

No. 689,396.

Patented Dec. 24, 1901.

H. K. HANSEN.
STONE CUTTER'S TOOL.
(Application filed May 15, 1901.)

(No Model.)

Fig. 1.

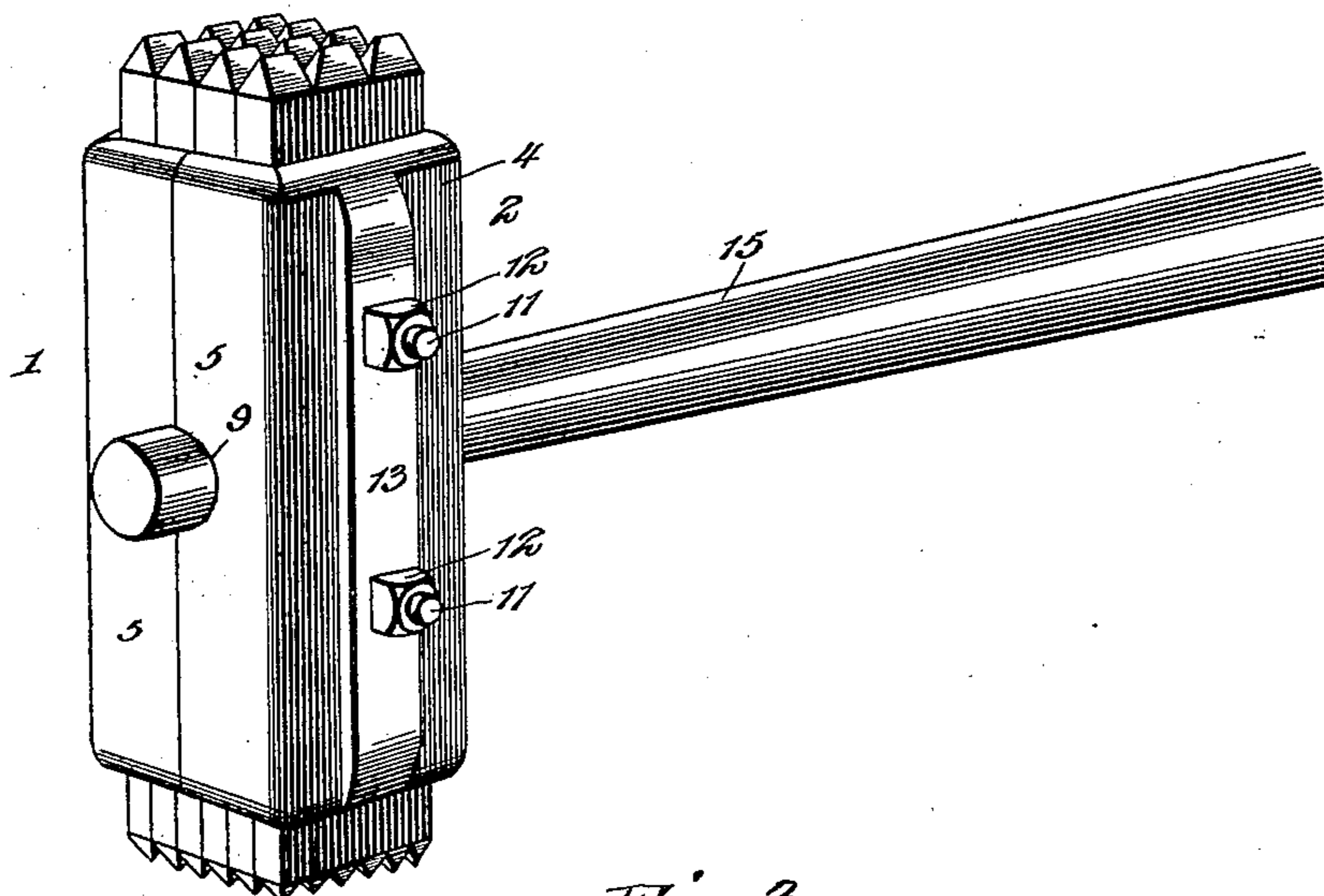


Fig. 2.

