

W. T. Nicholson.

Ruszn.

N^o 94,503.

Patented Sep. 7, 1869.

Fig. 1.

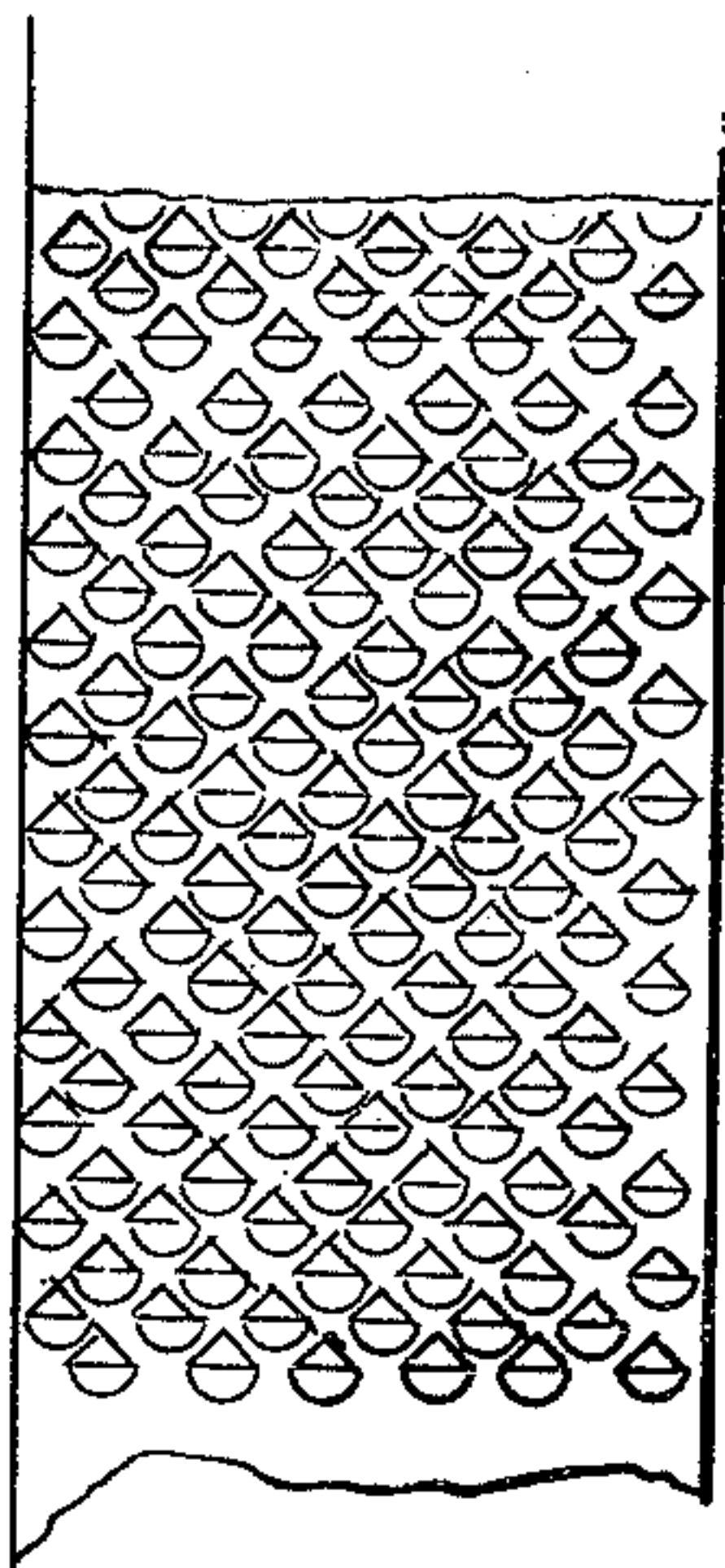


Fig. 2.

