

No. 759,917.

PATENTED MAY 17, 1904.

O. B. REYNOLDS.

END GATE.

APPLICATION FILED DEC. 26, 1903.

NO MODEL.

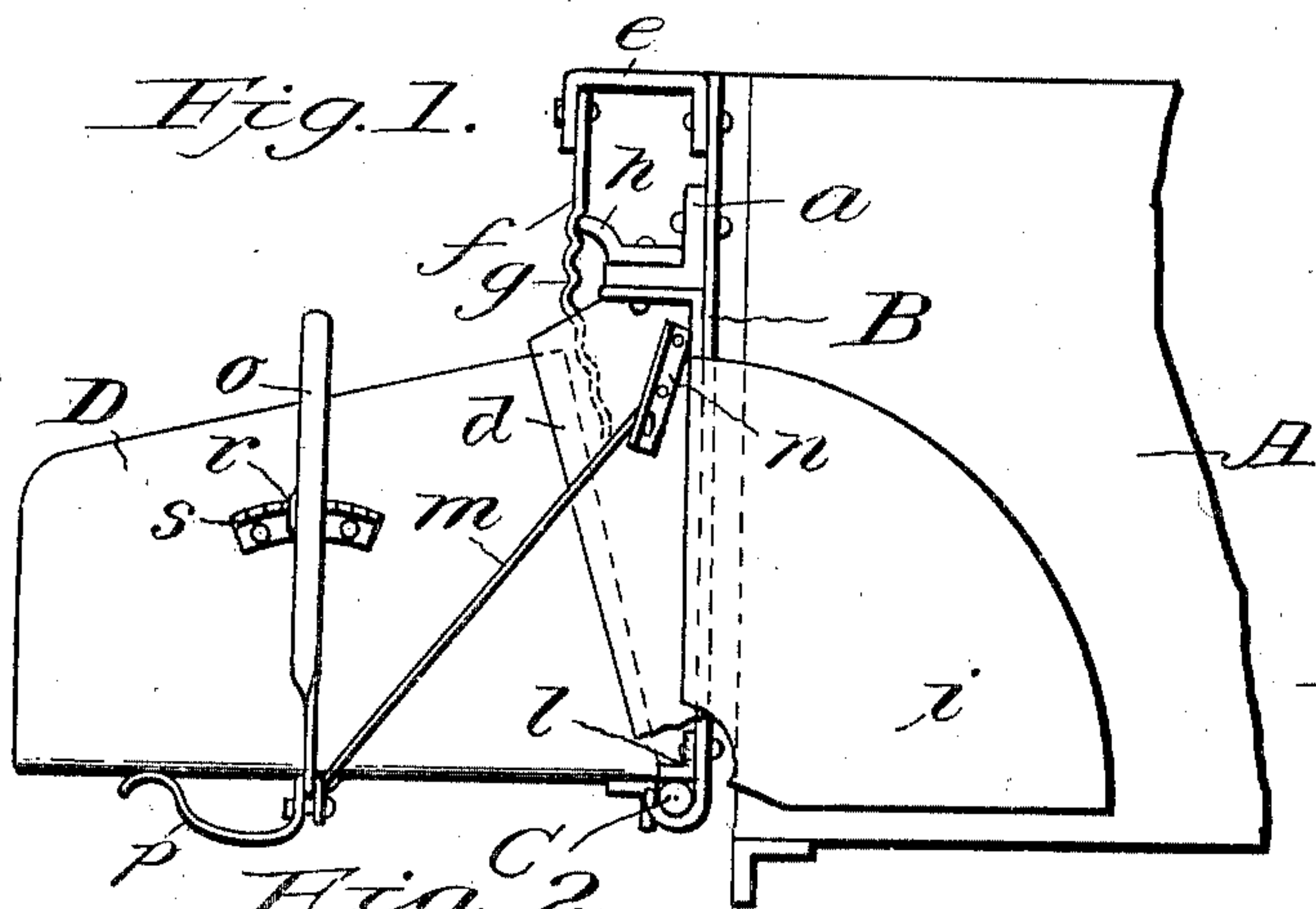


Fig. 4.

