

(Model.)

3 Sheets—Sheet 1.

C. B. SAUNDERS.

DISH WASHER.

No. 354,246.

Patented Dec. 14, 1886.

Fig. 1.

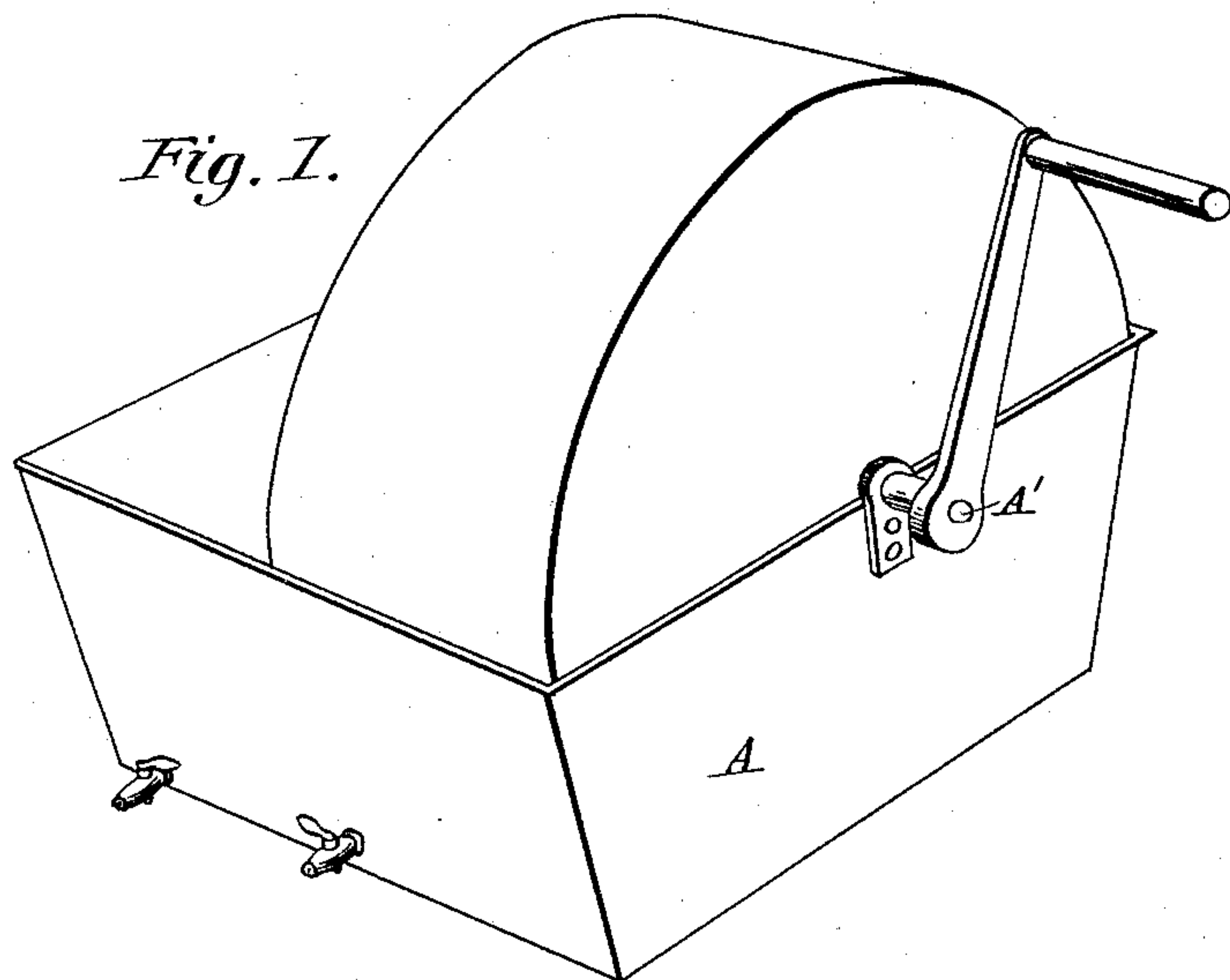
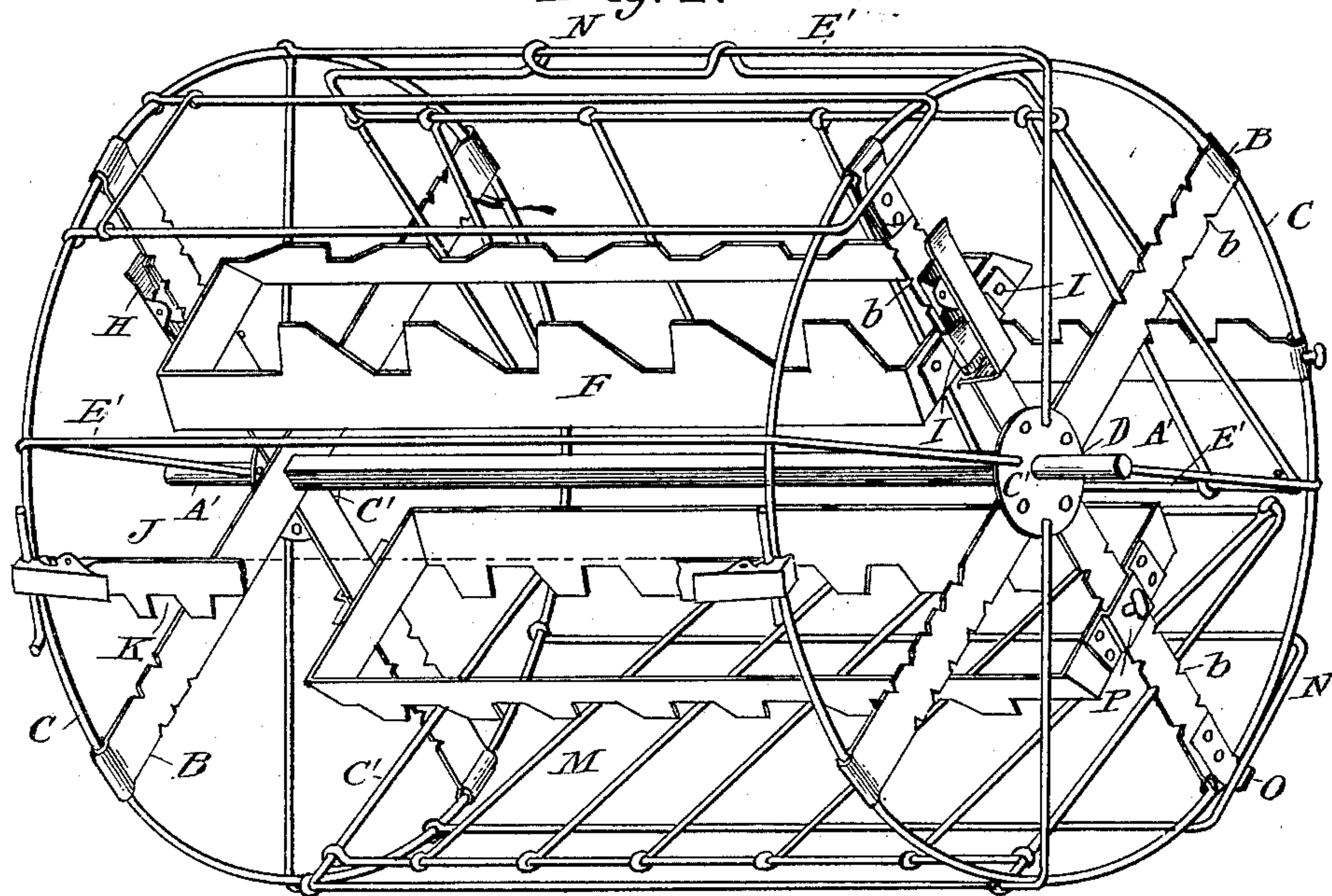


