

No. 669,424.

Patented Mar. 5, 1901.

A. H. MURRAY.
TILE MACHINE.

(Application filed June 27, 1900.)

(No Model.)

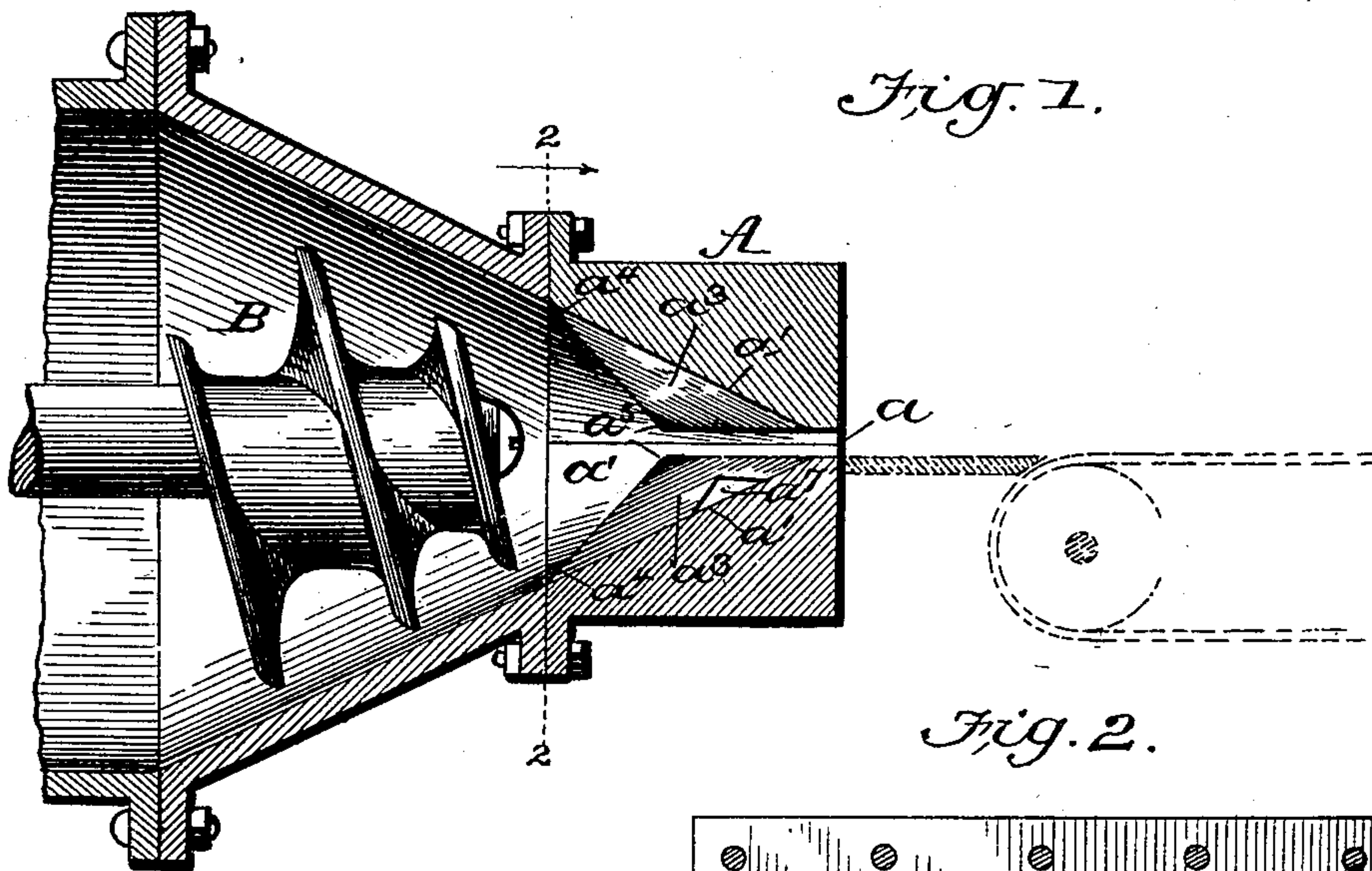


Fig. 1.

Fig. 2.

