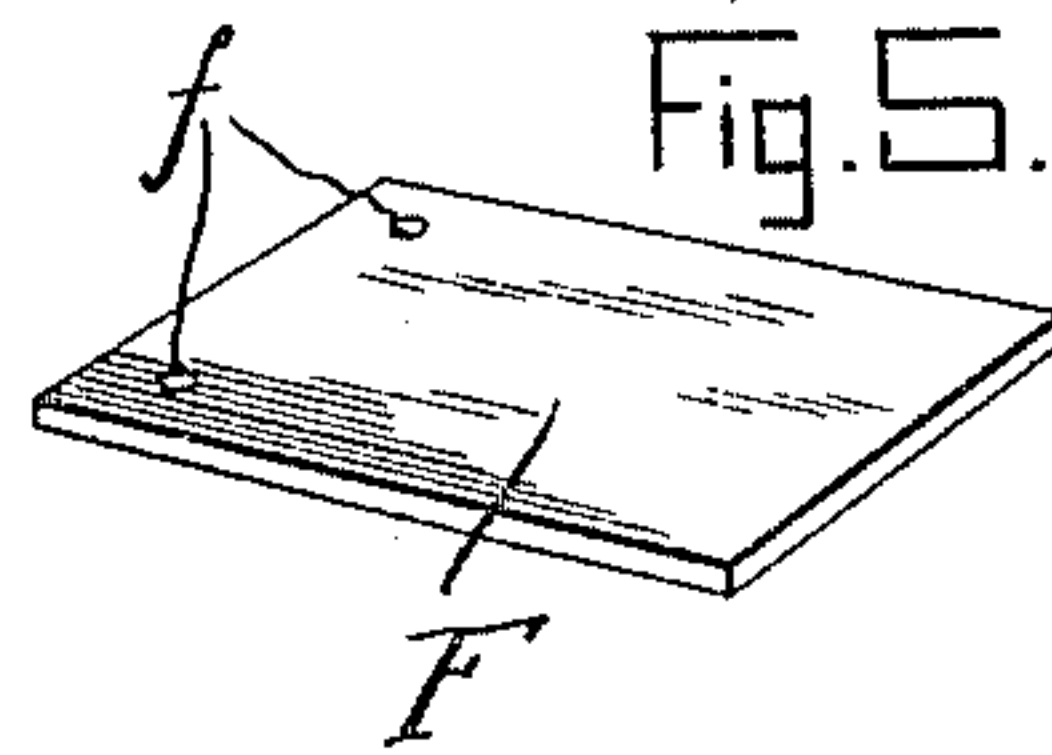
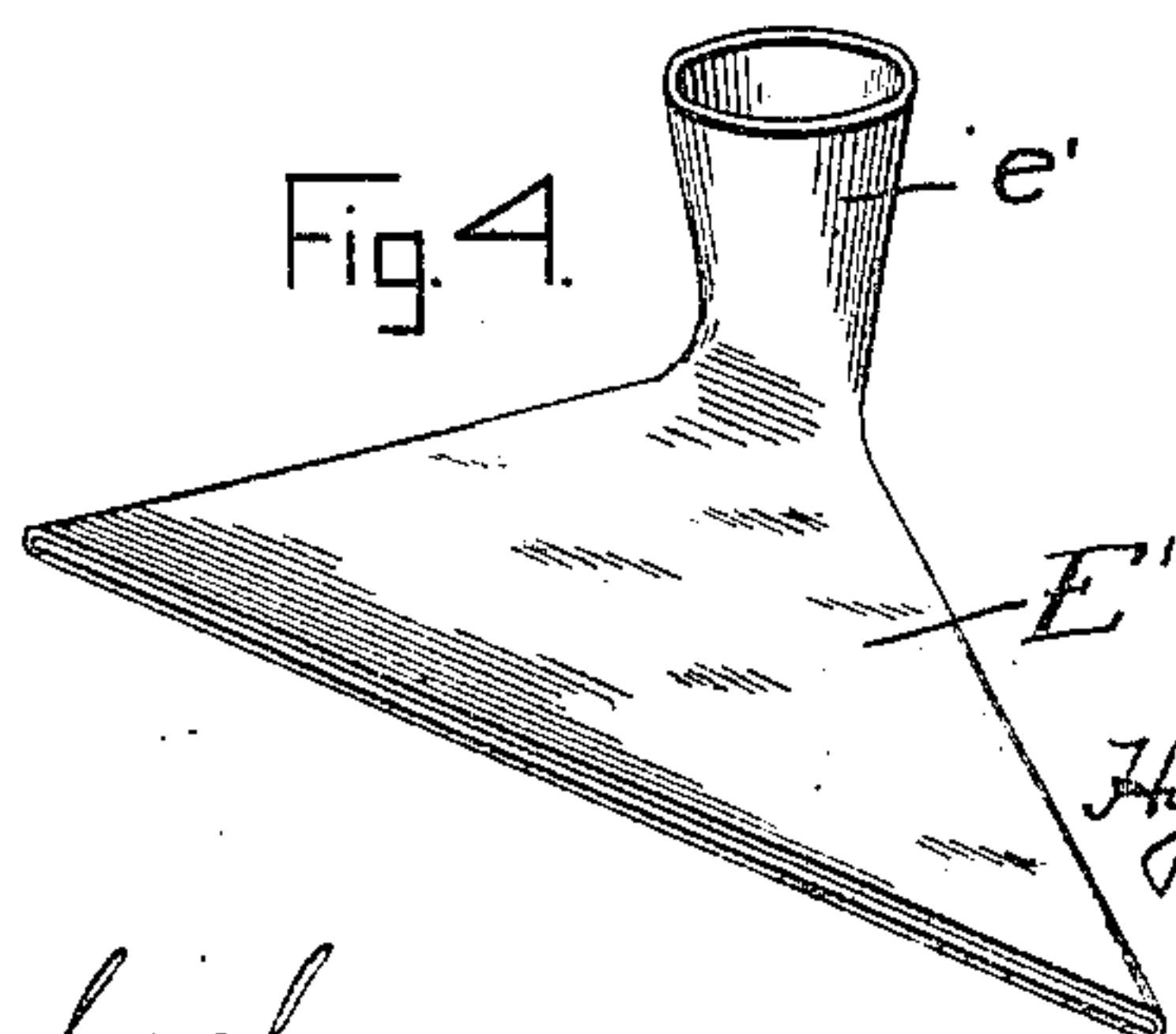