Fig. 2.



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Att'y.

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Fig. 3.

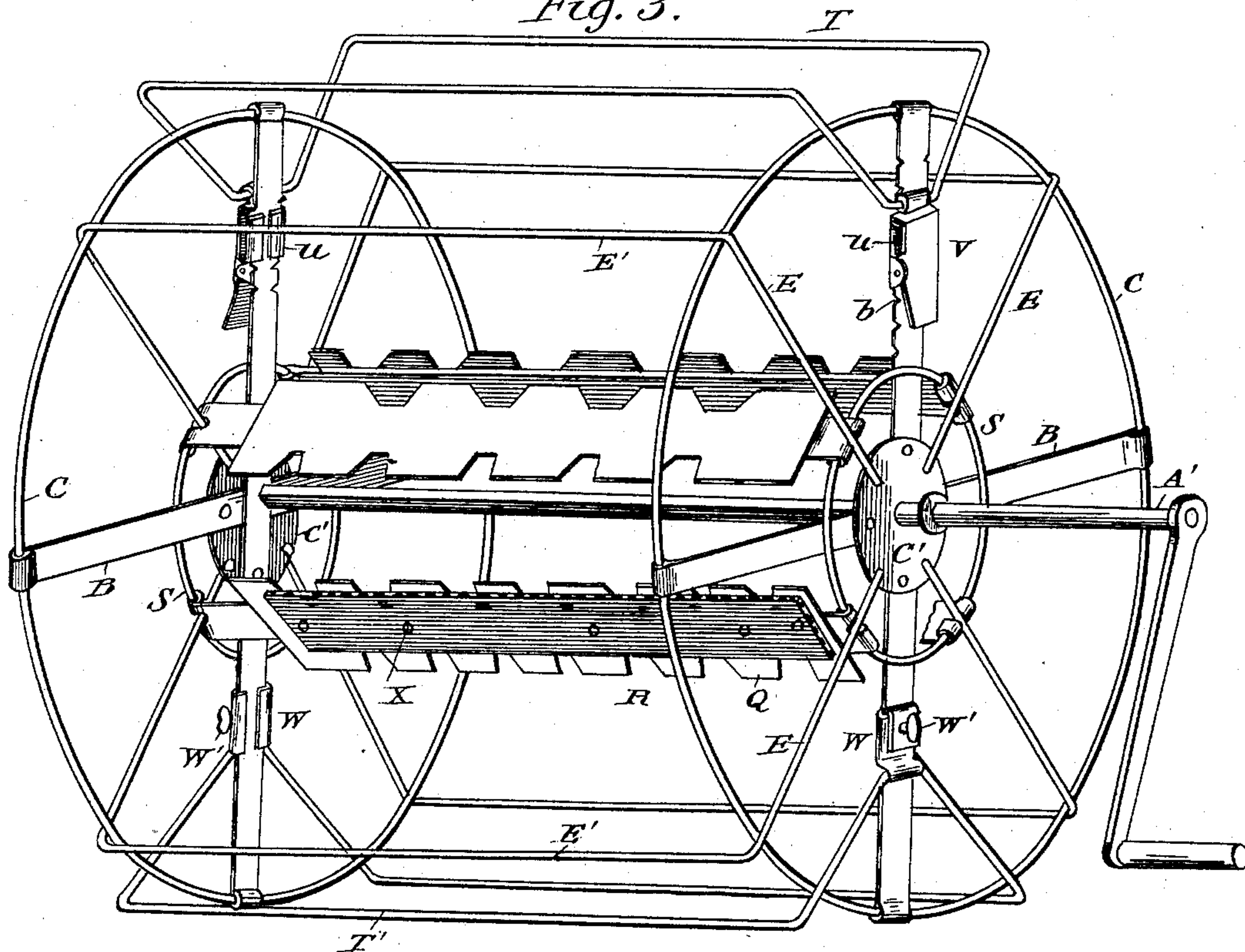


Fig. 4.

