

(No Model.)

3 Sheets—Sheet 1.

J. HOLLINGWORTH.
SHUTTLE BOX FOR LOOMS.

No. 365,683.

Patented June 28, 1887.

FIG. 2.

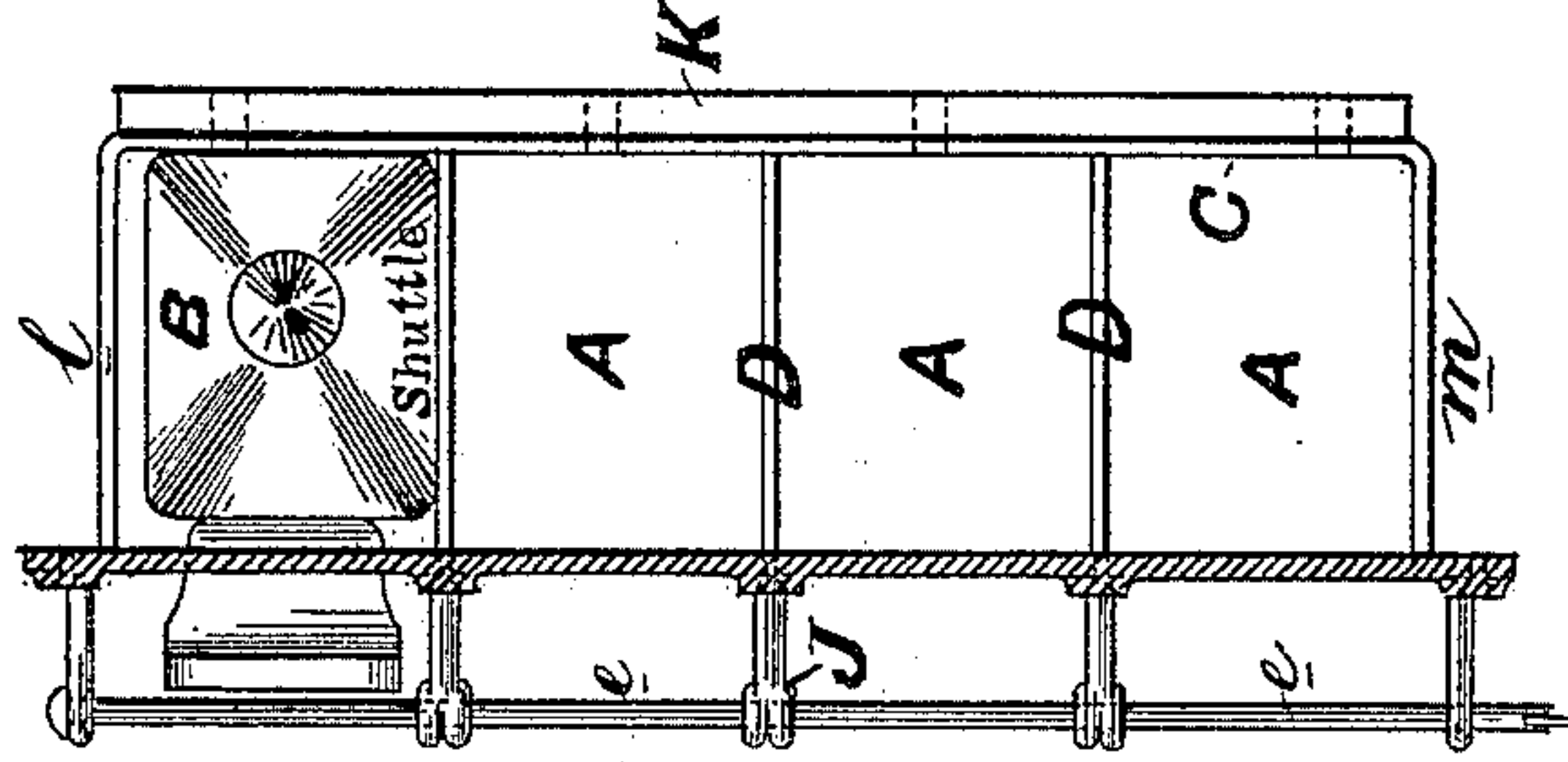
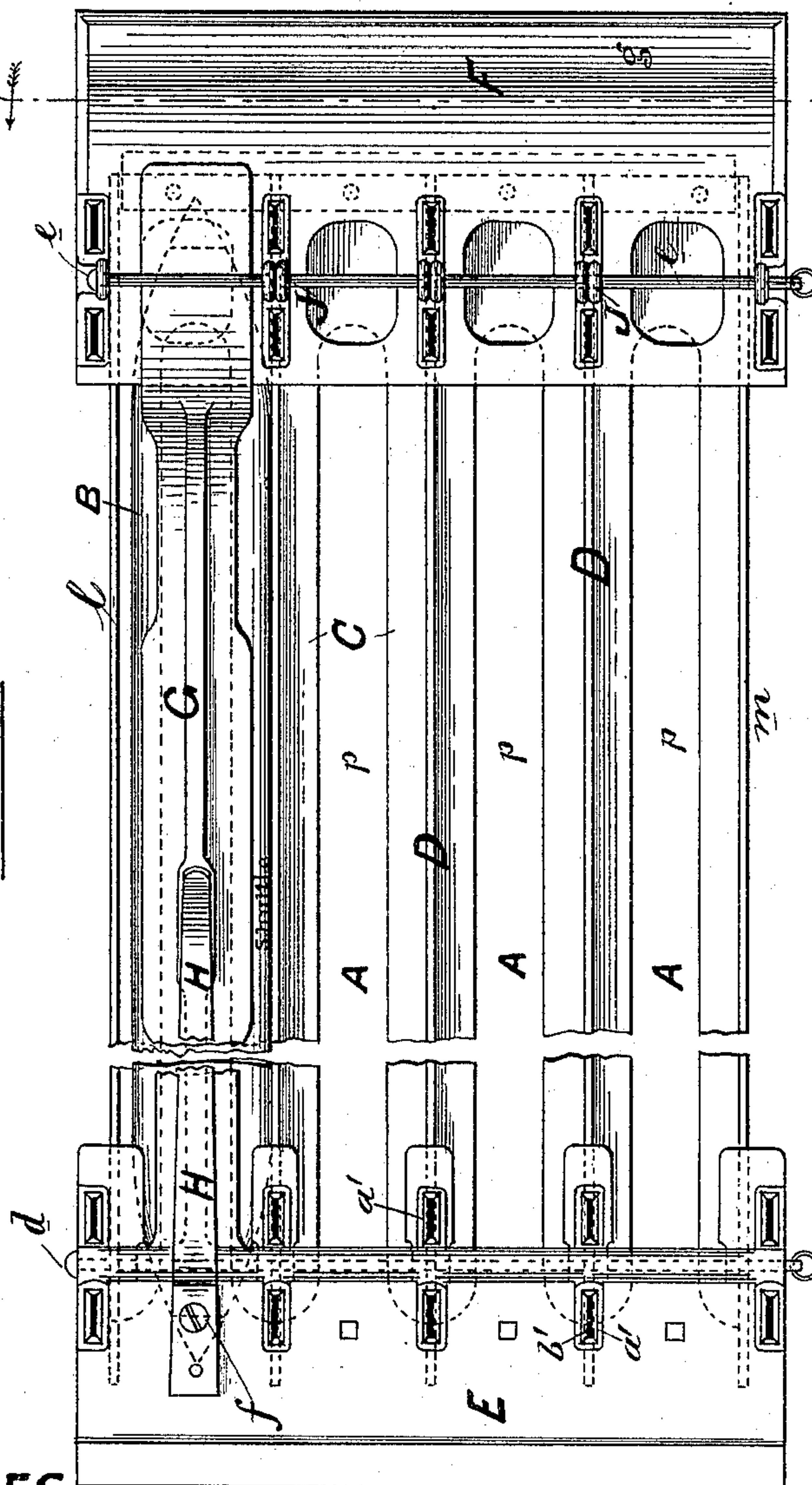


