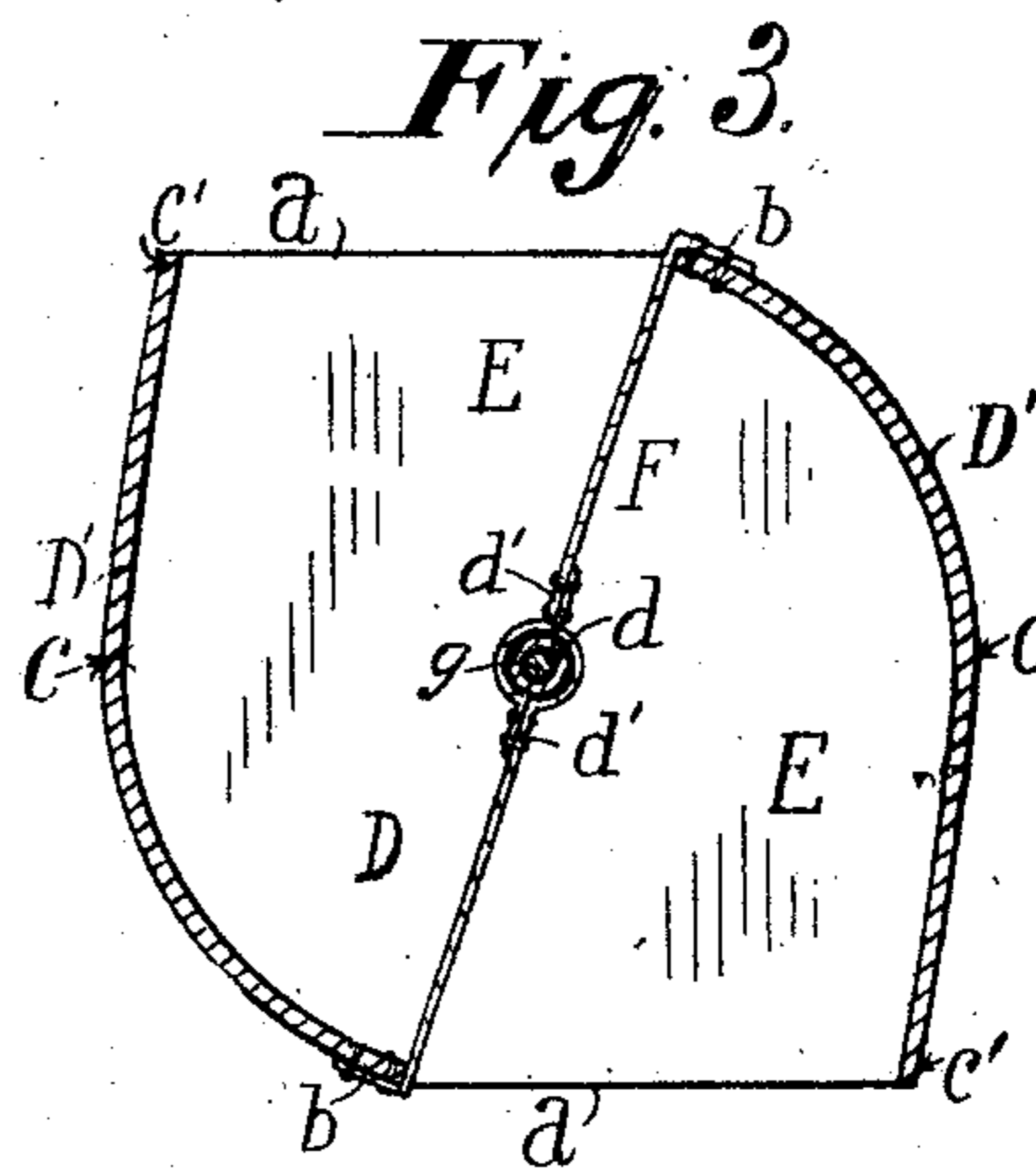