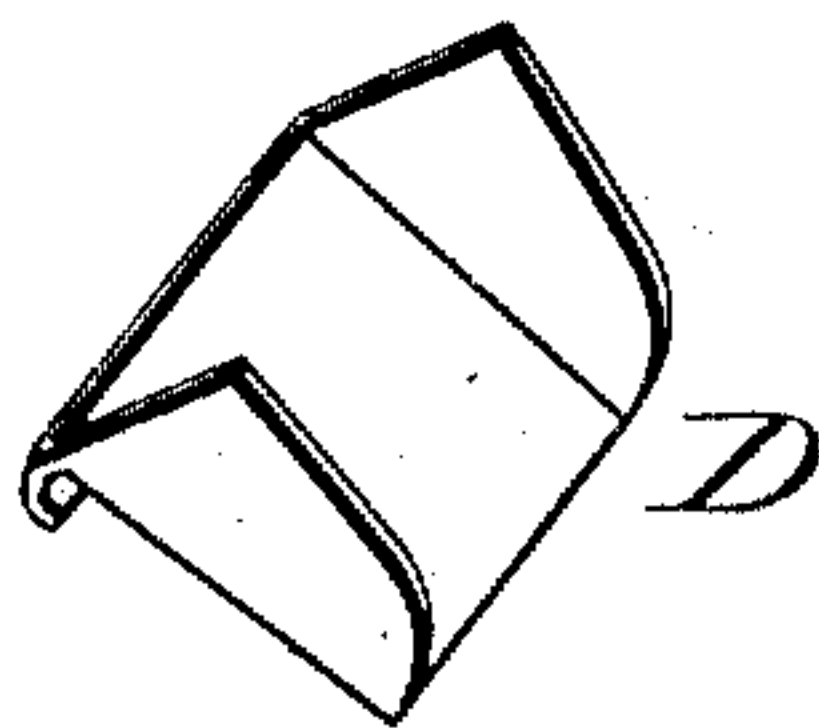


Fig. 5.

