

F. M. TURCK.

PAPER BOX AND LOCKING DEVICE THEREFOR.

No. 516,246.

Patented Mar. 13, 1894.

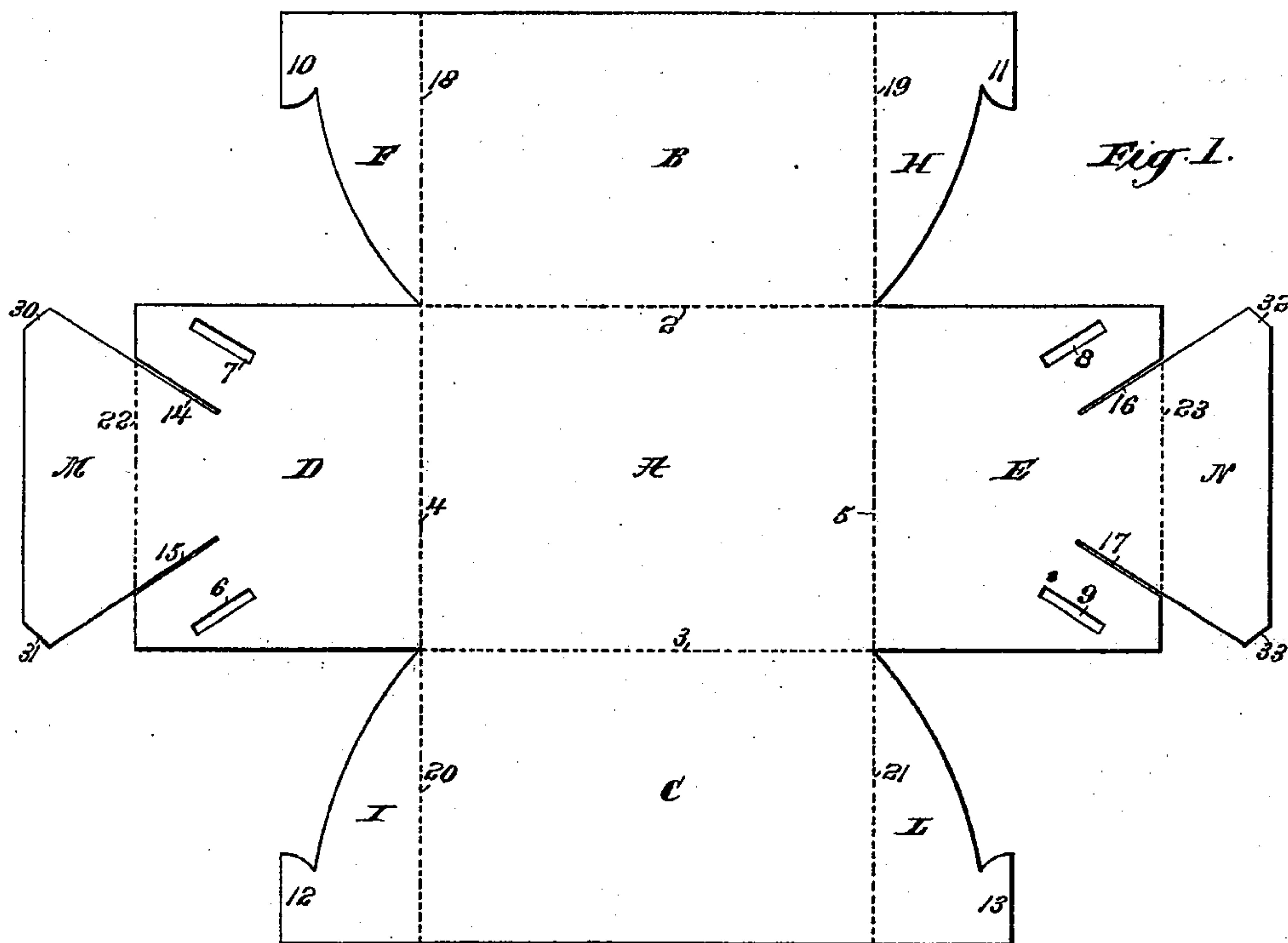


Fig. 3.