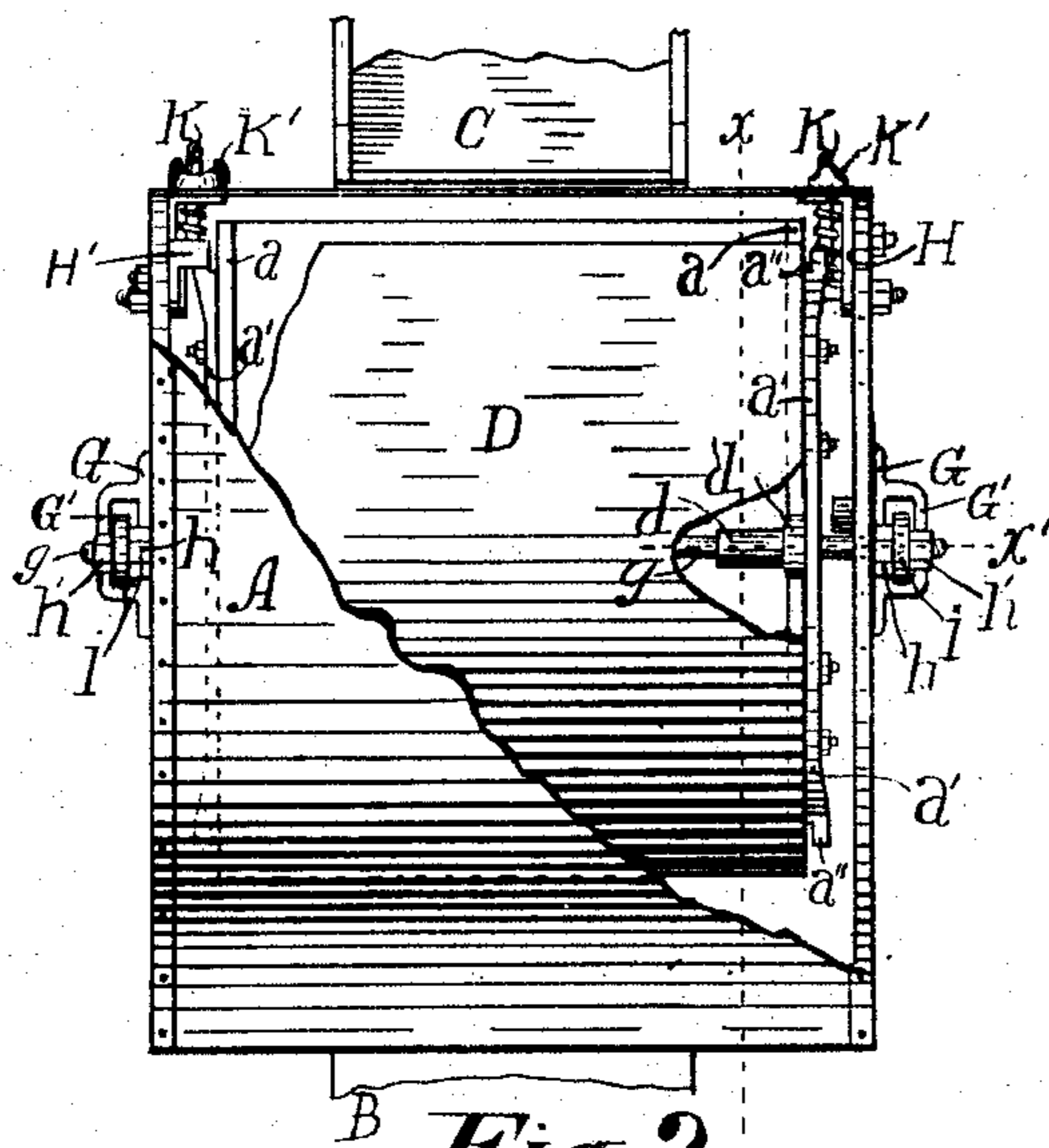