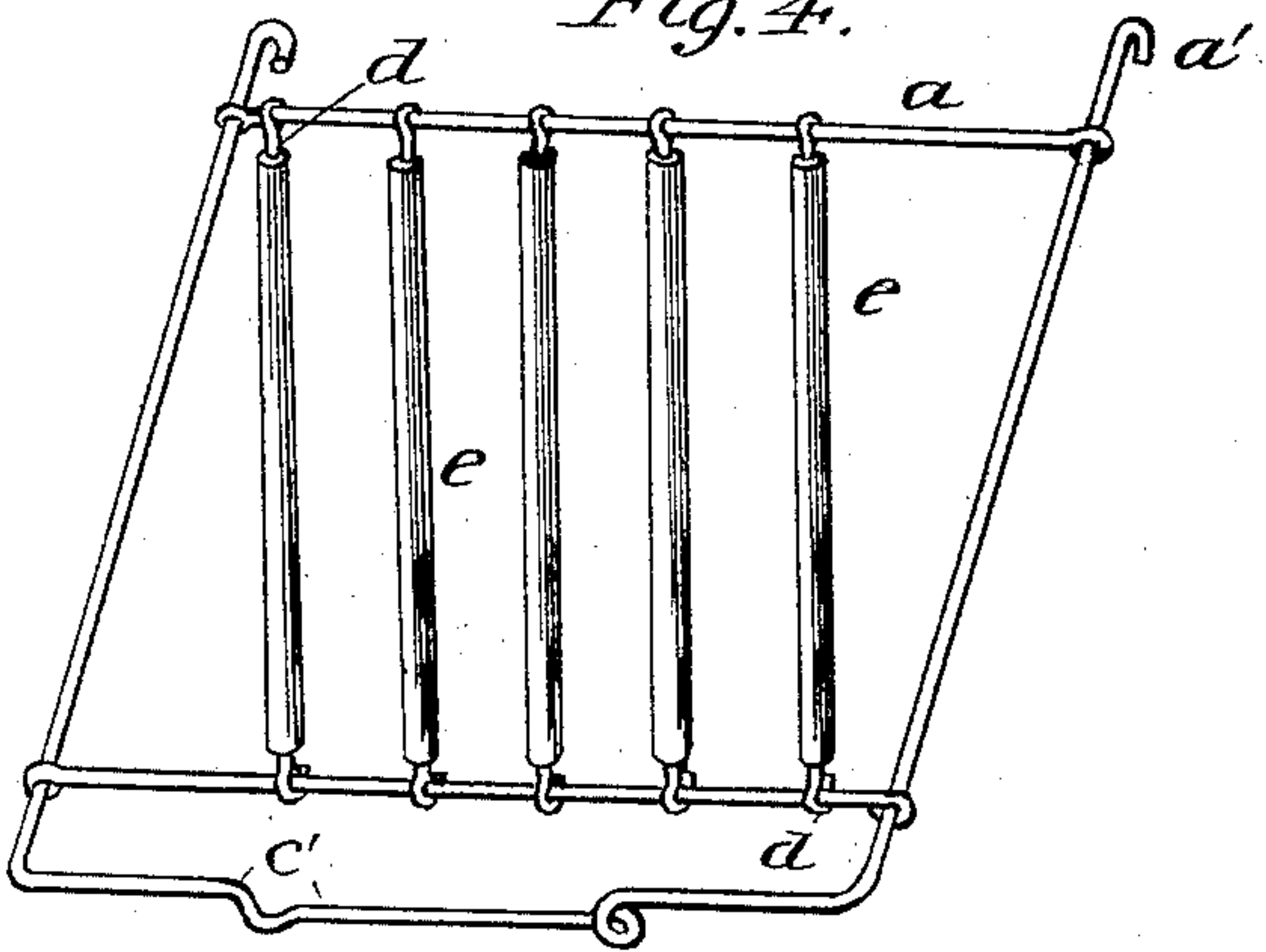
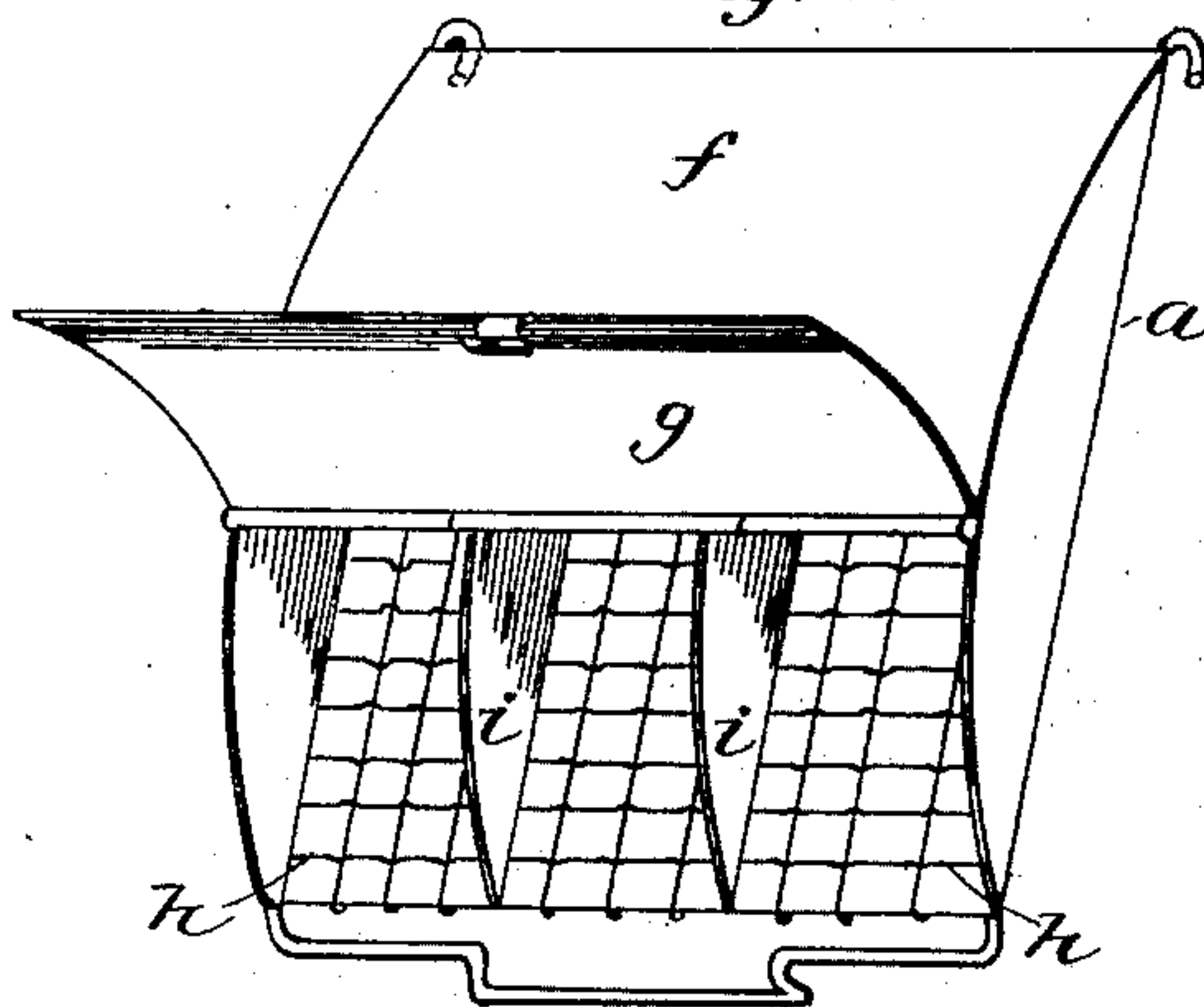


Fig. 5.



