

(Model.)

2 Sheets—Sheet 1

W. M. CONGER.
Holder for Japanning.

No. 243,107.

Patented June 21, 1881.

Fig. 1.

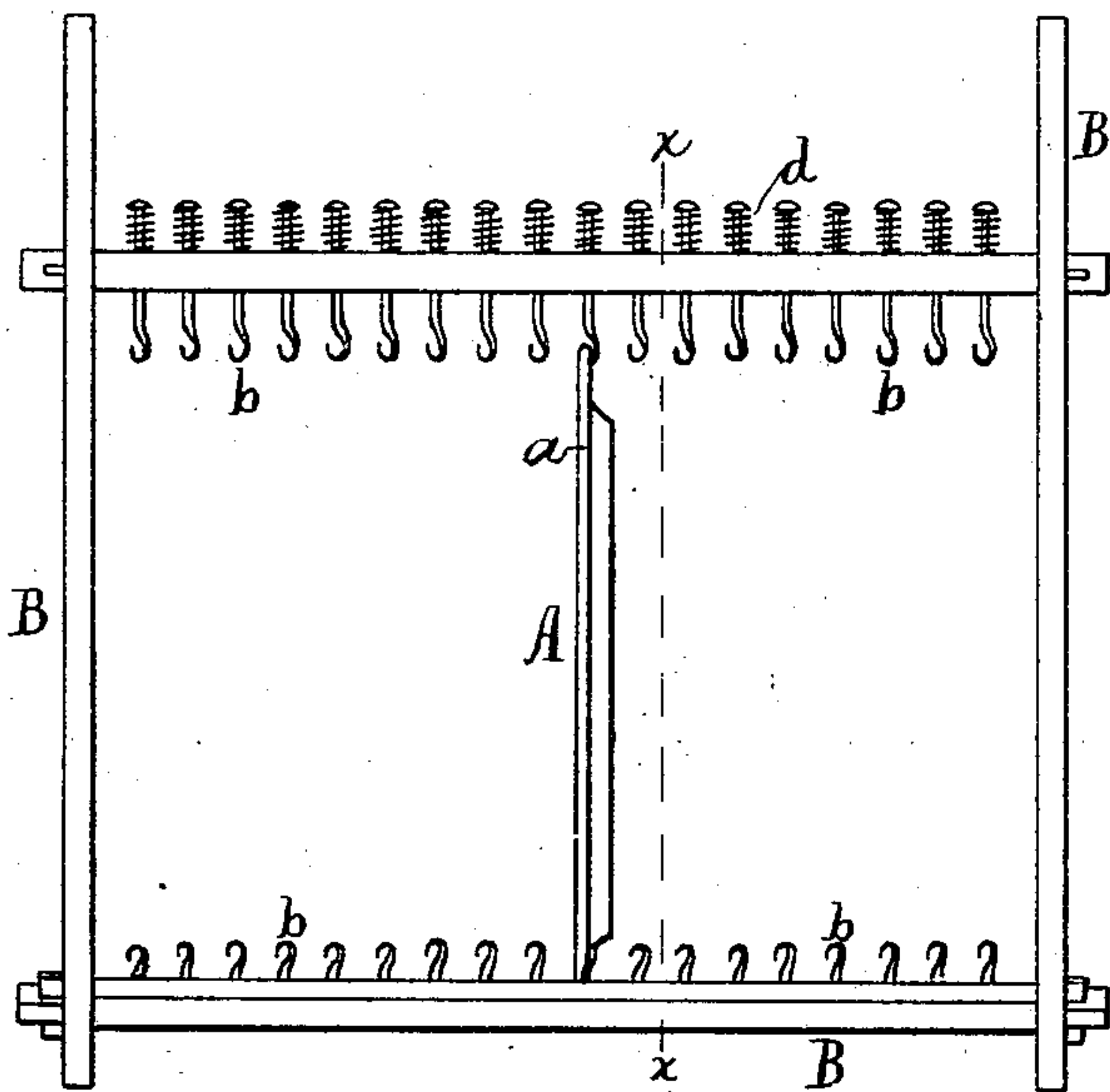


Fig. 2.

