

C. Alford,
Pug Mill,
No 9,226, *Patented Aug 31, 1852.*

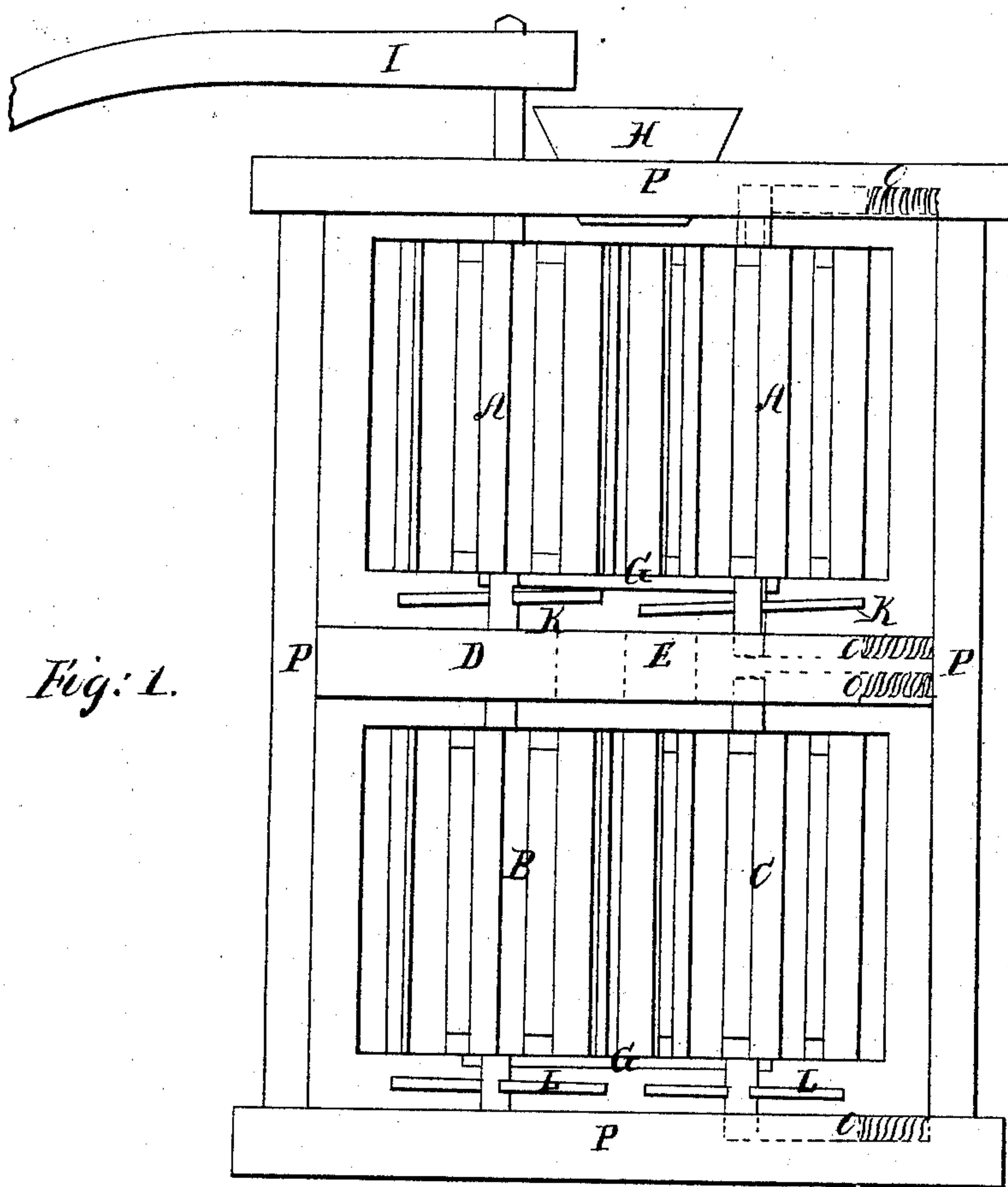


Fig: 1.

Fig: 3.