FIG. 1



WITNESSES:

A. Morosky
H. W. R. Ingham

INVENTOR:

J. Hollingworth
— 4 —

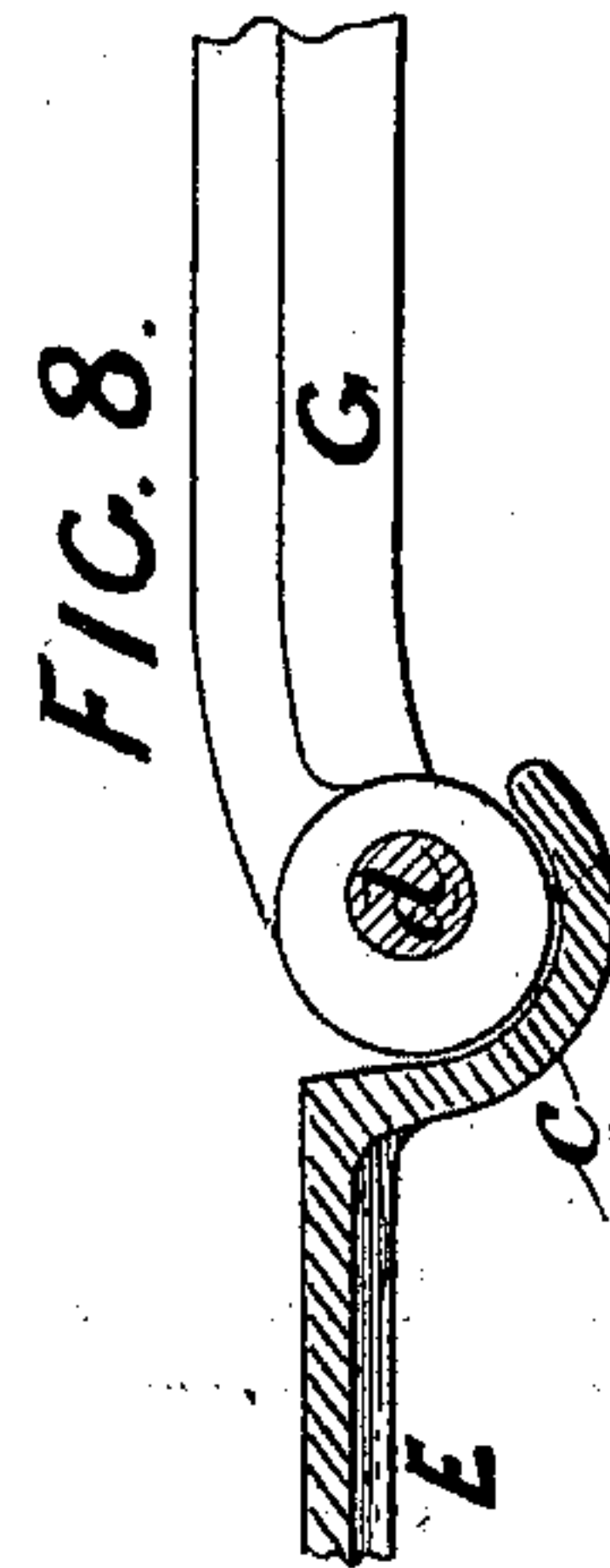
