

(No Model.)

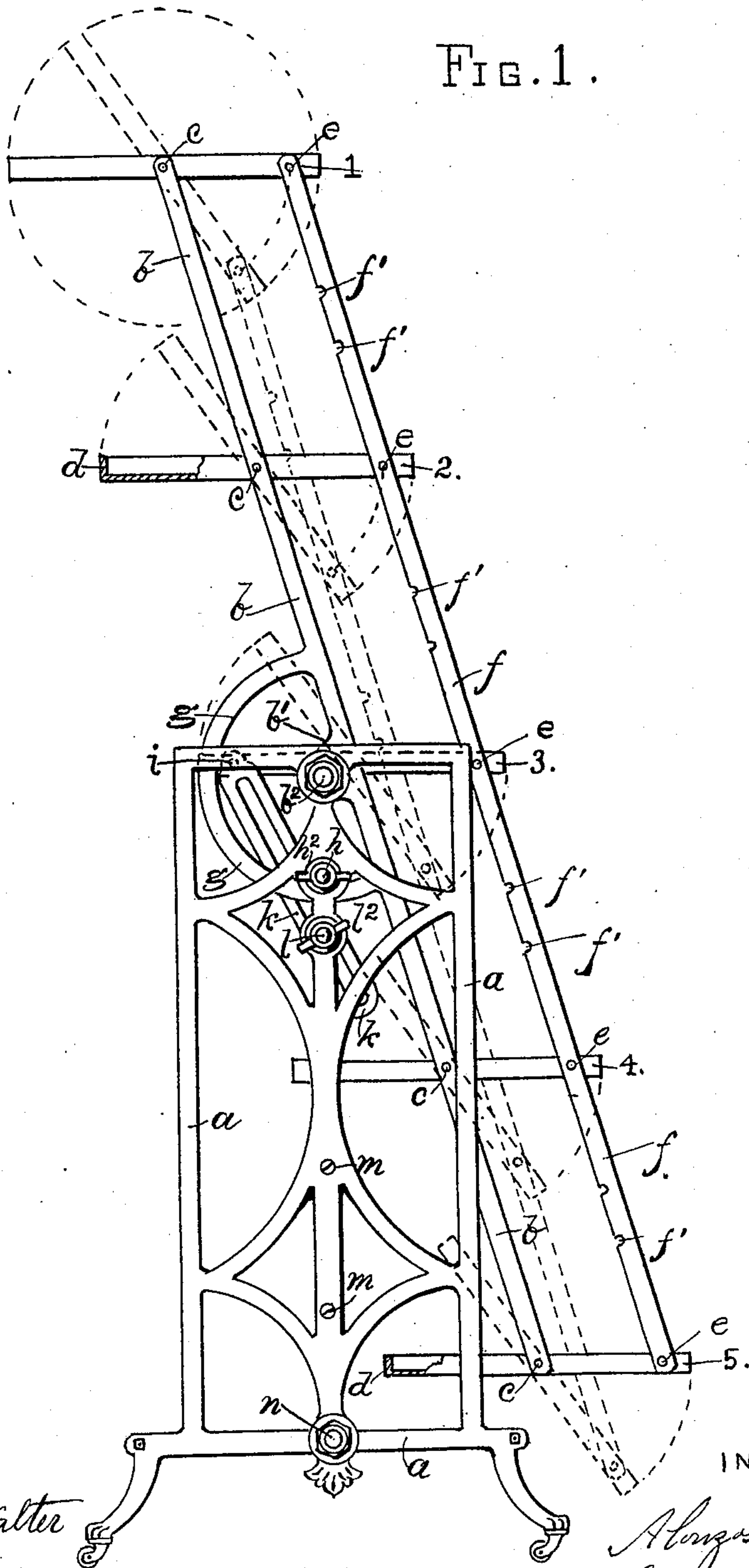
3 Sheets—Sheet 1.

ALONZO HALL & ALMON HALL.
CONVERTIBLE TABLE AND SHELF.

No. 582,350.

Patented May 11, 1897.

FIG. 1.



WITNESSES:

David C. Walter

L. C. Brown.

INVENTORS

Alonzo Hall.

Almon Hall.