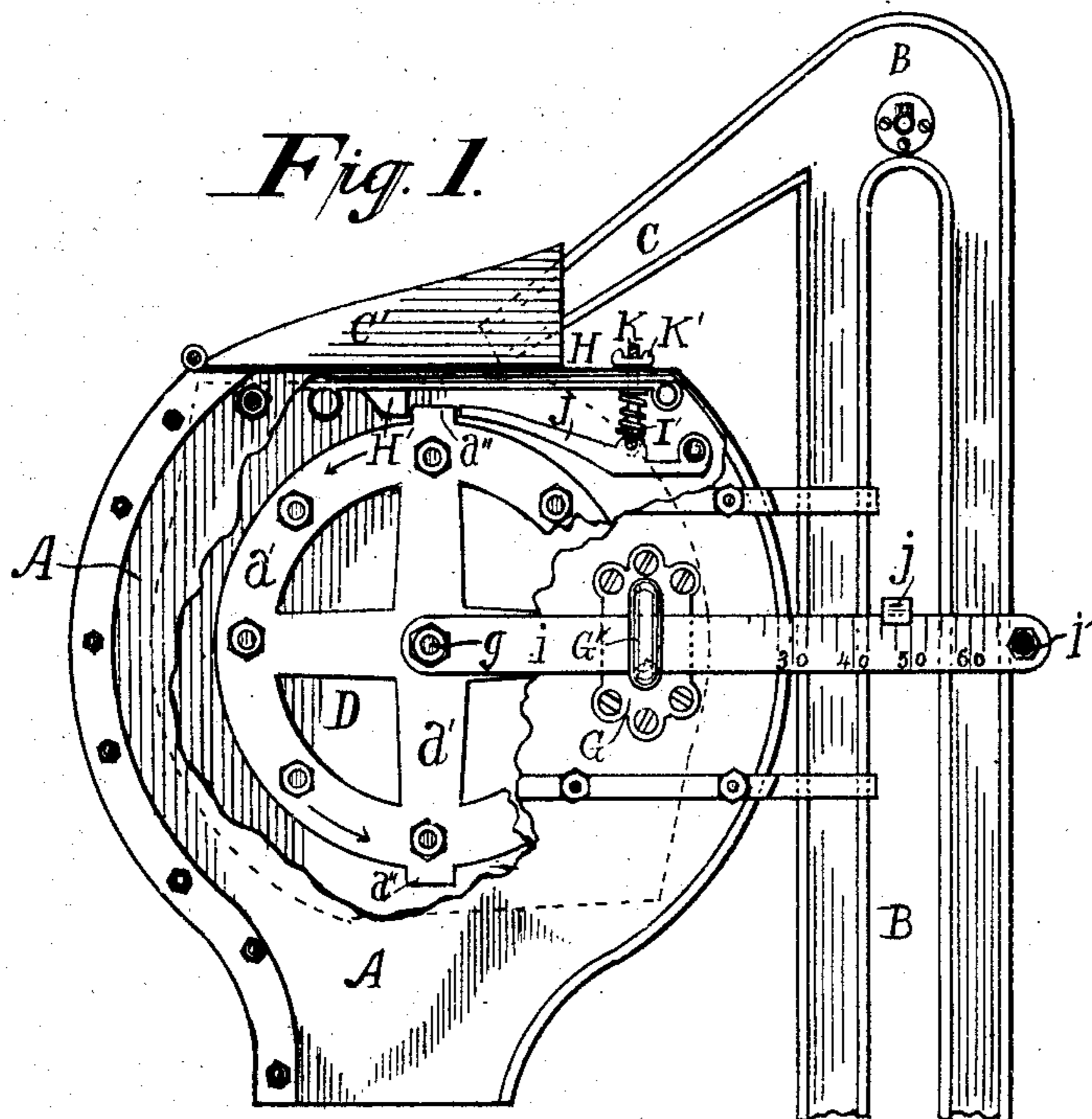