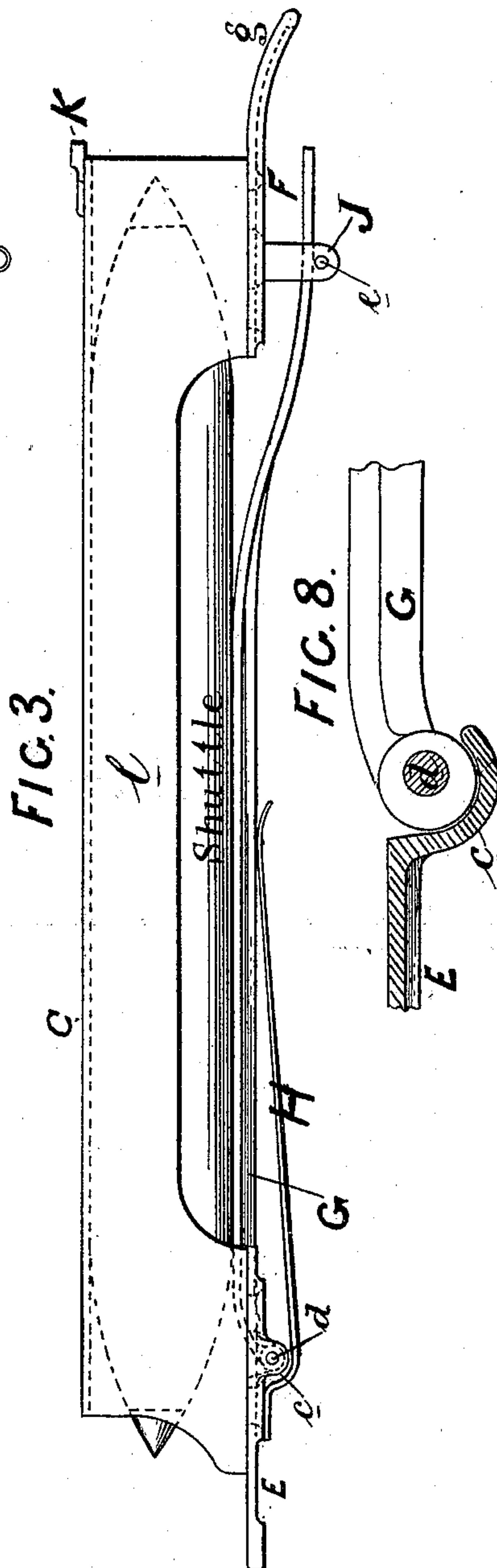
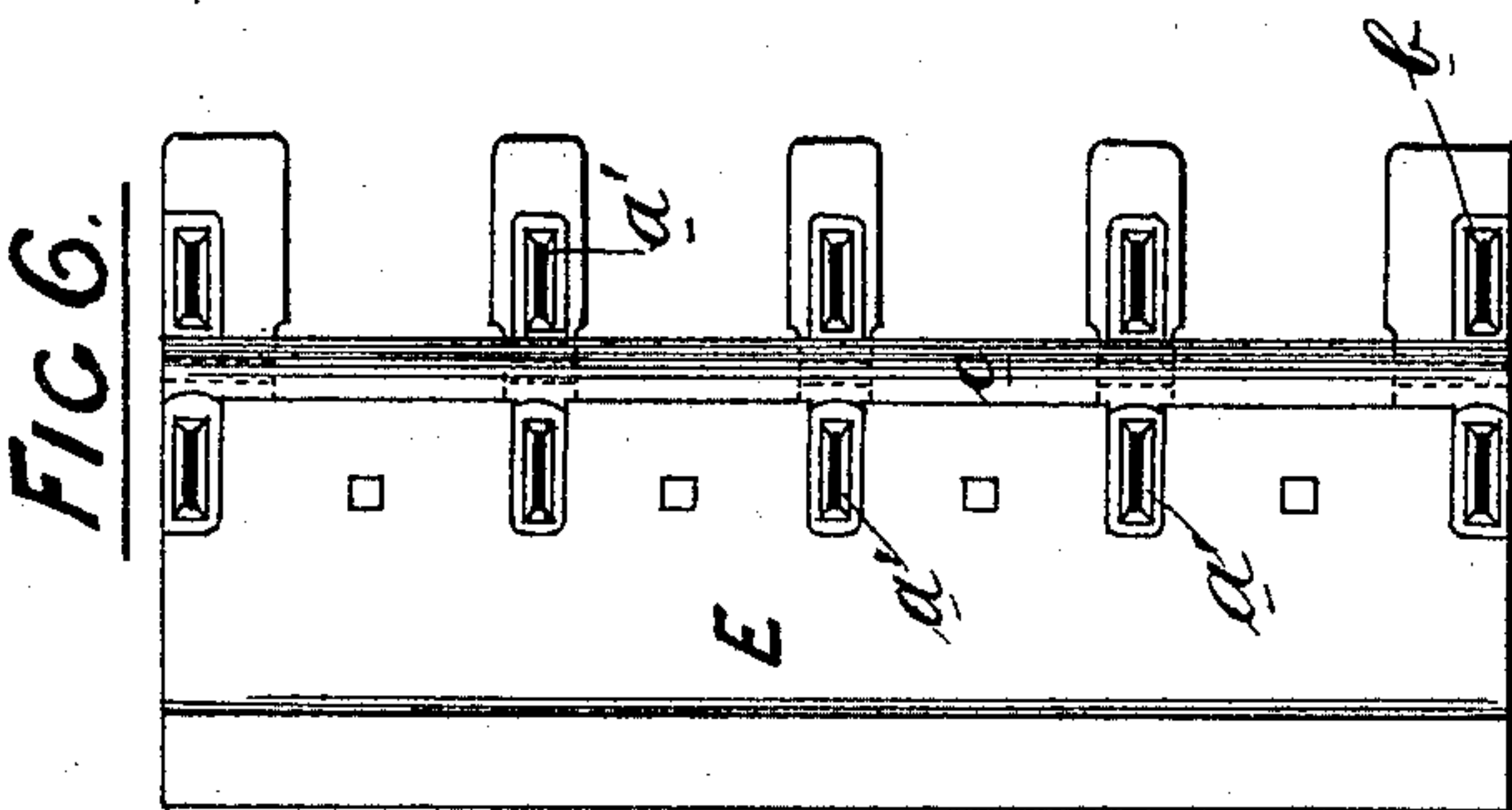
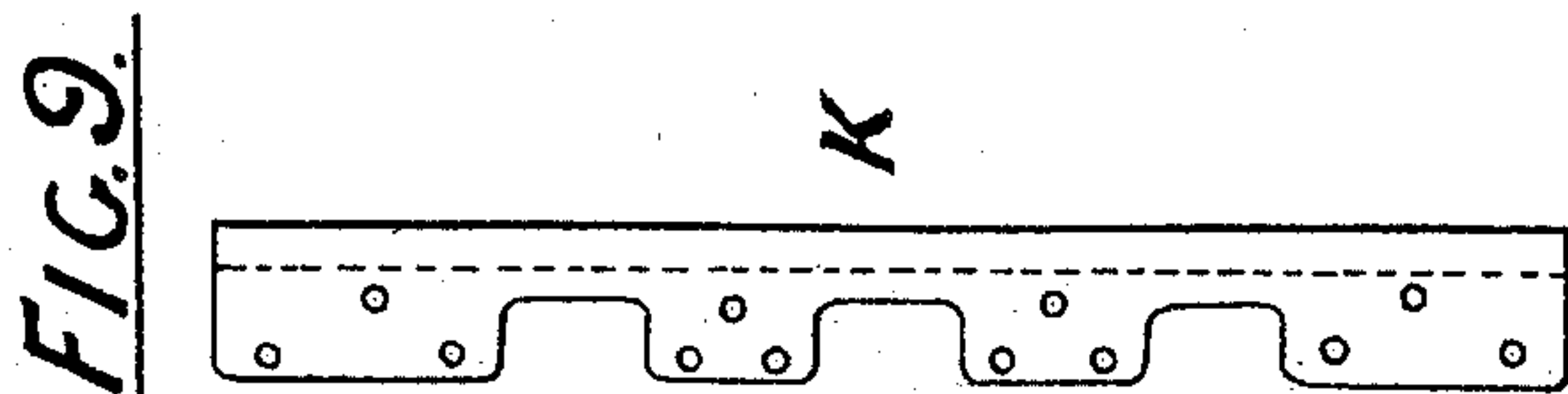