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(Model.)

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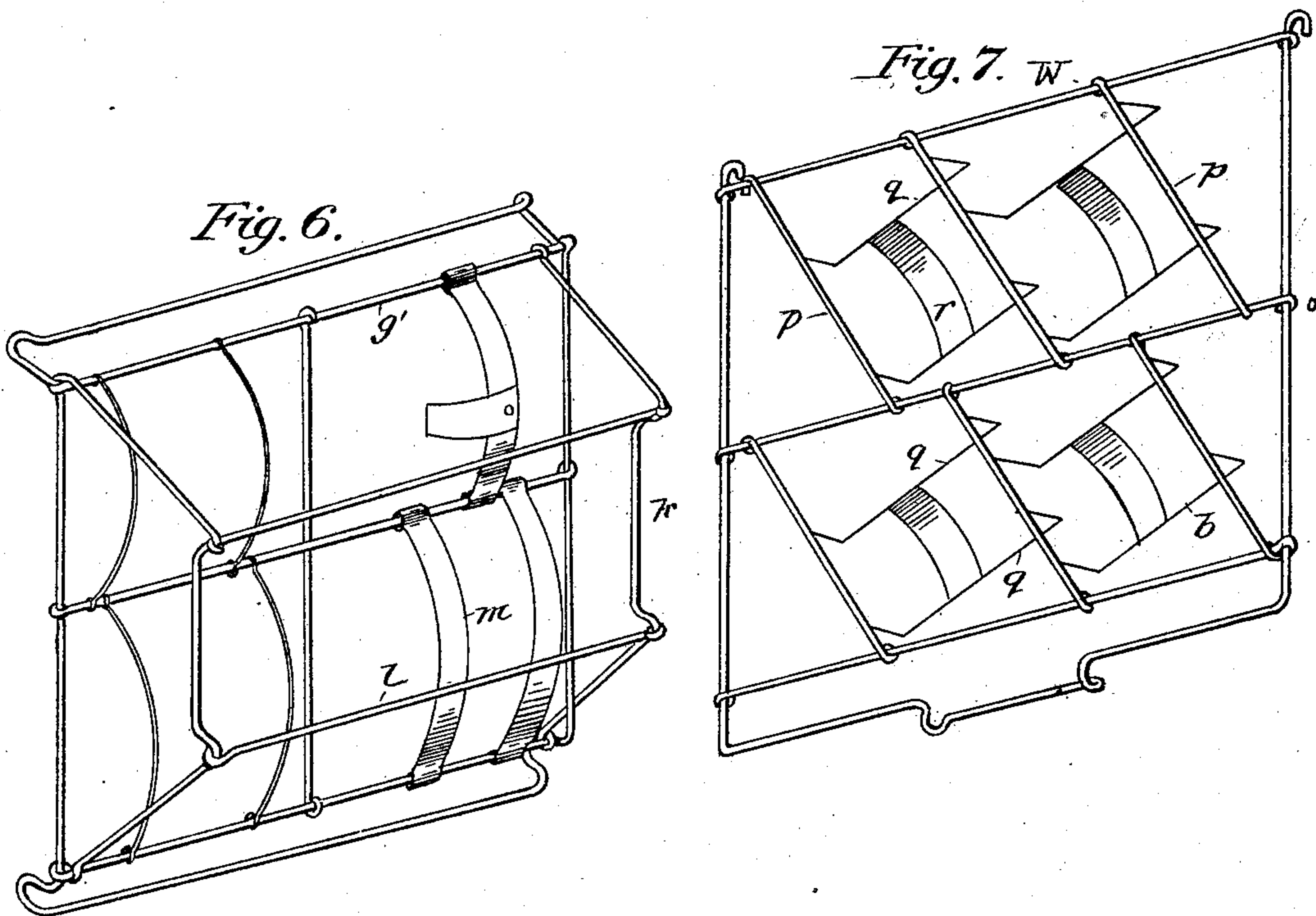


Fig. 8.

