No. 621,378. Patented Mar. 21, 1899.

H. C. SHOEMAKER.

RASP.

(Application filed May 21, 1898.)

(No Model.)

Fig. 7.

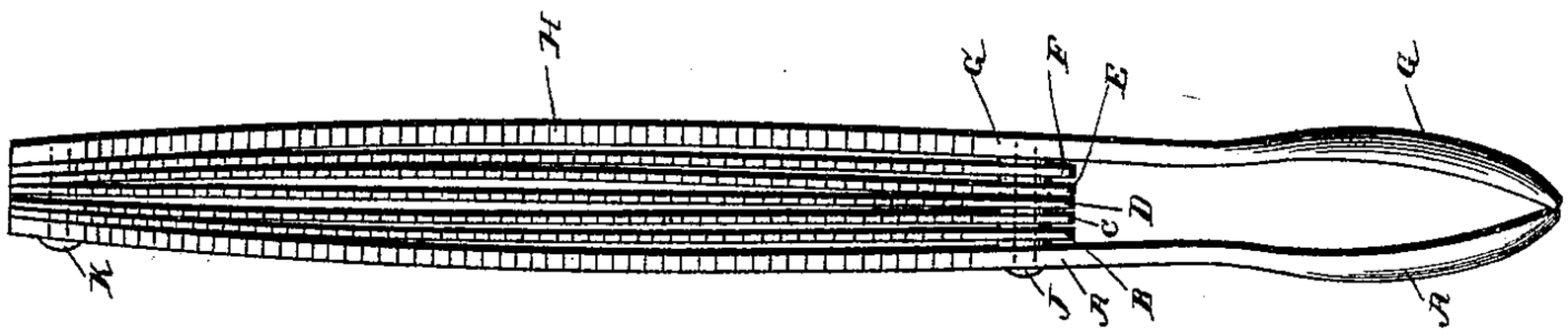


Fig. 5.

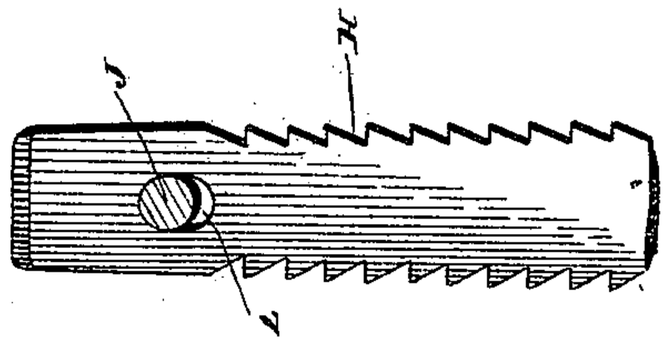


Fig. 6.

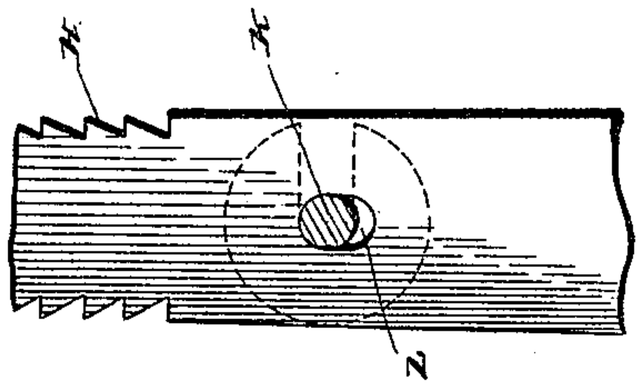


Fig. 4.

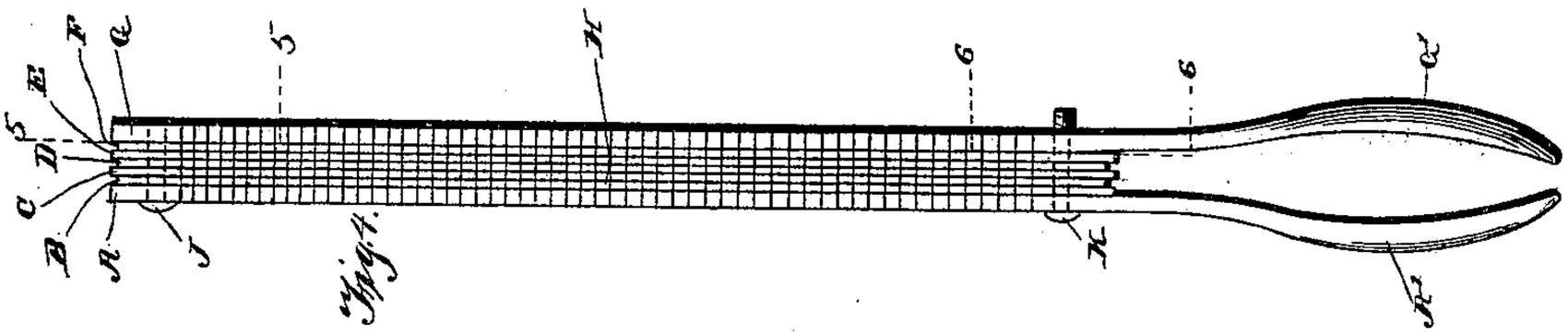


Fig. 2.

