(No Model.)

2 Sheets—Sheet 1.

R. HIKKI.

MORTISING BIT.

No. 602,752. Patented Apr. 19, 1898.

Fig. 1.

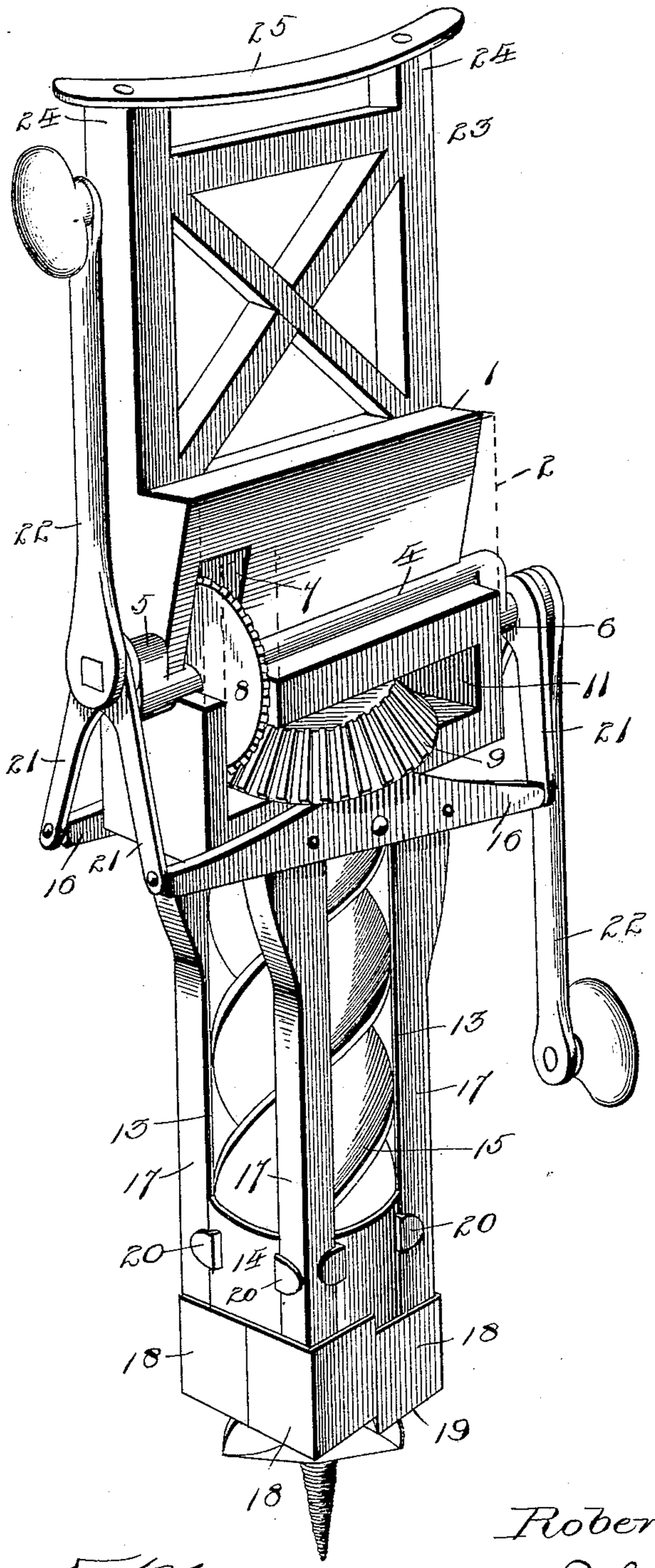
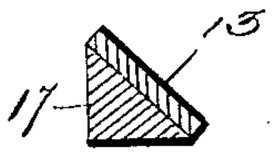


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

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MORTISING BIT.

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Fig. 2.