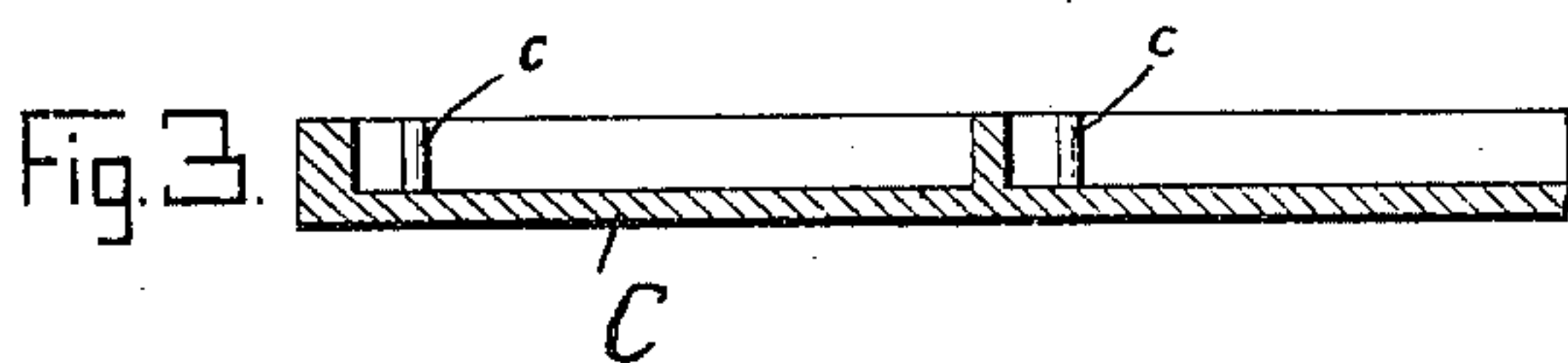