No. 881,217.

PATENTED MAR. 10, 1908.

G. M. BAIRD.  
AUTOMATIC GRAIN WEIGHER.  
APPLICATION FILED FEB. 28, 1907.

2 SHEETS—SHEET 1



*Fig. 2.*  
Witnesses:  
Wm. Reschke  
E. E. Mc Murray

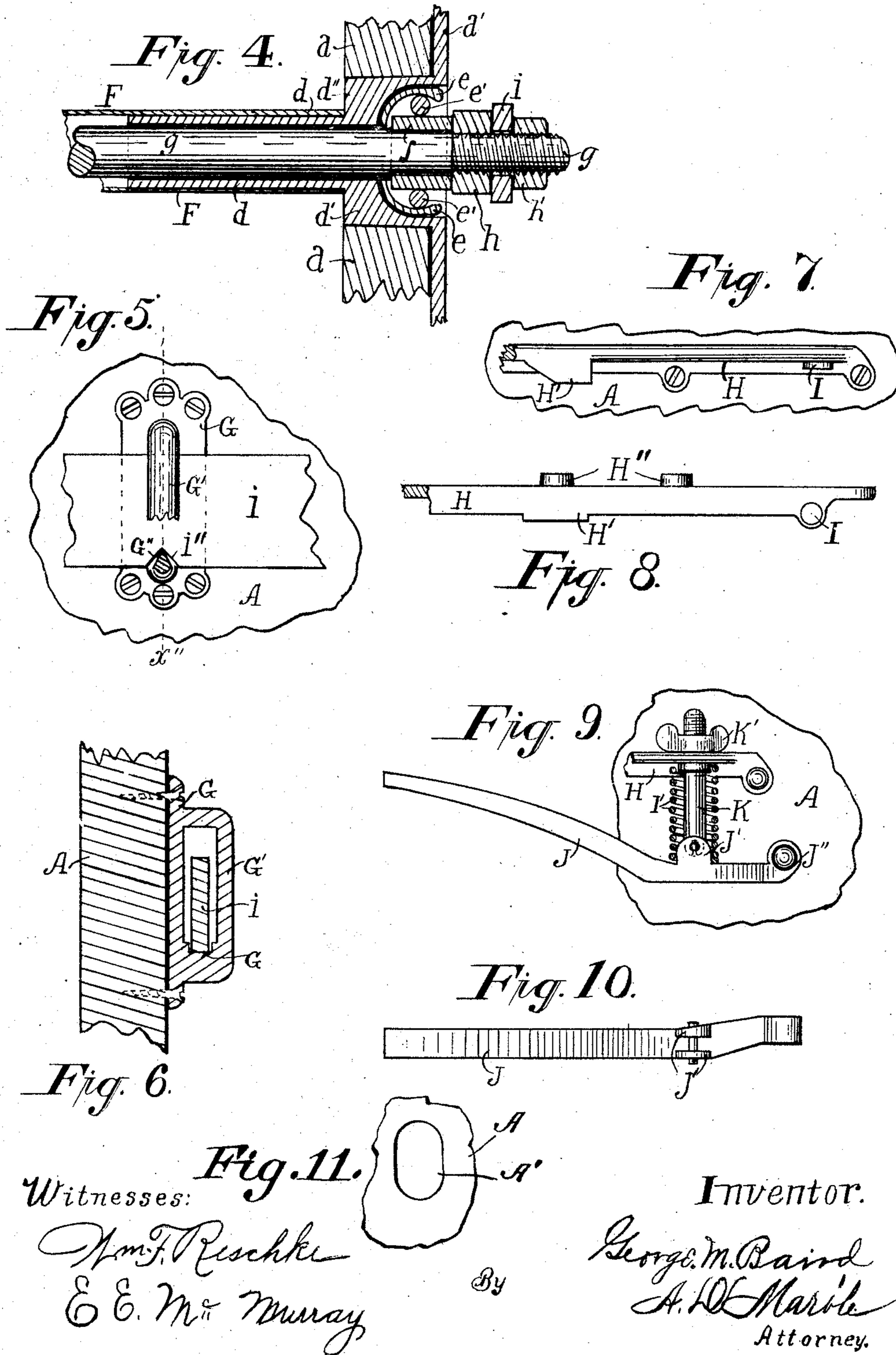
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2 SHEETS—SHEET 2.