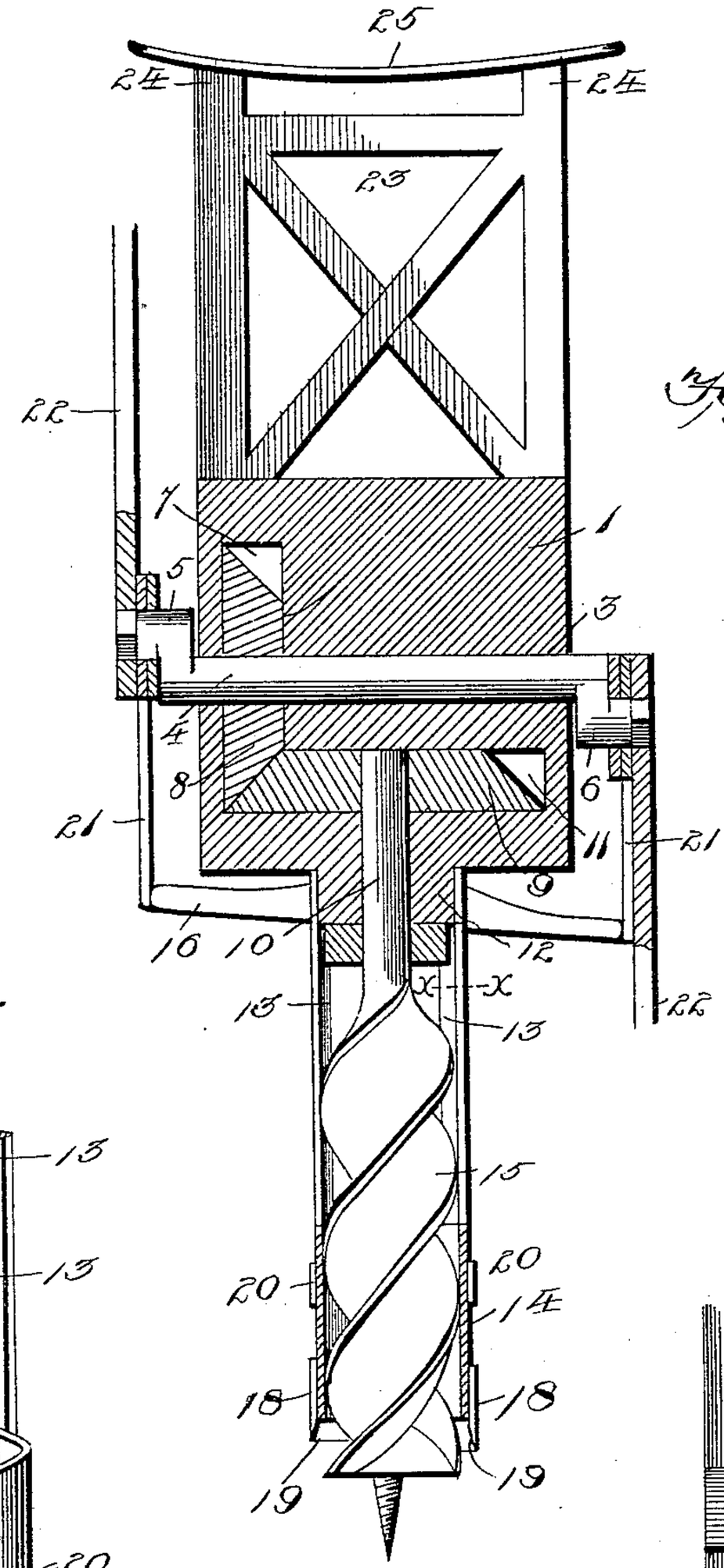


Fig. 3.