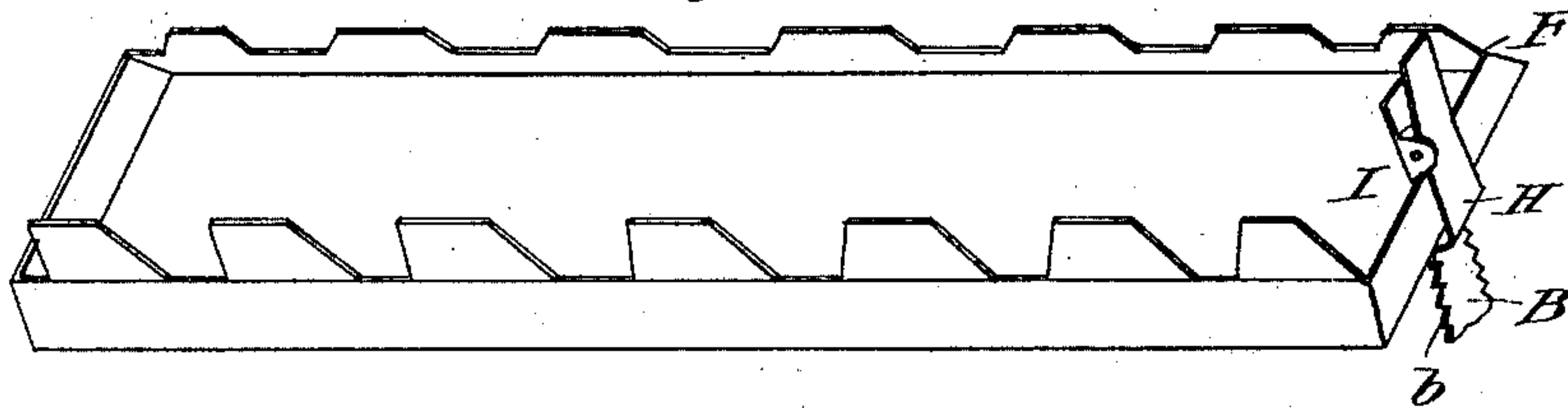
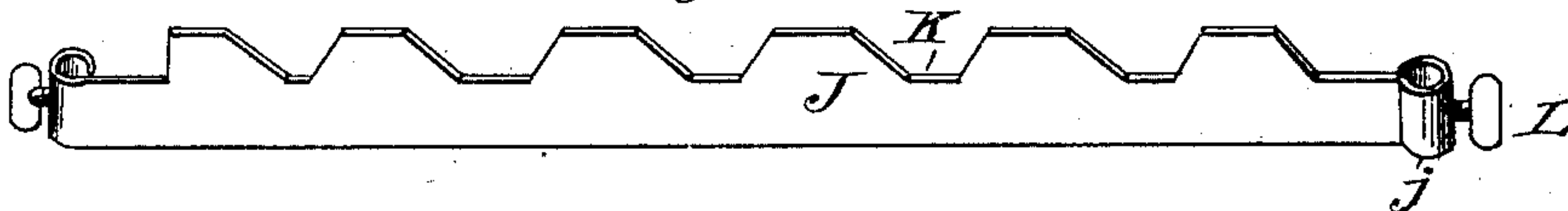


Fig. 9.



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UNITED STATES PATENT OFFICE.

CHARLES BERTRAM SAUNDERS, OF COLUMBIA, MISSOURI.

DISH-WASHER.

SPECIFICATION forming part of Letters Patent No. 354,246, dated December 14, 1886.

Application filed October 7, 1885. Serial No. 179,215. (Model.)

To all whom it may concern:

Be it known that I, CHARLES BERTRAM SAUNDERS, of Columbia, in the county of Boone and State of Missouri, have invented a new and useful Improvement in Dish-Washers, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a perspective view of the tank or frame of my improved dish-washer; Fig. 2, an enlarged perspective view of the rotating tray detached; Fig. 3, a perspective view of a wheel-tray, somewhat of a modification of Fig. 2; Fig. 4, a perspective view of the plate-rack detached; Fig. 5, a knife and fork receptacle attachment detached from the rotating tray, and Figs. 6 and 7 perspective views of cup-racks detached. Fig. 8 is a perspective view of the rack for the dishes. Fig. 9 is a like view of the peripheral dish-holding piece.

This invention relates to an improvement in dish-washers wherein I provide rotating trays having adjustable racks on the radial arms of the said tray, so that they may be arranged for different-sized plates, the said racks having openings therein set at angles, so that the plates while resting therein will, while revolving, act on the principle of a screw-propeller reversed, or in such a position that the water will strike the surface of the plates somewhat at an angle, and thus materially assist in cleansing them. Outwardly from these recessed racks adjustable wire keepers are provided on the arms, so as to retain the plates in position. Detachable segmental trays are also provided, so that the rotating tray may be used entirely for knives, forks, or cups, as occasion requires, all of which will now be fully set forth in detail.