# UNITED STATES PATENT OFFICE.

GEORGE M. BAIRD, OF OKLAHOMA, OKLAHOMA.

## AUTOMATIC GRAIN-WEIGHER.

No. 881,217.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed February 28, 1907. Serial No. 359,896.

*To all whom it may concern:*

Be it known that I, GEORGE M. BAIRD, a citizen of the United States, residing at Oklahoma city, in the county of Oklahoma, Oklahoma, have invented certain new and useful Improvements in Automatic Grain-Weighers, of which the following is a specification.

My invention relates to automatic grain weighers, in which a housing casement has mounted therein a rotatable grain receptacle pinioned by a pair of duplicate lever-bars fulcrumed upon supporting pivots and provided with pease; the said casement being secured to the grain elevator in such position as to discharge the grain into the said receptacle which makes two half revolutions to each bushel by means of a partition and duplicate apartments therein, and stops upon its outer ends contacting with the casement stops and a spring regulated latch to prevent the said receptacle from rebounding.

The objects of my invention are; to overcome certain defects in automatic grain weighers; first by providing a light, strong rotatable receptacle which will discharge all kinds of grain in all conditions freely; second, to provide a rotatable receptacle which will act quickly and positively; third, to provide a weigher which is accurate, reliable and durable. I attain these objects by the mechanism illustrated in the accompanying drawings forming a part of this specification, in which:

Figure 1 is a right side elevation as viewed from the front of my weigher attached to the elevator and having a portion of the right end of the casement broken away; Fig. 2 is a front elevation of Fig. 1 with portions broken away; Fig. 3 is a transverse sectional view of the receptacle on line  $x$  Fig. 2; Fig. 4 is a view in elevation, part sectional, of one of the duplicate receptacle shaft sections and its supporting shaft or rod on line  $x'$  Fig. 2; Fig. 5 is an elevation of the right pivot with a part broken away showing the fulcrum, also a portion of the casement to which the pivot is secured and a portion of one of the duplicate lever-bars; Fig. 6 is a cross section on line  $x''$  Fig. 5; Fig. 7 is a view in elevation of a portion of the left casement stop or bumper of which there is a pair; Fig. 8 is a plan view of Fig. 7 omitting the casement portion; Fig. 9 is a view in elevation of the latch with its tension bolt; Fig. 10 is a plan view of the latch with the tension bolt removed; Fig. 11 shows

a portion of one of the like vertical walls of the housing-casement having vertically oblong openings centrally located therein.

Similar letters refer to similar parts in the several views.

Referring to the drawings, the housing-casement A is firmly secured to the elevator B which delivers the grain through the spout C into the grain-receptacle D inclosed and protected by the said casement and consisting of two like nearly V-shaped compartments E E formed by the convex casing D' secured to the vertical circular-like ends  $a$  and the partition F extending across the interior of the receptacle from the rear edge of one of the openings to the rear edge of the opposite opening where it is lapped over and secured to the receptacle casing as at  $b$ ; and to provide that all kinds of grain shall at all times discharge freely the said casing deviates from a circle toward a straight line between the points  $c$  and  $c'$ , being their edge and central portions, bearing in mind that to curtail the expense and size of the casement the distance from the point  $c'$  and the center of the receptacle should be no greater than is necessary to insure a perfect discharge; the partition F is formed of two pieces of sheet metal, preferably, each piece forming a semicircle around the hollow axle sections  $d d$  over-lapping and being riveted to each other as at  $d'$ ; to provide for lightness, strength and ease of movement the said hollow axle sections terminate in hubs  $d''$  having secured therein the cups or cones  $e$  with their balls  $e'$  engaging and rolling upon the collar  $f$  secured firmly upon the supporting shaft or rod  $g$  by means of the jam-nut  $h$ , the shaft being turned smaller at the said collar; the said receptacle heads or ends  $a$  are reinforced by the metallic wheel-like plates  $a'$  secured to their outer surfaces and having upon their peripheries the two oppositely located slightly off-set projections  $a''$  serving as receptacle-stops; the receptacle being mounted upon the said shaft  $g$  firmly secured in the front ends of the duplicate lever-bars  $i$  by means of the threaded ends of the said shaft, the jam-nut  $h$  and the grip-nut  $h'$ . To provide means for tilting or the depression of the receptacle D the said duplicate lever-bars  $i$  are fulcrumed upon duplicate pivot plates G firmly secured to the outer surfaces of the vertical sides of the housing casement A, the rear ends of said lever-bars