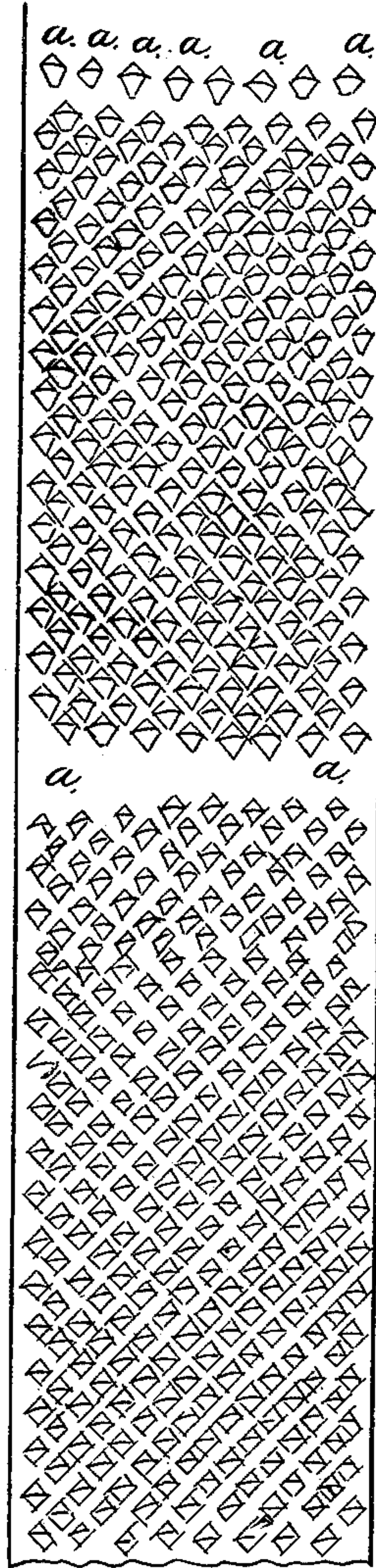


Fig. 3.

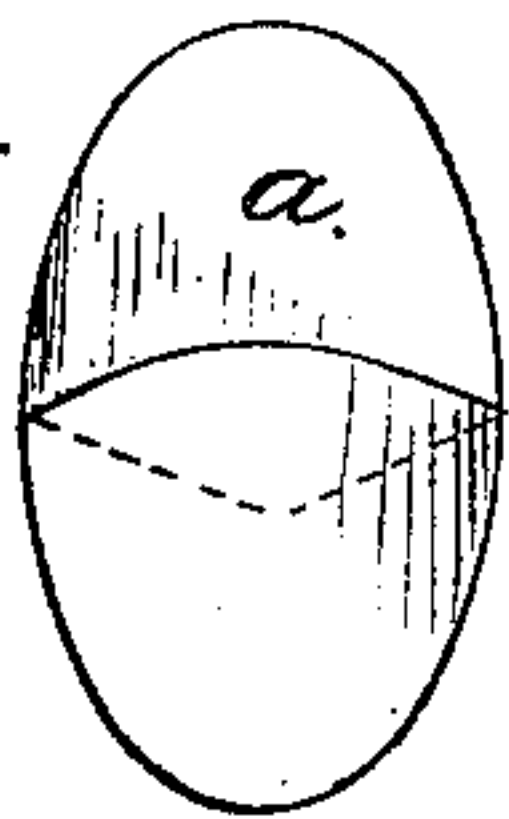
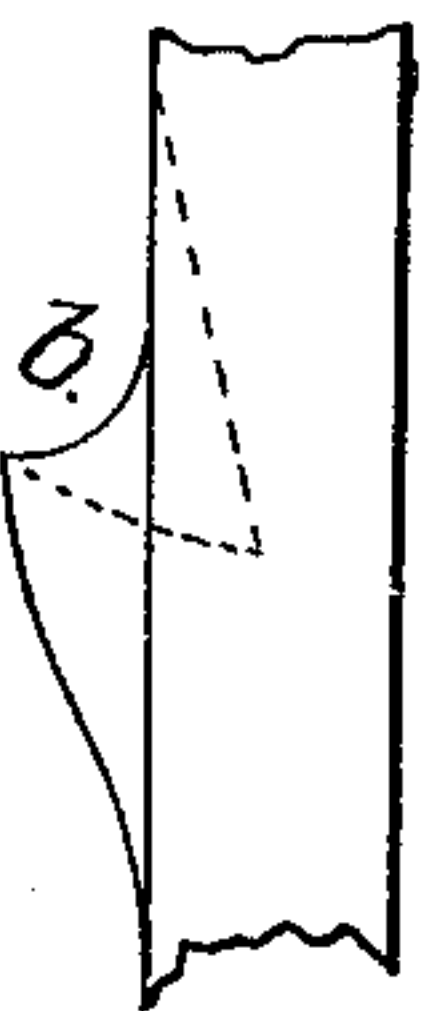
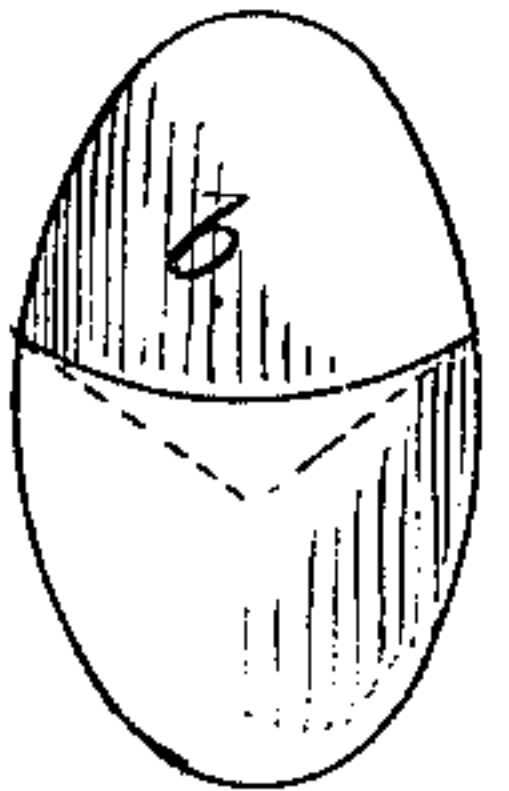