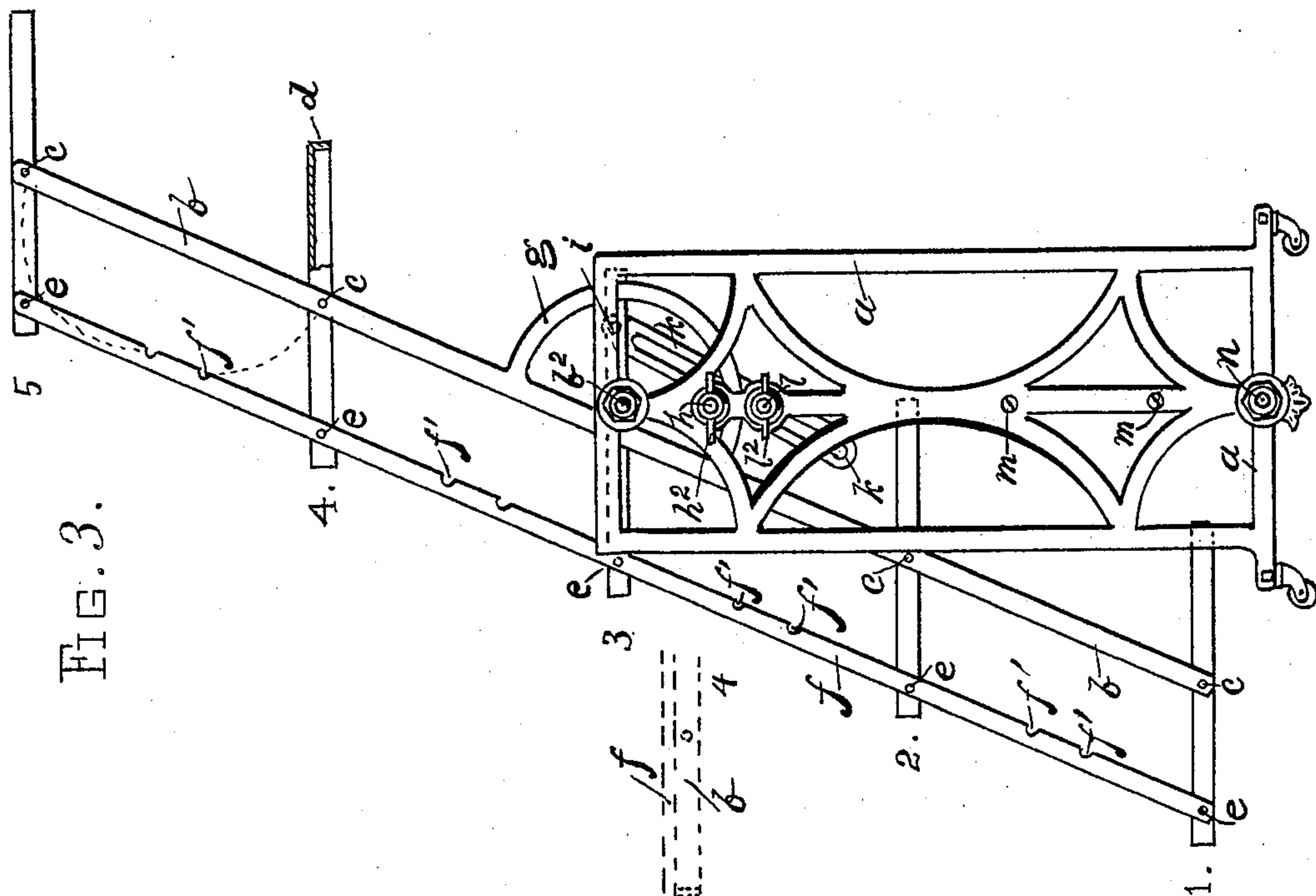
(No Model.) ALONZO HALL & ALMON HALL 3 Sheets—Sheet 2.