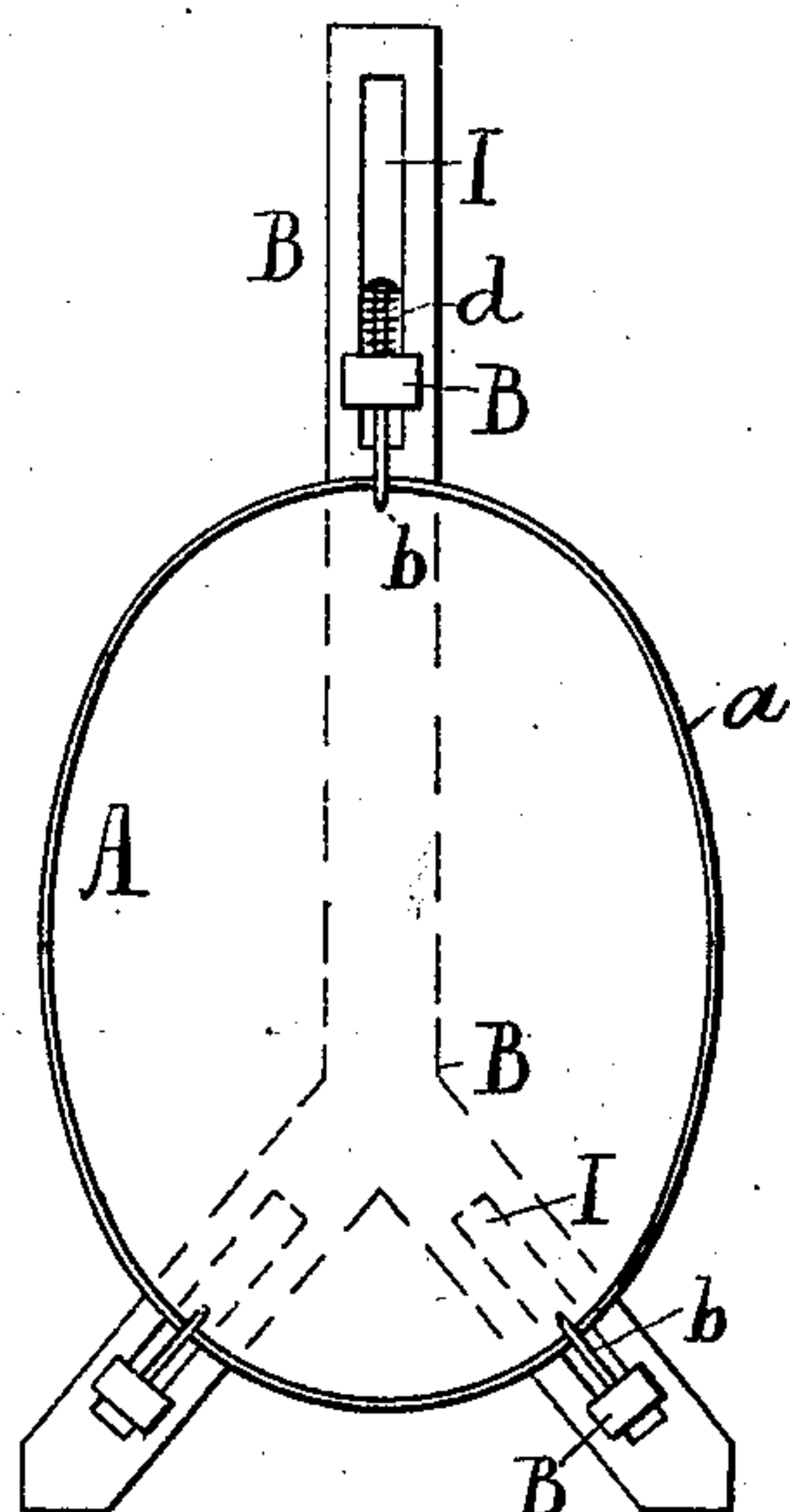


Fig. 3.