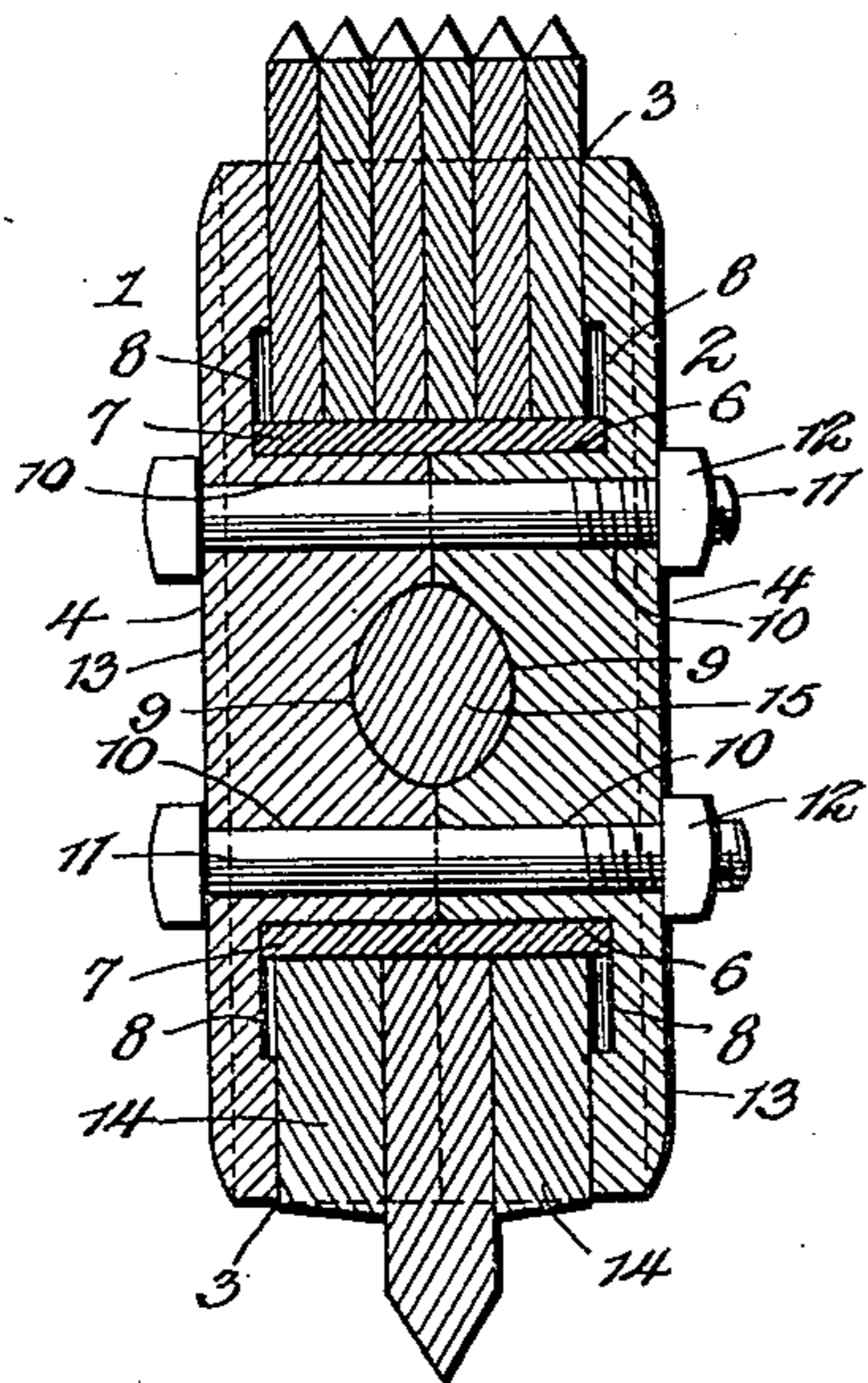


Fig. 3.