ALONZO HALL & ALMON HALL.³⁸

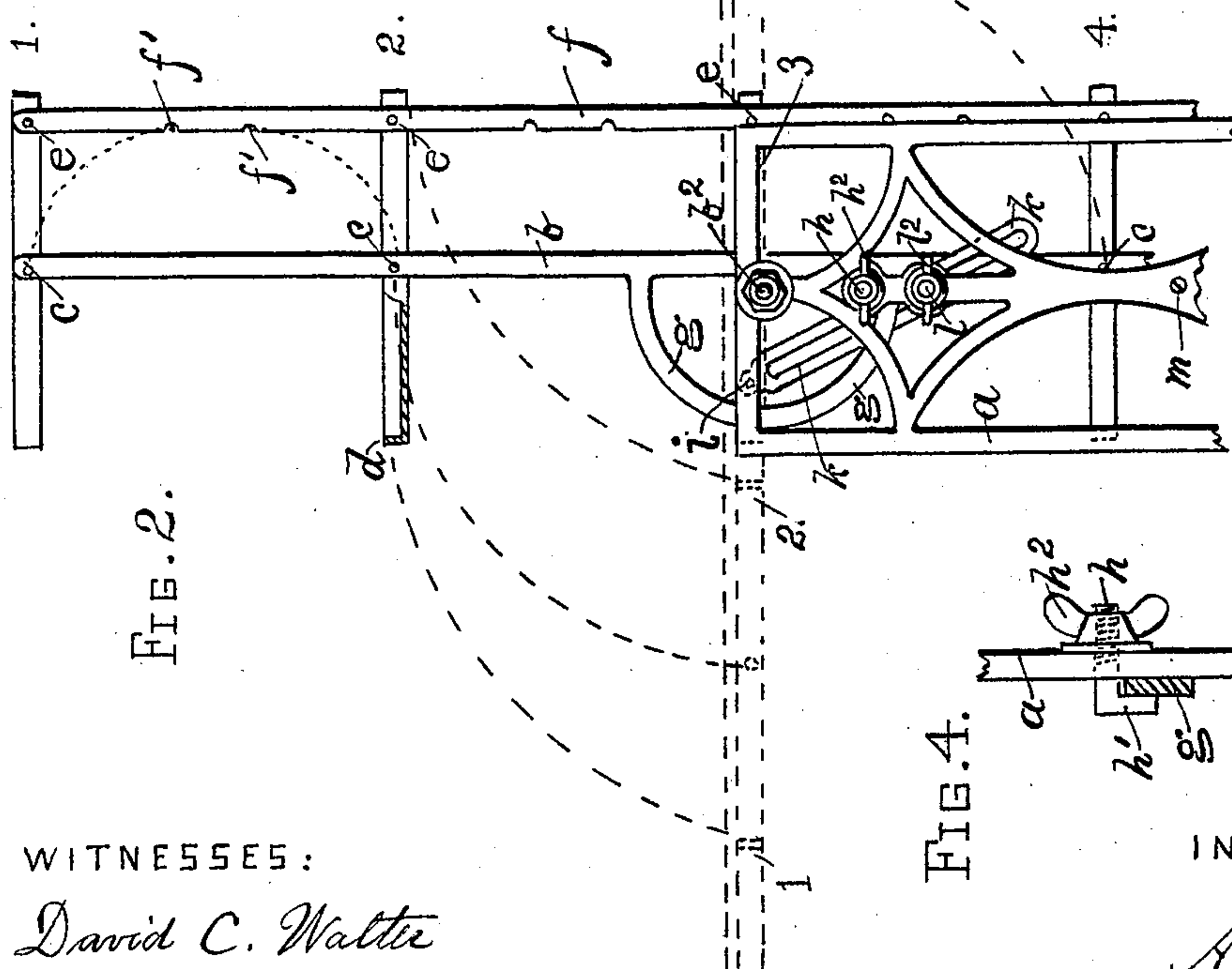
CONVERTIBLE TABLE AND SHELF.

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3. 5. 11



2. 5. 5.