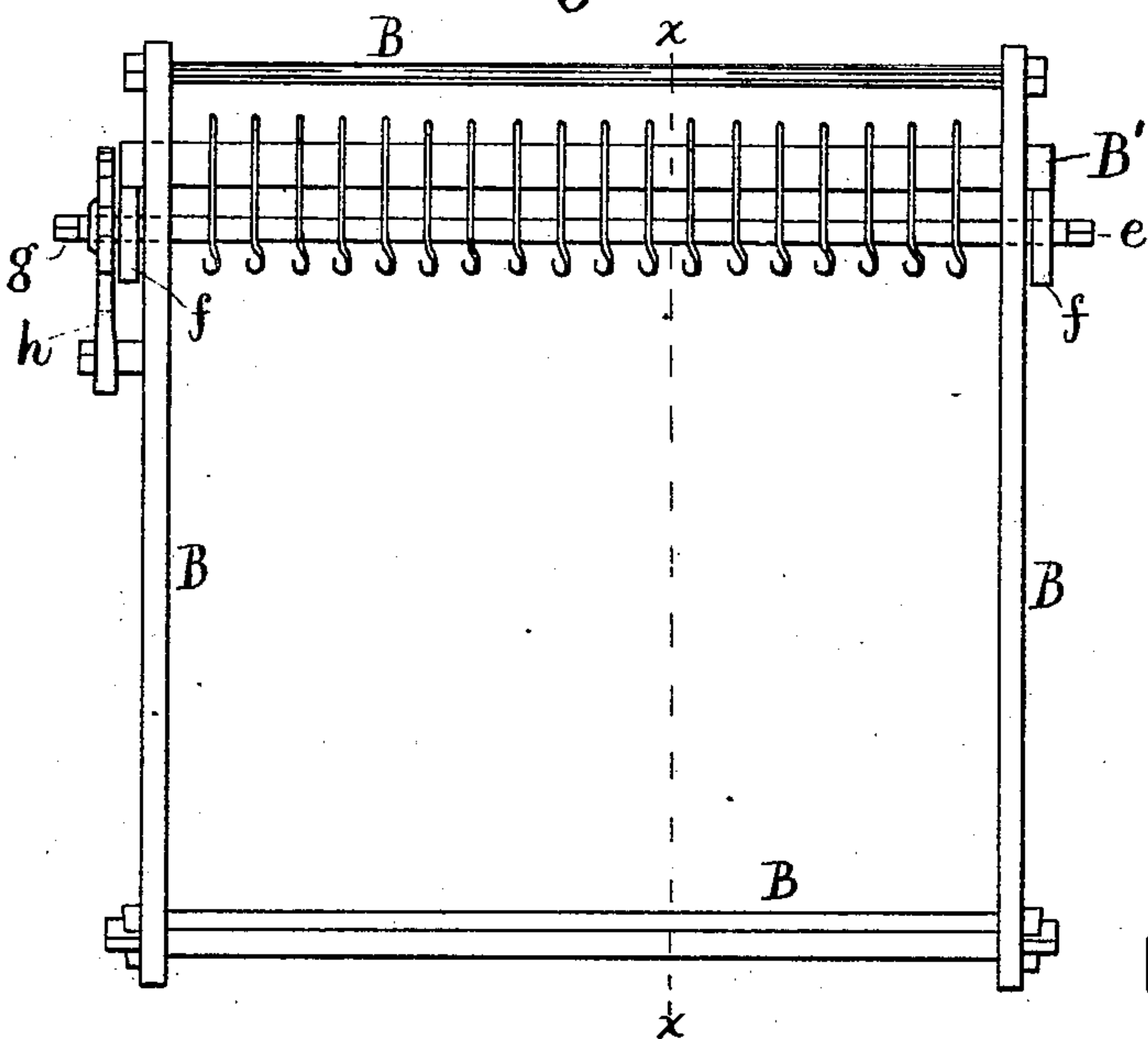
