(No Model.)

J. HAUSE.

MACHINE FOR CRUSHING AND GRINDING LIMESTONE ROCK, &c.

No. 256,678. Patented Apr. 18, 1882.

Fig. 1.

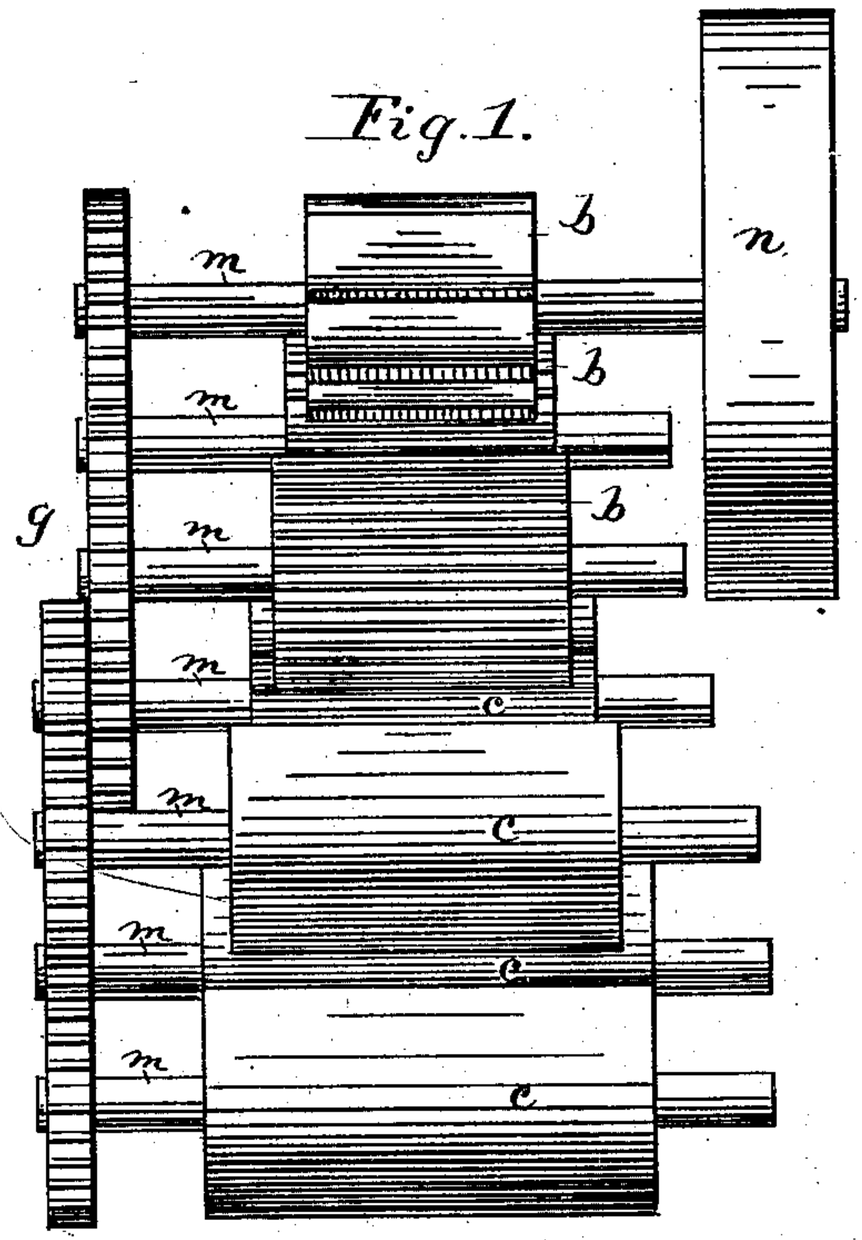


Fig. 5.

