

No. 705,318.

Patented July 22, 1902.

H. S. BURNS & T. G. BENNETT.

CELLULAR PRIMER TRAY.

(Application filed Mar. 24, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1

Fig. 2

Fig. 3

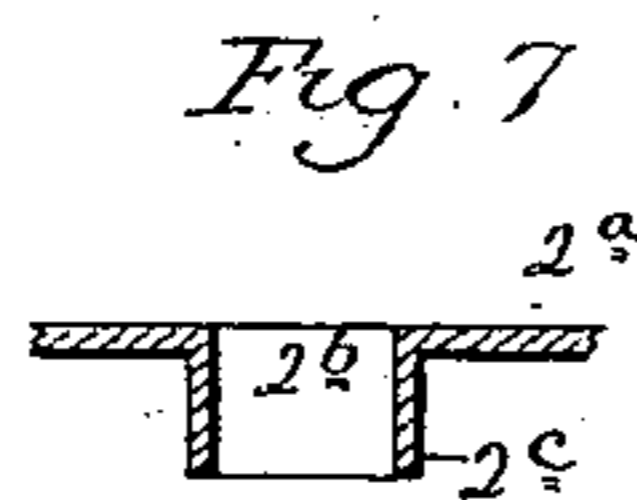
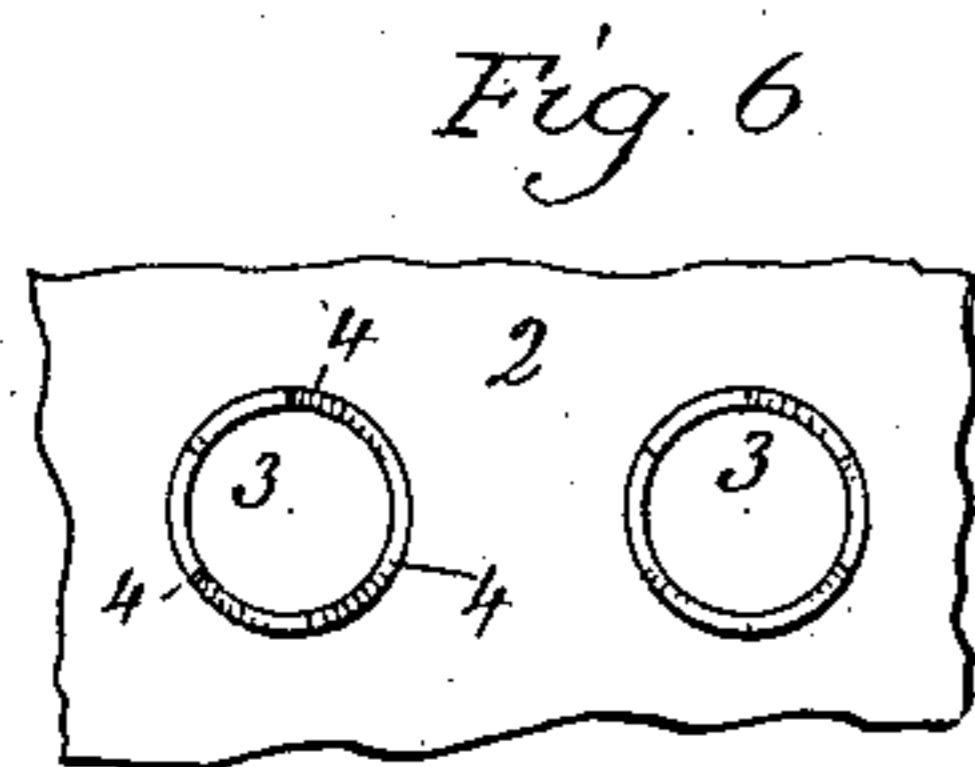
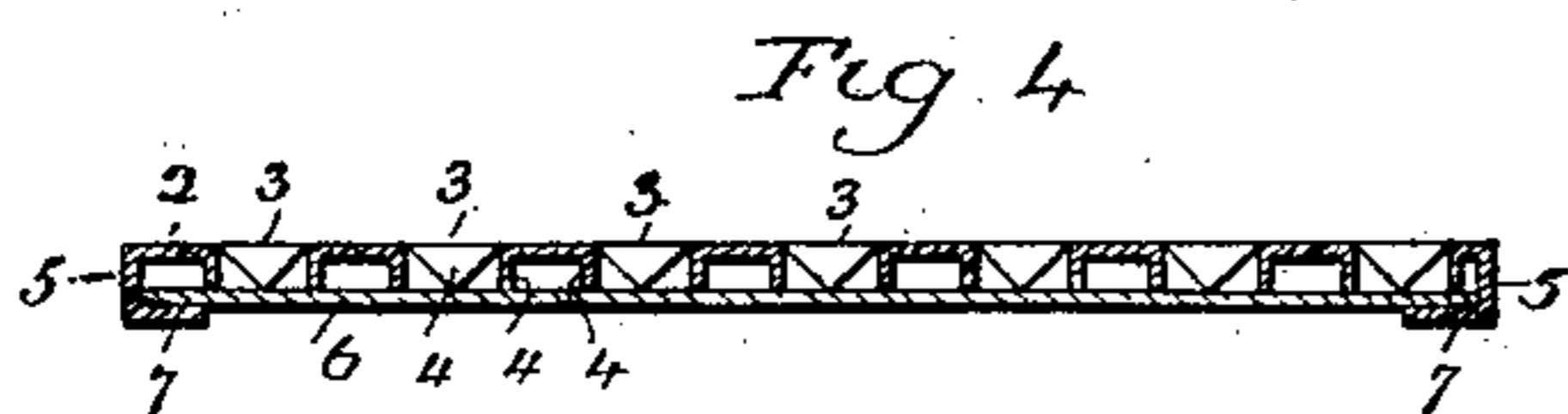
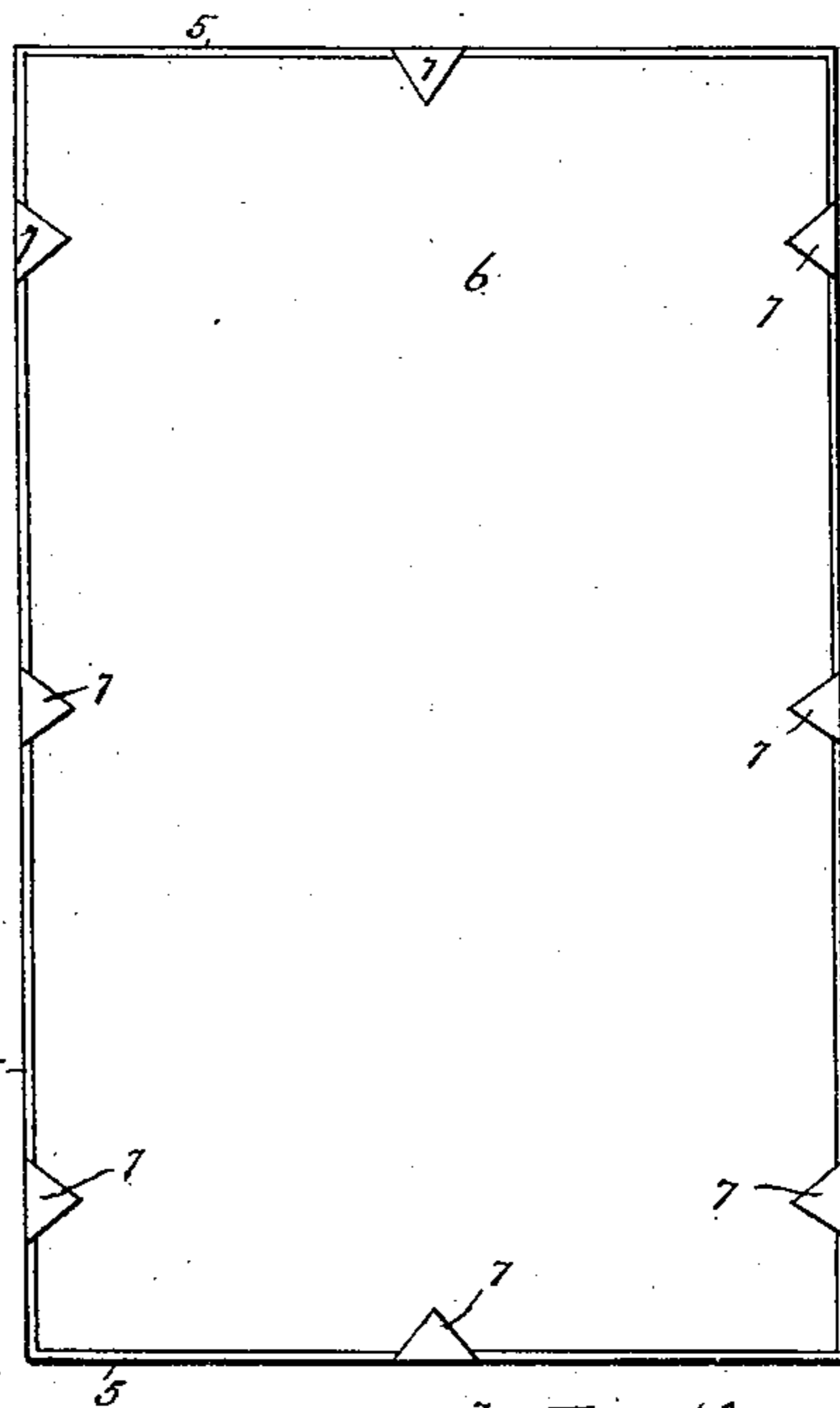