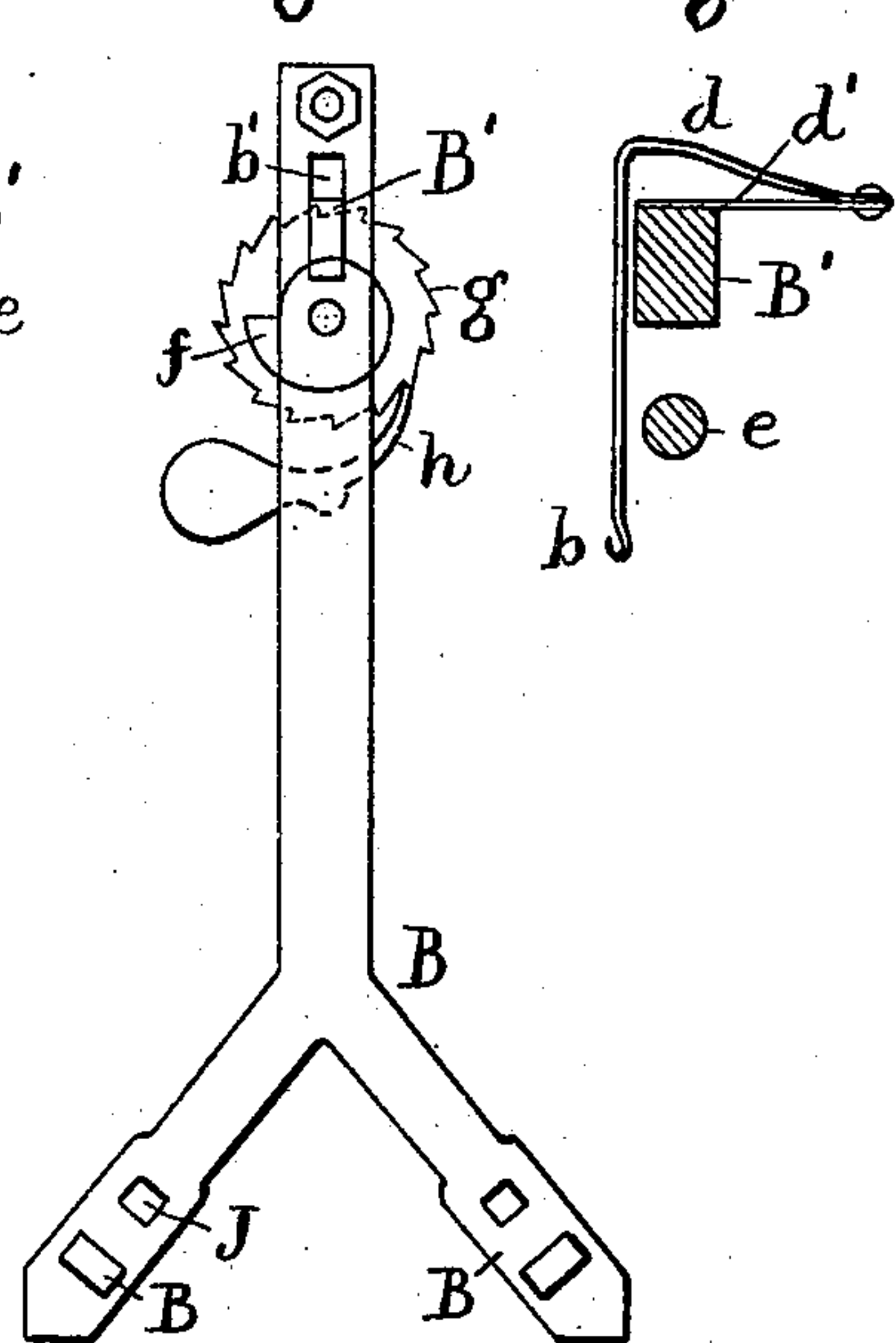


