2 Sheets—Sheet 1.

H. AIKEN.

Stone Separator.

No. 98,329. Patented Dec. 28, 1869.

Fig. 2.

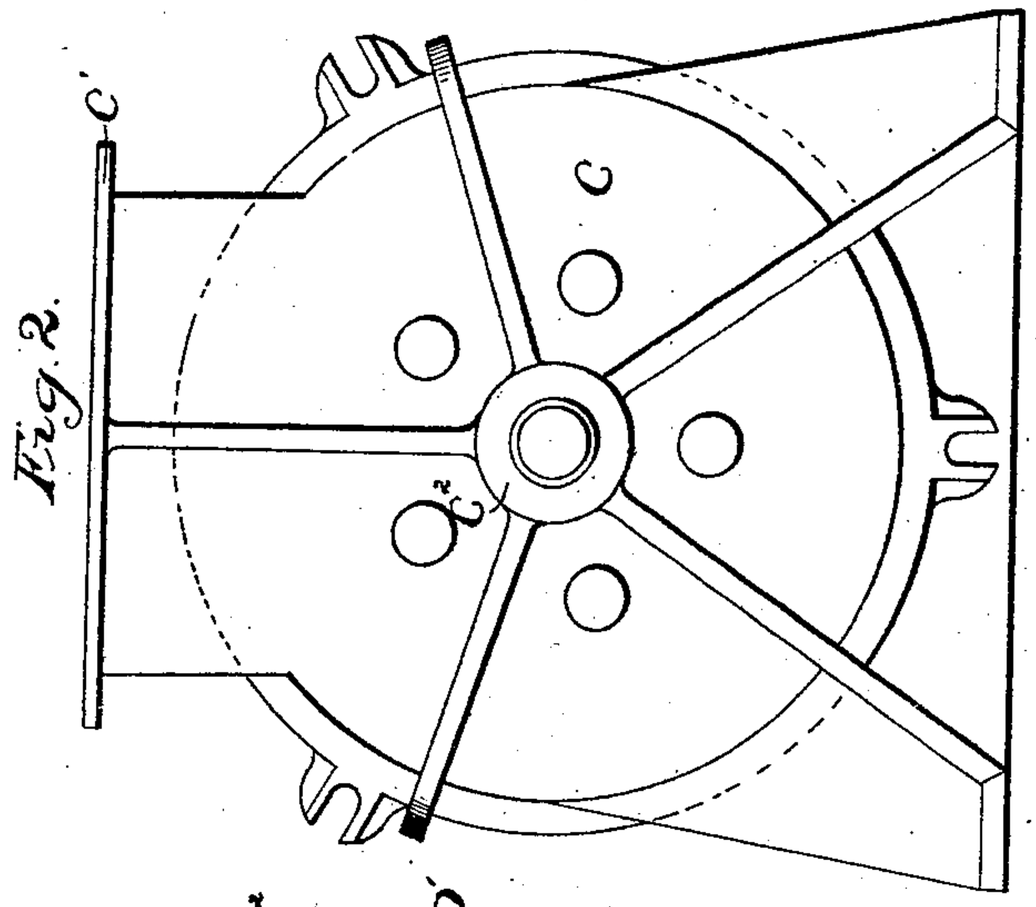
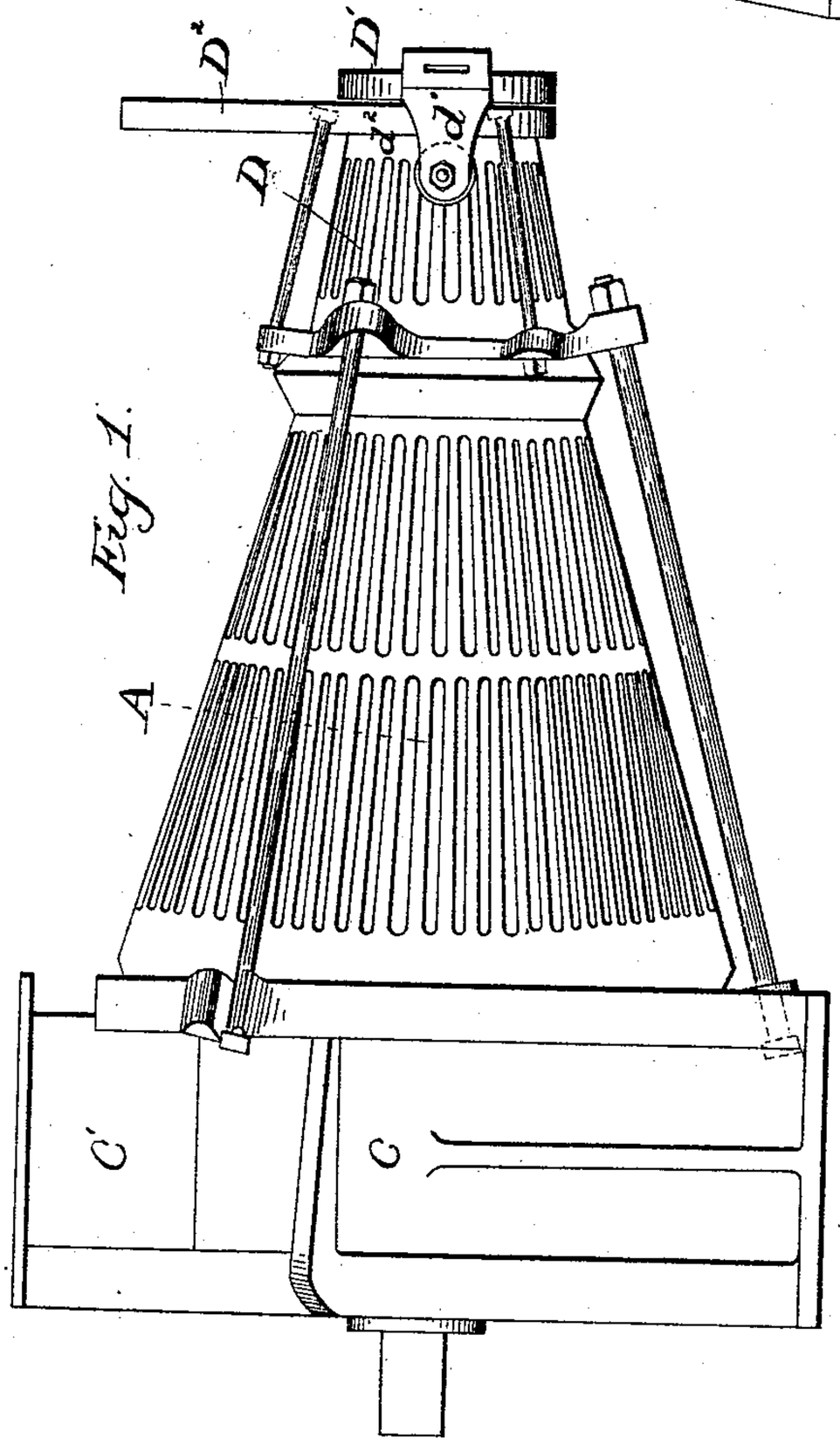


