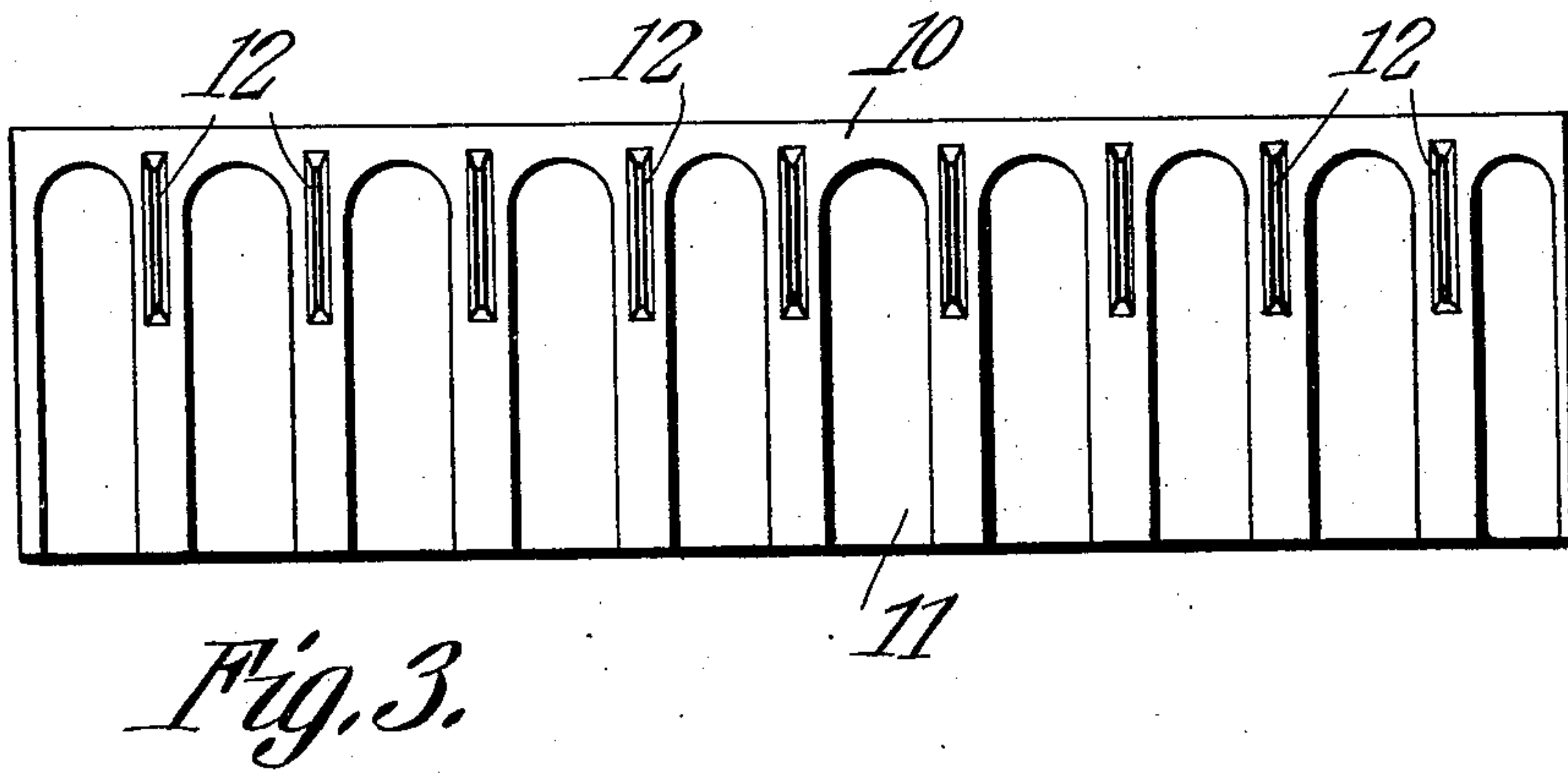
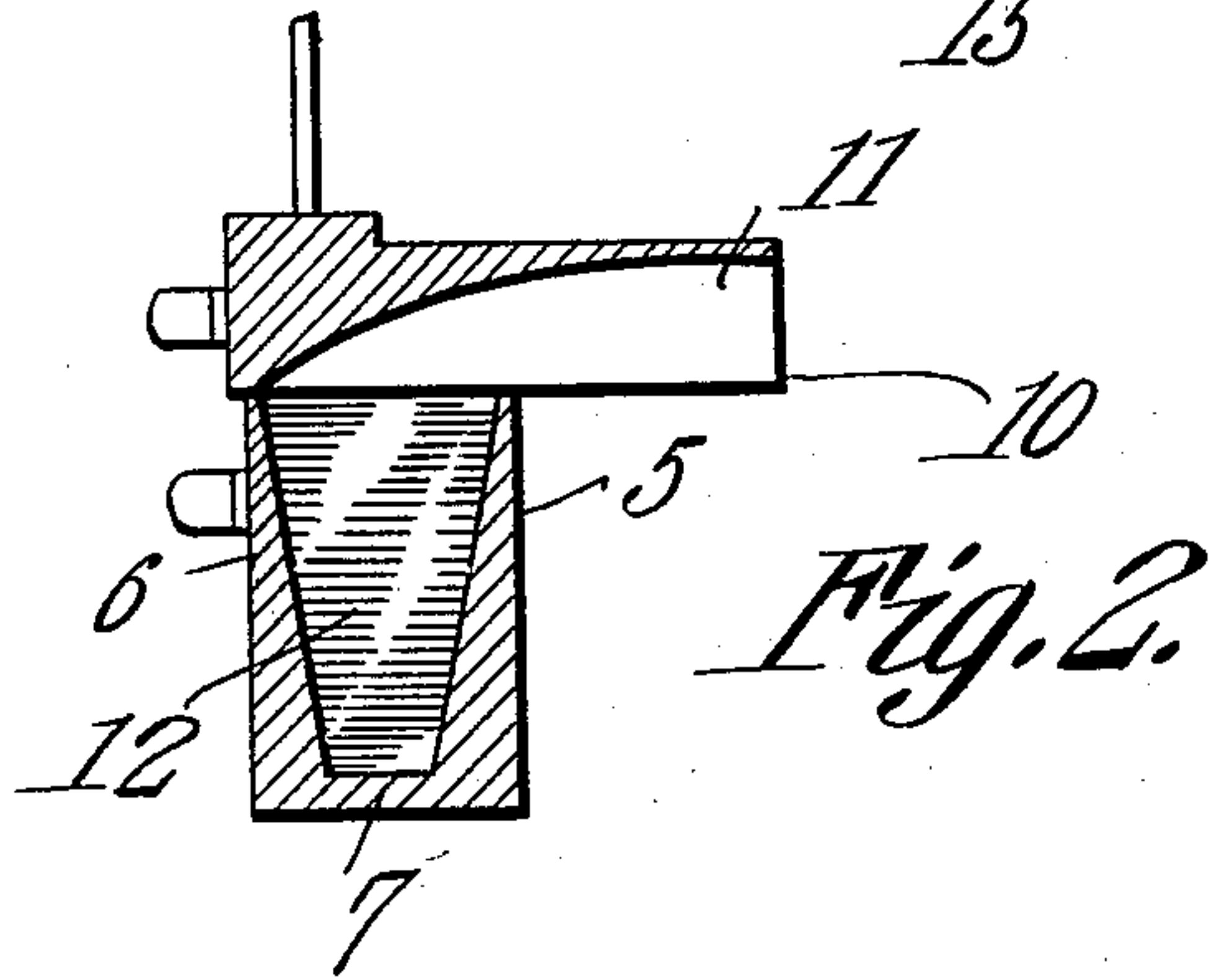