Fig. 4. Fig. 5.



Attest:

D. F. Tichenor
W. Dietz

Inventor.

Walter M. Conger, per
Thos. S. Crane, Atty.

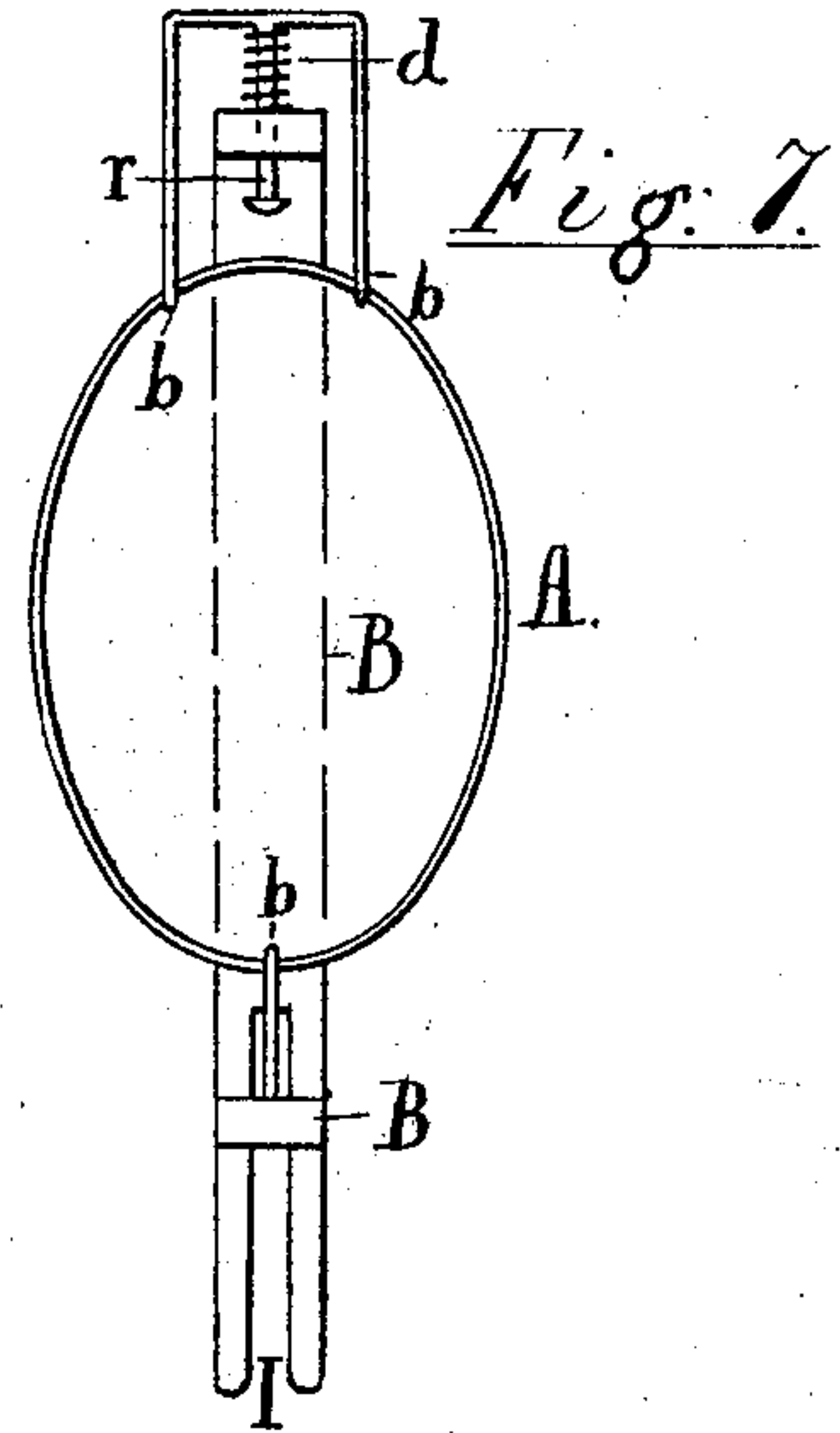
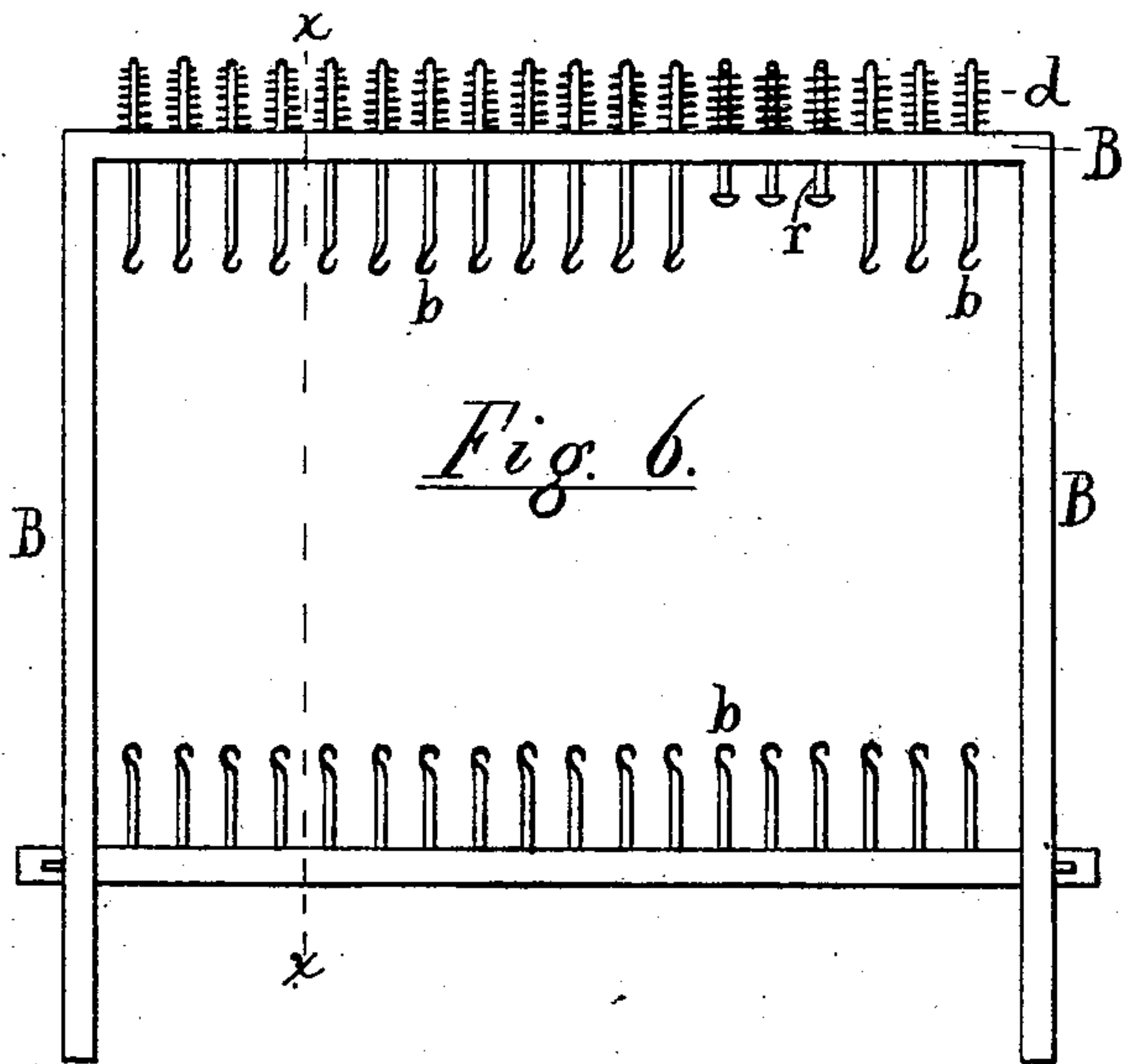
(Model.)