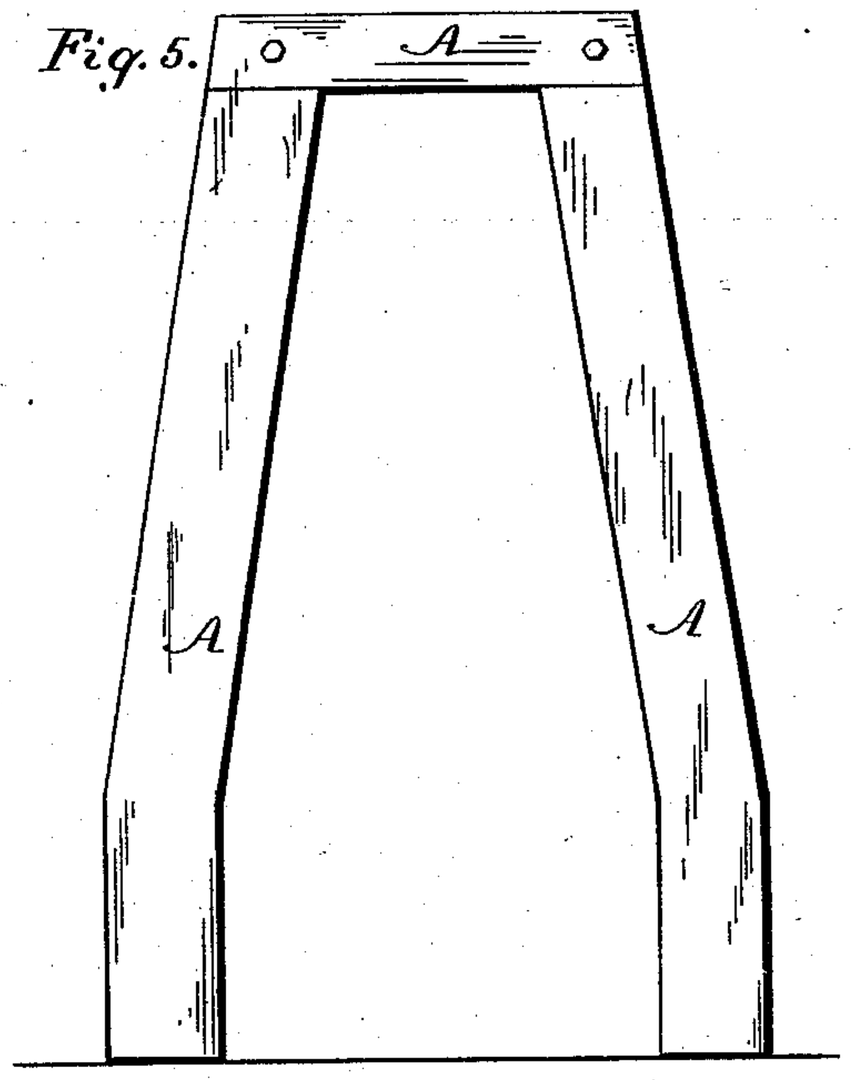


Fig. 4.

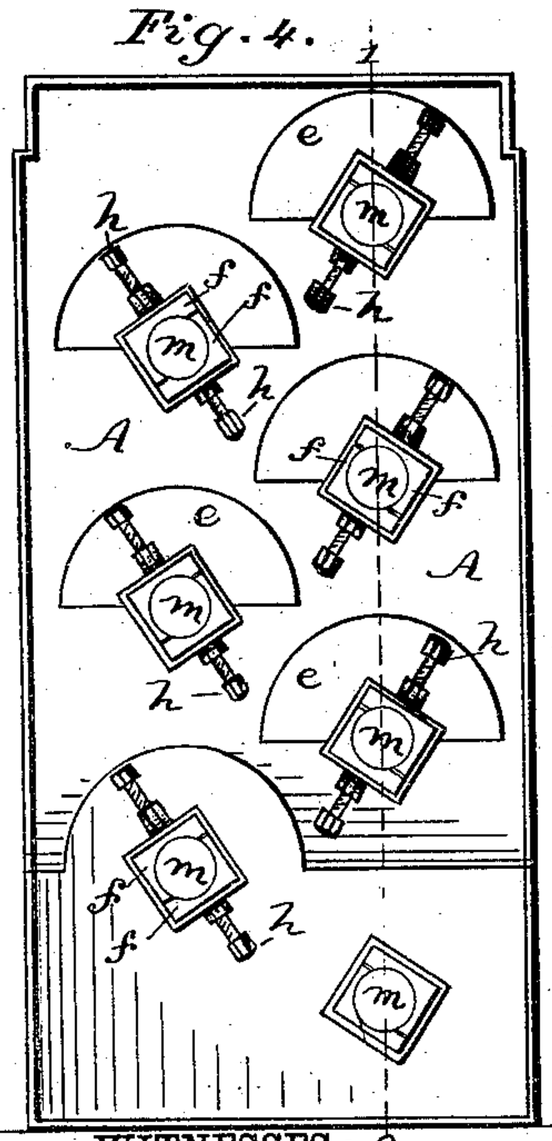


Fig. 2.