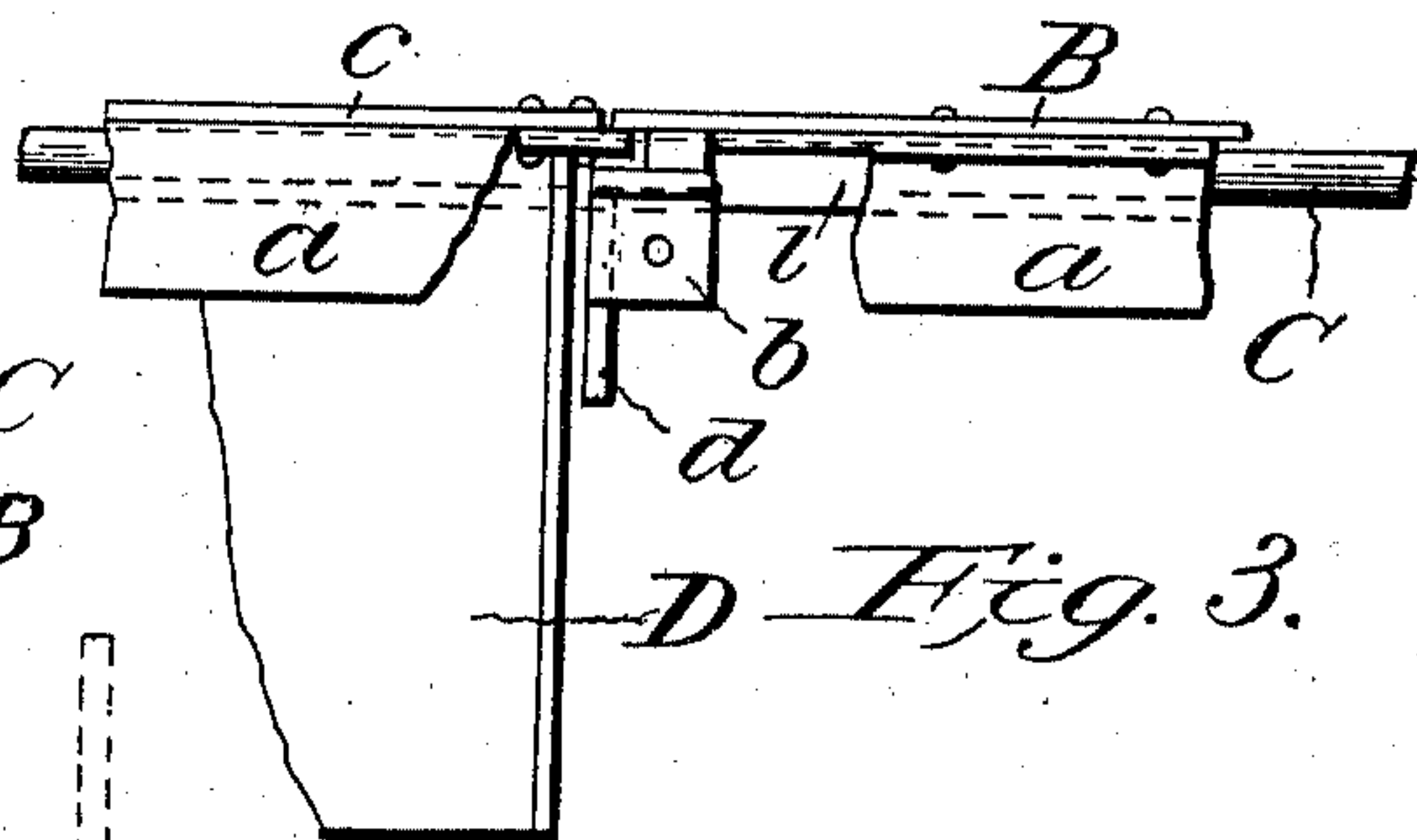