2 Sheets—Sheet 2.

W. M. CONGER.
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UNITED STATES PATENT OFFICE.

WALTER M. CONGER, OF NEWARK, NEW JERSEY.

HOLDER FOR JAPANNING.

SPECIFICATION forming part of Letters Patent No. 243,107, dated June 21, 1881.

Application filed October 5, 1880. (Model.)

To all whom it may concern:

Be it known that I, WALTER M. CONGER, of the city of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Holders for Japanning, of which the following is a description.

My invention relates to certain improvements in holders for japanning; and it consists, first, in hanging trays having a beaded or wired edge upon hooks in a portable frame in such manner as to avoid defacing the tray, and to hold them securely during the dipping and baking processes, and in the combination of the hooks with the supporting-frame, and with a spring, or its equivalent, applied to one of the hooks, arranged in contact with the wired or beaded edge of each tray; also, in providing the spring-hook with a screw or similar means of adjustment when a series of such hooks are mounted in one frame to carry a series of trays; also, in a frame of special construction for holding such adjustable hooks in a series adapted to fit beaded or wired trays of different sizes.

The object of my invention is to apply the japan to the trays with much greater rapidity than it has heretofore been done, and to transport large numbers of trays at once from the vat to the drying-oven, and to support them in the oven in much less space than is usually required, and in a better position for the circulation of the heated air between them.

While such trays have heretofore usually had the japan applied to them with a brush, and have been laid upon horizontal rods in the baking-oven, thereby consuming a great deal of space, my invention affords the means of securely holding any desirable number in a portable frame and of supporting them in the oven in a vertical position, by which they are much more rapidly dried than when laid down.

In my improved holders twenty or thirty trays can be held at once at a distance of an inch and a quarter from one another, and it can thus easily be seen how they may all be dipped simultaneously and hung in the oven merely by removing the holder thereto.

In the annexed drawings, Figure 1 is a side view of one of my holders constructed with triangular end frames and three horizontal bars. Fig. 2 is a section of the same on line *xx* in Fig. 1. Fig. 3 is a side view of a frame with a cam attachment for straining the trays

upon the suspending devices, and Fig. 4 a section of the same on line *xx* in Fig. 3. Fig. 5 is an alternative mode of constructing the spring for the hooks; Fig. 6, a holder provided with double spring-hooks, and Fig. 7 a section of the same on line *xx* in Fig. 6.

A is a tray with bead or wired edge at *a*; B, the frame or carrier to which the holding devices are attached; *b*, the hooks used to suspend or secure the tray by its rolled edge, and *d* the spring employed to afford one hook upon each tray a means of automatic adjustment by clamping the tray with a yielding pressure.

The operation of the devices shown is as follows: Commencing at one end of the frame, the operator fits the rolled or wired edge of the tray upon the stationary hooks, and then, bringing it in contact with the movable or spring hook, depresses the latter until it engages with the tray's edge, which is thus strained upon the points of three hooks in a yielding manner, as desired. Proceeding to the next set of hooks, a tray is fitted to them in similar manner, and to the remaining sets of hooks, until all are filled, when the trays may be dipped in a vat of japan and transferred to the oven bodily.

To adapt my invention to trays of different sizes I have devised various modes of construction, which will now be described.

My invention is equally applicable to frames for holding a single tray or a large number together, but is shown in the drawings as applied to the latter only.

In Figs. 6 and 7 is shown a plain rectangular frame, B, provided with a row of stationary hooks at the bottom, and having an equal number of movable fixtures attached to the opposite side of the frame. Each of these movable fixtures consists of two hooks, that the tray may be kept from twisting when held in the frame, the two being supported by a rod, *r*, with a T-piece at the top, by which they are held in the proper position. The rod is fitted loosely to a hole in the top bar of the frame, and is provided with a spiral spring placed between the T-piece and the frame, and a button on the lower end to prevent displacement. The holes for these rods *r* being made in a regular series at uniform distances in the bar or frame, the arrangement of the trays in a parallel and very compact condition is se-

cured without any effort or delay to the operator.