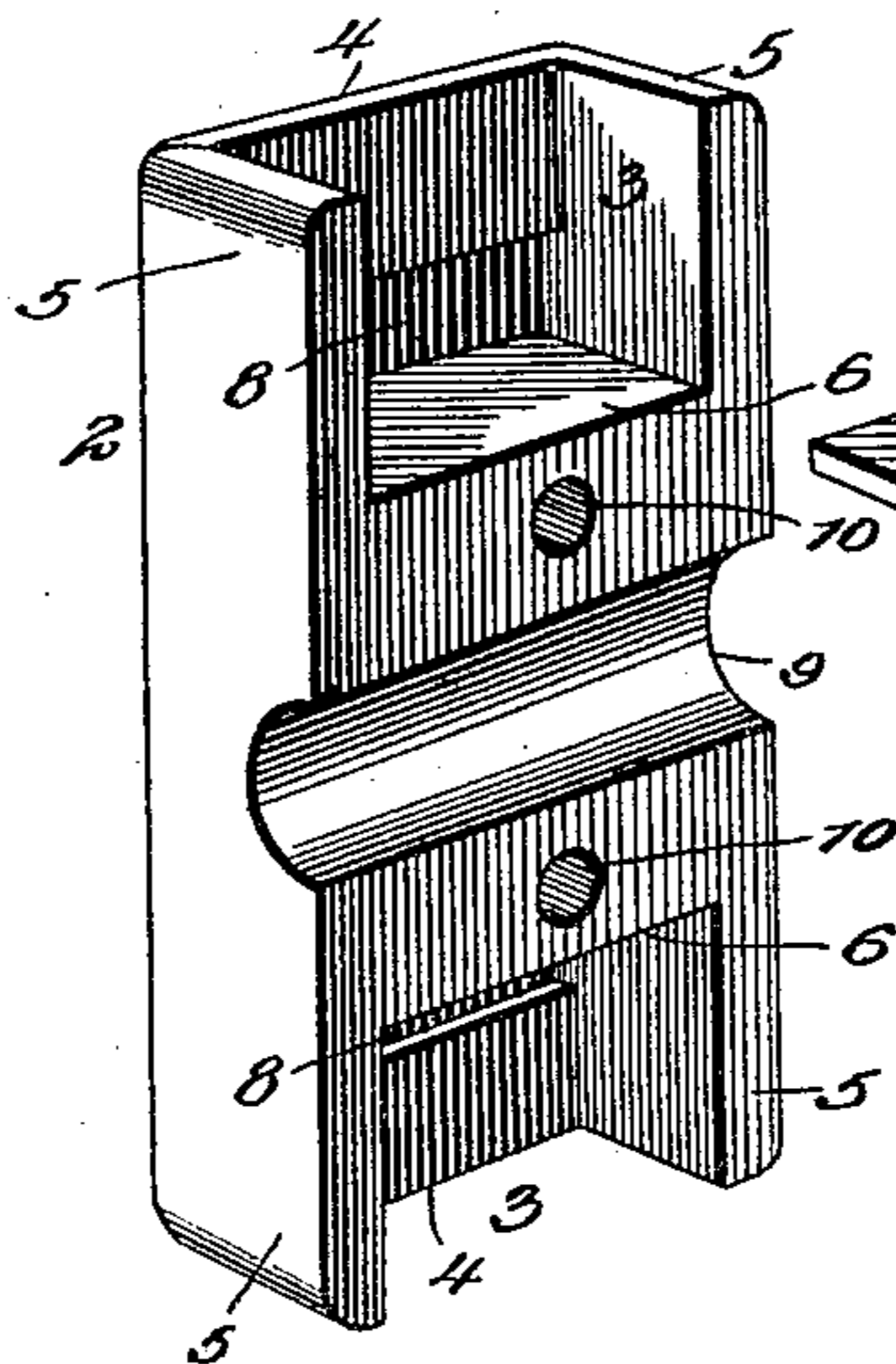
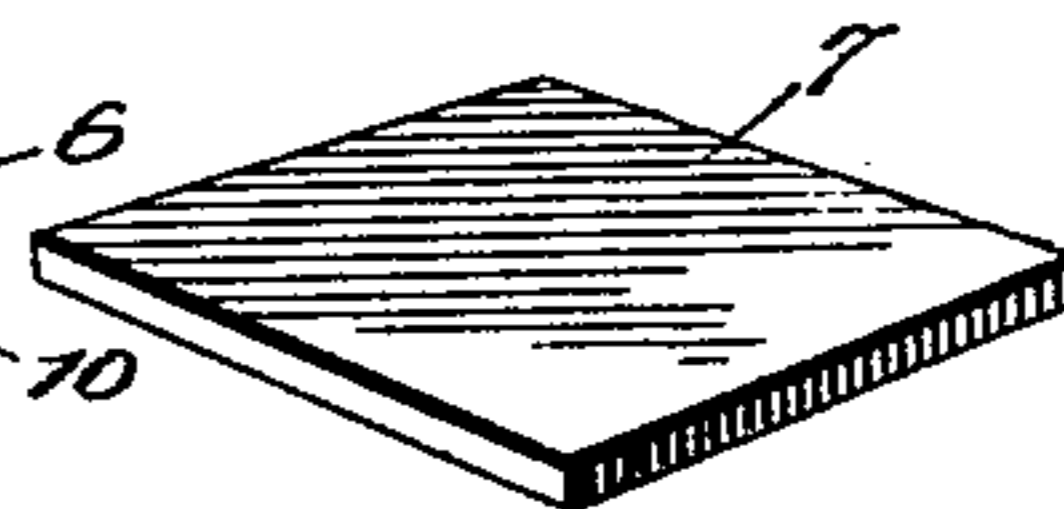


Fig. 4.