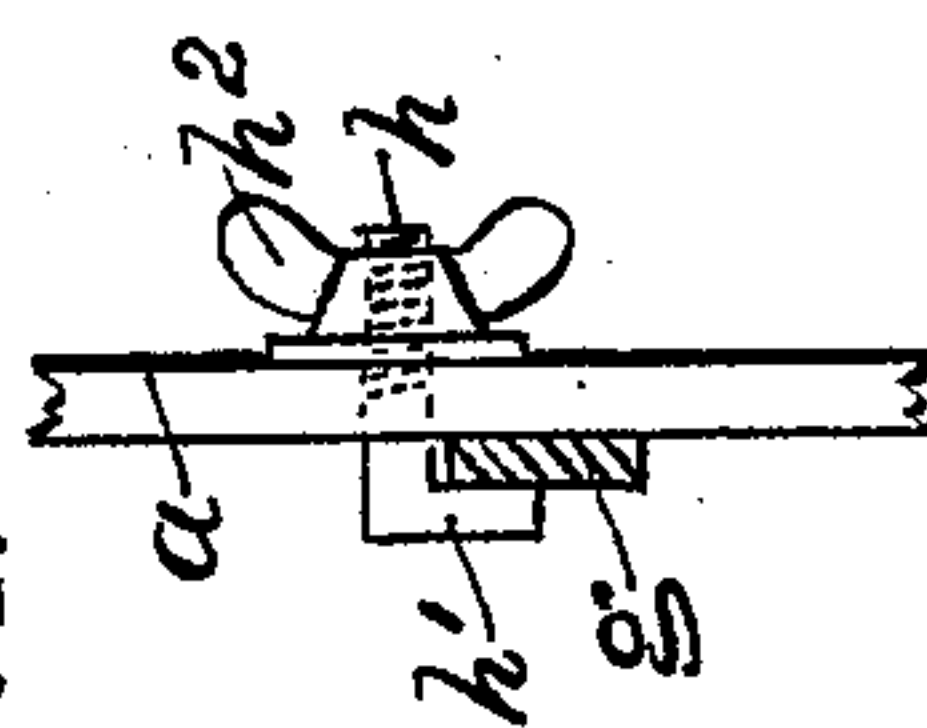


FIG. 4.

INVENTORS

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Longstaff
Mason Hall

(No Model.)

3 Sheets—Sheet 3.

ALONZO HALL & ALMON HALL.
CONVERTIBLE TABLE AND SHELF.

No. 582,350.

Patented May 11, 1897.

FIG. 6.