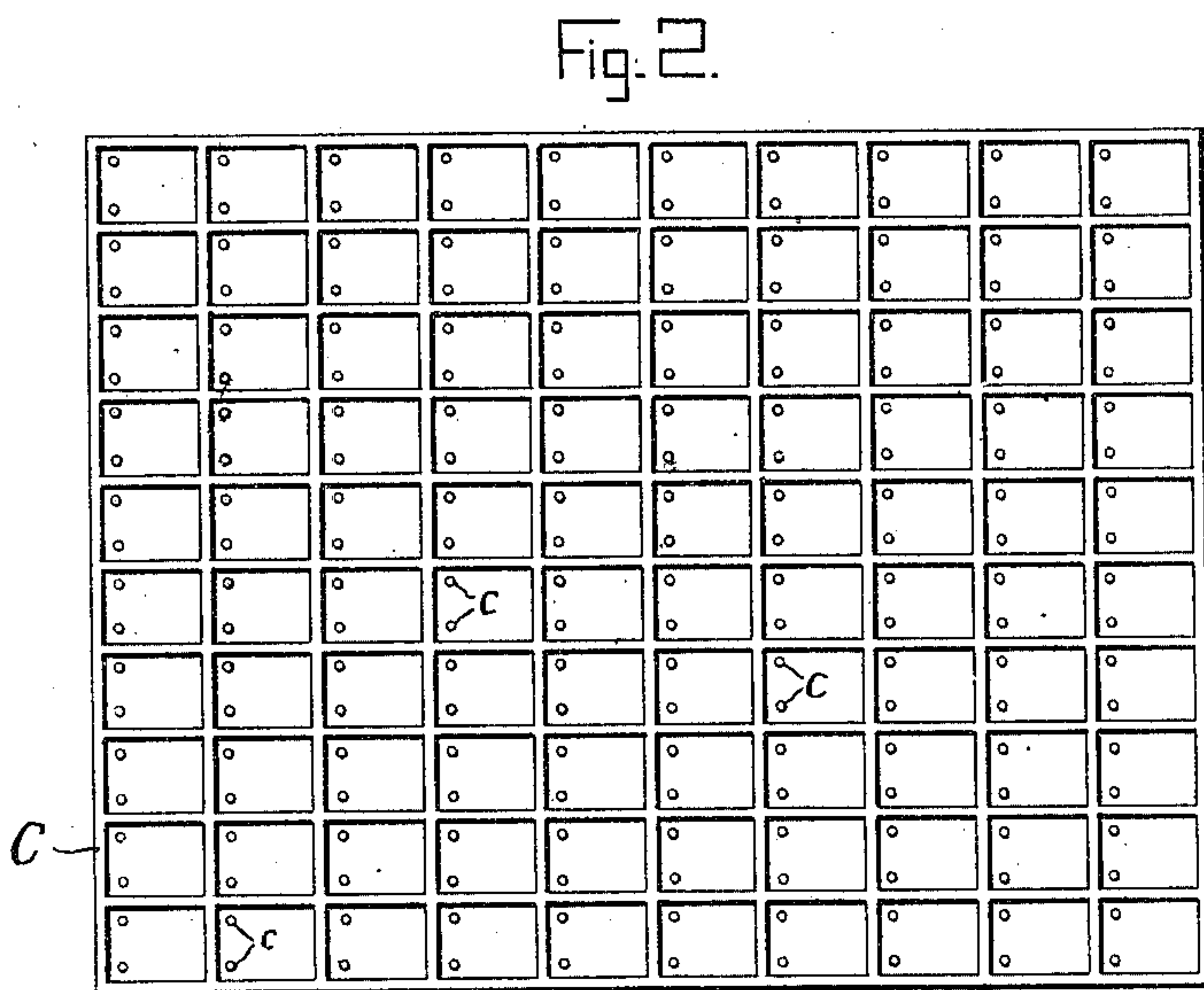
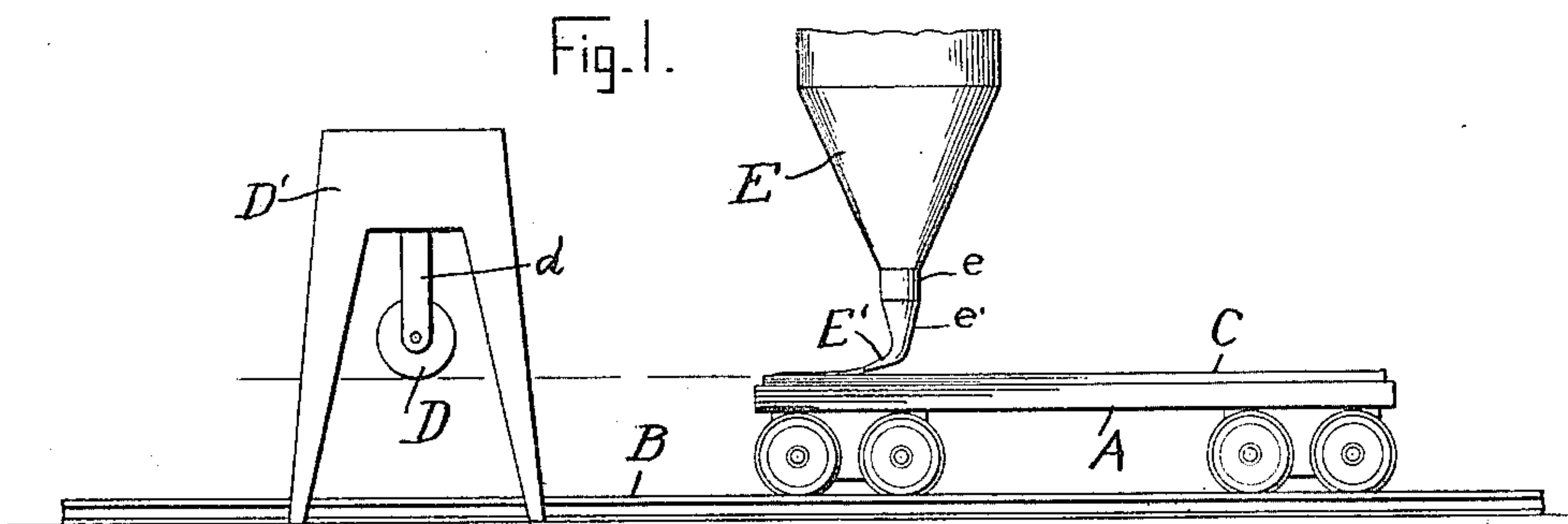