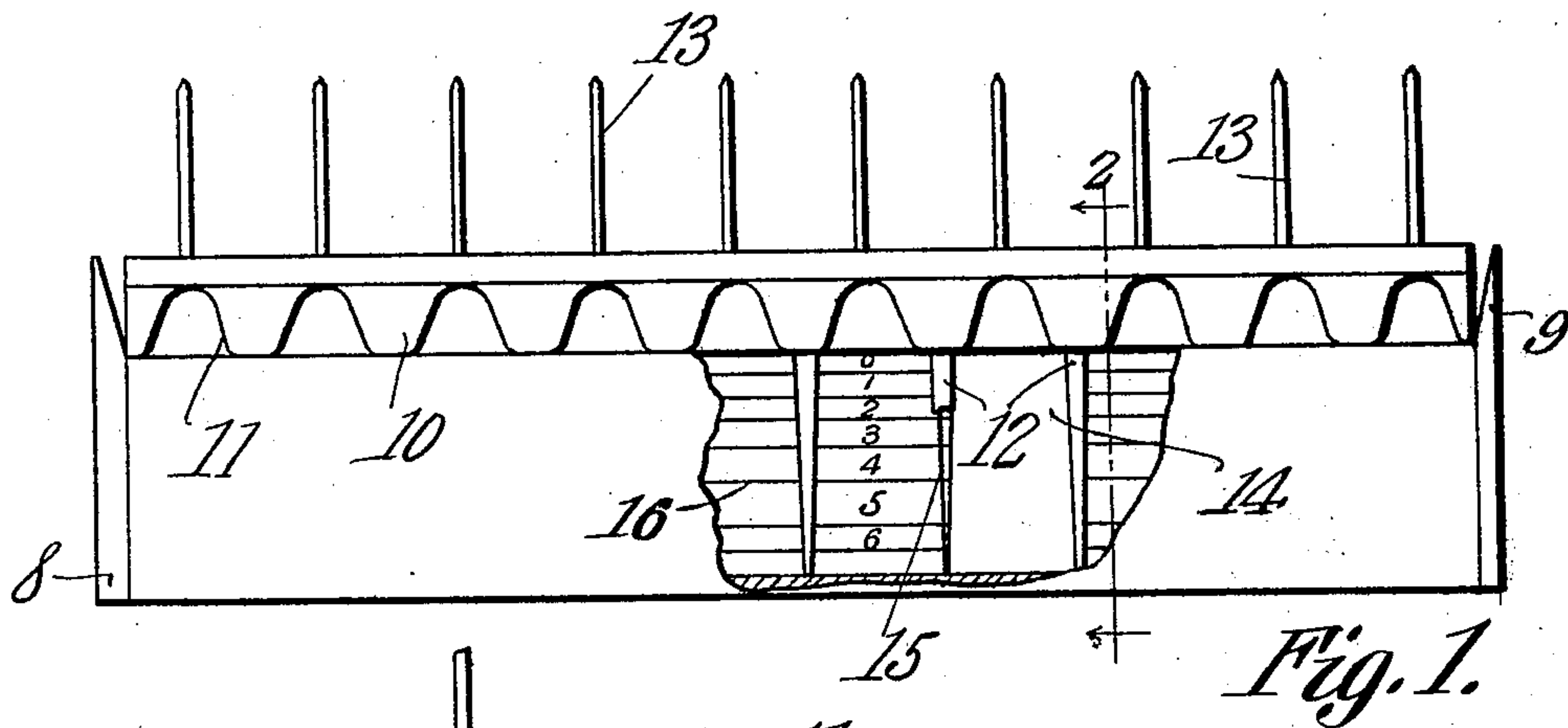


