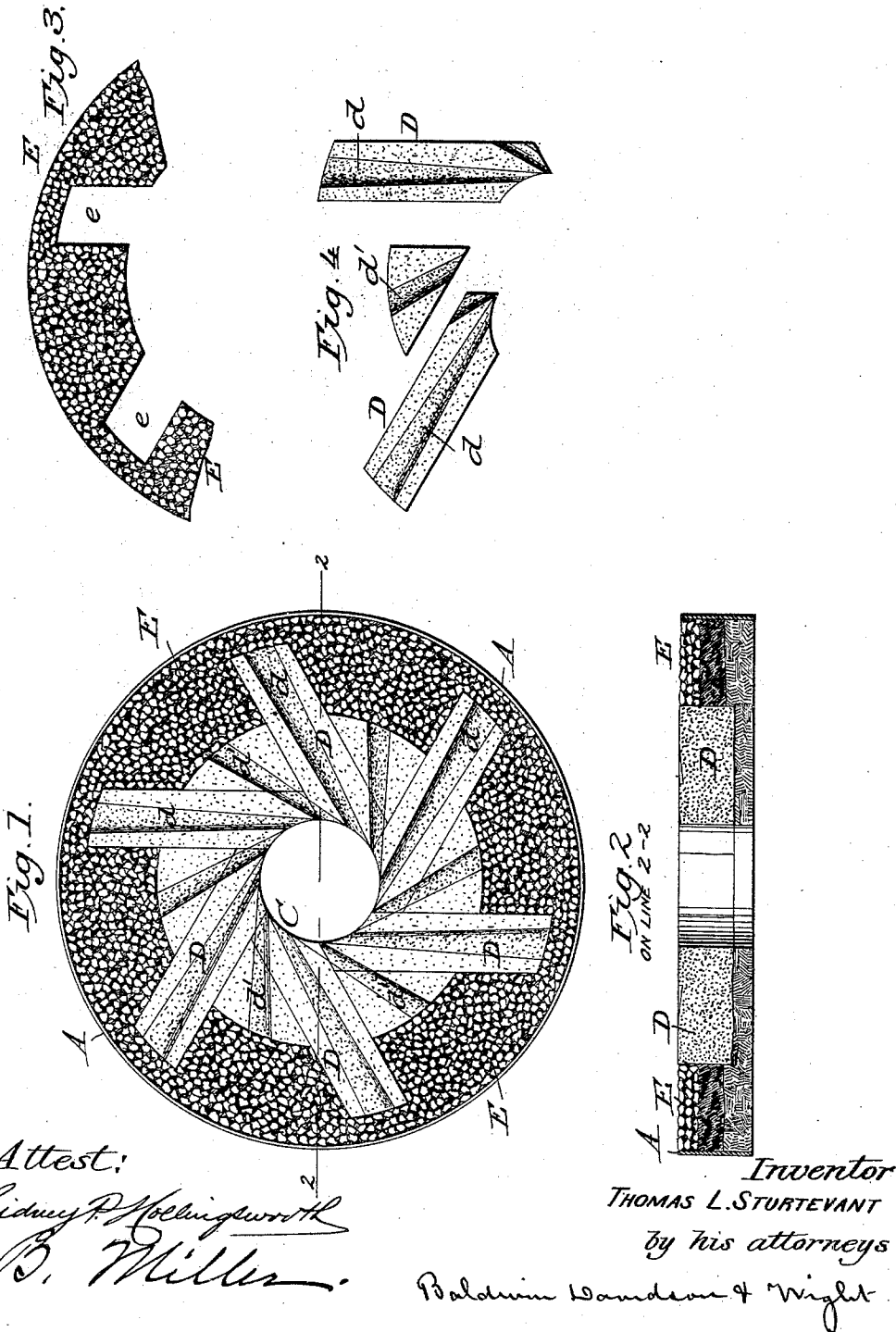


(No Model.)

T. L. STURTEVANT.  
COMPOSITE MILLSTONE.

No. 452,959.

Patented May 26, 1891.