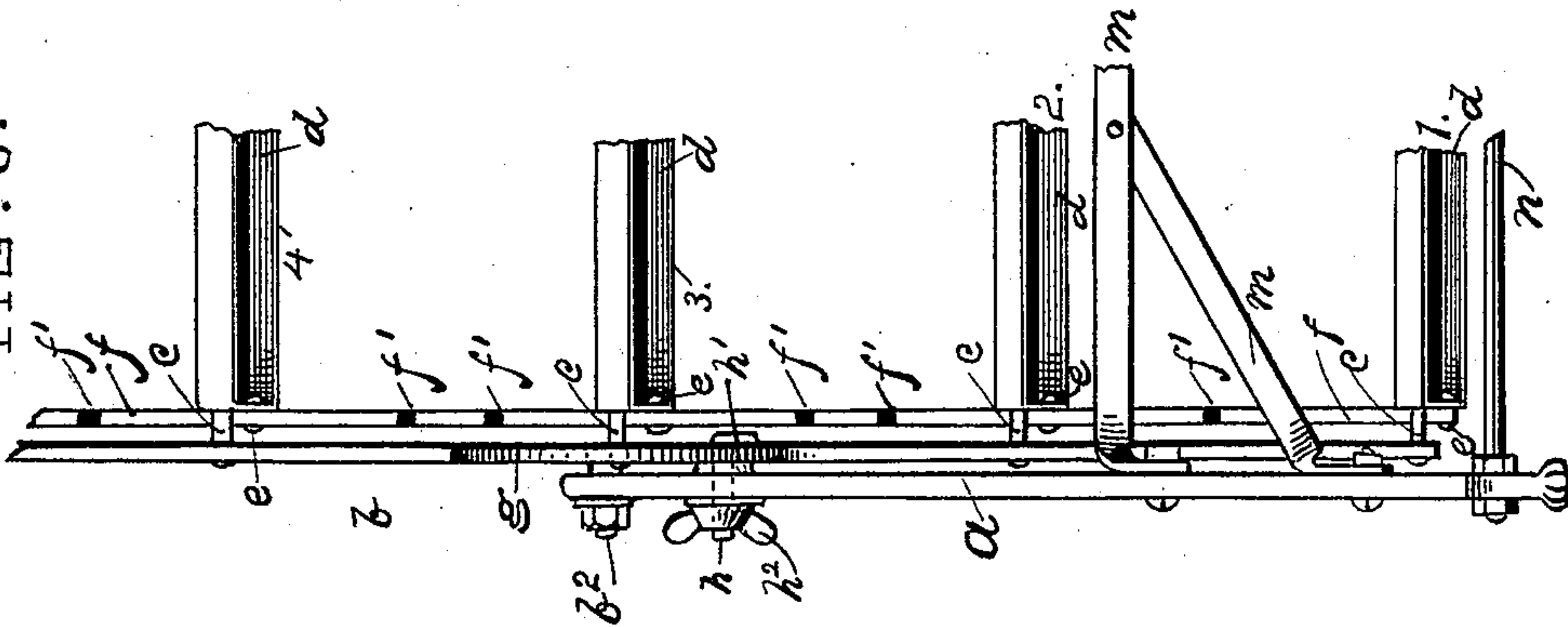
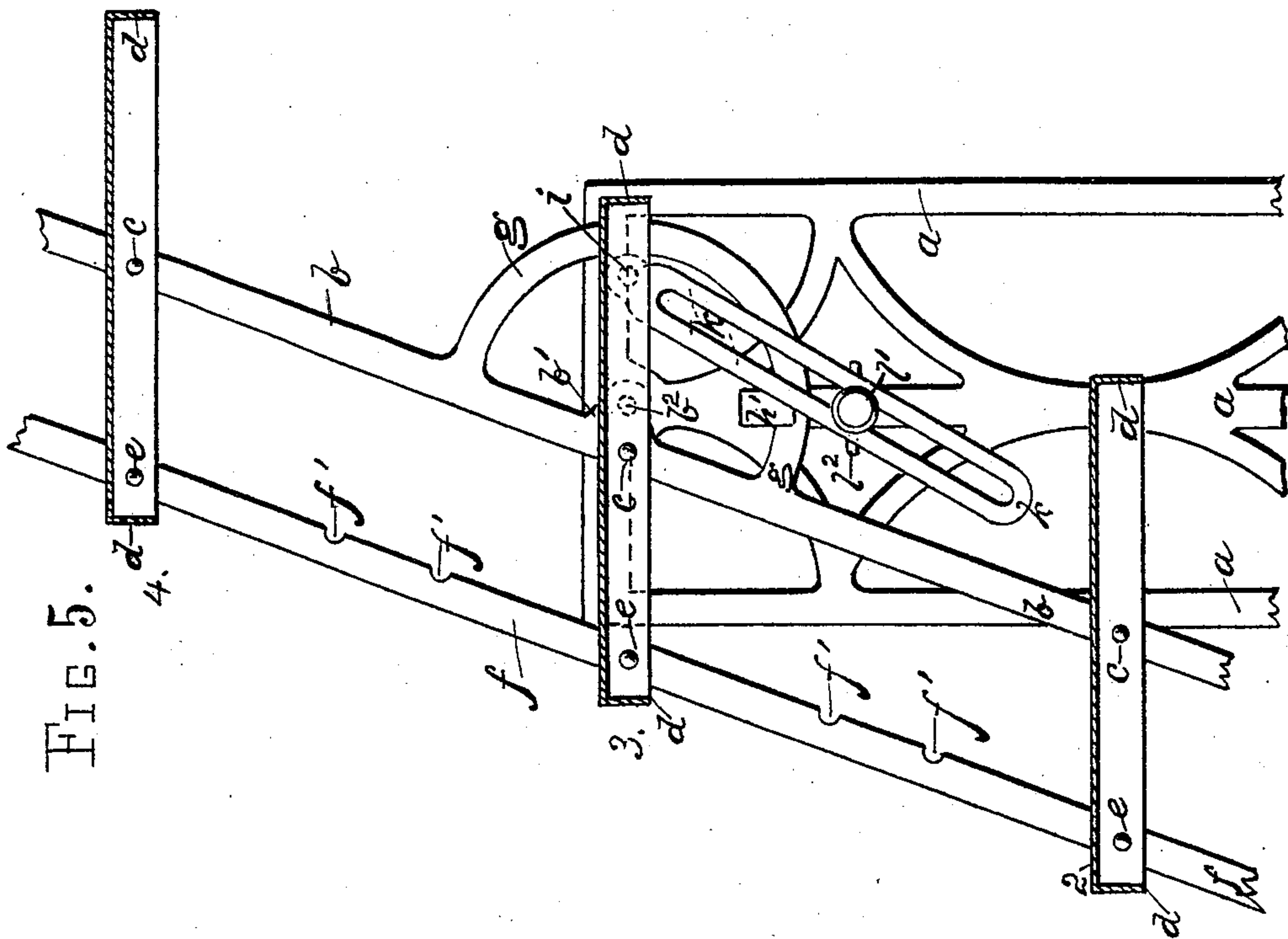