Figs. 3 and 4 show an arrangement of frame for suspending the trays by single hooks at the top and two hooks at the bottom, a space thus being secured between the latter for the japan to drip freely from the goods when dipped. For this purpose the frame is constructed with a three-armed piece at each end, tied together by a screw-rod at the top and by two bars at the bottom, to carry the series of hooks intended to be stationary. The movable hooks are all fastened to a bar, B', which is represented as fitted loosely into the slots b' near the top of the main frame, and adjustable up and down by the cams and ratchet-wheel upon the shaft e. By this arrangement the tension upon the various hooks and trays would be dependent upon the position of the bar B', and any separate adjustment required for each tray would require to be made by applying a screw-thread and nut to the top of each hook; or the rod of which the hook is made can be bent at right angles to the stem and serve as a spring to the hook. This mode of forming the spring is shown in Fig. 5, a flat plate, d', being secured to the top of the bar B' for the attachment of the series of spring-rods d.

In Figs. 1 and 2 a similar frame is shown, but without any movable bar at the top, the upper bar in these figures being keyed in a suitable position in the slots I, and the independent adjustment of each hook being secured by a spring applied to its shank, which is passed through a hole in the bar, and is readily pushed down when inserting a tray in the holder by applying the hand to a button upon the top of the shank.

By the use of the slots I or mortises J the cross-bars of the frame can be set to suit the various sizes of trays, while the springs afford the desired facility for moving each hook quickly and independently to insert a tray in the holder.

If desired, a screw-thread and nut can be applied to the shank of each hook above the spring, and the tension of the spring regulated at pleasure or restored when diminished by wear.

Although either a screw or cam is capable of moving the hook to insert and remove the goods from the holder, the spring has an entirely separate function in addition, which makes my whole invention applicable to purposes for which plain hooks alone are not at all adapted. The very highest utility of the spring is its faculty of yielding automatically to the changes of size and position produced in the goods by the heat to which they are subjected, and thus maintaining a secure hold upon them by the very small projection of the wired and beaded edge. Should the hooks be adjusted rigidly to such a narrow surface a very slight expansion of the tray would loosen the hold of the hook and allow the goods to fall from the holder in the oven.

In practice the goods expand and contract

considerably with the various changes of temperature in the baking-oven, and although a number of trays could be sustained by rigid hooks, if attached to a yielding bar, I find that each tray needs to be held by a hook separately controlled, to compensate for the particular heat operating upon such tray.

I am aware that holding devices have been used for galvanizing having claws adjustable toward one another, and that in a holder for a lady's bonnet a spring-presser has been used; but the latter was adapted solely to sustain a hat in a suitable position on a standard. I do not therefore claim a clamping-spring, broadly, but in combination with one of a set of hooks arranged about the edge of a tray, and adapted to fit into and catch upon the wired edge or bead of the tray, substantially in the manner set forth.

With the holder constructed upon these principles I am able to dip and put in the oven thirty trays in as little time as used to be required for two, the apparatus being suspended by loose tackle over the vat of japan, from whence it can be removed to the oven in a few minutes after the whole batch has been dipped.

Having thus fully described the nature and advantage of my invention, it will be seen that I do not therefore limit myself to the precise modes of construction herein described, but claim my invention as follows:

1. In combination with a frame adapted for hanging a tray having a rolled edge in a japanning vat or oven, the following device for grasping the tray, compensating for its expansion, and holding it without injury to its surface, consisting of two or more hooks arranged to grasp the bead or wired edge of the tray, and having their points bent toward the rim of the tray to hook under the rolled edge, one or more of such hooks being provided with a spring to render it self-adjusting to the expansion and contraction of the tray, substantially as described.

2. A holder for japanning a number of trays simultaneously, containing two or more sets of grasping-hooks, one hook of each set being provided with a spring for the purpose set forth, and a screw or equivalent means of adjusting it to variations in the sizes of the several trays, or to the wear of the spring, substantially as herein set forth.

3. The combination, in a holder for japanning trays, of slotted or mortised end frames and cross-bars fitted thereto and provided with stationary and adjustable hooks, as herein described, for grasping the tray's edge upon opposite sides, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereto set my hand, this 27th day of September, 1880, in the presence of two witnesses.

WALTER M. CONGER.

Witnesses:

THOS. S. CRANE,
W. DIETZ.