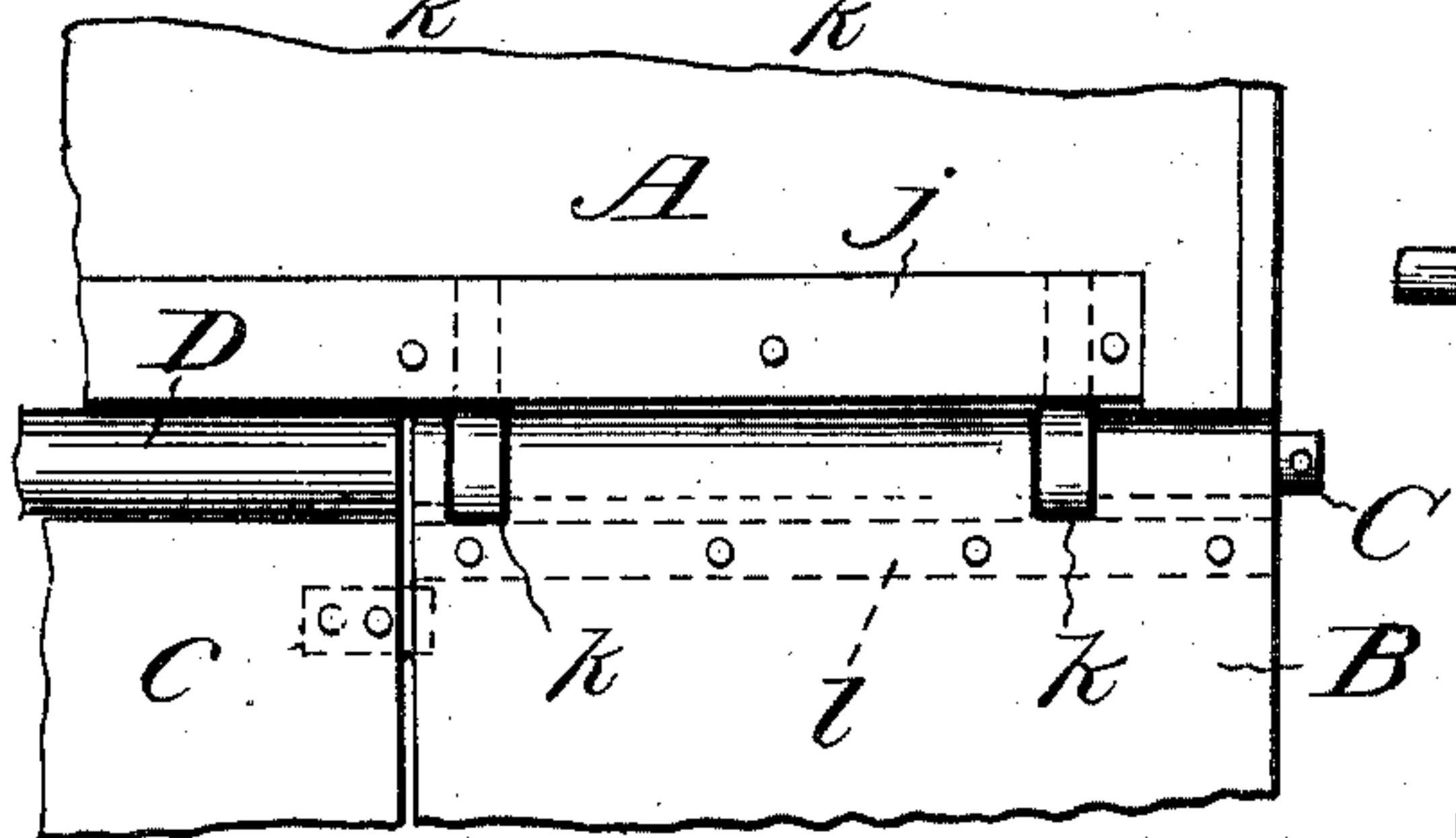
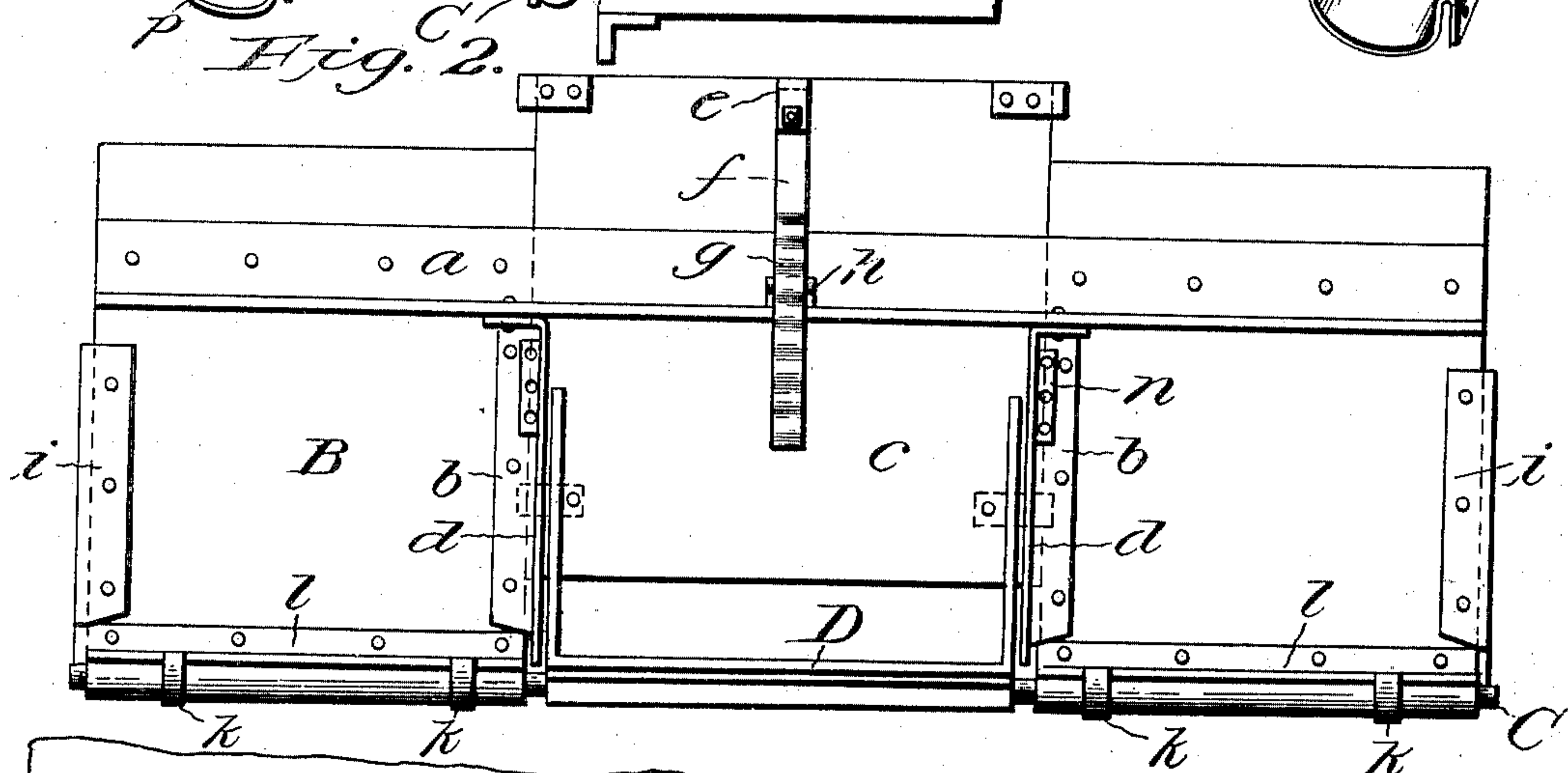
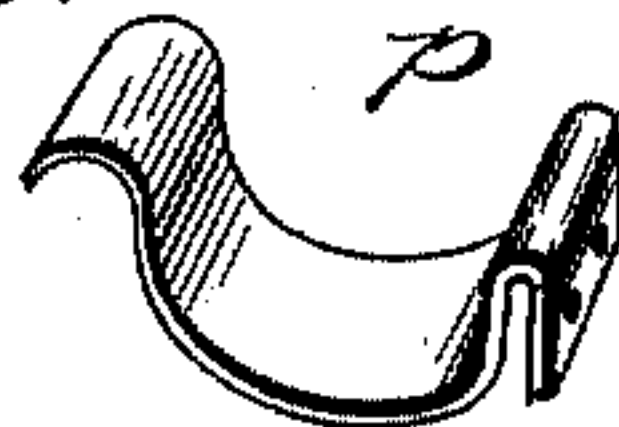