FIG. 5.



WITNESSES:

David C. Watter
L. E. Brown

INVENTORS

Alonzo Hall
Almon Hall

UNITED STATES PATENT OFFICE.

ALONZO HALL AND ALMON HALL, OF TOLEDO, OHIO.

CONVERTIBLE TABLE AND SHELF.

SPECIFICATION forming part of Letters Patent No. 582,350, dated May 11, 1897.

Application filed March 10, 1897. Serial No. 626,749. (No model.)

To all whom it may concern:

Be it known that we, ALONZO HALL and ALMON HALL, citizens of the United States, residing at Toledo, Lucas county, Ohio, have
5 invented certain new and useful Improvements in Convertible Shelves and Tables, of which the following is a specification.

In devices of this class heretofore in use a series of shelves is so arranged that the
10 shelves or leaves may be placed one above the other, as in a cupboard, or from this position they may swing so that they will all fall in the same horizontal plane, thus forming a table, it being understood that each particu-
15 lar shelf remains constantly in a horizontal position. The principal use to which devices of this character are put is the display of merchandise in stores and shops. It is evident, however, that many kinds of wares can-
20 not be displayed upon this sort of apparatus at all—such, for instance, as wet or moist goods, fine or pulverized substances, loose flimsy papers, such as pictures, music, and the like—when stood on edge.

Our invention relates to and its object is to provide means for overcoming the difficulties here pointed out, and more particularly to furnish such a device with a series of shelves or
25 leaves, one side of which presents a plain surface, the other side having a flanged margin forming a shallow tray; to provide means for inverting these shelves or leaves or setting them at any desired angle to the horizontal, and to provide means for locking the shelves
30 and their supports at any desired adjustment. We attain these objects by means of the device and arrangement of parts hereinafter described and shown, and illustrated in the accompanying drawings, made part hereof, in
35 which—

Figure 1 is a side elevation of our device with the trays or shelves arranged as steps in a stair, the dotted lines showing them tilted at an angle to the horizontal; Fig. 2, the same,
45 showing the trays arranged one above the other, as in a cupboard, and illustrating by dotted lines the same device arranged as a table; Fig. 3, the same, showing the shelves reversed—that is, with the flanged sides down-
50 ward and arranged in step-like series; Fig. 4, an elevation of the clamping device for the swinging bars, which support the series of

shelves, as hereinafter described; Fig. 5, a central vertical transverse sectional elevation giving an end view of the shelves or
55 leaves hereinafter referred to and the fastening devices to be described; and Fig. 6, a front elevation of a portion of our device, showing the shelves or leaves partly tilted and illustrating the arrangement of the braces
60 hereinafter alluded to. This figure shows nearly one half the device, omitting the other half, which is an exact reversed counterpart of the portion illustrated. For the sake of
65 clearness the clamping device *k l* hereinafter referred to is omitted from this figure.

Like letters and figures of reference indicate like parts throughout the drawings.