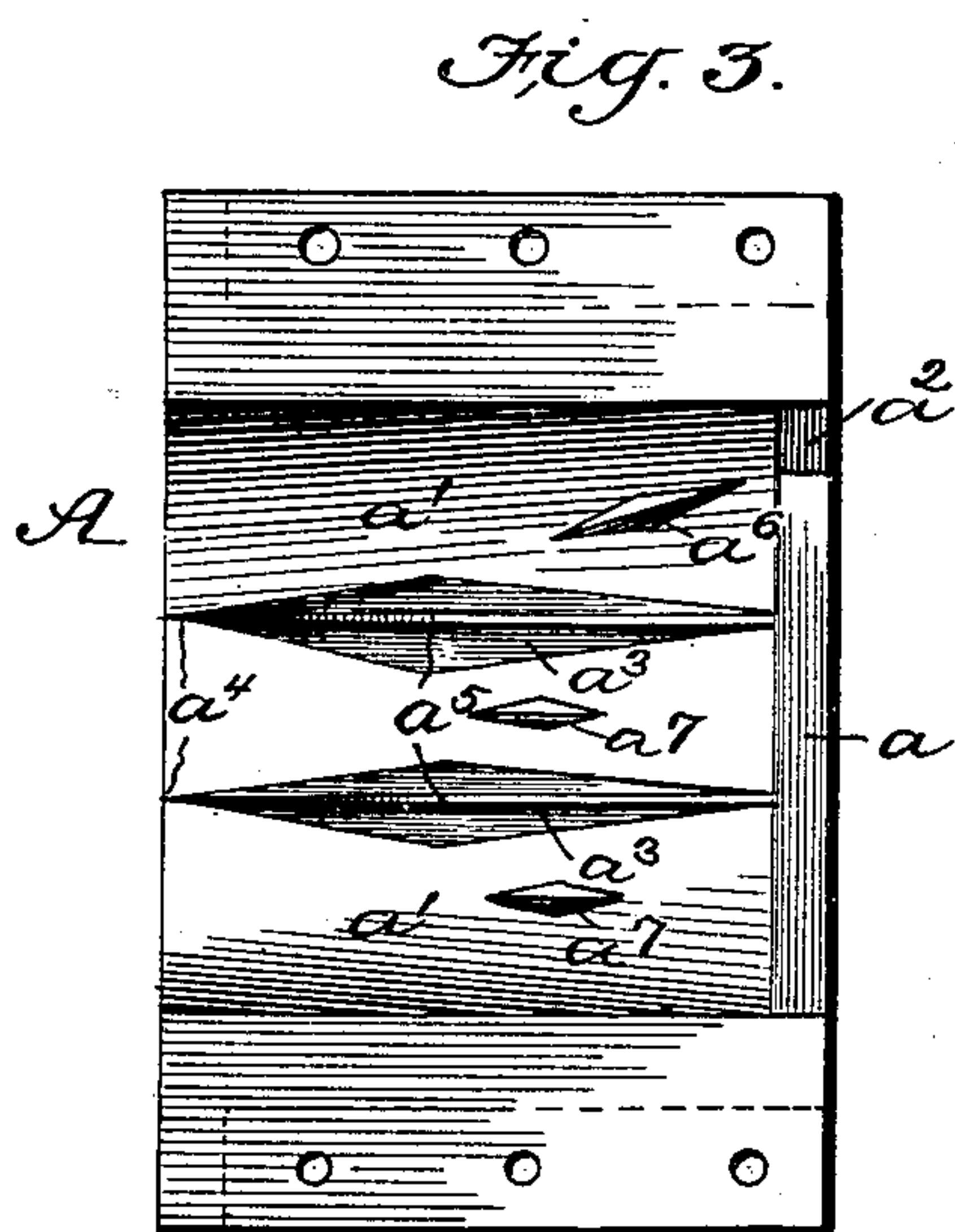


Fig. 3.