# UNITED STATES PATENT OFFICE.

THOMAS L. STURTEVANT, OF FRAMINGHAM, ASSIGNOR TO THE STURTEVANT  
MILL COMPANY, OF BOSTON, MASSACHUSETTS.

## COMPOSITE MILLSTONE.

SPECIFICATION forming part of Letters Patent No. 452,959, dated May 26, 1891.

Application filed September 29, 1890. Serial No. 366,556. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS L. STURTEVANT, a citizen of the United States, residing at Framingham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Composite Millstones, of which the following is a specification.

My invention relates to composite millstones of the class in which emery is combined with fusible material. In such stones, when of uniform composition, the skirt, traversing a greater distance in the same time than the eye, is necessarily abraded more rapidly, thus requiring frequent cutting down of the eye to preserve the proper cutting-surface.

The objects of my invention are to secure a millstone in which the grinding material will be firmly grasped to insure the wearing of the eye coincidently with that of the skirt, render the stone easy to dress, and to facilitate its construction.

In order to carry out my invention, I construct the skirt of the stone of emery embedded in cast-iron, the eye of stone, such as burr or Esopus stone, which is of course softer than the emery, and insert in the face of the stone furrow-strips of stone or of stone and metal.

The subject-matter claimed is hereinafter specified.

In the accompanying drawings, Figure 1 shows a face view of the stone, and Fig. 2 a transverse section therethrough on the line 2 2 of the preceding figure. Fig. 3 shows a detached portion of the skirt, and Fig. 4 detached views of the furrow-strips with an interposed section of the eye.

Unless otherwise specified, the parts are of usual well-known construction.

A band or ring A incloses the skirt E, composed of emery embedded in cast-iron. The stone is preferably made by placing the ring on a flat metal plate, inclosing a sand core, the counterpart of the eye D filling the space between the core and ring with fragments of emery, pouring cast-iron over it to the re-

quired depth, removing the sand core and supplying its place with material softer than the emery, such as iron, burr, or Esopus stone, and then completing the stone with a suitable backing of cement, metal, or other heavy material. The iron shrinks in cooling and holds the emery firmly embedded in its grasp.

Spurs or projections on the eye of the stone interlock with corresponding recesses in the skirt to lock the two firmly together. Suitable recesses are formed in the face of the stone to receive furrow-strips D. (Shown as arranged tangential to the eye of the stone.) This eye is composed of burr or Esopus stone. The furrow-strips D are of similar material. The furrow-strips D have grooves or furrows *d* formed in them, which are preferably wider at their outer than at their inner ends. Shorter furrows *d'* are formed in the face of the eye between the furrow-strips. The stone, being softer than the emery, abrades more rapidly, and the grinding-face of the stone is thus kept correctly dressed. The furrow-strips D may be secured to the stone in well-known ways to admit of their ready removal and replacement.

The method of constructing the stone of emery embedded in cast-iron constitutes the subject-matter of another application, Serial No. 366,554, filed simultaneously herewith.

Another simultaneously-filed application, Serial No. 366,555, dated November 24, 1890, describes and claims a millstone having a skirt composed of emery embedded in cast-iron, an eye of softer material, an eye and skirt composed of sections, and metal furrow-strips. I do not therefore broadly claim here in anything claimed in the above-named applications; but

What I claim herein as new and as of my own invention is—

1. A millstone constructed, substantially as hereinbefore set forth, with an eye of stone inclosed in a skirt composed of small irregular lumps of emery embedded in cast-iron.

2. A millstone constructed, substantially as

hereinbefore set forth, with a skirt of emery fragments embedded in cast-iron, with stone furrow-strips embedded therein.

5 3. The combination, substantially as hereinbefore set forth, in a millstone, of a skirt of emery embedded in a binding material with furrow-strips of stone radiating from the eye, extending into the skirt, and having grooves

or furrows gradually increasing in width from the center outwardly.

In testimony whereof I have hereunto subscribed my name.

THOMAS L. STURTEVANT.

Witnesses:

W. H. ELLIS,  
F. E. CLEARY.