In the drawings, *a* is a supporting-frame, of which there are two, one at each side of
70 the device, about the height of an ordinary table and suitably braced.

b is a bar, preferably of metal, having at its middle a portion which projects laterally in the plane of the bar, as at *b'*, upon which
75 portion the bar is pivotally supported, as at *b²*, upon the frame *a*. It should be understood that there are two of these bars, one at each side of the device, both pivoted upon and just inside of the supports *a*. Pivotally
80 supported, as at *c*, between and upon these two bars *b* at equidistant intervals is a series of shelves or leaves numbered in the drawings 1 2 3 4 5. These shelves or leaves are
85 formed, preferably, of sheet metal (sheet-steel is found to answer the purpose admirably) and have integral flanges or rims *d*, turned at approximately a right angle to the
90 plane of the shelf or leaf, forming upon one side of each of the shelves or leaves a plain surface and upon the other side a shallow
95 tray. The flanges give rigidity to the shelves and impart stability to the entire apparatus. These shelves, if preferred, may be made of wood and the projecting flanges *d* may be
100 formed of other material and secured to the margin of the shelf. The pivot or journal *c* at each end of each of the shelves may be formed of a stout cylindrical pin secured to the middle of the end of the shelf, projecting
105 through a hole in the swinging bars *b* and riveted or upset at its outer extremity to prevent the pin from slipping out of place.

The points at which the shelves are pivoted

along the bar *b* are such distance apart that the shelves when rotated upon their axis between the two bars will barely miss touching the neighboring shelf or shelves, thus permitting all the several shelves to be set either

in the same plane or at any desired angle to the plane of their supporting-bars *b*.
Pivotally secured, as at *e*, to each end of each of the shelves is another bar *f*, parallel with the bar *b*. The pivots *e* are spaced at equidistant intervals along the bars *f*. The longitudinal movement of the bar *f* causes all of the shelves to rotate upon their pivots *e*, as indicated by the dotted lines in Fig. 1. The inner margin of the bar *f* is notched, as at *f'*. The space between the ends of the shelves and the bars *b* is sufficient to receive the bar *f*, and it will be seen that the bar *f* may be folded side by side with the bar *b*, the pivot-pins *c* falling into the notches *f'*, thus bringing the shelves all into the same plane. Secured to each of the bars *b*, at their middle, is an arc-shaped piece *g*, having for the center of its circle the pivot *b*². Passing through the frames *a* from the outer side are bolts *h*, upon the inner end of each of which is a clamping-piece *h'*. (See Fig. 4.) The bolt *h* at its outer end is provided with a thumb-screw *h*². Arc *g* travels between the clamping-piece *h* and the inner side of the frame, and by means of the thumb-screw the clamping-piece is caused to clamp the arc at any part of its travel, thus holding the bars *b* against movement upon their pivots *b*².

Pivotally secured, as at *i*, to the ends of the shelf 3 are links *k*, through the longitudinal slot in which and through the frame *a* passes a bolt *l*, having at its inner end a head *l'* and at its outer end a thumb-screw *l*². As the shelf 3 swings upon its axis, all the other shelves being caused to perform a like movement through the connections *e f*, the link *k* moves longitudinally and swings upon the bolt *l*, accommodating itself to every position of the shelf 3. When the thumb-screw *l*² is tightened, the link is clamped between the head of the bolt and the frame. The link is now held against movement, which prevents movement of the shelf 3 upon its pivot *c*, as well as longitudinal movement of the bar *f*.

In case the device is to be used for the exhibition of heavy goods or is to carry a heavy load, the supporting-frame should be well braced. For illustration, I have shown a convenient method of bracing the frame which will not interfere with the adjustment of the device upon either of the pivots *b*² or *c*. The braces consist of two tie rods or bars *m n*, having their extremities riveted, bolted, or otherwise secured to the end frames *a a*. These bars or rods are in substantially the same vertical plane as the pivotal line *b*². The rod or bar *m* is located so that it will fall between the two lower shelves or leaves when the bars *b* are vertically disposed or nearly so, the rod or bar *n* being below the lower shelf or leaf

when horizontally disposed upon the vertically-arranged bars *b*.

The operation of our device is as follows: Assuming that the goods to be displayed consist of rice, coffee, sugar, or the like, or wet substances—such as fish, meats, pickles, &c.—the tray sides of the shelves or leaves are turned upwardly and placed horizontally, as shown in Fig. 1. If now the links *k* are clamped by the bolt and nut *l l'* *l*², the middle shelf and the other shelves, through the connections *e f*, are held against movement out of a horizontal plane. While the trays are thus held horizontally, if the clamps *h h'* *h*² be loosened the bars *b f* may swing upon their pivots from the vertical position shown in Fig. 2, in which the trays stand one above another, as in a cupboard or bookcase, to a horizontal position, as shown by the dotted lines in the same figure, in which the trays stand in the same horizontal plane as the leaves of a table. In either of these two positions, or at any angle between the two, the bars *b* may be rigidly clamped against movement by setting up the thumb-nuts *h*².