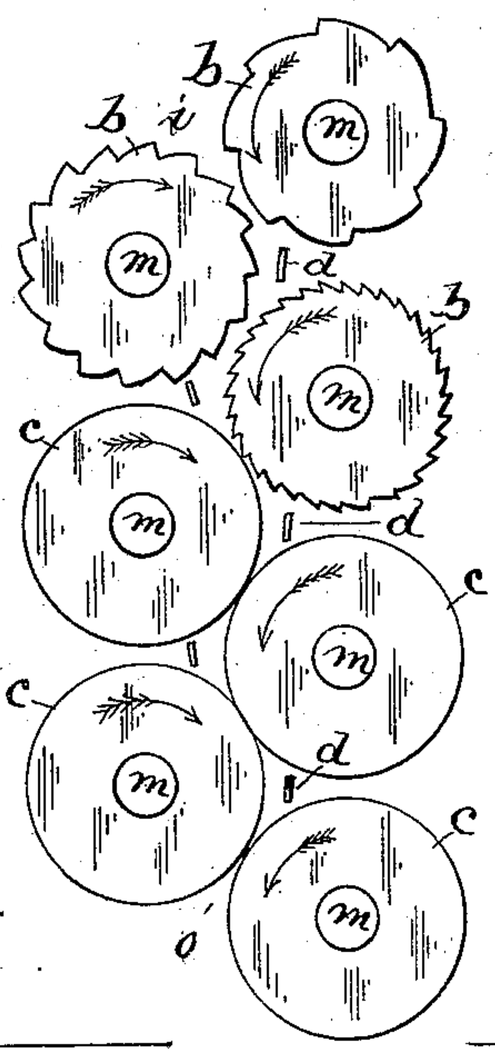
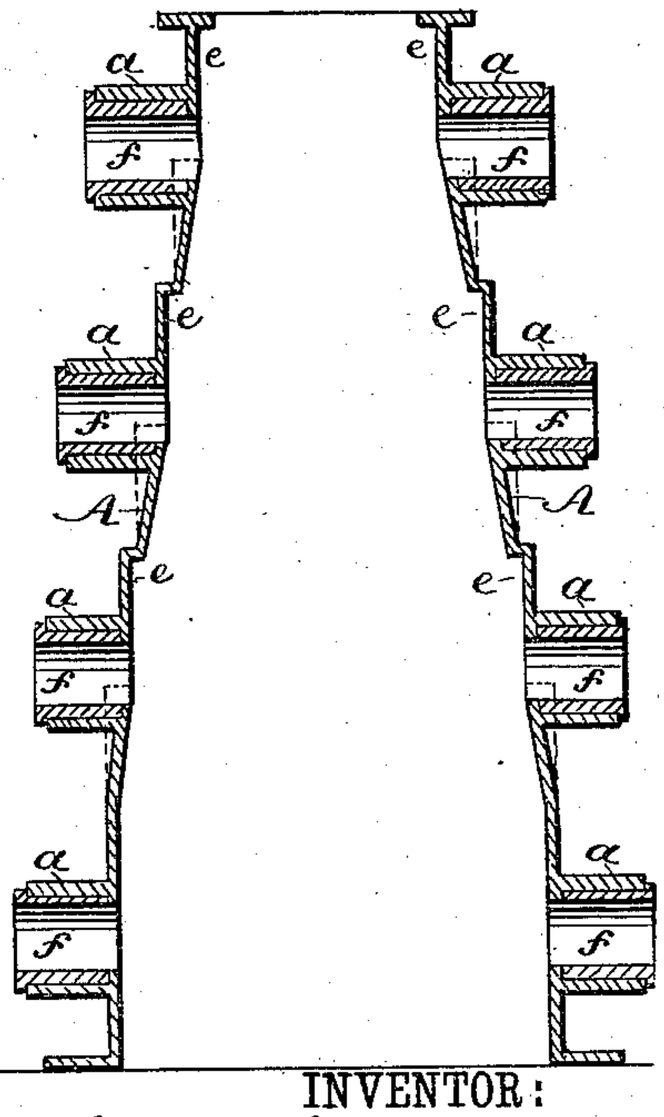


Fig. 3.