In the accompanying drawings, A represents a tank, and A' the axle-shaft, of my improved dish-washer, and near their outer ends each one is provided with the radial arms B, formed, preferably, of broad metal pieces. These are curved at their outer ends, forming a loop, so as to embrace the circumferential wire hoop C. At each of the hubs C', which are circular metal plates on the shaft, the arms B are riveted or otherwise secured. The radial wires E are also secured at their ends on each side to said plates C', so as to come between the arms B. Their horizontal portions

E' embrace, connect, and hold the circumferential hoops C.

Two or more of the arms B have adjustably secured to them the racks F, which are each formed of a metallic frame. The rectangular frame-work of this rack has its sides set somewhat at an angle, and with the outer edges recessed or serrated at F' somewhat obliquely, so that the edges of the plates will rest in the recesses of the sides of this rack and be somewhat obliquely disposed, so that the water, as the tray is rotated, will strike the face of the plates somewhat at an angle, and thus materially assist in cleansing and scouring the same. Each end of this rack F is provided with a metallic clip, H, hinged to a wing, I, on the end of the said rack and provided with a spring, so that the opposite end of the clip H will be held in contact with the arms B and engage with a series of notches on the edges of these said arms, so that these said racks F may be adjusted radially upon the arms B by means of these clips H. Outwardly from this rack F and laterally upon the peripheral hoop C, I provide a metallic piece, J, one edge having a series of notched recesses, K, corresponding in size and number with the notches in the rack F. The ends of these metallic pieces J are provided with a clip, P, or at j are looped, as shown in Fig. 9, so as to embrace the said wire hoop C, and thus are moved backward and forward thereon, so as to increase or diminish the space between them and the arms B, and are secured in position by means of set-screws L, which pass through said loops j and engage with the hoop C. These metallic pieces J may be so adjusted, in connection with the rack F, as to fit any size of plates used. In lieu of these notched metallic pieces J, I provide a rectangular wire frame, M, hinged at one end to one of the wires E', which connect the hoops C, and with the spring-loop at the other end engage on the opposite wire E'. Each frame thus may be opened out so that the plates may be placed within the rack F, and after being closed down and secured by the spring-loop N the plates will be held firmly in position.

Occasionally I find it desirable, instead of using a thumb-screw, L, to adjust the metallic pieces J by means of a clip, P, corresponding with the clip H on the racks F. The aforesaid

rectangular retaining-frame M may have transverse wires at an angle therein to correspond with the notches in the rack F, if so desired, though I prefer to dispense with these.

5 Fig. 3 shows a rotating wheel-tray with the frame-work constructed similar to that shown in Fig. 2, already described; but in lieu of the adjustable racks F upon the radial arms B on each rack, to form a receptacle for the series of plates in that part of the tray, I dis-
10 pense with these rectangular racks, and in their place provide a flat metallic piece, Q, having its opposite edges provided with indentations and recesses R, and instead of plac-
15 ing them between the arms B, I place them between the radial wires E, so that the adjoining edges of two of these metallic pieces Q will form a rack for the series of plates, and will rest in the same position relative to the arms
20 B as they would if resting in the rack F, as shown in Fig. 2. The ends of the metallic pieces Q are designed to embrace the circumferential wire S, secured to the arms B, and radial wires E, concentric with the axle A. As
25 will be noticed, when this form of rack is used, in order to overcome the difficulty of securing different-sized plates in position, the outer retaining-frame of the tray must be capable of adjustment. This I accomplish by
30 providing a retaining-frame, T, with the sides extending outwardly somewhat at an angle, and having the ends attached to a metallic piece, U, having on its outer face the clip V, so that this entire retaining frame or rack T
35 may be pushed out, with the clip V resting against the circumferential hoop C, when the plates can be placed within the rack, and then the said rack pushed down in contact with the plates, and thus hold them rigidly in position,
40 as in the other form. Though I prefer to have these racks T adjustable by means of the clips V, I occasionally find it convenient to have them adjustable by means of sleeve W and set-
45 screws W', as shown.

50 Upon the metallic pieces Q it may sometimes be found desirable to place a rubber strip, X, secured in position by means of rivets, with the edges of this said strip partially covering the recesses R, so that the plates,
55 while resting within these recesses, cannot be chipped. This is especially useful in cases where the dishes are of a light and delicate nature, as all tendency to damage them is thus avoided. The edges of the rack F, Fig. 2, and
also of the adjustable metallic pieces J, may have corresponding rubber strips, if desired; but this is not a necessary element in the construction of the device.