Fig. 4.



Witnesses:

Peter H. Hughes
Orville Beckham

Inventor:

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United States Patent Office.

WILLIAM T. NICHOLSON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE NICHOLSON FILE COMPANY, OF SAME PLACE.

Letters Patent No. 94,503, dated September 7, 1869.

IMPROVEMENT IN RASPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM T. NICHOLSON, of the city and county of Providence, in the State of Rhode Island, have invented a new and useful Improvement in Files; and I do hereby declare that the following specification, taken in connection with the drawings, making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is face view of the ordinary rasp-teeth.

Figure 2 is a face view of the rasp, with my improved teeth.

Figures 3 and 4 are face and sectional views of the teeth, enlarged.

The purpose of my invention is to so form the teeth of a rasp that each of the several teeth shall be able to effect a shearing-cut upon the metal or material to which the rasp is applied, and I accomplish this by making the cutting-edge of each individual tooth curved, or practically so, in two directions in relation to the surface of the file, the portion of the metal raised by the chisel being convex on its outer and inclined surface, and presenting a cutting-edge either convex or concave in relation to a straight line supposed to be drawn immediately in front of the tooth, and at right angles to its axis of elevation.

The formation of the teeth, as shown in fig. 1 and fig. 2, respectively, will illustrate the difference between the common tooth and that which is my improvement.

In the former figure, representing the common teeth of rasps, the cutting-edge of each tooth is raised by a punch, whose cross-section is a plain triangle; and, consequently, the cutting-edge of the tooth will be in a straight line.

In fig. 2, the cross-section of the punch, which is required to form the teeth is a mixtilinear triangle, the curved side of which forms the tooth's cutting-edge.

In the instance shown in the drawing, the several

teeth *a*, figs. 2 and 3, require a punch whose edge-forming face is convex, while to form the tooth *b*, fig. 4, the corresponding face of the punch should be concave. In both cases the tooth raised by such punches will be capable of making a shearing-cut. It is not necessary, however, that the outline of the cross-section of the cutting-face of the teeth should be a curved line; it may be composed of several straight lines, constituting the elements of a curved line.

Teeth formed as described can obviously be arranged to stand in any of the usual or preferred lines, across the face of the rasp, with the same facility as if made in the common form.

I am aware that a rasp has, before my invention, been made, with the arrangement of the cutting-edges of some of the teeth inclined to the longitudinal axis of the rasp, while the remainder of the teeth are arranged in the common way, the effect of which arrangement is to accomplish a partial shearing-cut.

My invention is independent of any means to obtain a result obtained from any peculiarity of arrangement of the several rows of teeth, but resides in the peculiar character which each tooth individually possesses, and which enables it, without regard to its arrangement with respect to any other tooth in the rasp, to produce a shearing-cut.

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

The improvement in rasps, which consists in making the cutting-edges of the several teeth thereof in the form and of the character substantially as herein described, for the purpose of enabling each of such teeth to exert a shearing-cut, when applied to use as set forth.

W. T. NICHOLSON.

Witnesses:

BENJ. F. THURSTON,
PETER F. HUGHES.