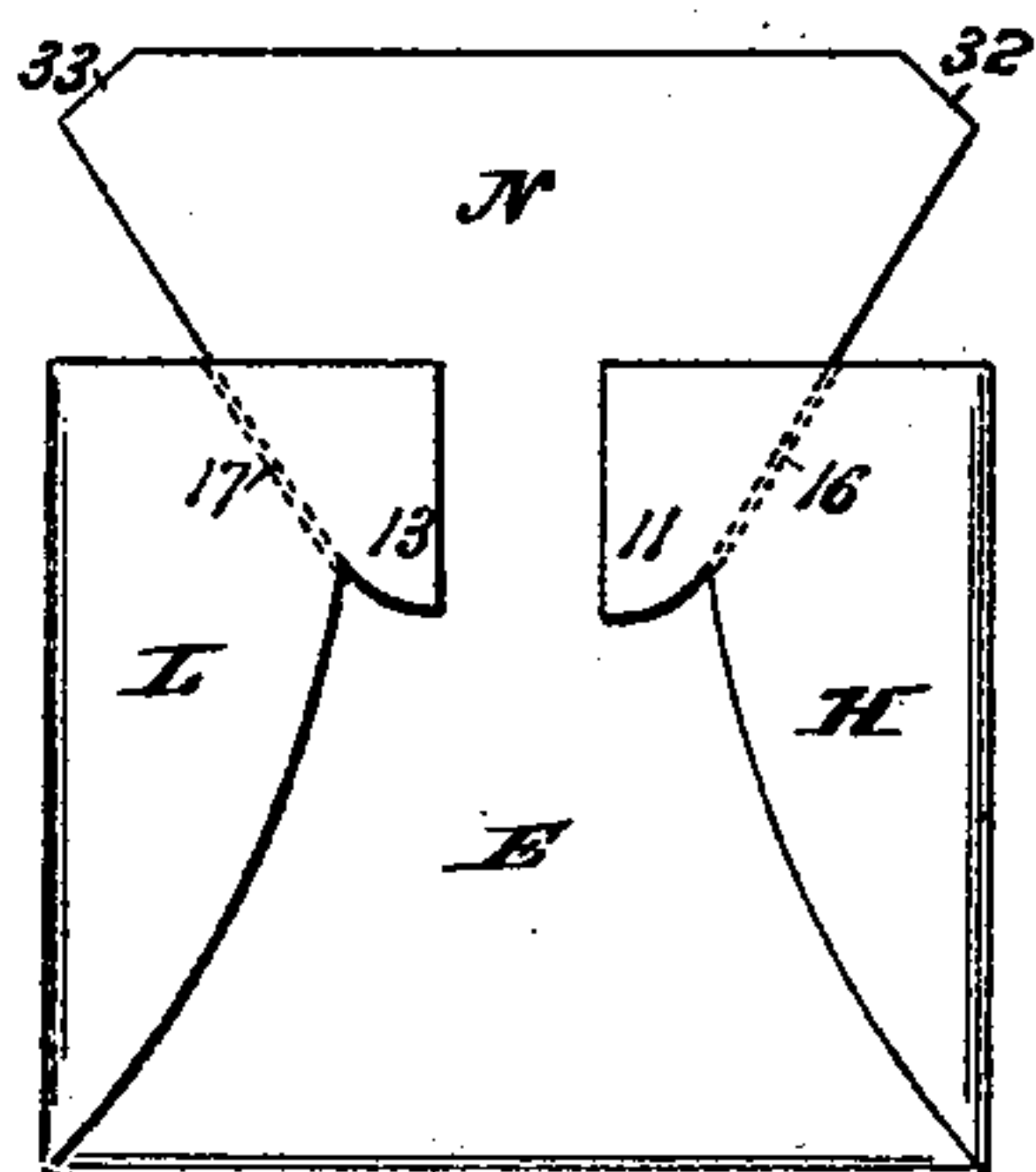


Fig. 2.

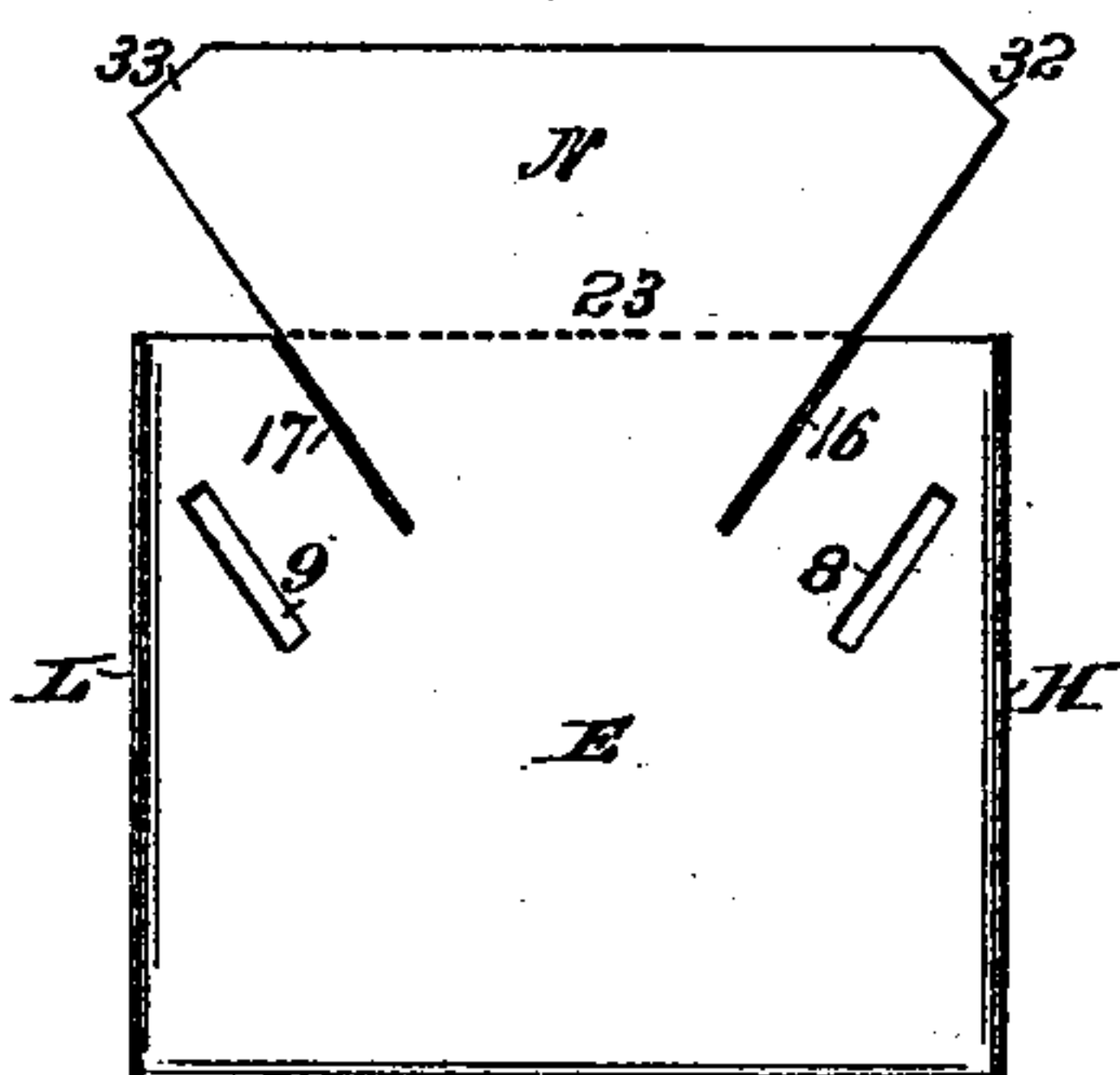


Fig. 4.