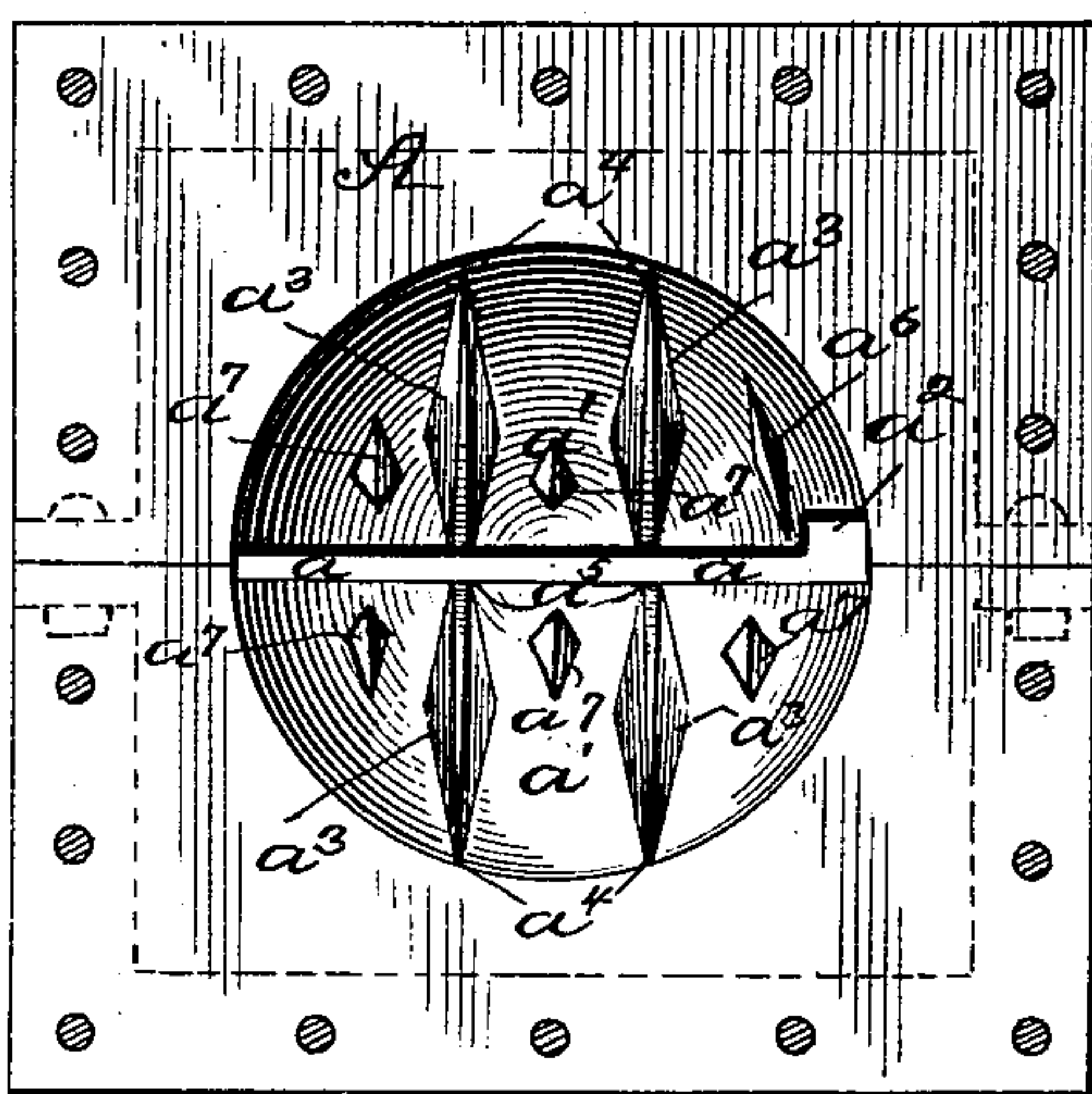
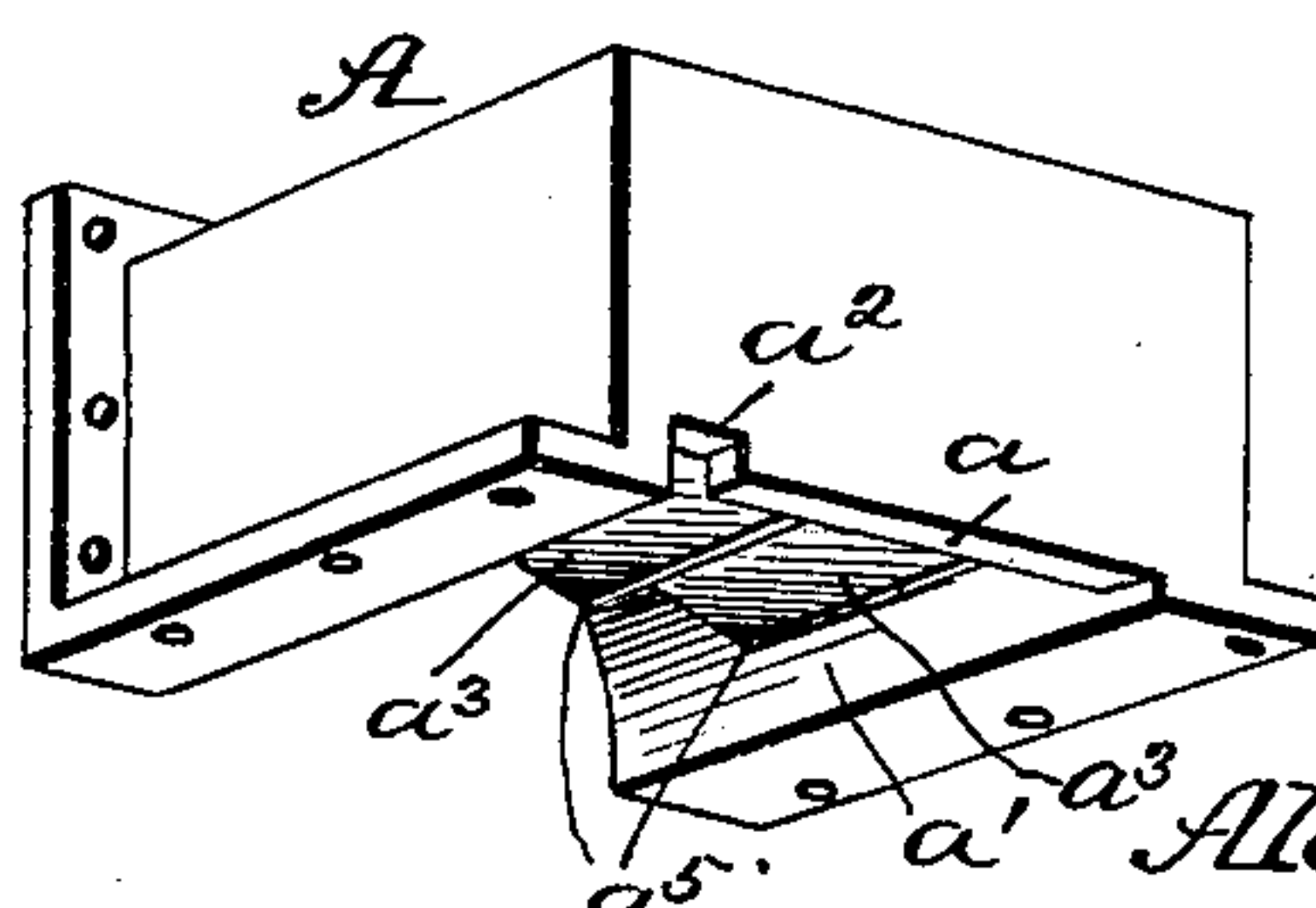