P. H. BROWN.
POWDER DIVIDING MACHINE.
APPLICATION FILED AUG. 12, 1909.

999,696.

Patented Aug. 1, 1911.



Witnesses

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UNITED STATES PATENT OFFICE.

PATRICK H. BROWN, OF TEMPLE, TEXAS.

POWDER-DIVIDING MACHINE.

999,696.

Specification of Letters Patent.

Patented Aug. 1, 1911.

Application filed August 12, 1909. Serial No. 512,551.

To all whom it may concern:

Be it known that I, PATRICK H. BROWN, a citizen of the United States, residing at Temple, in the county of Bell and State of Texas, have invented a new and useful Powder-Dividing Machine, of which the following is a specification.

This invention relates to devices for dividing powdered substances, and is more particularly adapted for use by pharmacists in dividing medicinal powders. Ordinarily, the powdered mass to be divided is blocked upon a slab by means of a spatula, and is then divided by means of the spatula, but this division is only accurate so far as the eyesight and expertness of the operator is accurate, and of high degree besides being very tedious and slow.

The invention therefore aims to provide a device which may be readily manipulated for the purpose of dividing a mass of powder into any desired number of equal portions.

One of the features of the invention resides in the provision of means which is arranged to indicate the size and number of the capsules which are to be employed to hold the several portions into which the powder is divided.

The device of the invention is furthermore particularly well adapted for use in connection with a capsule-filling machine of that general type disclosed in my Patent No. 928,356, dated the 20th day of July, 1909.

In the accompanying drawings:—Figure 1 is a view in front elevation of the device embodying the present invention. Fig. 2 is a vertical transverse sectional view there-through on the line 2—2 of Fig. 1. Fig. 3 is a plan view of that member of the device which carries the dividing blades.

In the drawings the device is illustrated as comprised, in part, of a powder-receiving trough which includes a front wall, indicated by the numeral 5, a rear wall 6, a bottom wall 7, and end walls 8. The surfaces of the front and rear walls 5 and 6 are located in downwardly converging planes, or, in other words, the interior of the trough is of less width from front to rear, at the bottom than at the top. It will be observed, from an inspection of Fig. 1 of the drawings, that the end walls 8 of the trough of the device extend to planes above the planes of the upper edges of the front and rear walls 5 and 6 of the trough, as in-

dicated by the numeral 9, and the inner or opposing faces of these end walls throughout their extended portions 9 are inclined downwardly and inwardly, whereby that member which carries the powder-dividing blades will be readily and accurately guided to proper position upon the trough member, when it is desired to divide a powder contained in the trough into a number of equal portions.