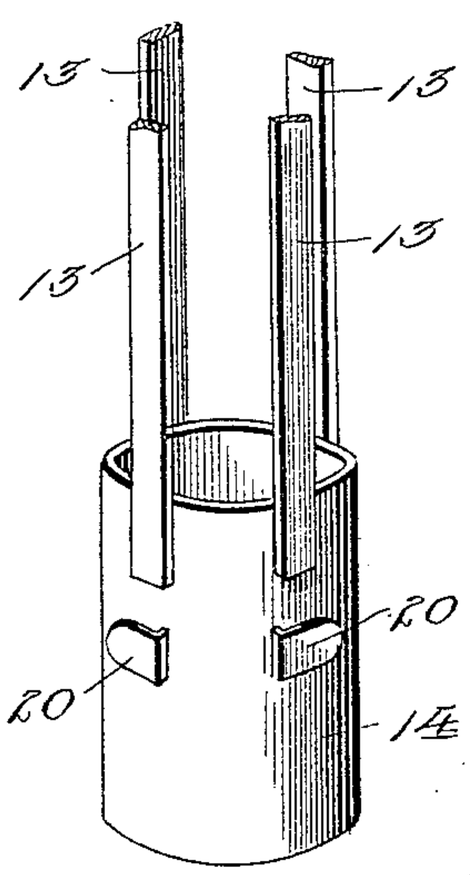
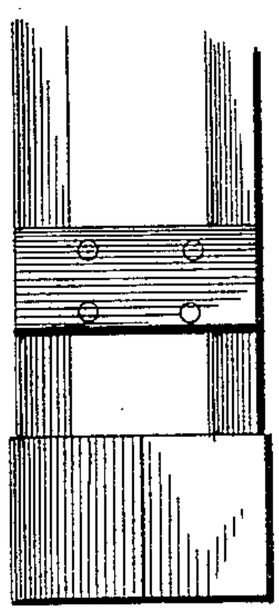


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROBERT HIKKI, OF MAPLE, WISCONSIN.

MORTISING-BIT.

SPECIFICATION forming part of Letters Patent No. 602,752, dated April 19, 1898.

Application filed May 27, 1897. Serial No. 638,402. (No model.)

To all whom it may concern:

Be it known that I, ROBERT HIKKI, of Maple, in the county of Douglas and State of Wisconsin, have invented certain new and useful Improvements in Mortising-Bits; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to mortising-bits for forming a square hole; and it consists, essentially, of a bit movable through a tubular cylindrical guide and vertically-reciprocating angular chisels movable in supplemental guides operated by rocking arms.

The invention further consists of the details of construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

The object of the invention is to facilitate the formation of angular holes by a simplified form of mechanism wherein the parts are strong and durable and easily and readily operated.

In the accompanying drawings, Figure 1 is a perspective view of the improved device, showing the face-plate of the bearing-block in dotted lines. Fig. 2 is a central longitudinal vertical section of the improved device. Fig. 3 is a detail perspective view of one of the guides for the bit and the supplemental guides resting thereagainst. Fig. 4 is a detail horizontal section on the line *x x*, Fig. 2. Fig. 5 is a view showing a modified form of guide.

Referring to the drawings, wherein similar numerals of reference are employed to indicate corresponding parts in the several views, the numeral 1 designates a bearing-block, over one side of which is mounted a face-plate 2, to cover a portion of the operating parts carried thereby and permit the same to be removed or placed in position in the said bearing-block. Extending transversely through the said bearing-block is an opening 3, forming a journal-bearing in which a shaft 4 is mounted, being held in place by the said face-plate 2. At the opposite ends of the shaft are suitable crank-arms 5 and 6, and in a vertical slot 7, formed partially in the said bearing-block and face-plate, a beveled gear 8 is keyed to the said shaft and meshes with a similar wheel 9, horizontally disposed and mounted on a revoluble bit-shank 10, projecting upwardly through the bottom of the bearing-block. The gear 9 is seated in a transverse slot 11, which communicates with the vertical slot 7, and the bit-shank extends through a base 12 at the center of the lower end of the said bearing. Attached to said base 12 are the upper ends of four downwardly-projecting supplemental guides 13, which are secured at their lower ends to a cylindrical protecting-guide 14 by any suitable means. Through this cylindrical guide 14 a bit 15 extends and is shielded thereby. On opposite sides of the base 12 are rocking arms 16, and thereto are secured the shanks 17 of reciprocating chisels 18, which are provided at their lower ends with right-angular cutting edges 19. The shanks 17 of the said chisels are attached to the rocking arms 16 on opposite sides of the fulcrums of the latter and move on the supplemental guides 13, being held against displacement by means of clips 20 on the said guides. To the opposite ends of the rocking arms 16 and engaging the cranks 5 and 6 are pitmen 21, which alternately operate the shanks 17 and chisels 18 in pairs on opposite sides of the bit 15. Outside of the said pitmen 21, on the cranks of the shaft 4, operating-handles 22 are mounted and arranged in reverse position, so as to operate the said shaft in such manner as to raise one pair of the chisels and depress the opposite pair. To the upper portion of the bearing-block 1 a breast-brace 23 is secured and consists of two uprights 24, continuous with or connected to a depressed cross bar or rest 25.