WITNESSES: 2

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UNITED STATES PATENT OFFICE.

JACOB HAUSE, OF CHEWSVILLE, MARYLAND.

MACHINE FOR CRUSHING AND GRINDING LIMESTONE-ROCK, &c.

SPECIFICATION forming part of Letters Patent No. 256,672, dated April 18, 1882.

Application filed January 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, JACOB HAUSE, of Chewsville, in the county of Washington and State of Maryland, have invented a new and useful Machine for Grinding and Pulverizing Limestone-Rock and other Hard Substances, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings and letters of reference marked thereon, in which—

Figure 1 is a side elevation of the machine without the frame. Fig. 2 is an end view of the rollers. Fig. 3 is a vertical section of the frame in the line 1 2 of Fig. 4. Fig. 4 is an end elevation of the frame, and Fig. 5 is a side elevation of the frame.

Similar letters indicate like parts in all the figures.

My invention relates to improvements in machine for grinding and pulverizing limestone-rock and other hard substances; and it consists in the peculiar construction and arrangement of the parts, as hereinafter more fully set forth, and pointed out in the claims.

In the accompanying drawings, A A represent the inclined frame of the machine. The outer faces of the ends of the frame A have bearings *a a* for the shafts of the rolls *b c*, which bearings are made integral with the ends of the frame, and each bearing is provided interiorly with bearing-boxes made in two parts, *f*, adapted to be adjusted by the screws *h* in the usual manner.

b b b represent grooved or roughened rolls, fast on their shafts *m*, and are employed for the purpose of crushing the larger lumps of limestone or other hard substance; and *c c c* are cylindrical rolls with smooth surfaces, intended to pulverize the material after the large lumps have been crushed. The rolls *b c* may be of the same or different diameters. The axes or shafts *m* of all the rolls are horizontal, and the axes of two of the rolls *b b* on the right-hand side of the machine and the axes of two of the pulverizing-rolls *c c* on the same side of the machine are in the same vertical plane, and the axis of one of the crushing-rolls *b* and the axes of the pulverizing-rolls on the left side of the machine are also in the same vertical plane. The axis of the top roll *b* on the left side of the machine is below the axis of the top roll on the right side, and each roll on the left side of the machine is arranged so as to work against two rolls on the opposite side of the machine, so as to increase the crushing and pulverizing effect of the rolls.

d d represent guides for the limestone-rock fed into the machine at *i* and discharged at *o*. The guides *d d* are secured to the ends of the inclined frame A, and serve to guide the material as it passes between the crushing and pulverizing rolls and thence out of the machine.

e e represent recesses formed in the inner faces of the ends of the frame A. The recesses *e* receive the ends of the rolls and lie above them, their function being to prevent the material being crushed and pulverized from passing over the ends of the rolls.

n represents a band-pulley secured to the shaft *m* on the upper crushing-roll, and *g g* represent cog-gears secured to the opposite ends of the shafts *m* and meshing with each other, whereby the rolls are revolved in the direction of the arrows in Fig. 2.

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

1. The combination, with the grooved crushing-rolls *b b b* and smooth pulverizing-rolls *c c c c*, so arranged that each roll on one side of the machine operates against two rolls on the opposite side, of guides *d*, arranged as set forth, substantially as described, and for the purpose set forth.

2. The combination, with the crushing and pulverizing rolls *b c*, of the inclined frame A A, provided with recesses *e e* in its inner faces, substantially as described, and for the purpose set forth.

JACOB HAUSE.

Witnesses:
WM. H. STOTLER,
HENRY J. POFFENBERGER.