

E. RIPLEY.
Millstone Dress.

No. 8,293.

Patented Aug. 12, 1851.

Fig. 3

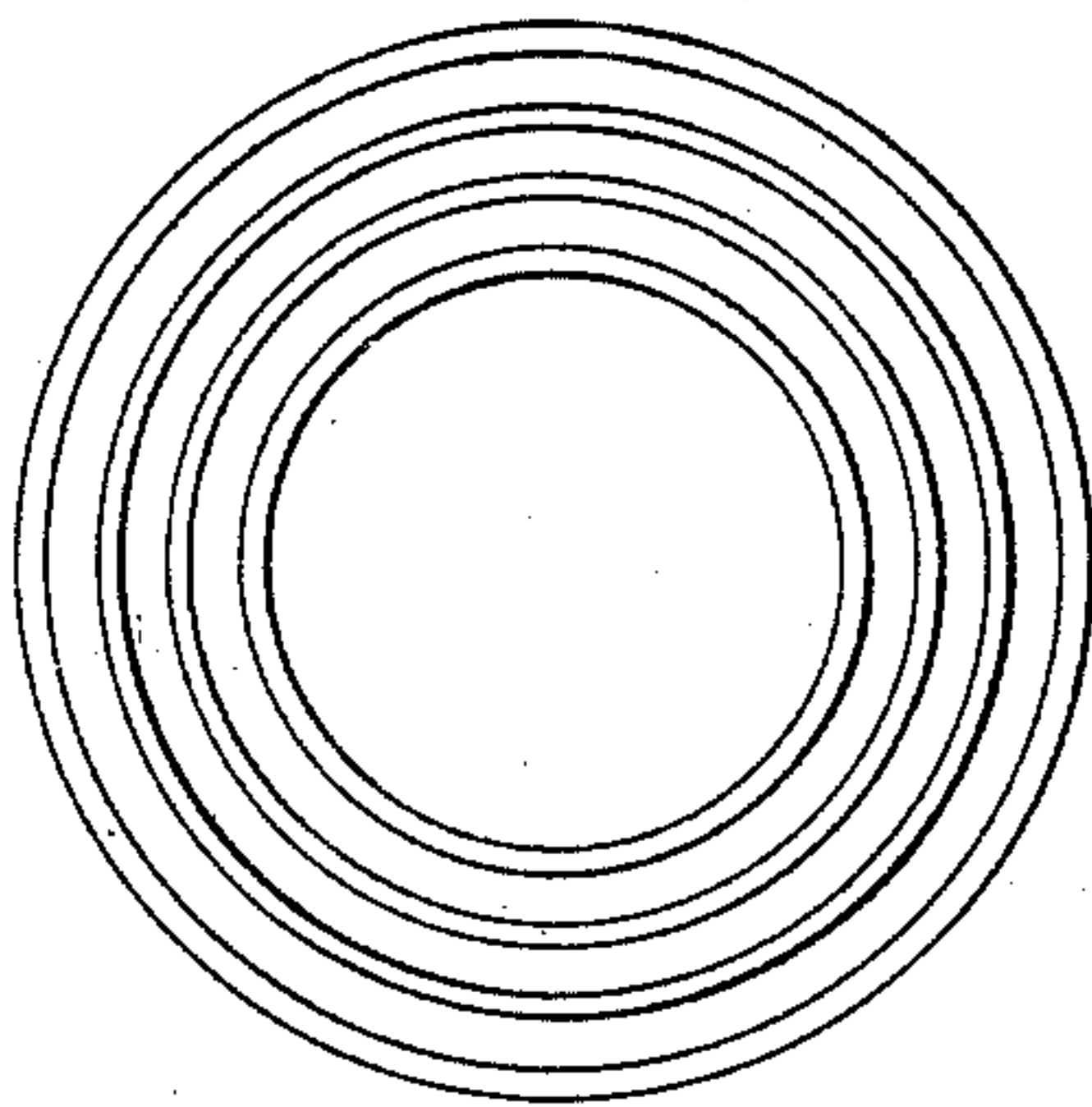


Fig. 5

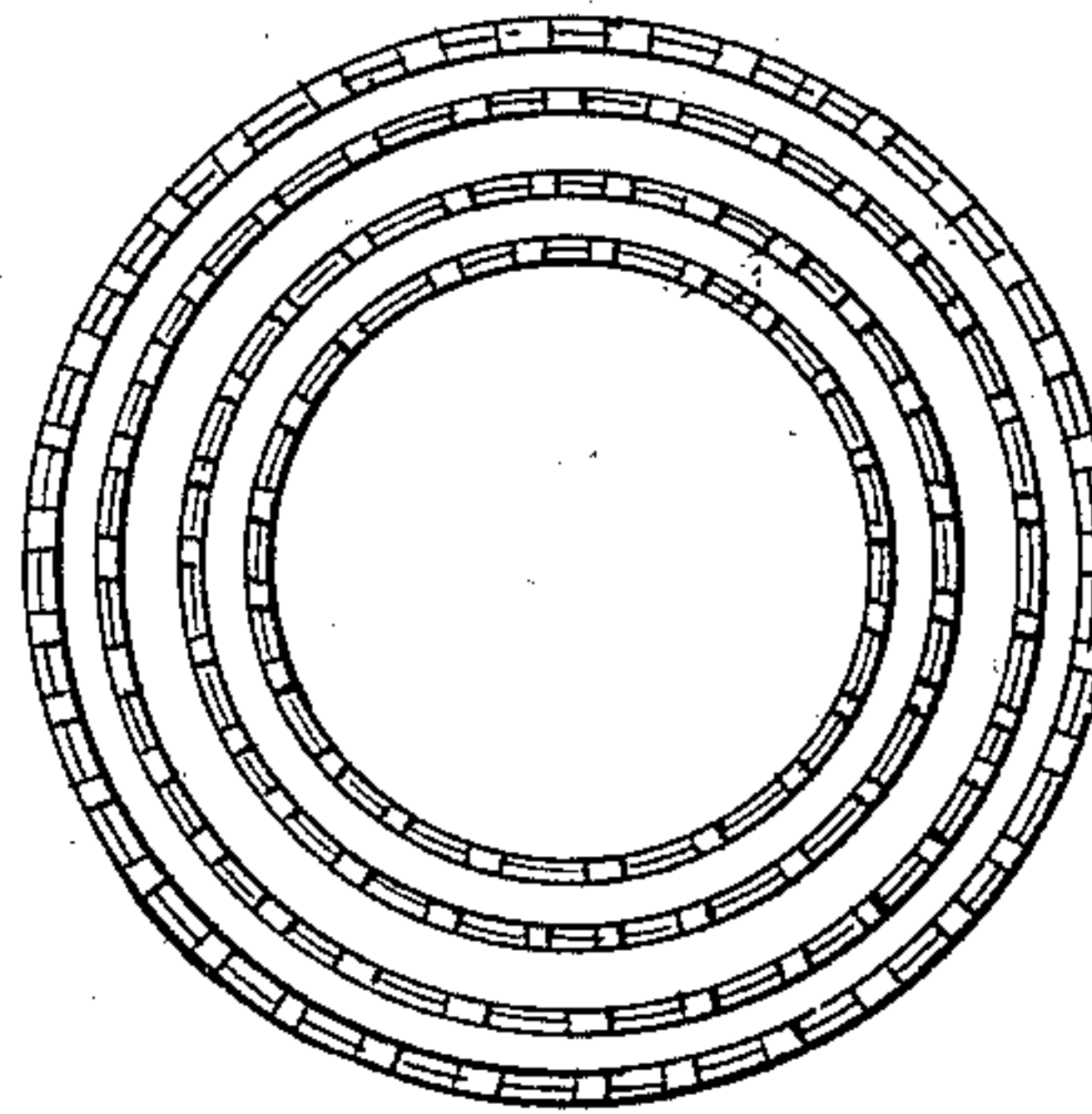


Fig. 2

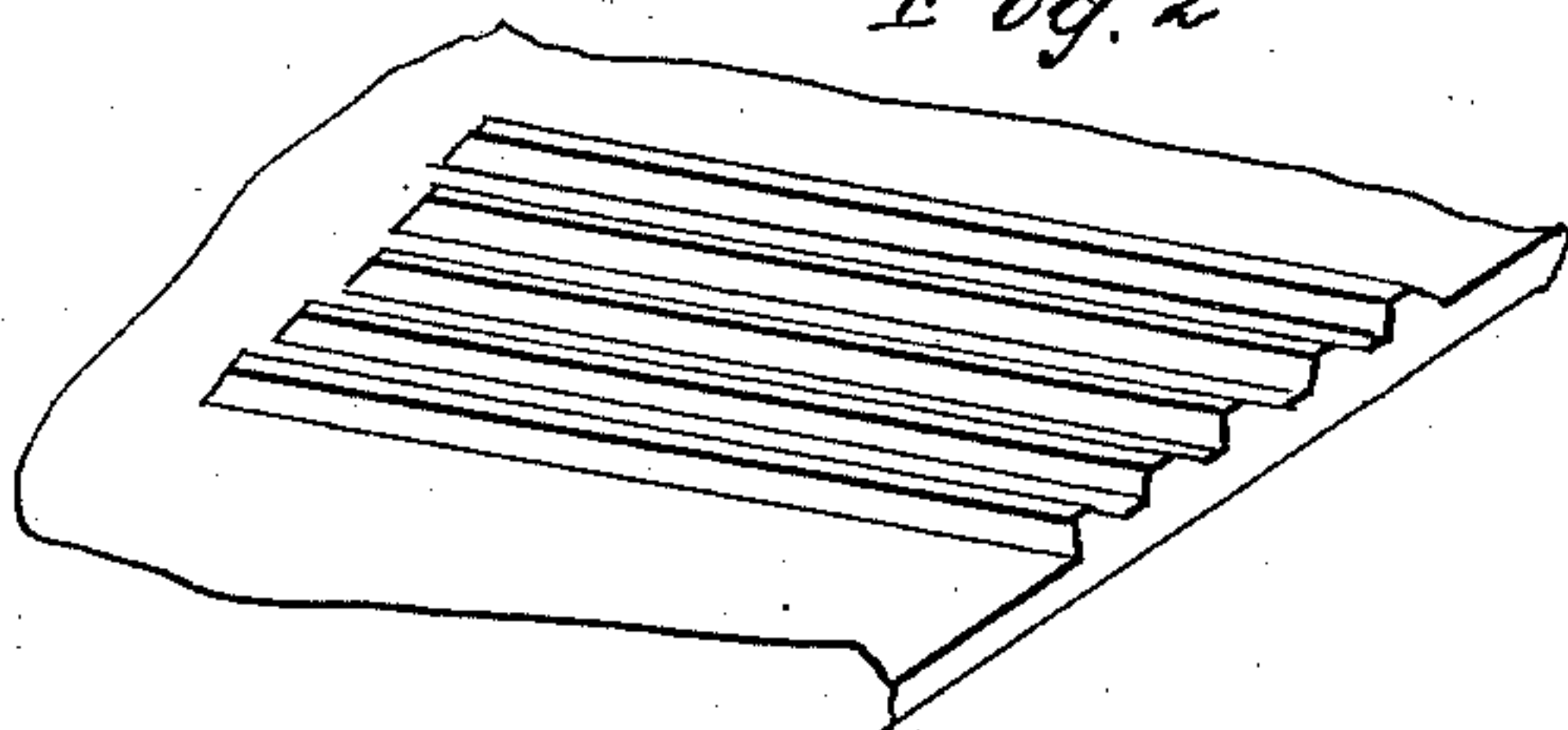


Fig. 4

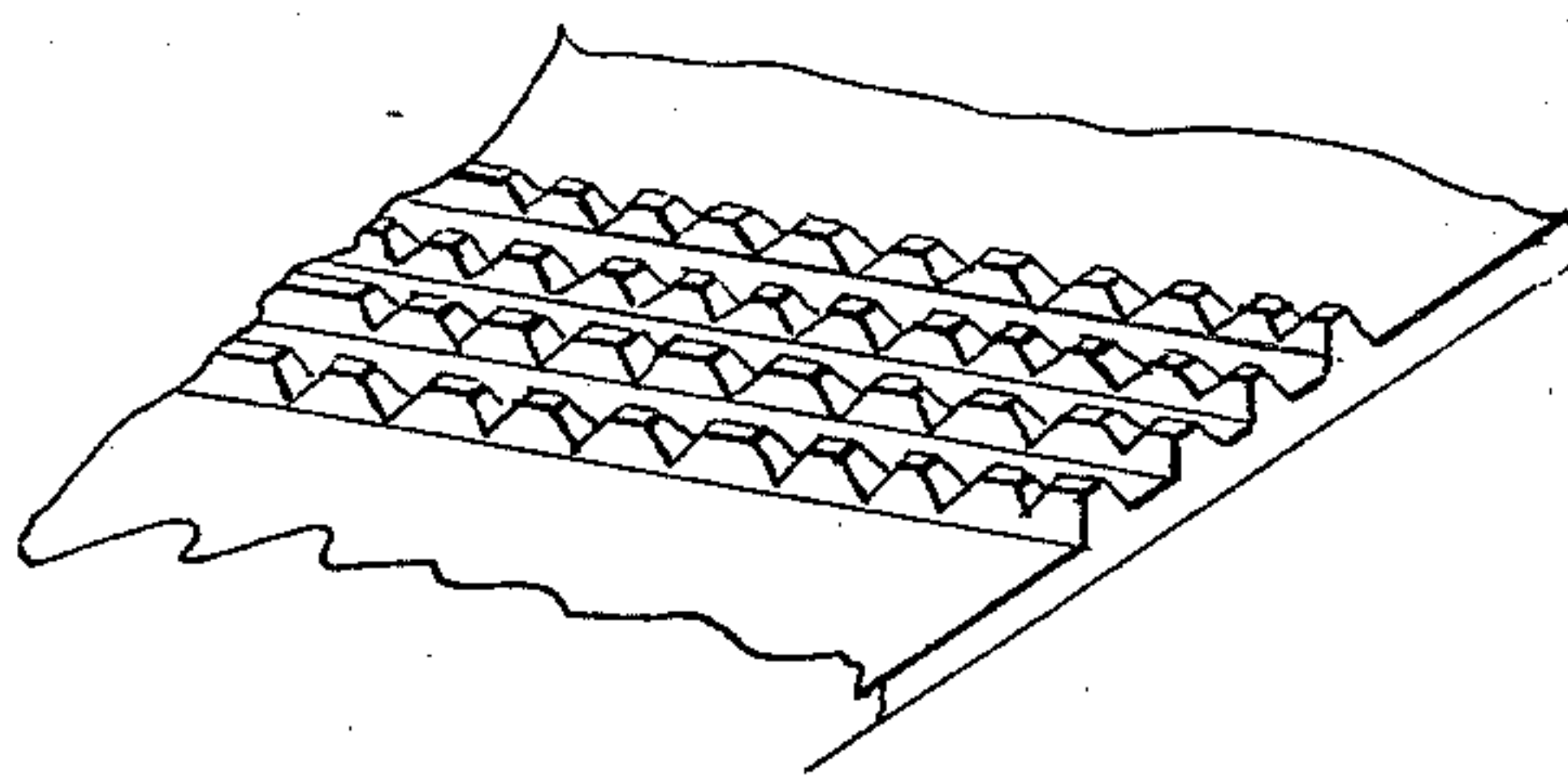


Fig. 1.



UNITED STATES PATENT OFFICE.

EZRA RIPLEY, OF TROY, NEW YORK.

METHOD OF FORMING TEETH UPON CAST-IRON GRINDERS.

Specification of Letters Patent No. 8,293, dated August 12, 1851.

To all whom it may concern:

Be it known that I, EZRA RIPLEY, of the city of Troy, in the county of Rensselaer and State of New York, have invented a new and useful improvement in the manner or mode of constructing or forming teeth or grinders upon cast-iron plates, cones, or other forms, as the case may require; and I do declare that the following is a full and exact description thereof, reference being had to the annexed drawings, which form a part of this specification.