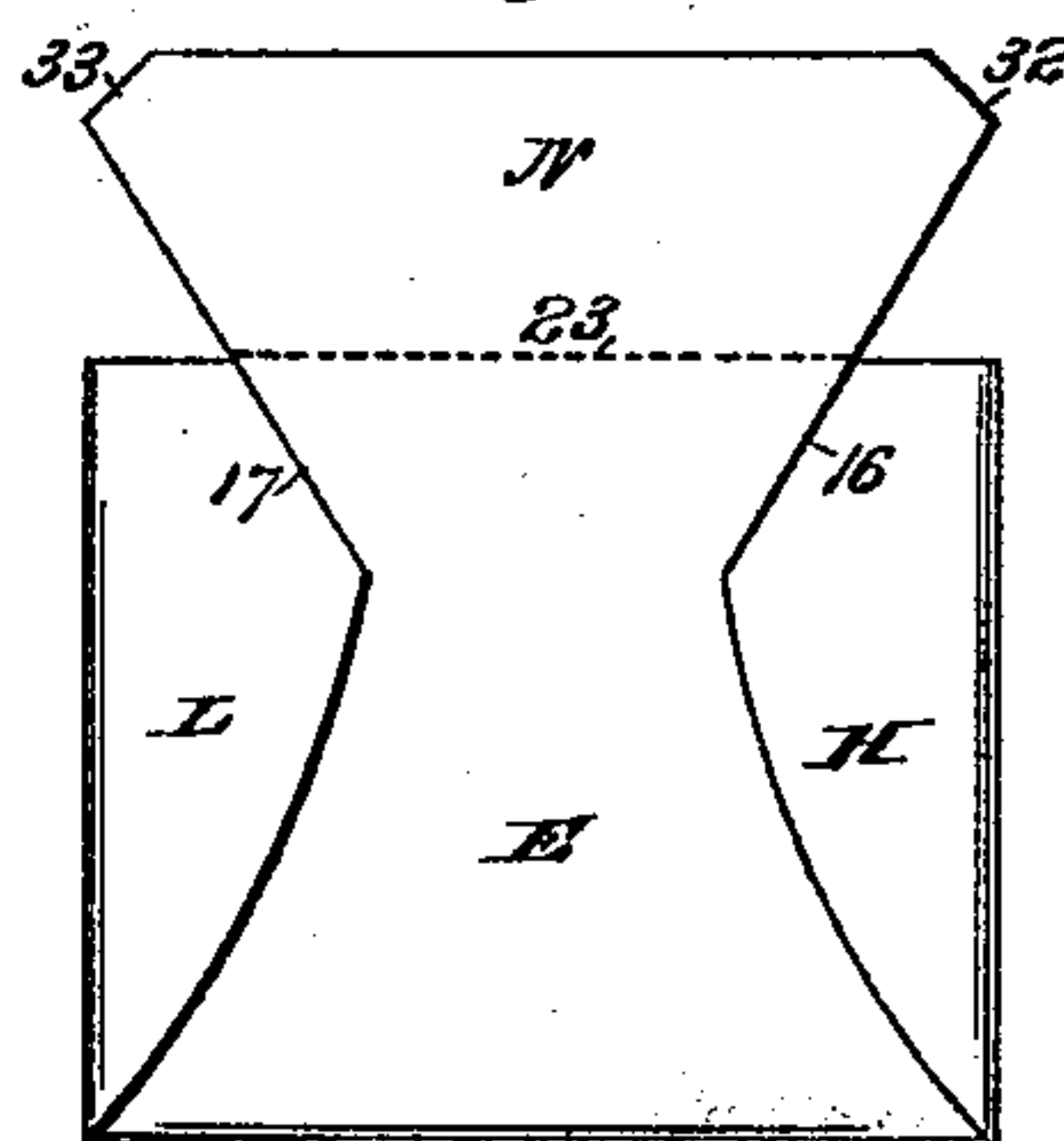
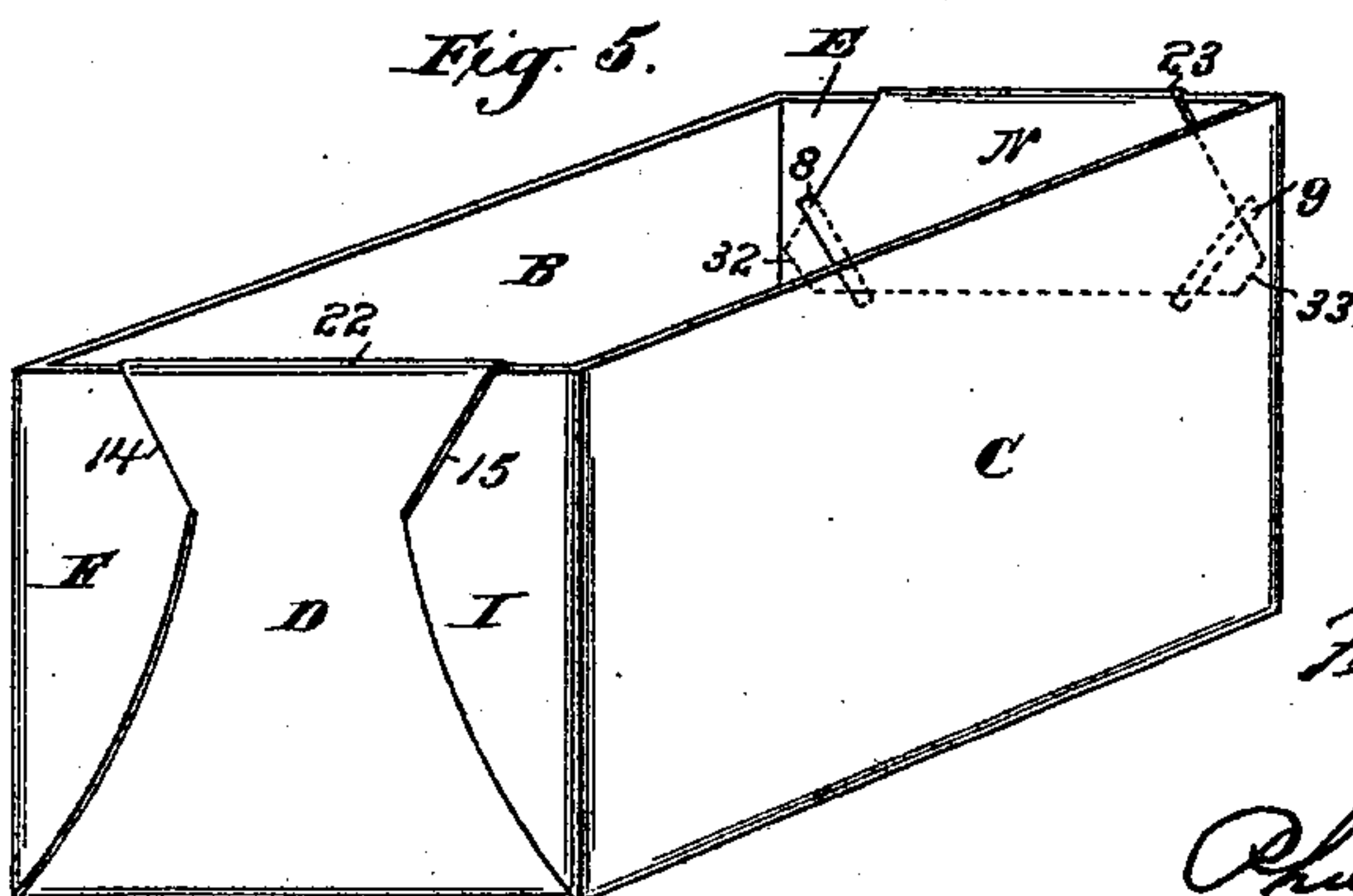


Fig. 5.



Attest:
Geo. H. Botta
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Frederick M. Turck
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 6.