being held in position by passing through them a stay-rod *i'* provided with threads and nuts and encompassed by a pipe or tube of proper length; the said lever-bars have their  
 5 upper edges graduated and have proper pease *j* provided to slide, and to be adjusted thereon to balance a half-bushel of the kind of grain being threshed. To insure free  
 10 action of the said lever-bars *i* and to guard against their accidental displacement their under edges are provided with notches *i''* in which the wedge-like fulcrums *G''* of the pivot plates *G* contact and support the said  
 15 lever-bars which are further protected from displacement by the pivot guards *G'* and the fulcrum shoulders each side of the lever-bars which prevent any tendency to lateral motion, see Figs. 5 and 6.

To prevent the continuous rotation of the  
 20 grain receptacle *D* the stops or bumpers *H* are provided, consisting of longitudinal plates each having a horizontally projecting flange at its upper edge with a vertical perforation *I* near its rear end, and near its front end a  
 25 downward, swelled projection *H'* having a rearward vertical face, the body portion of the said plates have rearwardly projecting studs *H''*, the plates are of necessity rights and lefts, and adapted to be firmly secured  
 30 to the inner surfaces of the vertical side-walls of the housing-casement *A* in such position that the heavy, downwardly projecting portion *H'* will receive the concussion and contact of the receptacle stop *a''*; to  
 35 assist in holding the stops or bumpers *H* in place the rear studs *H''* are provided which are embedded in the casement walls; near the rear end of said stops or bumpers and in the horizontal flange portion the opening *I*  
 40 with its boundary extending slightly below the under surface of the said flange, being a guide for the tension-bolt *K* pivoted in the vertical ears *J'* of the latch *J*, the downward extension bounding the said opening is to  
 45 prevent the tension-spring *I'* from retarding the vertical movement of the tension-bolt *K*, the said tension-spring being spiral, encompassing the said bolt and having its upper  
 50 end surround the said downward extension about the opening *I*, the lower end of said spring resting upon the latch *J* and tending to press the same downward, thus, by friction retarding the rapid rotation of the receptacle  
 55 *D* and decreasing the concussion between the stop-projection *H'* and the receptacle-stops *a''* which contact with the under-concave surface of the latch *J* which, by means of the opening *J''* in the rear end of the said latch is pivoted to the inner surface of the vertical  
 60 walls of the housing-casement *A* in the proper place for its front end to drop down behind the receptacle-stop *a''* to prevent re-action or re-bounding, of the receptacle, and to prevent the front end of the said latch from  
 65 dropping too far the thumb-nut *K'* is thread-

ed upon the upper end of the tension-bolt *K*; it will be understood that the said latches *J* are rights and lefts or in pairs.

In operation, the elevator *B* with its spout  
 70 *C* delivers the grain into the front half-bushel compartment in a continuous stream, by adjusting the pease *j* upon the lever-bars *i* according to the grain being weighed, when a half-bushel by weight has fallen into the  
 75 receptacle it is by the gravity depressed sufficient for the receptacle-stop *a''* to escape the bumper or casement-stop projection *H'* and the receptacle makes a half-revolution, at the same time discharging the grain in a  
 80 conveyer below and assuming the position for weighing and dumping another half-bushel and thus repeating the operation; to permit of the depression of the receptacle *D* to the point of unlocking centrally located  
 85 vertically oblong openings *A'* are provided in the side-walls of the housing-casement; and, to prevent straw, trash and wind from interfering with the weighing the hood *C'* is provided and hinged to the upper and outer  
 90 portion of the housing-casement.