The member carrying the powder-dividing blades is in the form of a plate which is indicated by the numeral 10, and is formed with a number of grooves 11, which extend from one edge nearly to the other edge, and which decrease in depth in the direction of the latter or closed edge. These grooves are separated from each other by cross walls, the lower edges of which are in a plane with and rest upon the upper edges of the front and rear walls 5 and 6 of the powder-receiving trough when the plate 10 is properly disposed thereon. A plurality of powder-dividing blades, indicated by the numeral 12 are formed or secured upon the lower face of the plate 10 in which the grooves 11 are formed, and these blades project from the plate at right angles to the plane thereof, and are tapered in a downward direction, both from side to side and edge to edge, and, furthermore, each of these blades is of an outline to fit exactly at its edges between the walls 5, 6 and 7 of the powder-receiving trough. The blades are located one between each two grooves 11, and nearer the closed edge of the plate 10 toward which the grooves decrease in depth. It will furthermore be observed that the powder-dividing knives 12 are equidistantly spaced.

In using the device above described, the powdered material to be divided into equal portions is deposited in the powder-receiving trough, and tamped until the powder appears level and evenly distributed therein, after which the powder-dividing, blade-carrying member is inserted above the trough and disposed thereon in the position shown in Fig. 1 of the drawings, with the powder-dividing blades 12 projecting down into the trough, and engaging at their edges snugly against the inner surfaces of the walls 5; 6 and 7 of the trough. This entrance of the blades into the trough and the engagement of their edges with the inner surfaces of the said walls of the trough

will result in the mass of powder in the trough being divided into a number of portions of like mass and weight. After this has been done, the device, as an entirety, is inverted, the plate 10 being held firmly in place, with its powder-dividing blades projecting into the powder-receiving trough. Upon inversion of the device, as just described, the portions into which the mass of powder has been divided will fall into the several grooves 11, filling the grooves to a greater or less degree. It will now be understood that inasmuch as each groove is located between a pair of the powder-dividing blades, the portion of powder separated from the mass by each pair of blades will fall into the respective groove. The next step in the filling of the capsules with the divided mass of powder, is to tilt the plate 10, and in fact the entire device with the plate so disposed that the ends of the grooves 11 will each be directly over a capsule-filling funnel, supported in any suitable manner. When the portions of the mass of powder have been deposited into the funnels from the grooves 11, the plate 10 is removed from the trough member of the device, and is then grasped and teeth 13, which project from that face of the plate opposite the face from which the knives 12 project, are inserted in the funnels in which the mass of powdered material has been deposited and are moved about in the said funnels, whereby to loosen the powdered material and cause it to flow down into the capsules being filled. The teeth are also used to tamp the powder into the capsules.

It will be understood of course that the trough for receiving the powder to be divided into equal portions may be of any desired length, and the plate 10 may be provided with any desired number of the powder-dividing blades 12, and, inasmuch as it will frequently be desired to divide the powdered mass into a less number of portions than the number of blades 12, a spacing block, indicated by the numeral 14, is provided, and is so constructed as to fit snugly between the walls 5 and 6 of the trough when inserted therein, and this block is further of such dimensions as to fit snugly between any pair of the powder-dividing teeth 12. The inner or opposed surfaces of the walls 5 and 6 of the receiving trough are ruled or indicated with vertical lines indicated by the numeral 15, these lines indicating the spaces into which the trough is to be divided by the powder-dividing blades upon the plate 10, when the said plate is dis-

posed upon the trough in substantially the position shown in Fig. 1 of the drawings, and it will be understood, from the foregoing, that by disposing the block 14 between any two of these marks 15, an accurate adjustment of the device may be secured. For example, it will be supposed that the trough is so marked as to be divided into twelve equal parts, and it is only desired to divide a mass of powder into eight equal parts. The block 14 will then be disposed within the trough between the lines between which the main space from one end or the other of the trough is located, and the plate 10 in inverted position will be disposed upon the trough in the manner heretofore described. In addition to the vertically ruled lines 15 upon the inner surfaces of the walls 5 and 6 of the trough, these walls are further ruled with horizontal lines 16, which extend lengthwise of the trough walls and intersect the lines 15, and the said walls are further preferably provided with number indications in the spaces between the lines 16, which number indications serve to indicate to the user of the device the number size of the capsule which will best contain the portion into which the powder mass is divided.

It will be understood of course that the size number of the capsule to be used is indicated by leveling off the powdered mass in the trough to one of the lines 16, or nearly thereto.

What is claimed is:—

A powder divider comprising a trough having its side walls internally flared upward and flat on their upper edges, and its ends higher than said edges and beveled on their inner faces; a plate fitting removably between said bevels, its body wider than the trough, and its lower face having parallel grooves shallow near the closed edge of the plate and growing deeper toward and opening outward through the other edge thereof; blades carried by the plate between its grooves and depending into and fitting within the trough when the plate is in place; and a spacing block adapted to be seated within the trough between any two blades and wholly beneath the plate.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

PATRICK H. BROWN.

Witnesses:

A. J. CONTRET,
A. B. ELKINS.