Fig. 4.



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ALEXANDER H. MURRAY, OF HUNTINGTON, WEST VIRGINIA, ASSIGNOR
TO CLAUDE R. MURRAY, OF SAME PLACE.

TILE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 669,424, dated March 5, 1901.

Application filed June 27, 1900. Serial No. 21,774. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER H. MURRAY, residing at Huntington, in the county of Cabell and State of West Virginia, have made certain new and useful Improvements in Tile-Machines, of which the following is a specification.

My invention is an improvement in the die or mold of machines for forming clay tiles or shingles. The clay is forced out of the dies of such machines in the form of a ribbon or thin strip, which is then divided transversely to form rectangular tiles of the desired length. Much difficulty has been experienced in the formation of fissures or cracks in the side edges of the tiles by reason of the fact that the clay feeds faster at the center than at the sides of the mouth of the die when discharging therefrom. Many attempts have been made to provide effective means for avoiding this result. I have devised an improved means for the purpose whereby the feed of the clay is regulated with minimum friction or resistance to its discharge from the die.

In the accompanying drawings, Figure 1 is a longitudinal section of a portion of a tile-machine with my invention applied. Fig. 2 is a vertical cross-section on line 2 2 of Fig. 1. Fig. 3 is an inner side view of one portion or half of my improved tile die or mold. Fig. 4 is a perspective view of the same.