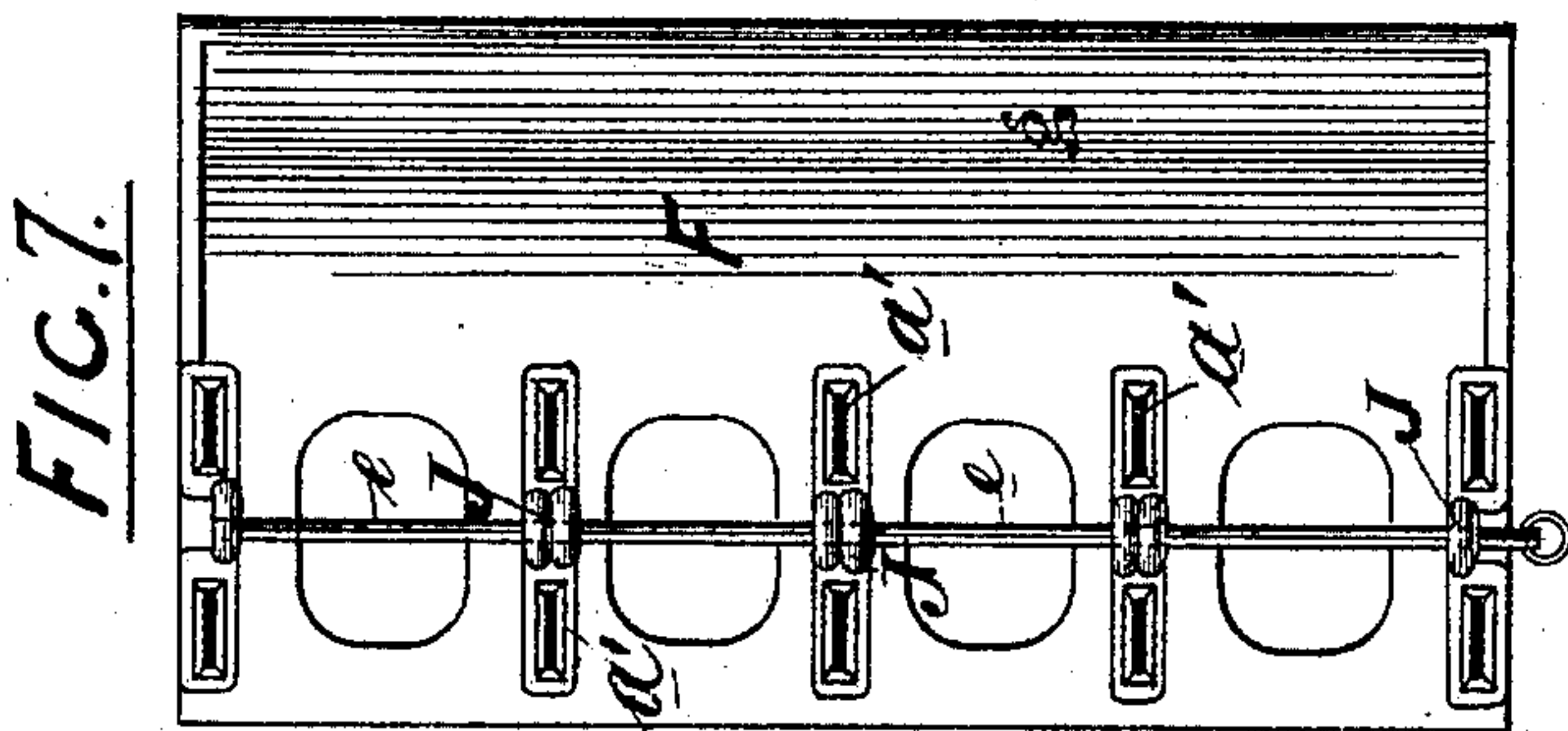
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WITNESSES:

H. H. R. Ingham.

INVENTOR:

Jas. Hollingworth

(No Model.)

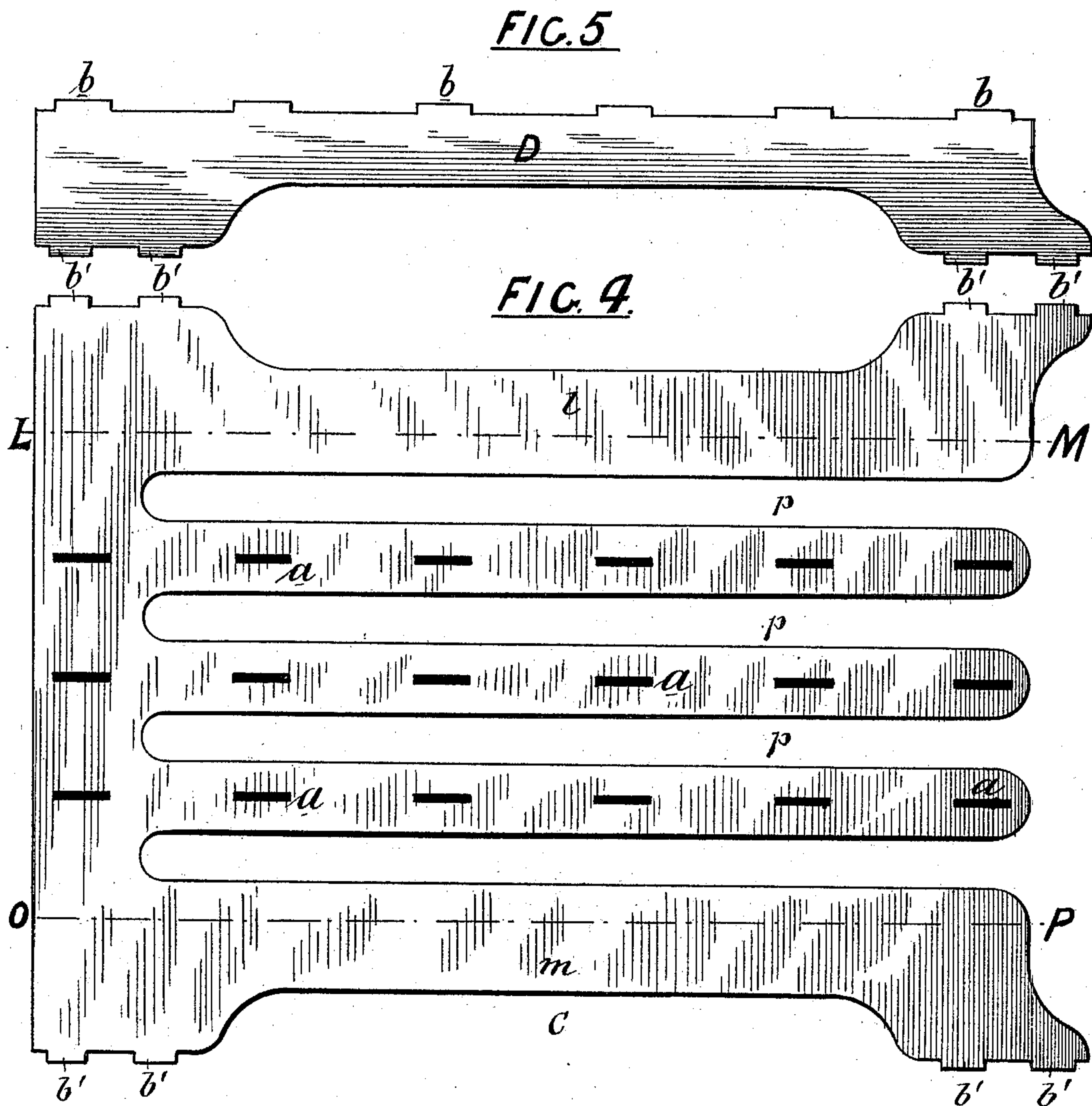
3 Sheets—Sheet 3.

