to the anvil-block D an adjustable table, B B, is arranged for receiving and raising or lowering such blocks of stone as it may be required to cut by the knives P P'. In order to effect this several rollers, *r r*, are attached, by side brackets *b b*, to this table (extending its full breadth) for blocks of granite or other stones to rest upon. At one end this table B B is hinged, on the pivot *i*, to a fixed stand, Q, while the other, next to the anvil-block D, rests on the eccentrics N N', fixed to the shaft *o*, which enable it to be lowered or raised sufficiently for all purposes by means of a long lever-arm, L, fitted into holes provided in a projecting socket, T, forming part of this shaft *o*; and any back motion is prevented by a ratchet-wheel and catch, *t y*, respectively, also arranged to act in conjunction with the parts described.

The mode of operation for cutting blocks of stone by this apparatus is as follows: The adjustable table B B is first lowered so as to present an inclined plane to the knives P P', which is arranged by depressing the eccentrics N N', by means of the lever L and socket T. The block of stone to be cut is placed on these rollers *r r r*, and slid downward to the anvil-knife P', till the portion to be cut off nearly rests against it. The table is then raised so that this block can be rolled still farther, until it is sustained by the knife P' at the place of cutting and these rollers *r r*. The table B B is then again lowered, as before, so that the block may finally only rest on the edge of this knife P' and one or two of the rollers, the table being depressed in order that when the knife P descends the piece of stone will be cut off at the place marked, while the attendant concussion will not injure the table in the same manner as it would necessarily tend to if the stone rested on a level bed of rollers.

I claim as my invention—

1. The adjustable table B B, provided with rollers *r r r*, dependent in its movements on

the eccentrics N N', socket and lever-arm attachments T L, respectively, and ratchet-wheel *t* with catch *y*, in combination with the hammer S, fitted with the knives P P', substantially as and for the purposes herein set forth and specified.

2. The combination of the knives P P', fitted, respectively, to the hammer and anvil blocks

H and D, with the adjustable table B B, and attachments thereto, herein described, substantially as and for the purposes herein set forth and specified.

LOUIS DUTERTRE.

Witnesses:

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