Having thus described my invention, what I claim as new and useful and desire to secure by Letters Patent is—

1. In an automatic grain weigher having a housing-casement attached to an elevator  
 95 or a grain discharge; a momentum and gravity actuated rotatable grain receptacle mounted within said casement and having circular-like ends and two like and oppositely located peripheral casing sections se-  
 100 cured thereto and having two like sections of partition having their external edges secured to the advance edges of said casing sections and their interior portions overlap-  
 105 ping and having semi-circular offsets to form an axle-tube when the said sections of partition are secured together to form two like  
 110 oppositely located and approximately V-shaped compartments void of projections for the lodgement of discharging grain, as described.

2. In an automatic grain weigher having a housing-casement attached to a grain ele-  
 115 vator or discharge; a double compartment gravity and momentum actuated grain receptacle; reinforcing plates secured to the outer surface of the ends of said receptacle and having upon their peripheries oppo-  
 120 sitely located stop-lugs to check and stop the rotation of said receptacle, said reinforcing plates having hubs extending in one direc-  
 125 tion and forming hollow axles; a non-rotatable shaft supporting said receptacle and having each of its ends extending outwardly beyond the sides of said housing-casement  
 130 and having fitted thereon jam-nuts and tightening nuts to secure said shaft in position and prevent it from rotating, as set forth.

3. In an automatic grain weigher having a

housing-casement attached to a grain elevator or discharge; a double compartment, gravity and momentum actuated grain receptacle mounted within said housing-casement; reinforcing plates secured to the outer surface of each end of said grain receptacle and having two oppositely located peripheral stop-lugs and converging hollow-shaft axles; a non-rotating shaft extending through said housing-casement with said grain receptacle mounted thereon and having its projecting ends provided with threaded nuts and jam-nuts to secure said shaft in position; non-rotating bearing collars secured upon said shaft by said jam-nuts to receive the turning friction of the said receptacle; a pair of duplicate, scaled lever-bars with their sides vertical and edges normally horizontal, by means of stay-rods secured in a parallel position adapted to maintain unity of action of said lever-bars positioned on each side of the housing-casement and having firmly secured in their front ends the non-rotating receptacle supporting shaft, and having in the lower edge of each a fulcrum kerf to prevent longitudinal movement of said lever-bars; weighing weights adjustably secured to the scaled portion of the said lever-bars to balance the weight of the said receptacle and grain therein; the duplicate pivot-plates G being firmly secured to the said housing-casement and having inverted V-shaped fulcrum pivots adapted to said kerfs in said lever-bars, and having vertical guards G' to prevent lateral movement of the said lever-bars adapted to vibrate upon said pivots, substantially as described.

4. In an automatic grain weigher having a housing-casement consisting of a cylindrical

body and vertical end walls and being attached to a grain elevator or grain discharge; a double compartment rotatable grain receptacle mounted therein; reinforcing plates *a'* secured to the ends of said receptacle and each having a hollow axle and two oppositely located peripheral stop-lugs *a''* to prevent said receptacle from continuous rotation; the right and left casement stops or bumpers H each having a longitudinal body horizontally secured to the inner surface of the end walls of said casement, and having a flange portion extending away from said wall and having an enlargement to receive the concussion of the said peripheral stop-lugs, the rearward portion of said flanges having vertical perforations therein; the right and left receptacle-locking latches J the rear end of their body portions being pivotally secured to the inner surface of the end walls of the said housing-casement in position for the end of the forwardly projecting neck portion of the said latches to be contacted and lifted by the said peripheral stop-lugs at each semi-revolution of the said grain receptacle, each of said latches being provided with a tension spring, a tension bolt with a thumb-nut to regulate the pressure upon the said stop-lugs to check the rotation of the said receptacle and prevent its back-action, its release being gravity actuated, substantially as described and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE M. BAIRD.

Witnesses:

WM. F. RESCHKE,  
CHAS. H. DONNELL.