60 In Fig. 4 I show a modification of the frame M—viz., a rectangular wire frame, *a*, provided at one side with hooks *a'*, and at the opposite side with a loop or catch, *c*. Within this frame I provide a series of oblique wires, *d*, set at an angle to correspond with the recesses
65 or indentations F', as shown in Fig. 2, and also recesses R, as shown in Fig. 3. These transverse wires *d* are designed to be provided

with small rubber tubing *e*, so that as I place this rack in position by hooking one side over one of the ribs E, and then connecting
70 the hook *c* over the opposite corresponding rib E, the dishes may be placed in the openings between the ribs *d*. The said rubber tubing *e* will prevent them from becoming
75 chipped, broken, or damaged in any way. The aforesaid may be used in addition to the adjustable racks, as shown in Figs. 2 and 3; or it may be dispensed with entirely, if so de-
sired.

80 Fig. 5 shows a rack on this detachable principle, to be used exclusively for knives, forks, and spoons, wherein the frame *a* has an in-
closed segmental portion, *f*, secured thereto, inclosing three sides of this rack and provided
85 with a hinged lid, *g*, at one side. The flattened portion of this rack is formed with a wire-gauze, *h*, and inwardly a series of parti-
tions, *i*, are placed, forming apartments. These may be placed in position in the man-
90 ner corresponding with the rack shown in Fig. 4.

Fig. 6 shows a form of rack to be used for receiving therein cups. This rack has a frame, *j'*, corresponding in size and general confor-
95 mation with those already shown in Figs. 4 and 5. Outwardly from this frame and at the ends extends a ridge-like frame, *k*, connected by means of rods *l*, having hooked ends, and
within the frame *j'* a series of curved ribs, *m*, are placed, corresponding in general size with
100 the periphery of an ordinary cup, so that when this rack is placed within the rotating tray the cups may be held in position.

A modification of Fig. 6 is shown in Fig. 7, and in general I find it more suitable, consist-
105 ing of the usual frame, *n*, having centrally a transverse piece, *o*, and between each of the said pieces of the frame and connecting with
this center piece, *o*, are obliquely-disposed ribs *p*. These ribs *p* have outwardly-project-
110 ing ribs *q*, with a central transverse band, *r*, the whole so disposed and of such a size that a cup may be retained on the inner side of this receptacle, in connection with either of the
115 racks F or R.

This device may be used in various ways. As an instance, the adjustable rack F in Fig. 2 may be used in connection with the permanent
120 rack Q, as shown in Fig. 3, by placing it in the position as shown by the rack T, and also the adjustable rack T may be substituted by the hinged rectangular retaining-frame M; also,
either of these outer retaining frames or racks M or T may be supplemented or substituted by
125 the rack *a*. (Shown in Fig. 4.) Especially is this so when the dishes to be cleansed are of a light or delicate nature, as the rubber tubing on
the ribs E, as shown in Fig. 4, prevents any chipping or breaking or other disastrous results.

Having described my invention, what I claim as new is—

1. In a dish-washer, a rotating tray having adjustable racks on radial arms, so as to be ar-
ranged for different-sized plates, the said racks

having recesses obliquely disposed, so that the plates while resting therein will be in such a position that when the tray is rotated the water will strike the surface of the plates somewhat at an angle and properly cleanse them, substantially as herein set forth.

2. In a dish-washer, the rotating tray provided with adjustable racks and having obliquely-disposed recesses to receive therein the plates, and held in position by outwardly-disposed independent adjustable pieces, and an intermediate adjustable rack having obliquely-disposed transverse wires and rubber cushions, so as to be gaged for different-sized dishes, substantially as herein set forth.

3. In a dish-washer, the rotating tray provided with radial arms B on the shaft, said arms notched at b, combined with the rectangular metallic frame F, the sides of which are somewhat at an angle, the outer edge recessed and set at an angle to receive the dishes therein, and the clips adapted to engage with the notched radial arms, substantially as described.

4. In a dish-washer provided with radial arms having located inwardly therefrom an adjustable rectangular rack and outwardly therefrom a hinged rectangular keeper, an intermediately-disposed adjustable frame having

obliquely-disposed metallic ribs with rubber tubing thereon, so that the said adjustable frame may act as a guard and keeper for the plates placed therein, to prevent them from becoming broken while coming in contact with the sides of the tray on being rotated, substantially as herein set forth.

5. The combination of the axial piece A, the radial arms B, and ribs E, and the circumferential pieces C, forming the frame, with the adjustable rack F, the clips H, and the rectangular hinged retaining-frame, substantially as herein set forth.

6. The combination of the axial piece A, the radial arms B, ribs E, the circumferential pieces C, forming a frame, the adjustable rack F, the clips H, and the rectangular hinged retaining-frame, with the intermediate frame, a, having the obliquely-disposed ribs d, protected with rubber tubing e, substantially as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand, this 21st day of September, 1885, in the presence of witnesses.

CHARLES BERTRAM SAUNDERS.

Witnesses:

HUGH M. HALL,
M. L. EDWARDS.