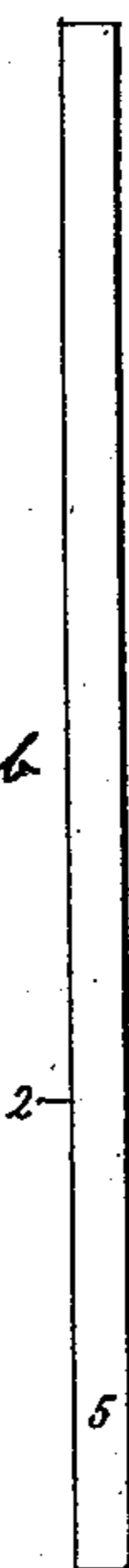
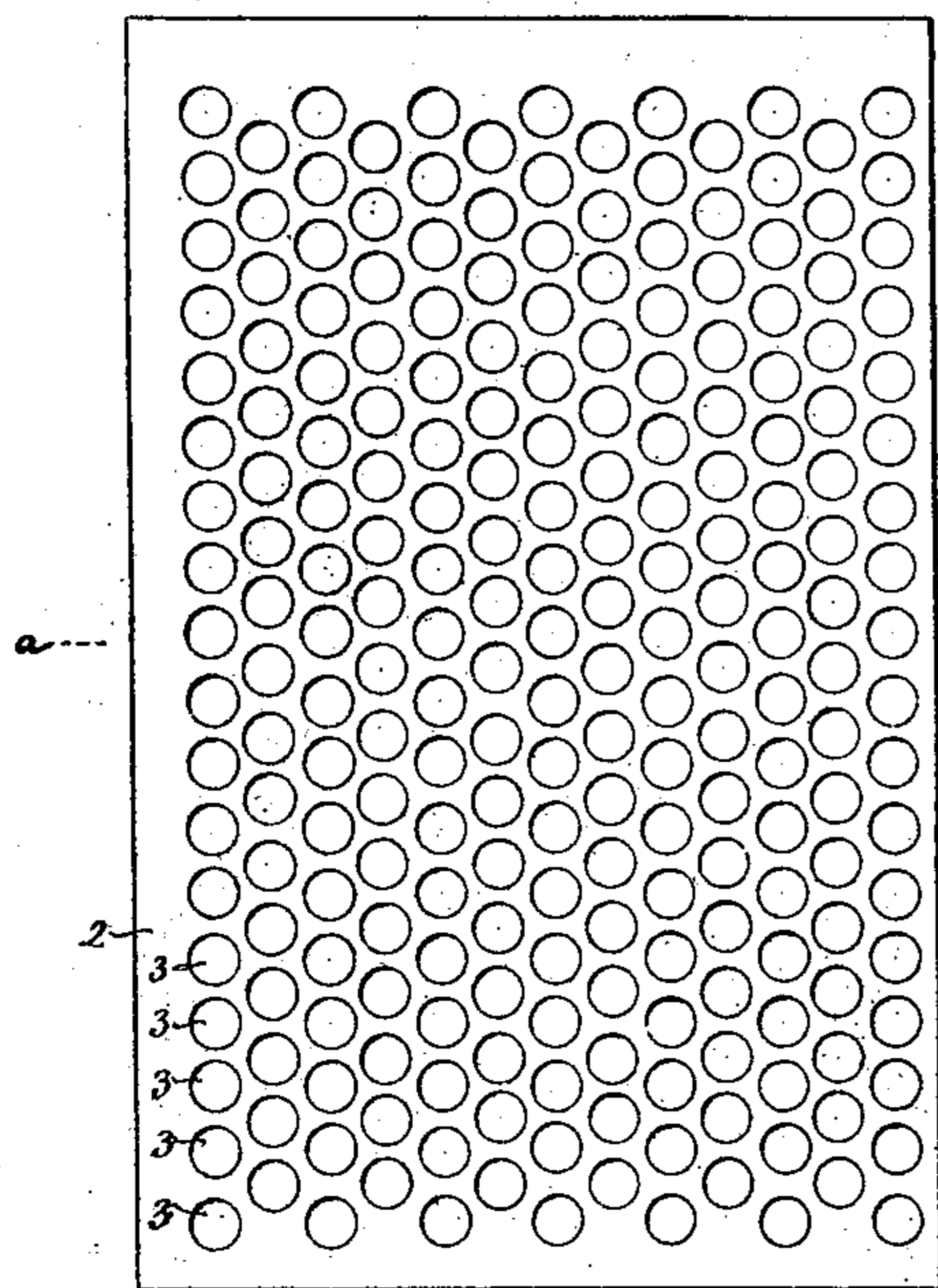