Fig. 1.



Witnesses:

S. H. Sprague,
Edw. J. Eils

Henry Aiken
D. P. Holloway & Co
Atty's

2 Sheets—Sheet 2.

H. AIKEN.

Stone Separator.

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Fig. 4.

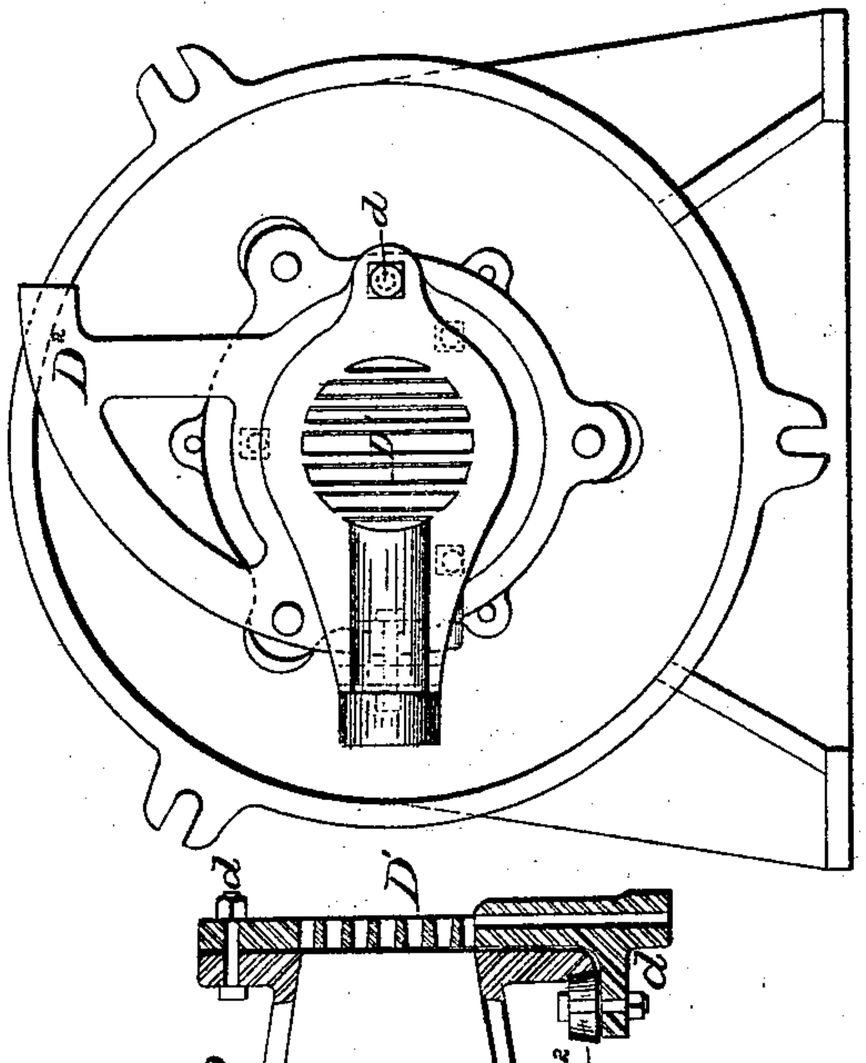

Fig. 3.