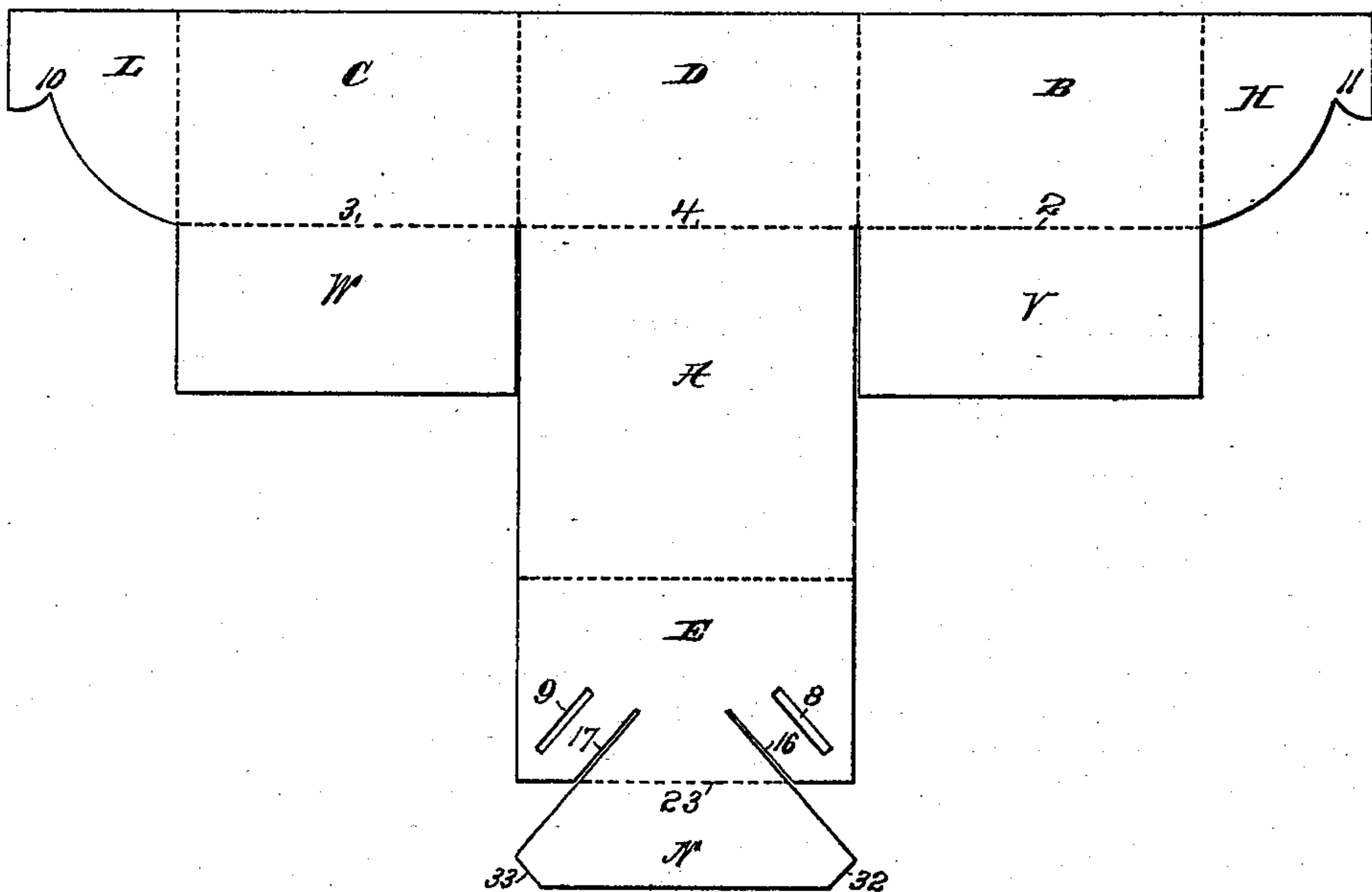


Fig. 7.

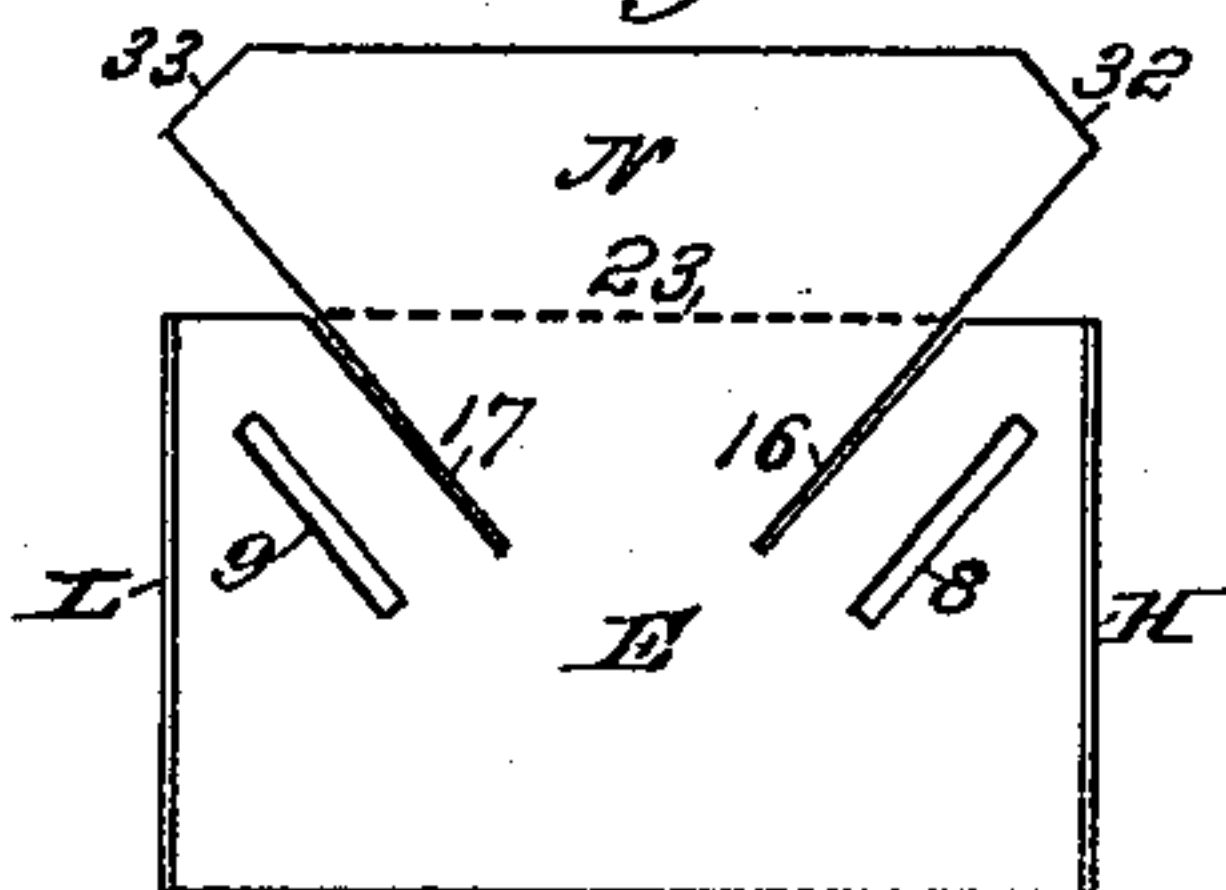


Fig. 8.