When the device is used, the operator braces his chest against the said breast-brace, and by turning the cranks 5 and 6, and consequently the shaft 4, the bit is caused to rotate and at the same time the chisels are reciprocated, thus boring and chiseling out a square hole.

It is obviously apparent that changes in the minor details of construction and arrangement might be made and substituted for those shown and described without in the least departing from the nature or spirit of the invention.

Having thus described the invention, what is claimed as new is—

1. In a mortising-machine, the combination of a bearing-block having a horizontal slot through the lower portion thereof communicating with a vertical slot at one side, a face-plate mounted over the said vertical slot, gear-wheels journaled in the said slots and meshing with each other, a bit or auger having the shank thereof secured to the horizontally-disposed gear-wheel, vertically-movable chisels surrounding the said bit or auger, a cylindrical guide surrounding the lower end of the bit or auger, supplemental guides for the said chisels, and means for operating the said chisels and bit or auger, substantially as described.

2. In a mortising-machine, the combination of a bearing-block, gearing mounted in said bearing-block, a bit or auger operated by said gearing, a crank-shaft to which said gearing is connected, rocking arms operated by said crank-shaft, and vertically-reciprocating chisels attached to said rocking arms and adapted to be operated thereby, alternately in pairs, substantially as and for the purposes specified.

3. In a mortising-machine, the combination of a bearing-block, having a transverse journal-bearing therein, a shaft mounted in said journal-bearing and provided with cranks, a gear mounted on said shaft, a bit-shank having a gear thereon, meshing with the aforesaid gear and provided with a lower bit, rocking arms attached to the lower portion of the bearing-block, vertically-reciprocating chisels movably attached to said rocking arms, and means for operating the said rocking arms, substantially as and for the purposes specified.

4. In a mortising-machine, the combination of a bearing-block having a transverse journal-bearing extending therethrough, a shaft mounted in said journal-bearing, and having cranks on opposite ends thereof, a gear on the shaft, a bit-shank adapted to be operated by said gear, and carrying a bit at the lower end thereof, rocking arms attached to the lower portion of the bearing-block, vertically-reciprocating chisels movably attached to said rocking arms, pitmen connecting the rocking arms to the cranks on the shafts, and means for operating the said shaft, substantially as and for the purposes specified.

5. In a mortising-machine, the combination of a bearing-block having a transverse journal-bearing therein, a shaft mounted in said journal-bearing and provided with cranks on the opposite ends thereof, a gear mounted on the said shaft, a bit-shank having a gear thereon engaging the aforesaid gear and carrying a bit at the lower portion thereof, a cylindrical guide forming a shield for the bit, supplemental guides depending from the lower portion of the bearing-block, rocking arms attached to opposite sides of the lower part of the bearing-block, vertically-reciprocating chisels movably attached to said rocking arms and held in position by the said supplemental guides, pitmen attached to the said rocking arms and to the cranks of the said shaft, and means for operating the said shaft, substantially as and for the purposes specified.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ROBERT HIKKI.

Witnesses:
A. H. MARKKAMN,
NELLIE ORTON.