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STONE-CUTTER'S TOOL.

SPECIFICATION forming part of Letters Patent No. 689,396, dated December 24, 1901.

Application filed May 15, 1901. Serial No. 60,371. (No model.)

To all whom it may concern:

Be it known that I, HEBER KIMBALL HANSEN, a citizen of the United States, residing at Logan, in the county of Cache and State of Utah, have invented a new and useful Stone-Cutter's Tool, of which the following is a specification.

This invention relates to stone-cutters' tools, and more particularly to a combination-tool wherein there is provision made in a single structure to present as many different kinds of cutting-tools as may be required by the workman.

The object of the invention is to provide a tool of the above character in which the bits shall be held securely in place in the head and in which provision is made to permit ready removal of the bits from the head when desired.

A further object of the invention is to provide means for holding the head-sections firmly assembled and also to prevent any lateral play of the sections when the tool is in use, which would result in permitting the cutting-tools to wobble in the head, resulting in their rapid destruction, owing to the fact that their cutting-faces would not impact squarely with the stone being worked.

A further object of the invention is to provide means by which as the cutting-tools wear away they may be projected the proper distance beyond the face of the head to effect proper working.

The tool characterizing my invention comprises a head composed of two sections, each the counterpart of the other and provided with two sockets or chambers in which the bits or cutting-tools are held, suitable means being provided to insure an even bearing for the bits and also means for clamping the sections of the head together.

To cause the device to present a combination-tool, there will be provided with each head a plurality of sets of cutters or bits, each having a definite function to perform in the stone-cutters' art. Thus there may be furnished with a head six sets of bits. Of these two sets will be employed in the head at the same time, one set for coarse bush-hammering and the other set for fine bush-hammering, and when these two sets are assembled in the head the tool will then constitute a

bush-hammer. Two of the other sets of bits provided will be employed, the one for coarse axing and the other for fine axing, and when these two sets of bits are assembled in the head the tool will then constitute an ax. Of the two remaining sets of bits one will constitute a tooth-ax and the other a peen-hammer, and when these two sets are assembled in the head the tool will then constitute a tooth-ax and peen-hammer. The bits are to be made in standard sizes, and the difference in their cutting edges will cause them to perform different functions under the heads above given.

As a matter of further and specific improvement I combine with the head butt-plates, these to fit snugly in the sockets of the head and upon which the butts of the bits rest, so as to insure an even bearing for the bits, the butt-plates also serving the further function of compensating for the wear of the bits, as by superimposing two or more of the butt-plates in the sockets the bits may be moved outward the desired distance beyond the face of the head. In addition to performing the functions stated these plates also prevent any lateral play of the head-sections when assembled, thereby insuring that the bits will not only be held securely in place within the sockets, but also that their cutting or impact faces will always strike true on the stone. The head may be made of any suitable material, such as iron or cast-steel, and, as will appear farther on, its construction is simple, and it may be readily manufactured at but comparatively small cost.

Further and more specific details of construction and points of advantage accruing from the tool of the present invention will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like numerals of reference indicate corresponding parts, I have illustrated a form of embodiment of my invention, it being understood that the same may be changed in minor details of construction without departing from the spirit of the invention, and in the drawings—

Figure 1 is a view in perspective, exhibiting the tool as it appears when employed as a bush-hammer. Fig. 2 is a view in eleva-

tion, partly in section, of the head, exhibiting the manner in which the bits are seated in the sockets of the head and also the manner in which a single cutter, as a peen-bit or tooth-ax, is held in place in the socket. Fig. 3 is a perspective detail view of one of the head-sections with the bits removed. Fig. 4 is a perspective detached detail view of one of the butt-plates.