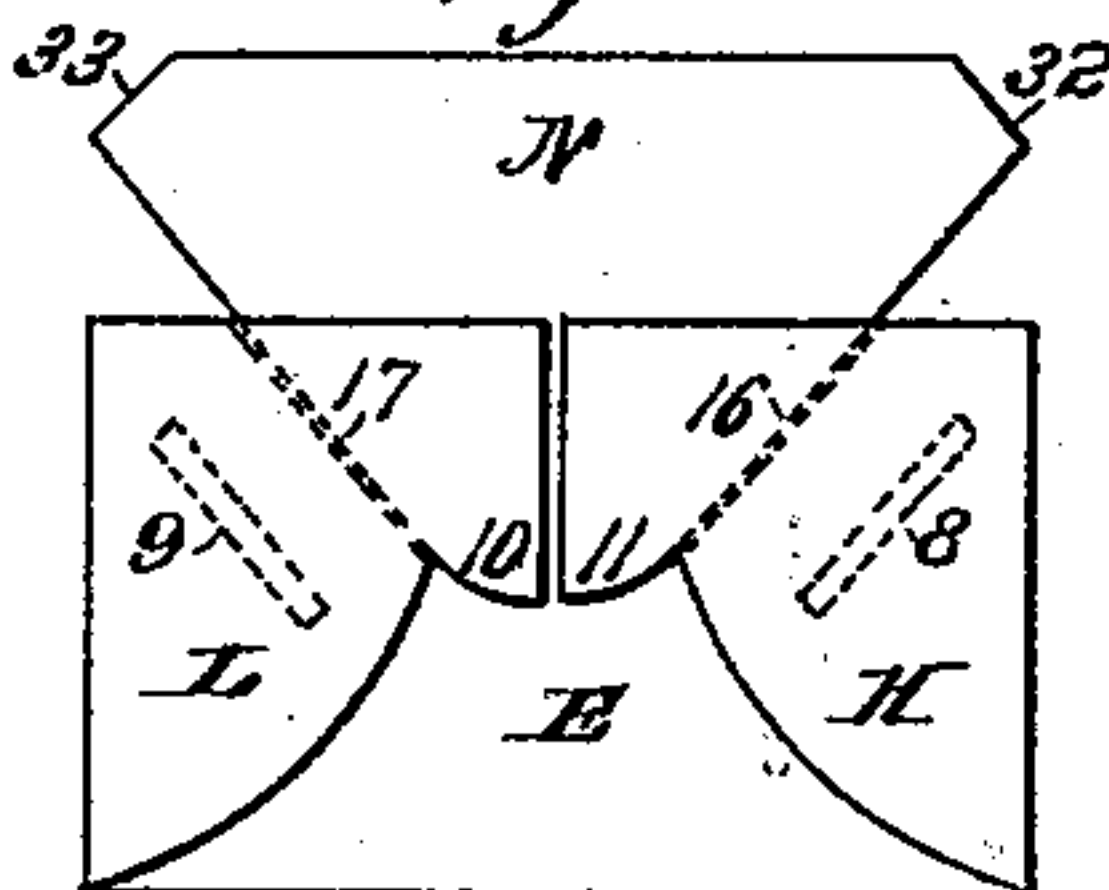


Fig. 9.

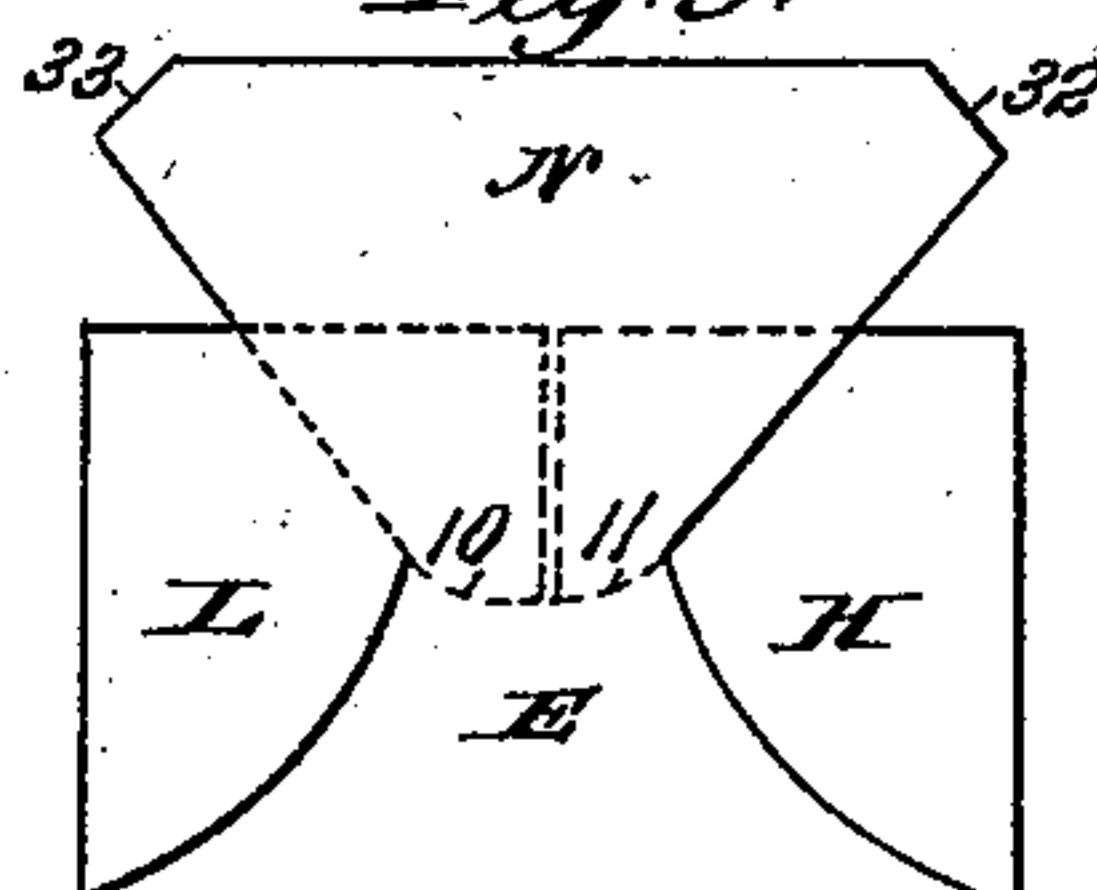


Fig. 10.