J. HOLLINGWORTH.

SHUTTLE BOX FOR LOOMS.

No. 365,683.

Patented June 28, 1887.



WITNESSES:

WITNESSES:
A. Brossley
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INVENTOR:

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UNITED STATES PATENT OFFICE.

JAMES HOLLINGWORTH, OF DOBCROSS, COUNTY OF YORK, ENGLAND.

SHUTTLE-BOX FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 365,683, dated June 28, 1887.

Application filed January 22, 1887. Serial No. 225,132. (No model.) Patented in England July 15, 1886, No. 9,200.

To all whom it may concern:

Be it known that I, JAMES HOLLINGWORTH, a subject of the Queen of Great Britain, residing in Dobcross, in the county of York, England, have invented certain new and useful Improvements in Shuttle-Boxes for Looms; of which the following is a specification.

My invention has special reference to shuttle-boxes arranged in tiers one above another, and mounted on the ordinary lathe-sword or "going part," being raised or lowered so as to bring each time the required shuttle opposite the picker. Such shuttle-boxes have hitherto usually been made by casting them of metal, a method which, because of their peculiar shape and construction, is very expensive, since they are difficult to mold in the sand, and when cast a great deal of labor is required to finish them and render them fit for use.

The object of my invention is to provide a cheaper and better construction of shuttle-boxes. To this end I construct them of metal plates stamped out in the required shapes, and afterward joined together by riveting or other means of fastening.

My improved shuttle-box consists of a back plate of metal cut out to the proper shape, and having its top and bottom portions bent at right angles, the one to constitute the top of the box and the other the bottom thereof, said back, top, and bottom being provided with fastening-slots and projections. The shelves or division-plates between the several shuttle-compartments are likewise cut out of metal plate, and are joined to the back plate by riveting. Against the front are placed two cast-metal front plates—one at each end—and the shelves and top and bottom are riveted to them. To one of these plates the swells are hinged, and the other plate carries stops for confining the free ends of the swells. The swells are hinged on a pin, and their knuckles are housed in a swell cast upon the front plate, which prevents their pivot-holes wearing unevenly.

Figure 1 of the accompanying drawings is a front elevation of a tier of shuttle-boxes constructed according to my invention. Fig. 2 is an end elevation thereof, partly in section, on the line 2 2 in Fig. 1. Fig. 3 is a plan thereof. Fig. 4 is an elevation of the cut plate which

is to form the back, top, and bottom. Fig. 5 is a plan of one of the shelves. Figs. 6 and 7 are front elevations of the two front plates. Fig. 8 is an enlarged fragmentary horizontal section showing the swell-hinge, and Fig. 9 is front elevation of a guide-piece.

Let A A designate the shuttle-boxes or cavities, and B a shuttle in one of them.

C is the back plate. D D are the shelves. E and F are the front plates, and G G are the swells.