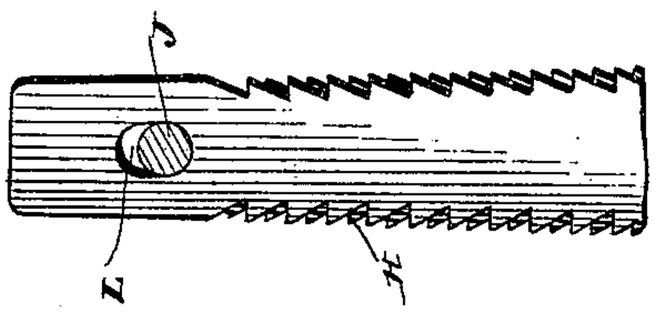


Fig. 3.

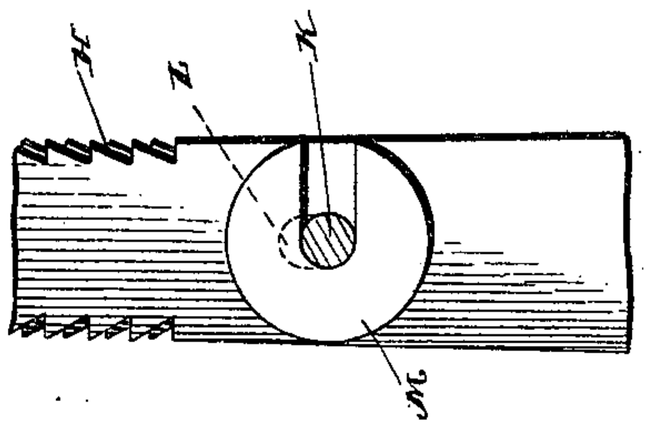
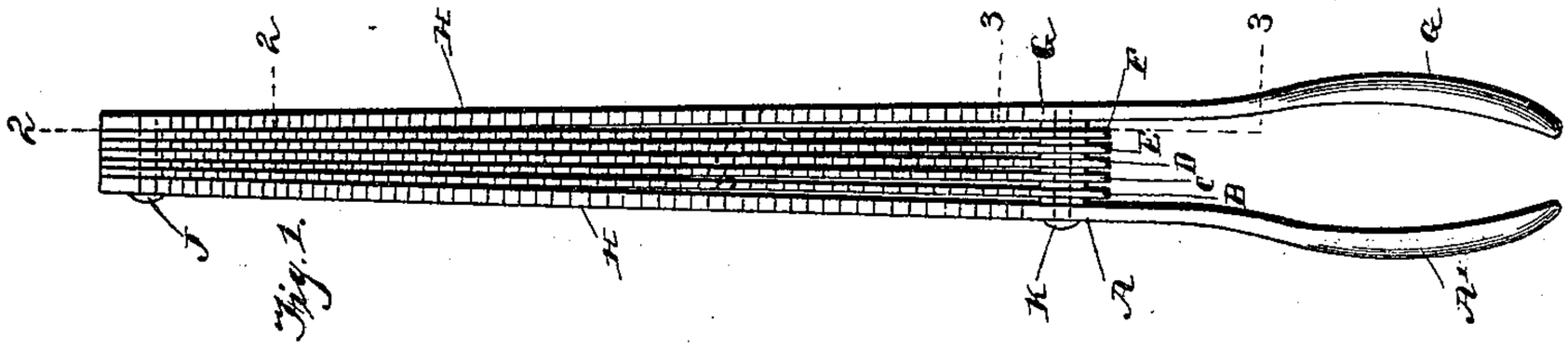


Fig. 1.



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UNITED STATES PATENT OFFICE.

HENRY C. SHOEMAKER, OF PIERCE CITY, MISSOURI.

RASP.

SPECIFICATION forming part of Letters Patent No. 621,378, dated March 21, 1899.

Application filed May 21, 1898. Serial No. 681,332. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. SHOEMAKER, a citizen of the United States, residing at Pierce City, in the county of Lawrence and State of Missouri, have invented a new and useful Rasp, of which the following is a specification.

My invention relates to rasps or files for working wood, bone, horn, leather, and like materials.

The object of my invention is to provide a rasp of this class which shall be simple, cheap, and durable in construction and capable of being easily sharpened by any one who can use an ordinary saw-file.

With this object in view my invention consists in a rasp composed of a series of thin narrow plates or strips of steel clamped together, one or both edges of the strips being provided with saw-teeth and one end being provided with removable spacing-washers.

My invention further consists in a rasp of this class wherein the outer strips are elongated and formed into handles.