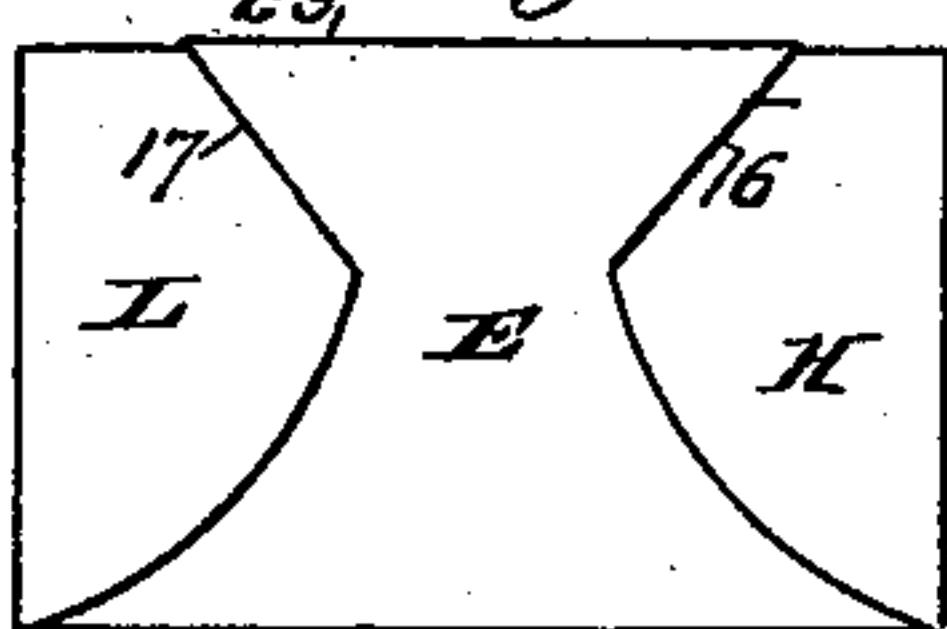


Fig. 11.

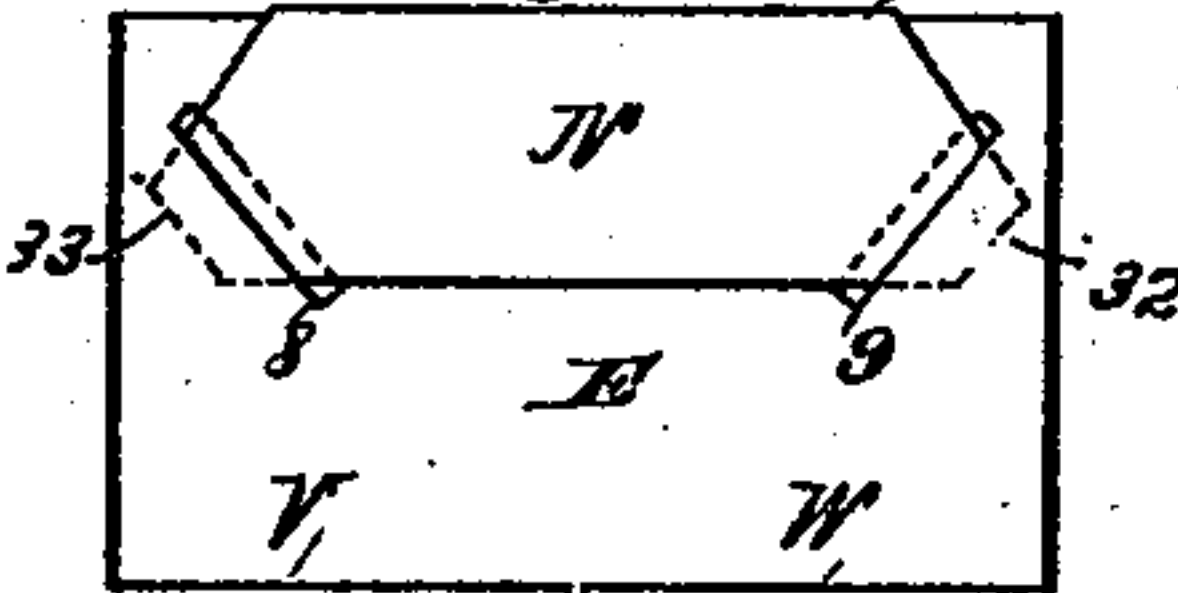
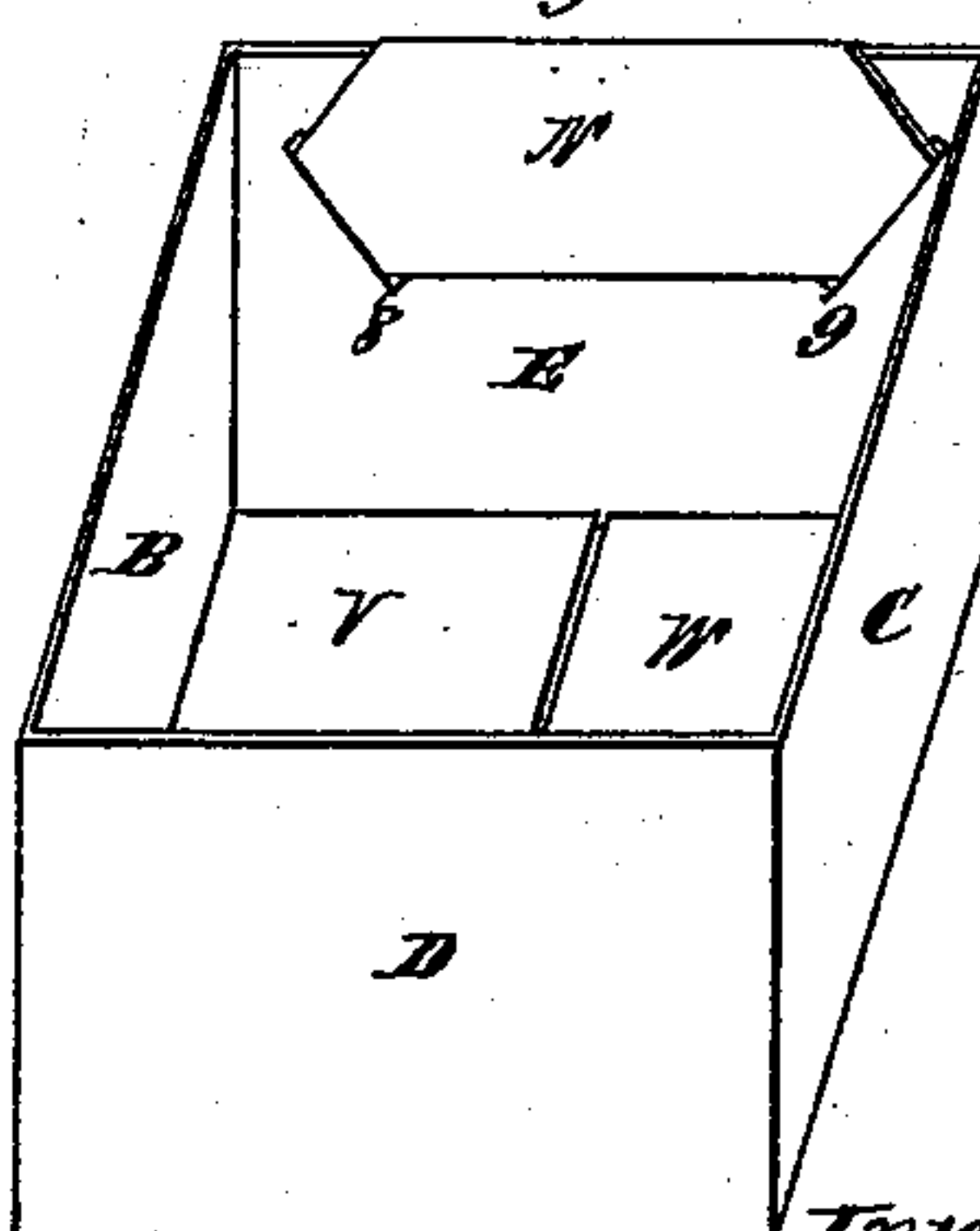


Fig. 12.