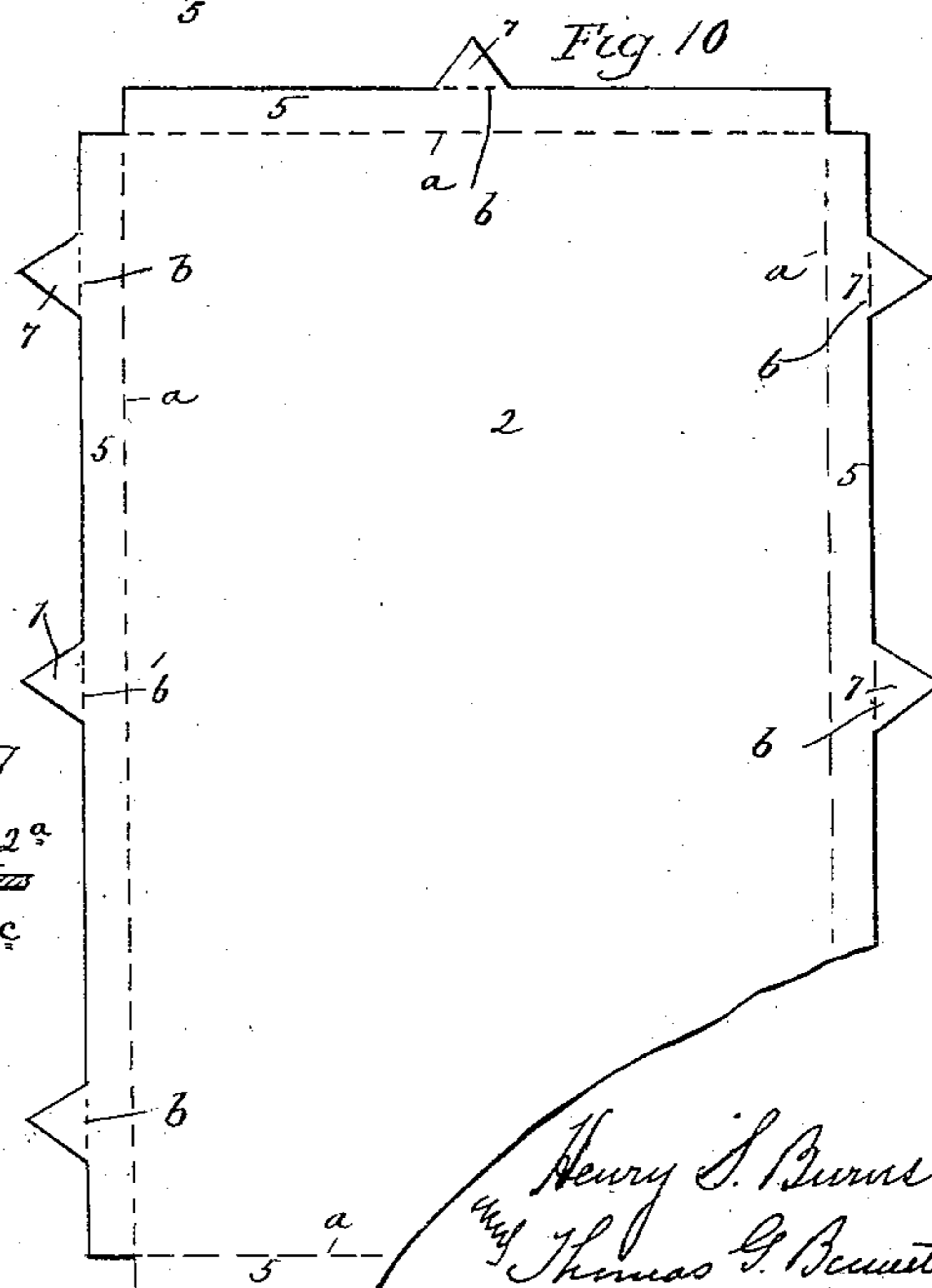
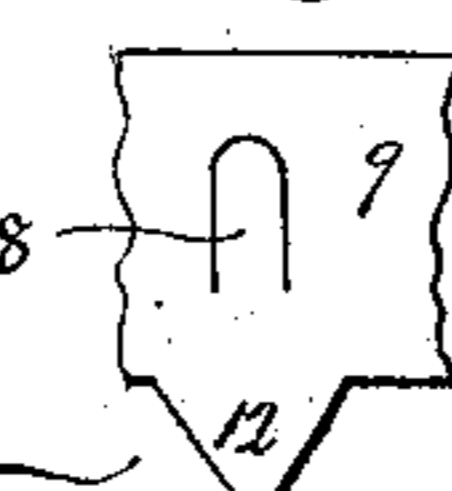
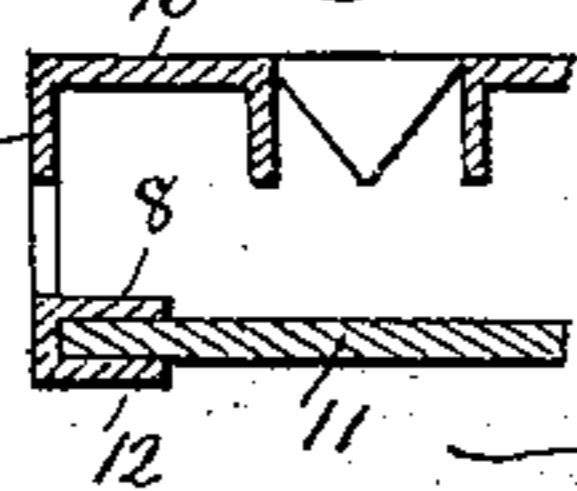