My invention is as follows: I cast upon the plates, cones or other shapes on which I desire to form the teeth projecting ribs or floats of the height required for the teeth or a little more. These ribs or floats are usually made parallel, though if desired, they may converge to or diverge from each other. They are of such a shape that a transverse section of each will (as seen in Figure 1) be a triangle with its upper angle blunted or truncated. This blunting of the upper angle is, as is well known, occasioned by the impossibility of casting an edge of iron perfectly sharp. As a general rule the sharper these ribs or floats are on their edges the better. The width of the base of these ribs or floats must vary according to the size and strength of the teeth; and the closeness and size of the ribs or floats must vary in the same manner. The sections of the ribs might even be a square.

Fig. 2, represents a plane surface with parallel and straight ribs or floats cast on it as above described. Fig. 3 represents a plane surface with parallel and circular ribs or floats cast on it; the concentric rings represented the upper edges of the floats or ribs. These ribs may of course in the same manner be cast on surfaces of any other form, such as cones, cylinders and the like; and the ribs may be cast in curved, spiral, straight, or any other lines, and may have such directions in respect to each other as may be desired. Having cast these ribs or floats, I next break, nick, chip, or crack out such parts of the same as are necessary to leave the teeth or grinders projecting, as may be

seen in Fig. 4; which represents a plane surface with parallel ribs nicked or chipped so as to leave the teeth or grinders. Fig. 5 also shows the manner in which the plate represented in Fig. 3 appears when the teeth are thus formed. The surfaces thus formed are suitable for a great variety of purposes, such as grinding corn, coffee, wheat, &c., for rasping wood and other substances and for various other uses; and the teeth may be sharpened when they become dull.

The advantage of this invention is that hard and sharp teeth can thus be cheaply formed upon cast iron of any desired shape. It is well known by those skilled in casting iron that no sharp edge or sharp tooth can be obtained by casting either in a sand mold or in a solid chill mold. Teeth therefore which are entirely cast, in either of these molds, want that sharpness which is desirable.

My invention is applicable to castings made either in a sand mold or in a solid chill mold; but its great advantage is seen in the latter case. By casting in a solid chill mold the ribs or floats above described, and then nicking or cracking out the teeth or grinders in the manner aforesaid, I produce very hard, durable and sharp teeth or grinders, suitable for any purpose of grinding or rasping. It is true that sharp teeth can be cast by means of Ripley's Union Chill Die; but that method is comparatively expensive for mill work.

I do not claim the casting of ribs or floats, but

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

The mode herein substantially described of making or forming teeth or grinders upon surfaces of cast iron, by nicking, cracking or chipping out parts of ribs or floats cast thereon, so as to leave the teeth or grinders projecting, as above set forth.

Dated July 11, 1851.

EZRA RIPLEY.

Witnesses:

WM. L. LEAMED,
W. S. HEVENOR.