H. A. WEBSTER.  
PROCESS AND APPARATUS FOR MAKING SLAG SHINGLES.  
APPLICATION FILED MAR. 31, 1910.

964,348.

Patented July 12, 1910.



Witnesses  
C. K. Reichenbach.  
L. A. Price.

By

Inventor  
Hyleman Alison Webster

E. W. Bradford

Attorney



# UNITED STATES PATENT OFFICE.

HYLEMAN ALISON WEBSTER, OF COLUMBIA, TENNESSEE, ASSIGNOR OF ONE-FOURTH TO ARCHELAUS M. HUGHES, OF COLUMBIA, TENNESSEE, ONE-FOURTH TO JOHN W. CONNER, OF KNOXVILLE, TENNESSEE, AND ONE-FOURTH TO ERNEST W. BRADFORD, OF WASHINGTON, DISTRICT OF COLUMBIA.

## PROCESS AND APPARATUS FOR MAKING SLAG SHINGLES.

964,348.

Specification of Letters Patent.

Patented July 12, 1910.

Application filed March 31, 1910. Serial No. 552,635.

*To all whom it may concern:*

Be it known that I, HYLEMAN ALISON WEBSTER, a citizen of the United States, residing at Columbia, in the county of Maury and State of Tennessee, have invented certain new and useful Improvements in Processes and Apparatus for Making Slag Shingles, &c., of which the following is a specification.

The object of my said invention is to provide a method and an apparatus for utilizing the slag product of smelting furnaces, which has heretofore, in most common practice, been allowed to waste because no scheme for utilizing the same profitably has been known. I have discovered that when rolled into thin sheets it is very durable for roofing, and such like purposes, and my invention consists in the method of converting said slag into a suitable form to be used for such a purpose, and, further, in an apparatus for carrying out the same, all as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is a general view illustrating the apparatus employed, Fig. 2 a top or plan view of a mold forming a part of said apparatus, Fig. 3 a detail section through a portion of said mold on an enlarged scale, Fig. 4 a perspective view of a spreader or distributor for the slag, and Fig. 5 a perspective view showing one of the slag plates, or shingles, in finished form.