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Inventor.

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United States Patent Office.

HENRY AIKEN, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 98,329, *dated December* 28. 1869.

IMPROVEMENT IN STONE-SEPARATORS.

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, HENRY AIKEN, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Stone-Separator; and I do hereby declare that the following is a full, clear and exact descripion thereof, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation.

Figure 2 is a front elevation.

Figure 3 is an axial horizontal section.

Figure 4 is an end elevation.

The same letters are used in all the figures to designate identical parts.

My invention relates to a machine to be used in the preparation of clay for the manufacture of bricks, tiles, pipes, and earthenware, and has for its object the separation of stones and other solid bodies from the crude clay, and effecting a perfect mixture and pulverization of such clay. To this end,

My invention consists in a tapering cylinder, with longitudinal openings, or slots, in its entire surface, and a tapering shaft, with screw-formed beaters, revolving within said cylinder, whereby the crude clay fed into the larger end of the same, through a suitable hopper, is pulverized and mixed, and all the clay forced through the slots, while the stones, and other solid bodies, are gradually forced to the rear or smaller end of the cylinder, from which they are discharged into another short cylinder attached to and forming an elongation of the larger one.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The tapering cylinder A is to be secured at its larger end to the open side of the stand C, so as to be in a nearly horizontal position. It may be made of cast-iron, or other suitable material, and is to be provided with slots in its periphery, as shown. Such slots must be made sufficiently narrow to prevent stones, or other solid bodies which are found in crude clay, from passing through them.

B represents a tapering hollow shaft secured upon the spindle B^1, which latter has its bearings in an elongated hub formed upon the side of the stand, concentric with the cylinder A.

The spindle B^1 projects through such hub, and is provided on its outer end with a crank, or pulley, by which to revolve it.

Upon the periphery of the hollow shaft B, which extends from end to end of the cylinder A, is secured spirally, a number of screw-formed beaters, B^2, projecting from such shaft to near the wall of the cylinder, as shown.

C represents the stand, it being a flat cylindrical box, provided with legs for its support, and terminating on top in a hopper, C^1.

Upon one side of this stand is formed, centrally, a hub, C^2, through which a hole is bored to receive and support the shaft B^1. The other side is open up to the hopper, and an annular flange may be formed around such opening, to which to secure the cylinder, or the latter may be held to such stand in the manner shown in figs. 1 and 3, so that, in case the screw becomes choked, the cylinder can be readily removed for the purpose of cleaning it, it only being necessary to slip the bolts out of the slotted lugs on the stand.

D is another short tapering cylinder, slotted like cylinder A, to the smaller end of which it is secured in any convenient manner, and of which it forms an elongation.

Its outer end is closed by a gate, D^1, pivoted thereto at a point, *d*. Opposite this point, the gate is provided with a short arm extending outward, and having a lug, d^1, formed upon it, to receive a stud, upon which a friction-roller, d^2, is arranged.

D^2 is a guide, formed upon this end of the cylinder D, along which the friction-roller travels on opening or closing the gate.

A socket is formed in the arm of the gate, in which to insert a lever, or bar, for operating the same.

The operation of this machine may be described as follows:

The parts having been constructed and arranged as described, a quantity of crude clay is emptied into the hopper, and the hollow shaft, with its screw-formed beaters, put in motion, it being revolved in such direction that the spirally-arranged beaters gradually force the mass to the smaller end of the cylinder. The mass will be thoroughly mixed and pulverized, and the beaters will force it violently against the wall of the cylinder, through the slots of which the fine clay will be discharged, while stones, and other solid bodies, being too large to pass through its openings, will be carried to its rear end and discharged into the smaller cylinder D, which is emptied, from time to time, through the gate D^1.

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

1. Separating stones from clay, by forcing the latter through elongated slots in a tapering cylinder, and discharging the former into a suitable receptacle at the small end of such cylinder, substantially in the manner and for the purpose specified.

2. The combination of the tapering slotted cylinder A, shaft B, with screw-formed beaters B^2, and stand C with hopper C^1, all arranged to operate substantially as and for the purpose set forth.

3. In combination with the elements of the preceding clause, the tapering cylinder D, substantially as and for the purpose set forth.

4. The combination of the tapering slotted cylinder D with the slotted pivoted gate D^1, friction-roller d^2, and guide D^2, when said parts are constructed and arranged as herein set forth.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

HENRY AIKEN.

Witnesses:

B. EDW. J. EILS,

F. H. SPRAGUE.