Referring to the drawings, 1 and 2 designate the two head-sections, which, as stated, are exact duplicates of each other. When the sections are assembled, as shown in Fig. 1, there is formed in each end of the head a socket or chamber 3, the same being formed by the solid side 4 and the two half ends 5 of each end section. The opposed faces of the sections are to be true, so that when assembled there will be no space between them, the object being to have as close a union at the bases 6 of the sockets as possible, so that there will be no danger of the formation of a recess, which would be injurious to the bit resting over it. To prevent any lateral play of the sections when assembled and also to afford a solid and true base for the ends of the bits, each chamber has housed in it a butt-plate 7, the plate being somewhat wider than the width of the socket, and to permit the plate to be inserted in the socket under these conditions the opposed faces of the side walls adjacent to the base of the socket are recessed or incut, as shown at 8, the object of this arrangement being to prevent the butt-plate from becoming disengaged from the socket when the bits are to be changed. As shown in Fig. 2, there is but one of these butt-plates employed; but, as before stated, as the bits wear down additional butt-plates may be inserted in the sockets, thereby to cause the cutting-faces of the bits to project the desired distance beyond the face of the head. The inner face of each of the sections is provided with an approximately semicircular transverse recess 9, forming one-half of the handle-bore, the bore when the members of the head are assembled being practically elliptical, as shown in Fig. 2, this form of bore being preferred for well-known reasons. Adjacent to and on each side of the handle-bore of each section is an opening 10, through which openings when the sections of the head are assembled are passed bolts 11, carrying nuts 12. When the head-sections are assembled, as shown in Fig. 1, the sockets or chambers in the ends of the head exactly aline, so that when the bits are positioned therein, as shown, their cutting edges will lie exactly parallel with the sides of the head, so that in operation the stone-cutter will know that the bushing, axing, or peen-hammering will be accurate.

It will here be noted that the outer edges of the recesses 8 form sharp edges to bite into the bits, and thereby prevent endwise displacement of the latter. In other words, un-

der the pressure applied by tightening the nuts 12 the intermediate portions of the bits will be slightly compressed and the inner end portions thereof will be correspondingly enlarged in a lateral direction, and thereby spread outwardly into the sockets 8, thus securing a biting engagement between the outer edges of the sockets and the adjacent bits. Also the recesses are of considerable width, so as to accommodate a plurality of butt-plates for the outward adjustment of the bits when the latter have been worn sufficiently to require adjustment and, furthermore, to locate the outer edges of the sockets intermediate of the outer and inner ends of the bits, so as to insure an effective biting engagement between said edges and the bits.

In order to reinforce the head-sections, each is provided on its side with a reinforcing-rib 13, through which pass the bolts 11, this reinforcing-rib rendering it possible to have the walls of the sockets comparatively thin, and yet capable of exerting such pressure on the bits as to hold them rigidly in place.

As shown in Fig. 1, the bits in the upper socket of the head are for coarse bushing and those in the lower socket for fine bushing, while the bits shown in the upper socket of Fig. 2 are for coarse axing and the bit in the lower socket for peen-hammering. To hold the peen-bit in position, two or more plates 14 are employed, these being placed on each side of the bit and being of a thickness corresponding to the series of bits omitted, so that when the nuts 12 are tightened the walls of the socket will bear upon the plates and securely lock the peen-bit in position.

To convert the tool from one style of cutter to another, it will be readily apparent that it will only be necessary to loosen the nuts 12, remove one set of bits, insert another set, and then retighten the nuts. Of course at each time that the nuts are loosened the handle 15 is loosened; but this does not make any difference, inasmuch as in the readjusting of the head-sections the handle is again securely locked in place.

As pointed out, bits of different characters may be carried by the sockets, as shown in Fig. 2, so that by this arrangement the utility of the tool is very greatly enhanced. The different character of bits mentioned will be understood by those skilled in the art, so that it is deemed unnecessary to give an illustration of each of the styles employed, as it is thought that those illustrated are sufficient to render clear an understanding of this device.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from

the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim is—

5 In a tool of the character described, the combination of opposite duplicate head members having their inner faces provided with corresponding handle-sockets and opposite terminal corresponding bit-sockets which are enlarged at their inner ends, the outer end
10 edges of the enlarged portions of the bit-sockets forming biting edges, butt-plates held within the enlarged portions of the respective bit-sockets, said enlargements being wider
15 than the thickness of a single butt-plate to receive a plurality of such plates, bits held

within the terminal bit-sockets and resting against the butt-plates, the outer biting edges of the enlarged portions of the bit-sockets lying between the opposite ends of the bits and adapted to bite into the same, and fastenings piercing the opposite head members and lying at opposite sides of the handle-sockets and also between the latter and the respective bit-sockets. 20

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses. 25

HEBER KIMBALL HANSEN.

Witnesses:

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JOHN W. POPE.