The apparatus consists, as shown in Fig. 1, of a car A mounted upon a suitable track B and carrying a mold C, and a roller D journaled in suitable bearings in hangers *d* depending from a heavy frame D' above said track. The slag pot E is also located above said track at an elevation above said car and a distance to one side of, or behind, said roller. The roller D is mounted at a height to just clear the top edge of the mold C on car A. To the discharge end *e* of the slag pot E is attached a spreader E' which is formed with a neck *e'* adapted to attach to the neck *e* on said slag pot and with a fan-shaped lower end which extends in a horizontal direction, being of a width to extend nearly across the top of the mold or car A, its discharge end having a mouth in the form

of a long narrow slit of substantially the width of the intended thickness of the product so that the molten slag will be discharged in a thin sheet over and into the top of said mold. Each mold, or frame, is divided into the numerous pockets, as shown in Fig. 2, each of said pockets being of the size and shape which it is intended the separate boards, or shingles, shall be. A pair of vertical pins *c* are fixed near the front end of each of said pockets, the pins being of exactly the same height as the edges of said mold.

In the complete apparatus it is intended that the track B shall be circular in form and the car A, or a series of similar cars, be mounted on said track to run continuously beneath the slag pot E and roller D. In operation the molten slag will run from the slag pot E through the spreader or distributor E' and discharged therefrom in a thin sheet to substantially cover and fill the mold C. The car with said mold thereon then passes under roller D, which being of exactly the height to just clear the edges of the mold C, will serve to compress and smooth off the slag, filling the pockets and leaving its top surface smooth and even with the top edges of said mold, and with all sections in a uniform condition. After the car A has passed under roller D and the slag in the mold smoothed off and compressed, the mold is removed from the car, at a point beyond, and an empty frame or mold placed thereon and the car continued in its motion around the track to receive another supply of the molten slag, the operation being continued as long as the molten slag is being discharged. After cooling, the mold is emptied and the slag shingles F may be stored ready for use, being formed, by reason of the pins *c*, with the holes *f* by which nails may be driven through them for the purpose of securing them on roofs, or other places where it is desired to use them in the same manner that ordinary shingles are secured.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:

1. The process of forming slag products which consists in depositing and spreading the slag in a molten state into molds of the



shape of the products desired, smoothing off the top of said molds to fill the various portions of the molds uniformly and remove the surplus slag, and then cooling said slag in said molds, substantially as set forth.

2. An apparatus for forming slag shingles comprising a car mounted to run beneath a slag pot, said slag pot provided with a discharge opening, a spreader or distributor mounted on said opening and adapted to conduct the molten slag from said slag pot in a thin stream, a roller fixed in bearings at a height adapted to roll over the top of said mold, and means for guiding said car beneath said slag pot and roller, substantially as set forth.

3. An apparatus for forming slag shingles comprising a track, a car mounted on said track, a mold shaped to form the product as desired mounted in said car, a slag pot, means for conducting the molten slag from said slag pot into said mold as the car passes beneath said slag pot, and a roller fixed in bearings in front of said slag pot at a height to roll over the top edge of said mold, substantially as set forth.

4. An apparatus for forming slag shingles, etc., comprising a traveling mold with an open top and sides of a height corresponding to the thickness of the product to be formed, and a roller fixed in position to

smooth off the slag even with the top of said sides, substantially as set forth.

5. An apparatus for forming slag shingles, etc., comprising a mold having a multiplicity of cells or pockets, each formed with an open top and sides of a height corresponding to the thickness of the product to be formed, pins set in each cell of substantially the height of its sides, and means for smoothing off the slag even with the top of said sides, substantially as set forth.

6. The process of forming slag products which consists in depositing and spreading the molten slag directly from the slag-pot into a mold of the shape desired for the product during the passage of said mold beneath said slag-pot, continuing the movement of said mold beneath a device to smooth off the top of said slag to fill the various portions of the mold uniformly and remove the surplus, and then cooling said slag in said mold, substantially as set forth.

In witness whereof, I, have hereunto set my hand and seal at Columbia, Tennessee this 28th day of March, A. D. nineteen hundred and ten.

HYLEMAN ALISON WEBSTER. [L. s.]

Witnesses:

S. F. ASHTON,  
E. E. COLLINS.