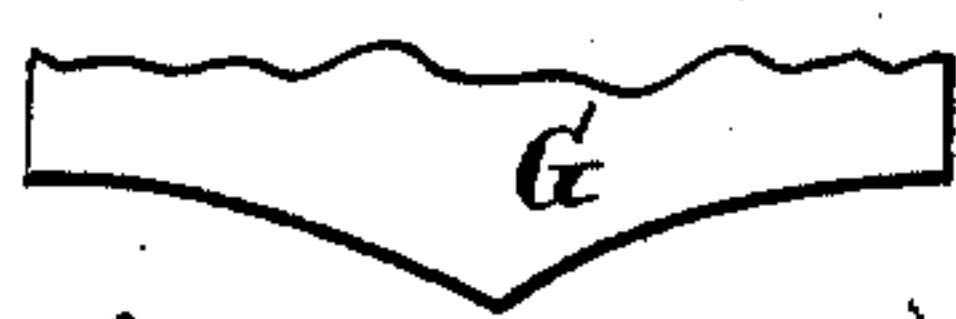
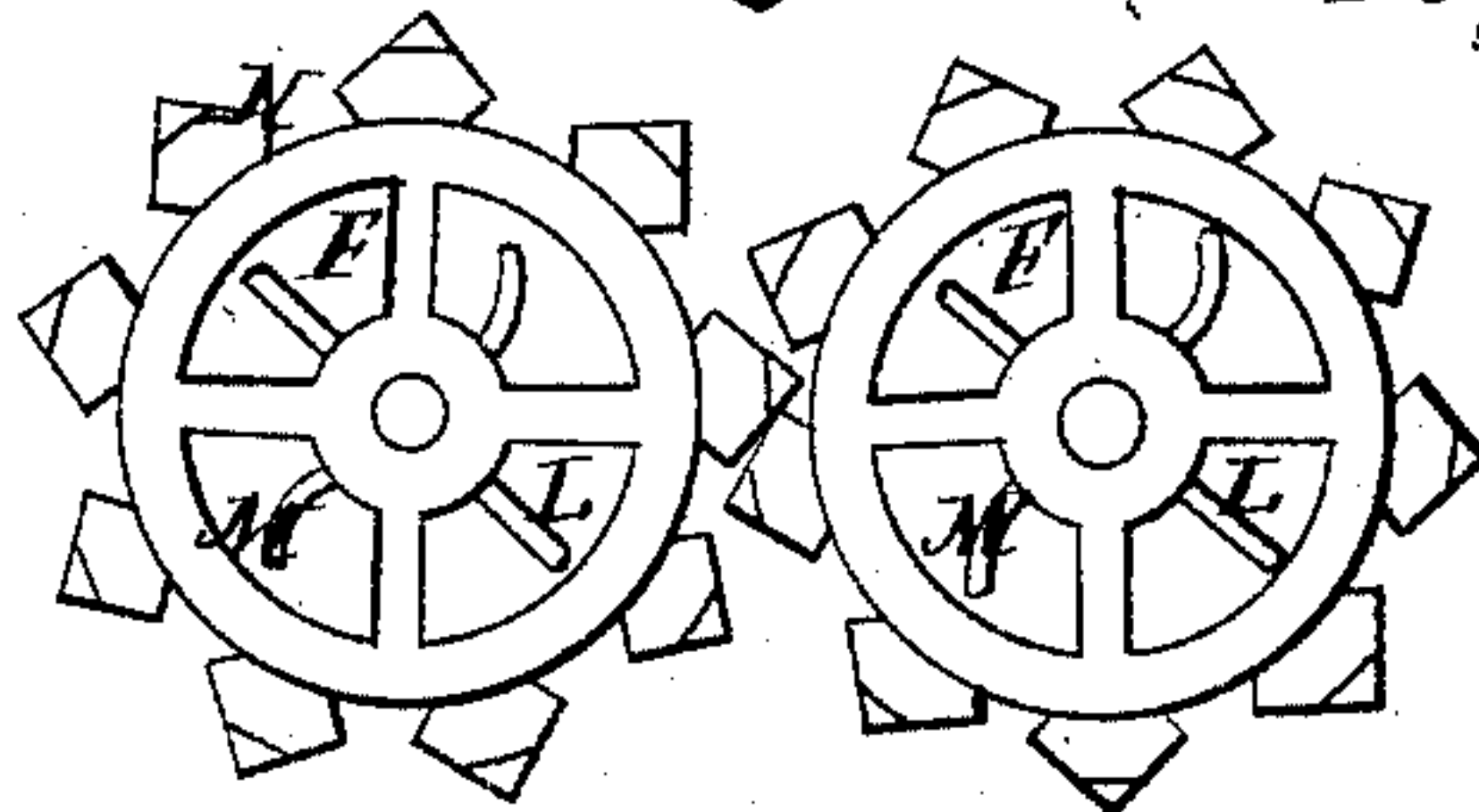


Fig: 2.