Fig. 8

Fig. 9



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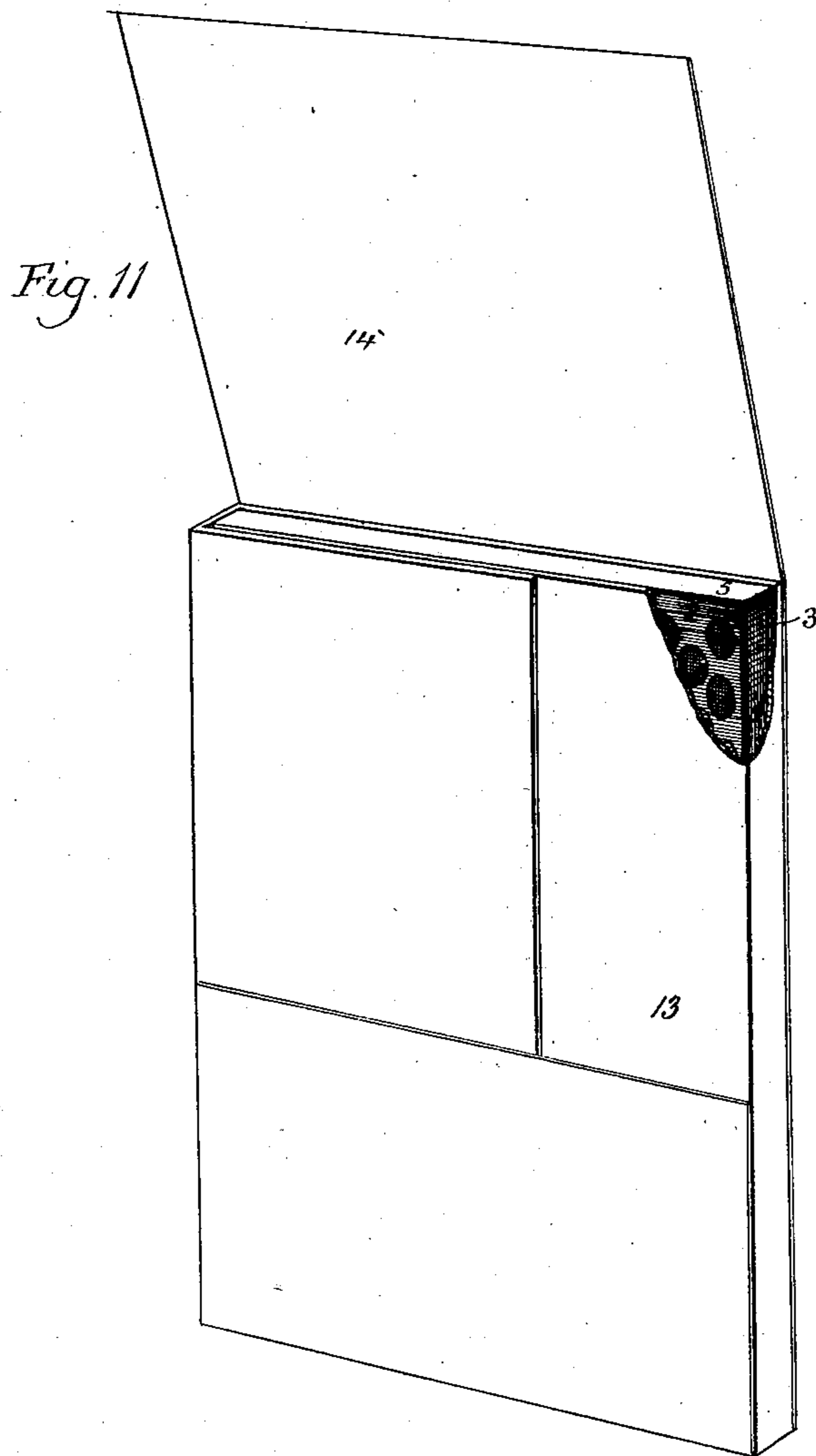
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

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CELLULAR PRIMER-TRAY.

SPECIFICATION forming part of Letters Patent No. 705,318, dated July 22, 1902.

Application filed March 24, 1902. Serial No. 99,776. (No model.)

To all whom it may concern:

Be it known that we, HENRY S. BURNS and THOMAS G. BENNETT, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Cellular Primer-Trays; and we do hereby declare the following, when taken in connection with the accompanying drawings and the figures of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view of a cellular primer-tray embodying our invention; Fig. 2, an edge view thereof; Fig. 3, a reverse plan view thereof; Fig. 4, a sectional view thereof on the line *a b* of Fig. 1; Fig. 5, an enlarged broken view, in side elevation, of a portion of the cellular top plate of the tray, showing two of the cells in the said plate; Fig. 6, a reverse plan view thereof; Fig. 7, a broken sectional view showing another form which the cells may assume; Fig. 8, a broken sectional view of one of the modified forms which the tray may assume in the matter of holding the bottom plate from upward movement; Fig. 9, a broken end view thereof; Fig. 10, a broken plan view of the blank from which the cellular top plate is formed, the blank being shown prior to having its body portion perforated and its edges bent to form end and side flanges; Fig. 11, a perspective view showing the tray in its paper case.

Our invention relates to an improved tray for receiving percussion-caps, whether the same be nipple-caps, such as employed in percussion-lock arms, or primers which are introduced into the heads of center-fire cartridges, the object of the present invention being to produce a simple and convenient packing constructed with particular reference to insuring the safe handling and transportation of percussion-caps in supplying them to the trade.

With these ends in view our invention consists in a cellular primer-tray having certain details of construction, as will be hereinafter described, and pointed out in the claims.