If the goods to be displayed consist of sheet-music, pictures, magazines, or the like, the shelves with their flanged sides uppermost may be tilted to any angle best suited to the convenience of the observer, as illustrated by the dotted lines in Fig. 1, the flange *d* at the lower edge of the shelf preventing the articles from slipping from place.

If from the character of the goods to be displayed it is desirable to have the plain sides of the shelves uppermost, this is readily accomplished by loosening both clamps *h* and *l* and inverting upon pivot *b*² the bars *b f*, so that the order of the shelves or trays shown in Figs. 1 and 2 shall be reversed, as shown in Figs. 3, 5, and 6. The adjustment of the shelves or leaves is now made and maintained in the same manner as above described. It will be observed that the plane surface presented by the leaves arranged as a table may be tilted bodily into a vertical plane and there secured, thus forming a convenient screen.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a convertible table and shelves, a series of leaves or shelves, a flange or rim projecting at an angle from one side of each of said shelves, whereby said shelves or leaves present upon one side a plane surface and upon the other side a tray, and means for turning either side of said leaves or shelves uppermost, substantially as and for the purpose specified.

2. In a convertible table and shelves, a supporting-frame, a series of shelves or leaves pivotally mounted upon said frame, means for turning either side of said shelves or leaves uppermost, means for adjusting said shelves in a plane or planes, horizontal or at any desired angle to the horizontal, and means for

securing said shelves or leaves in adjusted position.

3. In a convertible table and shelves, a supporting-frame, a pair of side bars pivotally supported by said frame, a series of shelves pivotally supported by said bars, a rim projecting from one side of each of said shelves at an angle to the plane thereof, and means for turning either side of said shelves uppermost, substantially as and for the purpose specified.

4. In a convertible table and shelves, a supporting-frame, a pair of side bars pivotally supported by said frame, a series of shelves pivotally supported by said bars, a rim projecting from one side of each of said shelves at an angle to the plane thereof, means for turning either side of said shelves uppermost, and means for locking said shelves in adjusted position, substantially as and for the purpose specified.

5. In a convertible table and shelves, a supporting-frame, a pair of side bars pivotally supported by said frame and adapted to be inverted upon said pivotal support, a series of shelves or leaves each pivotally supported upon said side bars, another pair of bars pivotally connected with each of said shelves or leaves, and independent means for locking said two pairs of bars in adjusted position.

6. In a convertible table and shelves, a supporting-frame, a pair of side bars mounted in said frame, a series of leaves or shelves pivoted upon said side bars, pivotal connections between said side bars and said supporting-frame in the plane of movement of said bars but out of line therewith, braces between the

ends of said supporting-frame arranged in the vertical plane of said side-bar pivots, whereby said side bars may be inverted and placed in vertical position on either side of said braces, substantially as and for the purpose specified.

7. A convertible table or shelves comprising a supporting-frame, a pair of side bars pivoted upon said frame and adapted to be inverted upon said pivots, a series of leaves or shelves presenting upon one side a plane surface and upon the other side a tray, pivotal connections between said side bars and said leaves or shelves, connections between said leaves or shelves whereby they may all be swung upon their said pivotal connections with the side bars, means for locking said side bars in adjusted position, and means for locking said connections between the shelves or leaves in adjusted position, substantially as and for the purpose specified.

8. In a convertible table and shelves, a supporting-frame, a series of shelves or leaves mounted upon said frame, a pivotal support for said series of shelves, whereby said series may be swung from a horizontal position to any angle thereto, a pivotal support for each of said shelves or leaves, means for tilting said shelves or leaves on their respective bearings from a horizontal position to any desired angle thereto, and means for locking said shelves or leaves in adjusted position.

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In presence of—

P. A. MACGAHAN,

L. E. BROWN.