A indicates the die or mold for forming a clay strip which is to be subsequently divided in the usual way to form tiles or shingles. The die is constructed in two like parts, as usual. The clay is forced through such die A by means of a rotatable screw B or any other preferred device.

The mouth or discharge-orifice a of the die A has the usual rectangular and oblong form, and the throat a' is tapered or converged thereto, as shown. The said mouth a has an offset or lateral extension a^2 at one end to form a flange or lip on the clay strip, as required for a well-known type of roofing-tiles.

In the central or middle portion of the die-throat a' and on each side of the same and in proximity to the mouth a I provide two or more retarders a^3 , which have the following peculiarities of form and arrangement: They are placed parallel to the axis of the die A

and nearer each other than the sides of the throat. The wider spaces are provided on the sides for flow of the clay, and it is consequently retarded more at the center than at the edges by reason of the position of the devices a^3 , as well as their projection toward the center. The retarders are triangular in form and placed in the inclined sides of the throat—that is to say, they incline inward, Figs. 1 and 3, from a^4 to the apex a^5 , while from the latter to the mouth a their edges are parallel to the axis of the die, besides being in the same plane with the sides of the mouth a . Thus, as shown in Figs. 1 and 2, there is a clear space between the parallel edges of the opposite retarders, which space is equal to the width of the mouth and the thickness of the clay strip to be formed. The several retarders are tapered from the base to their apexes and from the center of the base toward each end, so that they may enter the clay easily and allow the clefts or channels formed by them to close perfectly before or when it reaches the mouth of the die. Practical test has demonstrated that with devices so constructed and arranged the feed or progress of the clay through the die is so regulated that the central portion is retarded sufficiently to prevent the formation of fissures or cracks in the edges of the clay strip, as usual when the rapidity of movement of the clay is greatest at the center of the die. In other words, the form and relative arrangement of the devices a^3 are such that, while a free space is provided for them for the clay to pass unobstructed to the mouth a , yet the feed of the same toward that central space is retarded, so that the rapidity of feed is practically equalized at all points.

The side extensions of the die-mouth a are dispensed with when no lip or flange is required on the tiles; but when it is employed I provide adjacently a small retarder a^6 , which is similar in form to those already described and arranged in proximity to the said extension and at a slight angle to the adjacent side of the throat a' , whereby it serves to hinder the clay passing too rapidly into the extension, and thus equalizes the feed as required.

Clays are well known to differ considerably in plasticity and adhesiveness or tenacity, and hence do not feed alike through the tile-

die. I may therefore employ small retard-
ers a^7 in connection with the larger ones a^3 ,
before described, the same being arranged
between the latter and also between them
5 and the sides of the throat of the die, as shown.

What I claim is—

1. An improved tile die or mold having two
or more retarders on opposite sides, the two
sets thereof having straight edges adjacent to
10 the mouth and the same being separated from
each other and said edges being parallel, sub-
stantially as shown and described.

2. An improved tile-die having a tapered
throat, and two sets of triangular retarders
15 arranged on opposite sides of the throat, the
same being inclined to the axis of the die from
their inner ends to their apexes, and parallel
to said axis from their apexes to the mouth,
and also separated by a space equal to the
20 width of the die-mouth, as shown and de-
scribed.

3. An improved tile-die having a tapered
throat and two sets of retarders arranged
therein on opposite sides, the same being in-
25 clined on their inner edges and parallel to the

axis of the die on their outer edges which are
separated by a space equal to the width of the
mouth, as shown and described.

4. An improved tile-die having a tapered
throat provided with two retarding devices 30
arranged parallel on the side of the throat and
at a greater distance from the sides of the lat-
ter than from each other, as shown and de-
scribed.

5. The improved tile-die having a tapered 35
throat and a mouth provided with a lateral
extension at one end, and a retarding device
located in the throat adjacent to said exten-
sion and at a slight angle thereto, as shown
and described. 40

6. A tile-die having retarders located in its
throat as described, the same being triangu-
lar in form and tapered from the base to the
apex and from the middle toward both ends,
the opposite straight edges of the retarders 45
being parallel, as and for the purpose specified.

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Witnesses:

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