My invention further consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the appended claim.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a face view of a rasp constructed in accordance with my invention, the parts being adjusted into their operative positions. Fig. 2 is an enlarged sectional view on the dotted line 2 2 of Fig. 1. Fig. 3 is a similar view on the dotted line 3 3 of Fig. 1. Fig. 4 is a face view of the rasp with the parts in position for sharpening. Fig. 5 is an enlarged sectional view on the line 5 5 of Fig. 4. Fig. 6 is a similar view on the line 6 6 of Fig. 4. Fig. 7 is a face view of the rasp, showing the clearance-spaces expanded by pressing the handles together.

Like letters of reference mark the same parts wherever they occur in the different figures of the drawings.

Referring to the drawings by letters, A, B, C, D, E, F, and G indicate seven strips of flat plate-steel which are all of the same width, the outside strips A and G being longer than the rest and their extensions being shaped to form handles A′ and G′. Each of the strips is toothed on one or both edges, as shown at H, and when the strips are secured together in working position they are so arranged as to cause the teeth on each strip to alternate with the teeth on the adjoining strip. The strips A, C, E, and G are provided with round holes near each end and the strips B, D, and F with slots, which register with the holes in the other strips when all the strips are secured together by means of screws J and K, which pass through smooth holes and slots in the strips A, B, D, E, and F and are threaded into the holes in plate G.

The slots hereinbefore mentioned as provided in the strips B, D, and F near each end I have marked L wherever shown, while the round holes in the strips A, C, E, and G have not been designated by letter.

M indicates a washer provided with the usual central opening and slotted from one side of said opening to the circumference, the slot being of the same diameter as the central opening, so that the washer can be slipped upon the screw K or removed therefrom at pleasure.

When in position for practical operation, as shown in Figs. 1, 3, and 7, one of these washers M is placed between each two adjacent strips, so as to separate them at their inner ends to provide clearance-spaces for the dust or chips cut by the rasp. These clearance-spaces can be further widened while operating the rasp by squeezing the handles A′ and G′ together, which will throw out the strips between the screws J and K, as shown in Fig. 7.

As before stated, when the rasp is in operative adjustment the teeth of the adjacent strips alternate with each other.

In order that the whole rasp may be sharpened with an ordinary saw-file quickly and easily at one operation, I have provided means

for causing alternate strips, as B, D, and F, to be adjustable with relation to the adjacent strips A, C, E, and G. The slots L in the strips B, D, and F are for this purpose, and in order to bring the teeth of all the strips into line across the rasp, so that they may all be sharpened at the same stroke of the file, it is only necessary to loosen up the screws J and K and drop out the separating-washers M, when by striking the handle end of the rasp against some solid body the strips B, D, and F will move toward the handle, the slots passing along on the screws J and K for about the distance of one-half the length of a tooth. This will bring the teeth in line across the rasp, when the screws may be again tightened up, clamping the strips tightly against each other and closing up the clearance-spaces, when the teeth of all the strips may be sharpened at once, after the manner of sharpening a saw. By reversing this operation—that is to say, loosening the screws and striking the outer end of the rasp against some solid body—the strips B, D, and F will again be forced to the position shown in Figs. 1, 2, 3, and 7, in which their teeth alternate with the teeth of the other strips. The separating-washers M will again be inserted and the screws tightened up, leaving the whole rasp in the operative position illustrated in Fig. 1, with the outer ends tightly clamped together and the inner ends tightly clamped with the separating-washers between them. The separating-washers between the strips provide clear spaces through which dust or chips made by the rasp may be passed, thereby preventing the teeth from being clogged up, as is often the case with solid rasps. Forming the outer strips into handles confers an additional advantage, inasmuch as the outer clearance-spaces especially may be widened at will by squeezing the handles together, and the additional expense of a separate handle and means for attaching it is avoided.

In Figs. 4, 5, and 6 I have shown the position the strips assume when adjusted for sharpening.

I have illustrated my rasp as composed of seven strips; but this is not necessary, as the number of strips may be varied according to the width of rasp desired or the fineness of the teeth, very fine teeth requiring a larger number of strips in a given width of rasp.

The advantages attending the use of my invention will be readily apparent from the foregoing description of its construction and operation. The rasp may be sharpened continually until the strips are entirely filed away, causing one rasp to last many times as long as a rasp made of a solid block.

While I have illustrated and described what I now consider efficient means for carrying out my invention, I do not wish to be understood as restricting myself to the exact details of construction shown and described, but hold that such slight changes or variations as might suggest themselves to the ordinary mechanic would properly fall within the limit and scope of my invention. If desired, one or both faces of the rasp could be made curved.

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

The rasp herein described, consisting of the series of flat steel strips having teeth on their edges, the alternating strips provided with round holes and registering elongated slots, respectively, near their ends, a screw J connecting the strips near their outer ends, a screw K connecting them near their inner ends, and the open washers removably placed on the screw K between the alternating strips, the outer strips A and G being extended to form handles, substantially as described.

HENRY C. SHOEMAKER.

Witnesses:
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