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UNITED STATES PATENT OFFICE.

FREDERICK M. TURCK, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HENRY J. HOWLETT, TRUSTEE, OF SAME PLACE.

PAPER BOX AND LOCKING DEVICE THEREFOR.

SPECIFICATION forming part of Letters Patent No. 516,246, dated March 13, 1894.

Application filed July 25, 1892. Serial No. 441,147. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK M. TURCK, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Paper Boxes and Locking Devices Therefor, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to that class of boxes usually made from paper in the form commonly known as mill-board or cardboard, which is a sheet of such thickness as to be stiff and strong enough to enable a blank to be cut therefrom and so incised and scored or creased as to adapt it to be bent into hollow or box form and have its otherwise free parts interlocked and fastened together for use as a container of articles or material; but this may of course be any similar material suitable for the purpose, as combined cloth and paper, thin metal sheets and the like. As the blanks composing such boxes contain within themselves the means for sustaining them in a hollow or box form and are thus adapted for storage or shipment in flat form to be set up and locked together by the user, they are sometimes provided with covers by duplicated bodies made appropriately shallow for such use, and are known as knock-down boxes.

The objects sought by the present improvements are the attaining of simplicity and economy in manufacture, the construction of a locking device that possesses great strength and is capable of easy manipulation, and the providing of means for protecting the interlocked parts by binding their upturned edges together at the locked end, thus preventing said edges and the locking devices from being engaged, ruptured or forced apart by the contents of the box either while loading or carrying the same.

This invention consists in a box and its composing blank so shaped, incised and creased or scored as to provide its sides with flaps having locking extensions and its end with interlocking incisions, whereby the sides and end are interlocked, the body portion of the end flap with a tucking slot or slots and

the extension of the end with a locking tongue or tongues whereby said end flap and its extension may not only inclose the side flaps but additionally envelop the upturned edges of the side flaps and be locked to itself, thus providing a fastening of unusual strength, which besides enabling a light material to compose the box, forms an envelope that not only covers the locking devices and thus presents a superior exterior finish, but binds together what would otherwise be the raw edges of loose upturned side flaps and furnishes them with a bound edge of doubled material, which construction prevents the exposure of any loose or free ends or edges of the lock or flaps to destructive abrasion or engagement from the hand of the user or the contents of the box, either in filling, handling, transportation, or otherwise.

The invention also embraces details of construction in the lock and modifications of the box and its blank so particularly hereinafter described as to need no preliminary explanation.

The accompanying drawings fully illustrate practical embodiments of this invention, as follows:

Figure 1 is a plan view of a blank cut, creased and incised to provide it with my improved locks adapting it to be set up and secured in hollow or box form. Fig. 2 is an end view of the same with the end raised at right angles to the bottom and standing vertically between the upraised sides. Fig. 3 is an end view when one end flap has been raised at right angles to the bottom, and stands vertically between the said upraised sides, and the extended flaps of said sides have been lapped centrally over said end, the view being given to show the relation of the locking tongues and the incisions in which they are to be engaged. Fig. 4 shows the flaps extending from the sides as not only turned inwardly but with their locking tongues entered into the locking incisions of the end flap. Fig. 5 is a perspective view of the completed box showing the enveloping extension of the end flap as turned inward and interlocked with itself to inclose, bind and protect the end. Fig. 6 is a plan view of a blank cut, creased and incised to provide it with my improved locks

whereby it is adapted to be set up and secured in hollow or box form by means of one set of fastenings. Fig. 7 is an end view of the same when three of the sides have been bent upward, two of them have been swung forward to carry their auxiliary bottom extensions over the main bottom, and the free end flap has been upraised. Fig. 8 is an end view when the projecting locking flaps of the upturned sides have been bent inward upon the said free end flap, the view being introduced to better illustrate the relation of the hooked locking tongues to the incisions with which they interlock. Fig. 9 is a similar end view with said hooked locking tongues secured in said incisions. Fig. 10 is a similar view of the locked end of the box with all of the parts in place. Fig. 11 is an inside view showing more particularly the completely locked end of the box. Fig. 12 is a perspective view of the finished box showing more particularly its double bottom.

The blank shown in Fig. 1 is cut, incised and creased or scored in the manner shown, by hand or by means of any of the appliances used in the manufacture of boxes and though shown as formed to produce a rectangular box may have other configurations as is common in this art. It is composed of a bottom A having sides B, C, connected therewith by means of creased or scored lines 2, 3 and the ends D, E connected to said bottom by means of creased or scored lines 4, 5, on which lines 2, 3, 4, 5 the sides and ends are to be upturned to form a hollow or box structure. In order to secure the upturned sides and ends in this relation to the bottom said sides are respectively provided with extended flaps F, H and I, L, respectively connected with the sides B, C by creased or scored lines 18, 19 and 20, 21, each of which flaps is fashioned to provide it with a tongue preferably with a hooked end which tongues are respectively marked 10, 11 and 12, 13. The ends D, E are respectively provided with incisions, preferably angular, respectively marked 14, 15 and 16, 17, with which said locking tongues are engaged, and they also carry extensions M, N respectively connected to them by a scored or creased line as 22, 23, which extensions have their outer ends fashioned to provide locking tongues as 30, 31, 32, 33, which are adapted to enter locking slots 7, 6, and 8, 9 with which the ends D, E are respectively provided. The neck of each locking tongue 10, 11, 12, 13, and the inner extremity of the incisions 14, 15, 16, 17 are so positioned and related to each other that they will coincide when the sides B, C, and ends as D, E are upturned and the side flaps F and H, and I and L, are turned inward toward each other and lapped against said ends, each coacting tongue and incision being thus adapted not only to engage but to so interlock as to hold the sides in true angular position with respect to the bottom A, as shown in Figs. 3, 4 and 5. Referring now to one end of said box it will be readily understood that this in-

terlocking is accomplished by entering the tongue as 11 into the incision as 16, and the tongue 13 into the incision 17, while the sides B, C are moving to their upright positions and carrying the end flaps H, L toward each other and in contact with the end E, thus enabling the necks of the tongues 11, 13 to enter the incisions 16, 17 into which they will slide until each side, B or C reaches its upright position when the necks of the said tongues will each have descended into contact with the lower extremity of its incision as in Fig. 4. In this condition of the parts the extension N will protrude above the sides or upper edges of the box and occupy such a position that when it is folded over the edges of the side flaps and laid against the inner face of the box end, the uppermost edges of the said side flaps, H, L at the end of the box will be enveloped thereby and that when said tongues 32, 33, are entered into their retaining slots 8, 9, preferably laterally, they will snugly fit therein, thus embracing the side flaps as H, L within folds formed wholly by the end piece and at the same time bind the free upper edges together with a bend of continuous material and not only cover the locking tongues and slots from external exposure, but protect them from contact with the contents of the box or the hands of the packer or user, as in Fig. 5.