The shuttle-box is made in the following manner: There is cut or stamped out from sheet-steel or other metal plate a piece, C, of the requisite shape, as shown in Fig. 4, having holes or slots *a a* in it and projections *b' b'* on its opposite edges. This plate is bent up at right angles on the line L M in Fig. 4, in order to form the top *l*, Fig. 2, of the shuttle-boxes, and is likewise bent up on the line O P in Fig. 4, in order to form the bottom or lower shelf, *m*, thereof, Fig. 2. A number of plates, D, of the shape shown in Fig. 5, are also cut out of sheet metal to form the shelves or division-plates. These have projections *b b* on their back edge, which fit into the slots *a a* in the plate C, and which, being inserted therein, are riveted down on the back thereof. They also have projections *b' b'* on their front edges, corresponding in position to the projections *b' b'* on the top and bottom portions, *l* and *m*, of the plate C. The front of the shuttle boxes is left open, except at the ends, which are covered by front plates, E and F. (Shown detached in Figs. 6 and 7.) These plates are made with slots *a' a'* to receive the projections *b' b'* on the shelves D and on the top and bottom *l m* of the plate C, which projections, on being inserted in said slots, are riveted down, thereby securing the several parts firmly together. These plates are preferably cast, in order that they may readily be made of varying thicknesses. They may be of cast-iron or steel, or of malleable iron or other metal. They are made somewhat thicker than the plates C D, and are thickened around the slots *a' a'*, in order that these slots may be beveled or countersunk on their front sides, as shown. This countersinking of the slot gives the riveted head a dovetail form, which is stronger than a mere straight rivet. The plate F is curved outwardly at its end *g*, for the purpose of

guiding the shuttle into the boxes in case it is not thrown exactly true. The shuttle-box swells G G (of which only one is shown in Fig. 1) are pivoted to the front plate, E, all being hinged upon a pin, *d*, which passes through eyes therein.

H is the leaf-spring for pressing the swell against the shuttle. It is fastened to the plate E by a screw, *f*. The ends of the swells extend over the plate F, and are confined by a pin, *e*, passed through posts J J on said plate, so that the swells cannot move forward of this pin. As the swell moves upon its pivot every time that a shuttle enters or leaves its box, it is found in practice that, as ordinarily constructed, the pivotal hole in the swell wears unevenly by constant working upon its pin, becoming in time elongated or worn eccentrically upon one side. To avoid this defect, I provide the plate E with a hood or cover, *c*, in which the knuckle of the swell is housed and against which it is re-enforced as the swell moves. This cover is preferably cast in one piece with the plate, being formed as best shown in Figs. 6 and 8. The knuckle of the hinge is confined in this cover, and as it wears upon its pin it bears against the cover, which divides the wear and keeps the hinge from pressing always against one side of the pin.

Fig. 9 is an elevation of a guide-piece, K, which is useful only in guiding the shuttle-boxes in their up and down movement, being fastened to the back of the boxes in the position shown in Fig. 3, and working in the frame of the lay. The back plate, C, has long slots *p p* extending into it from one end for the picker to work in.

My improved shuttle boxes have the advantage of greater strength, less weight, and neater appearance than those heretofore made, besides being cheaper to construct. As the boxes are made up of small and flat sections, these can easily be smoothed or finished before putting them together.

My invention is subject to modification from the precise construction shown, although that is the preferable one. The metal sections may be put together otherwise than by riveting, if desired.

My invention applies to the construction of any number of boxes in a tier, or even to single boxes.

I am aware that the shelves and bodies of shuttle-boxes have been made of sheet metal

or metal plate, and that boxes have been made of different pieces of metal fastened together.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is the following-defined novel features or combinations, substantially as hereinbefore specified, namely:

1. The sheet-metal blank from which the back, top, and bottom of the shuttle-box are formed, the same consisting of top and bottom portions, *l m*, having fastening projections *b' b'*, and the body of the blank having apertures or slots *a a* for the attachment of the horizontal shuttle-supporting shelves.

2. The sheet-metal blank from which the back, top, and bottom of the shuttle-box are formed, the same consisting of top and bottom portions, *l m*, having fastening projections *b' b'*, and parallel strips separated by slots *p p*, said strips having apertures *a a* for the attachment of the horizontal shuttle-supporting shelves.

3. In a shuttle-box, the back plate of metal bent rectangularly at top and bottom to form the top and bottom of the box, said top and bottom having fastening projections, in combination with front plates having apertures in which said fastening projections fit, whereby said front plates are fastened to said top and bottom.

4. In a shuttle-box, the back plate of metal bent rectangularly to form the top and bottom of the box, said back plate having apertures therein and said top and bottom having fastening projections, in combination with front plates having apertures in which said fastening projections fit, and horizontal shelves having fastening projections which fit in the apertures in said back plate, substantially as set forth.

5. Shuttle-boxes made of a thin metal back plate, two front plates at opposite ends, the one at the entering end being extended beyond the back plate and curved outwardly, and horizontal shelves fastened between them.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAS. HOLLINGWORTH.

Witnesses:

THOMAS H. BARRON,

A. B. CROSSLEY,

Both of Market Place, Huddersfield.