In carrying out our invention as herein shown we employ a sheet-metal top plate 2,

having practically its entire body portion formed with cells 3, placed as close together as may be and preferably produced by means of round punches having polygonal points as distinguished from punches having round or conical points. When punches having three-sided points are used, for instance, the metal forced downward below the plane of the plate is symmetrically divided into three triangular leaves 4, which conform in curvature to the curvature of the cell and constitute a downward extension thereof. These leaves "increase," so to speak, the isolation of the primers in the cells, and so increase the safety of the packing under the rough handling which it is likely to undergo in transportation. Of course the more perfect the isolation of the primers the greater the safety. As a matter of fact these leaves are the "burs" produced by dividing and displacing the metal. On the other hand, if punches having four-sided points are employed, the bur will be similarly divided, but into four triangular leaves. This method of forming the cells stiffens the plate and permits very thin sheet metal to be used, cheapening the cost and securing lightness. Although we preferably employ punches having polygonal points in producing the cells in the top plate, we may of course use punches having round or conical points, which, instead of dividing the displaced metal into leaves, will form a continuous flange with a more or less straight edge, as shown in Fig. 7 of the drawings, in which the plate 2^a is formed with a cell 2^b, having a downwardly-extending annular flange 2^c. The said plate 2 has its edges turned downward at a right angle to form side and end flanges 5, these flanges being as wide as the depending leaves 4 of the cells 3 are long or even wider. The said plate forms the top of the tray, the bottom of which is formed by an imperforate bottom plate 6, made of pasteboard, sheet metal, or any other convenient material and substantially corresponding in size to the side of the body portion of the plate 2 forming the top of the tray. This plate 6 is placed within the side and end flanges 5, which are provided with integral retaining-tongues 7, which are bent inwardly under the

lower face of the plate 6, as shown in Figs. 3 and 4. As also shown in Figs. 3 and 4, the plate is held in place against upward movement in the tray by its engagement with the leaves 4; but in case the tray is designed for the reception of primers longer than the said leaves 4 they cannot be utilized for holding the bottom plate 6 against upward movement in the tray, and some other means than the said leaves must be provided for the purpose. An example of such means is shown in Figs. 8 and 9 in which a finger 8 is struck inwardly at a right angle from the end flange 9 of the top plate 10. Then the bottom plate 11 is pressed up against this finger 8 by the retaining-tongue 12 when the same is bent inward. It will be understood, of course, that both of the end flanges and both of the side flanges would be formed with one or more fingers like the finger 8. In Fig. 10 of the drawings we have shown such a blank as is used in forming the top plate 2, the broken lines *a* indicating the lines along which the edges of the blank are bent to form the side and end flanges 5 of the plate, and the broken lines *b* the lines on which the tongues 7 are bent to retain the bottom plate 6 in place.

For the reception of the tray we preferably provide a paper case 13, Fig. 11, conforming in shape to the tray and provided with a flap-cover 14, which secures the tray in place in the case, which prevents the primers from dropping out of the open upper ends of the cells, which are arranged in a plane at a right angle to the plane of the tray.

In view of the modifications shown and described and of others that may obviously be made we would have it understood that we do not limit ourselves to the precise construction set forth herein, but hold ourselves at liberty to make such alterations therefrom as fairly fall within the spirit and scope of our invention.

Having fully described our invention, what

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

1. In a cellular primer-tray, the combination with a sheet-metal top plate formed with a plurality of cells each of which is downwardly extended by integral leaves which increase the isolation between the primers in the cells, and having its edges turned downward at a right angle to form side and end flanges, and a bottom plate located entirely within the said side and end flanges in position to prevent the primers from dropping through the said cells in the top plate.

2. In a cellular primer-tray, the combination with a sheet-metal top plate having its body portion formed with a plurality of cells and its edges turned downward to form side and end flanges the edges of which are provided with retaining-tongues, of a bottom plate located within the said side and end flanges and having the said tongues turned under its lower face whereby it is held in place.

3. As a new article of manufacture, a cellular primer-tray having a top plate formed with a plurality of cells and having its edges turned downward to form side and end flanges, and the said tray also having a bottom plate secured to the top plate in position to prevent the primers from dropping through the cells which are arranged in a plane at a right angle to the plane of the tray, in combination with a paper case receiving the tray and preventing the primers from dropping out of the upper open ends of the cells.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

HENRY S. BURNS.
THOMAS G. BENNETT.

Witnesses:

G. W. ALLEN,
H. F. BEEBE.