A box provided with such a fastening is adapted for the containing and carriage of heavy or bulky articles and is capable of resisting in a large degree any tendency of its parts to separate or be drawn out of shape by pressure of its contents against the sides or ends—while the engaging parts of the locks are so protected as not to be exposed to engagement with the contents when introduced into the box or with the hands of the packer—and all of the edges of the interlocked portions are held snugly upon each other and are laid smoothly together.

As thus far described the lock at one end has been more particularly referred to, but it will be understood that the locks at both ends of the box shown in Figs. 1 to 5 are constructed precisely alike.

The extensions M, N are preferably, though not necessarily, formed with sides which are continued on lines that are prolongations of the angles of the incisions as 14, 15 and 16, 17; but these incisions may be made on lines parallel with the side edges of the box end or at a greater or less angle thereto, the extension M or N extending more or less near the side edges according to the disposition of said incisions.

Although I have illustrated the extensions M, N, of this box with oppositely arranged locking tongues 30, 31 and 32, 33, and they are shown as angularly disposed so as to be entered laterally into their similarly arranged locking slots 7, 6 or 8, 9, and all of which is the preferable construction, said tongues and slots may be arranged so that the tongues

will enter the slots by a vertical movement or by straight insertion, and one such tongue and slot centrally arranged will suffice when external appearance is of slight consideration, or a means of sealing the lock is desired, but the precise construction shown is the more advantageous.

It may now be stated that for some uses as a holder for documents and papers, adapted to be supported in a container, or as a stand for a pad calendar, such a box might have its sides cut down from the top of one end as E on angles that intercept the line of union between the other end as D and the bottom A, in which case the box would have but one end provided with this improved lock. And it will upon slight consideration also be apparent that the hooked locking tongues upon the side flaps adapted for engaging incisions in the box end, may be omitted and said side flaps be simply bent inwardly over the box end with their upper ends protruded through the incisions but without interlocking therewith, and yet be held securely in place by the enveloping inclosing self-interlocking box end through its extensions and locking means.

A modified box embodying this improved locking means is shown in Sheet 2 of the drawings. In this modified form of box, which is made from a single blank with only one set of locking devices and has its parts held together thereby without cemented or pasted seams, the end locking devices are of precisely the same construction and operation as those shown in Sheet 1 and therefore need no explanation other than is given them in the description of the drawings and that which is indicated by their letters of reference corresponding with those of the preceding figures. In this box, however, the bottom A carries at opposite points the two end pieces D, E and the end piece D has attached to it at opposite points the two side pieces B, C which side pieces have depending from them flaps V, W which are wide enough to in whole or in part constitute an auxiliary bottom to the box. The side pieces B, C are also provided with extending flaps H, L which have hooked tongues as 11, 10, that co-operate with the incisions 16, 17 to fasten said flaps and the end piece E together and be enveloped by the extension N when interlocked with itself, as before explained. In setting this box up for use the auxiliary bottom flaps V, W are bent upward on the scored lines 2, 3, of their union with the sides B, C and then the end D is bent up at right angles to the bottom A on the dotted line 4 of scoring. Then the sides B, C are bent inward upon the lines of scoring uniting them with the end D, which causes the auxiliary flaps V, W to swing over the bottom A and the sides B, C to coincide in alignment with the side edges of the bottom A. Thereupon the end E is raised at right angles upon its line of scoring connecting it with the bottom A,

when the box will present the appearance shown in Fig. 7. The flaps H, L are now bent upon their lines of scoring attaching them to the sides B, C and their hooked tongues 11, 10 are respectively engaged with the incisions 16, 17 as in Fig. 9, and then the extension N is folded upon its line 23 of scoring connecting it with the end piece E and has its opposite tongues 32, 33 entered into the locking slots 8, 9 as in Fig. 11. Thus the side flap N overlaps the upturned edges of the side flaps H, L and presses and binds the same together most securely. The structure shown in Sheet 2 is not, however, claimed herein except insofar as it is broadly within the scope of the claims hereof.

What is claimed is—

1. A paper box formed from a single piece of material and comprising two sides with flaps that extend inwardly at the box end, and with an end piece that is provided with an extension and locking devices that enable said end piece to fold over and envelop the side flaps and lock to itself, thus inclosing and binding the parts together, substantially as described.

2. A box of paper or similar material consisting of a bottom, sides and end, said sides being each provided with an extended flap carrying a locking tongue, the end of the box having two incisions adapted to receive and engage with said tongues and being also provided with an extension carrying a tongue or tongues and in its body with a slot or slots to receive said tongue or tongues, which extension is adapted to overlap the upper edges of the side flaps that are interlocked with said end and thus envelop and bind the parts in place, substantially as described.

3. A box of paper or similar material consisting of a bottom, sides and ends, said sides being provided at each end with an extended flap carrying a locking tongue, the ends of the box each having two incisions adapted to receive and engage with said tongues and each end being also provided with an extension carrying a tongue or tongues and in its body with a slot or slots to receive said tongue or tongues, which extensions are adapted to overlap the upper edges of the side flaps that are interlocked with said ends and thus envelop and bind the parts in place, substantially as described.

4. A blank of paper or similar material, cut, incised and creased or scored to provide a bottom and sides and end, attached thereto, said sides carrying flaps that are shaped to provide them with locking tongues, and said end having two incisions to receive said tongues and being provided with an extension shaped to form a tongue and in its body with a slot to receive said tongue, and thus form an envelope to inclose the end flaps, substantially as described.

5. A blank of paper or similar material, cut, incised and creased or scored to provide a bottom and sides and ends attached thereto, said

sides each carrying two flaps that are shaped to provide them with locking tongues, and said ends having two incisions to receive said tongues and each being provided with an extension shaped to form a tongue and in its
5 body with a slot to receive said tongue, and thus form an envelop to inclose the end flaps, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FREDERICK M. TURCK.

Witnesses:

H. T. MUNSON,
ROBT C. TAYLOR.