UNITED STATES PATENT OFFICE.

CLARK ALVORD, OF GEDDES, NEW YORK.

MILL FOR MASHING VEGETABLES AND MIXING CLAY.

Specification of Letters Patent No. 9,226, dated August 31, 1852.

To all whom it may concern:

Be it known that I, CLARK ALVORD, of the town of Geddes, in the county of Onondaga and State of New York, have invented a new and useful machine for mashing vegetables and grinding and mixing clay, mortar, and other like substances, which I call a "grated hollow-cylinder mill;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, in which—

Figure 1 is a descriptive view of a mill of four cylinders placed in the frame or box in which they operate (one side of the frame or box being removed), Fig. 2 a sectional view of the lower end of a pair of cylinders, showing how the grates are placed upon the periphery of the wheels forming the ends of the cylinders, and the manner in which the grates of one cylinder mesh between the grates of the opposite cylinder, so that by turning one the other is caused to turn in an opposite direction.

A mill may be composed of two, four, or any even number of cylinders, one pair placed above the other in a vertical position, so that the material to be washed, ground or mixed may be operated upon as many times as there are pairs of cylinders in the mill.

In Fig. 1, P, P, P, P represent the frame; i, the lever by which the shaft upon which the cylinders A, B, are fastened is turned; H, the hopper in which the material to be operated upon is placed—said hopper being upon the top of the frame on the side opposite to the side removed, so that the material to be operated upon is presented to the periphery of the cylinders on the side of said cylinders turning toward each other, said lever being turned to the right.

A, C, represent cylinders placed in contact with the cylinders A, B, and meshing into them, and moved by them, A, A, having a like number of grates, of the same size and placed a like distance apart. B, C, also correspond in the number of grates, which are smaller and placed nearer together than the grates on the cylinders A, A, for which reason A and C are placed on separate shafts, at each end of which the springs O, O, O, O, are placed for the purpose of keeping them in contact with their correspond-

ing cylinders and allow stones to pass through without injuring the mill.

D represents the floor placed between the pairs of cylinders upon which the material falls from the interior of said cylinders, it having been forced from the periphery of the cylinders by and through the grates to the inside, by which operation the mashing, grinding and mixing is performed. E represents the hole in said floor on the same side of the frame and directly under the hopper H, through which the material passes to the cylinders below, when swept around by arms K, K.

L, L, represent arms for the purpose of mixing the material if need be after passing through the mill.

M, M, in Fig. 2 represent arms working below and on the same shafts of L, L, and bent for the purpose of turning the material when through the mill out of the box in which the mill is inclosed.

G, Fig. 3, represents in section the floor so formed as to fit closely to the periphery of the cylinders at the bottom of each pair, and between them, directly under the hopper H, for the purpose of holding the material in such a position that as the cylinders turn in toward each other it is taken hold of by the grates and passed through to the inside of the cylinders, from which it passes by its own weight to the floors below. The position of said floor G is shown in Fig. 1 by G, G.

N, Fig. 2, represents the end of a grate.

In the construction of a cylinder, I use two wheels of like diameter, which form the heads of the cylinders. The one forming the head, which is down when the cylinder is placed in a vertical position in the mill, must be open, so as to allow the material to fall out. The upper end or head may be open or not. These wheels may be a foot or more in diameter, with a rim of one or more inches wide. The wheels I fasten together by small bars an inch or more or less square and a foot or more or less than a foot long, depending upon the work to be done. These bars I place around the wheels at equal distances apart, the ends resting on the rims of said wheels, to which rims I fasten them by bolts, rivets or any other substantial means. The distance apart depends upon the size and form of the bars or grates used, the distance apart to be less than the diameter

of the bars used, of whatever form, so that the grates in meshing into or between each other in operating the mill will not pass entirely through, but press against each other, as shown in Fig. 2 of the annexed drawing.

I use cast or wrought iron or both in the construction of a cylinder, (or any other material of sufficient strength.)

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

The use of grated hollow cylinders op-

erating together so that the grates of one cylinder mesh between the grates of another cylinder of like construction, thereby forcing the material operated upon from the periphery of the cylinder or cylinders to the inside of such cylinder or cylinders, thereby mashing, grinding and mixing the same as above set forth.

CLARK ALVORD.

Witnesses:

MONTGOMERY MERRICK,
H. W. LEE.