Fig. 6.

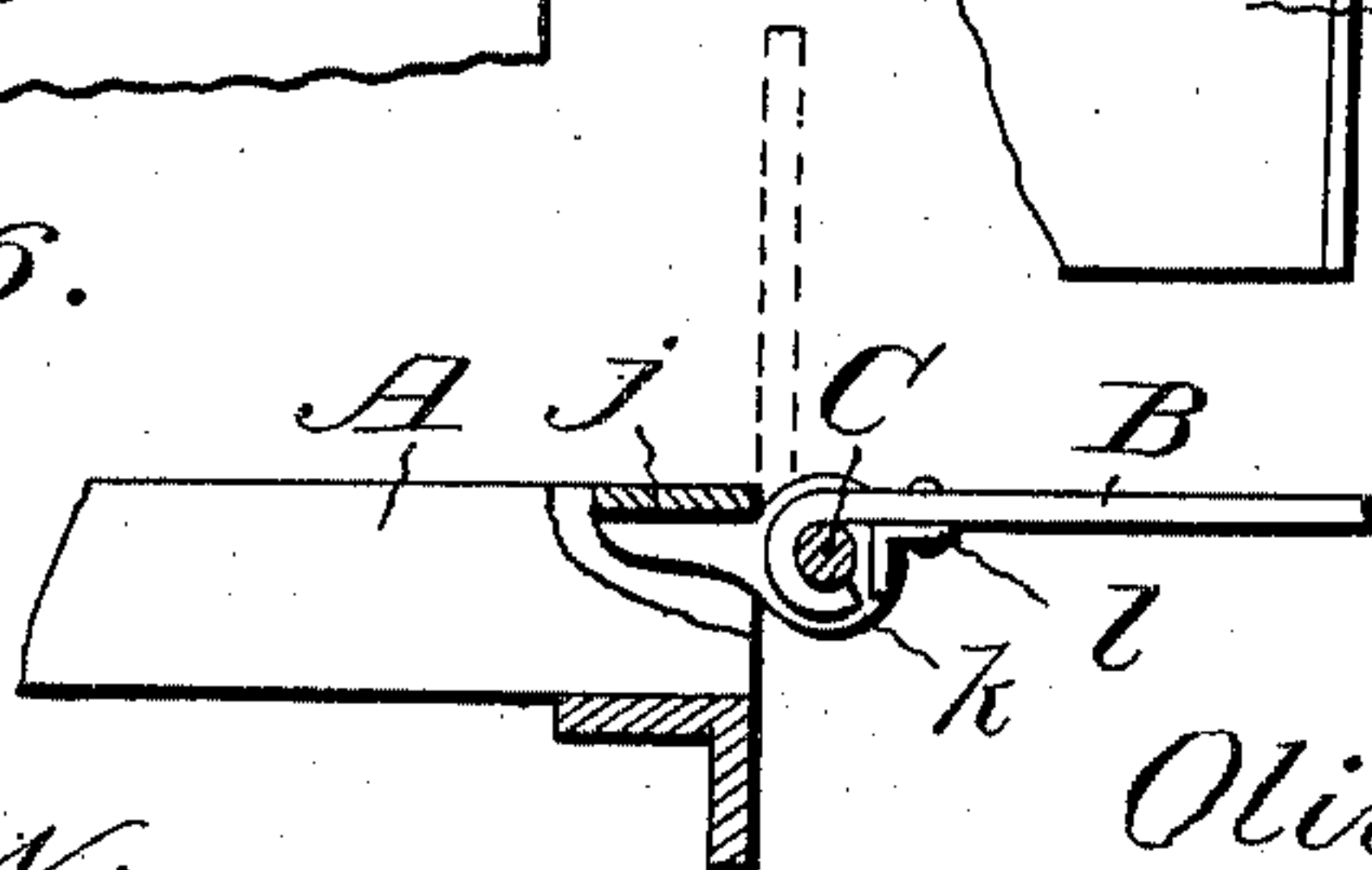


Fig. 7.

WITNESSES:

C. N. Walker.
C. N. Fowler

INVENTOR

Oliver B. Reynolds

BY

J. Walter Fowler
Attorney

UNITED STATES PATENT OFFICE.

OLIVER B. REYNOLDS, OF BROCKTON, MASSACHUSETTS.

END-GATE.

SPECIFICATION forming part of Letters Patent No. 759,917, dated May 17, 1904.

Application filed December 26, 1903. Serial No. 186,561. (No model.)

To all whom it may concern:

Be it known that I, OLIVER B. REYNOLDS, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented new and useful Improvements in End-Gates, of which the following is a specification.

My invention relates to certain new and useful improvements in end-gates for wagons; and it consists of the parts and the constructions and combinations of parts, which I will hereinafter describe and claim.

In the accompanying drawings, forming part of this specification, and in which similar letters of reference indicate like parts throughout the several views, Figure 1 is a side elevation of a portion of a wagon-body with an end-gate embodying my invention. Fig. 2 is a rear view of the end-gate. Fig. 3 is a top plan view of a portion of the gate. Fig. 4 is a reduced perspective view of the chute. Fig. 5 is a perspective view of a chute-elevating arm. Fig. 6 is a plan view of a portion of the wagon-body and hinge connection. Fig. 7 is a side elevation of Fig. 6 partially broken away.

In carrying out my invention I may use the end-gate in connection with any of the wagons or vehicles to which it is applicable, and in practice the gate will be found particularly useful in that class of vehicles designed for hauling heavy loads and commonly known as "dumping-wagons," although its use is not limited to this or any specific form of wagon.

Referring to the drawings, A represents a wagon-body, which may be of any appropriate and well-known form and construction, but preferably one that is designed to dump and to discharge its load through an end-gate or a chute which forms a part thereof—for instance, such a dumping-wagon as is shown, described, and claimed in another application Serial No. 179,427, filed by me November 2, 1903.

The end-gate B herein shown swings in opening and closing about a transverse shaft C, and it has a chute D, which may be independently let down and adjusted to various inclinations. Across the upper portion of the end-gate is fixed an angle-iron *a*, and on the

back of the gate between this angle-iron and the bottom of said gate are vertical plates *b*, which form guides for a vertically-movable slide-gate *c*, controlling an opening located approximately in the center of the end-gate and adapted to communicate with an appropriate chute, as I will hereinafter describe, the said vertical guide-plates *b* having outwardly-extending flanges *d*, which taper from their upper ends downwardly and are adapted to cover the joint between the inner end of the chute and the end-gate and prevent the escape of coal or material through the space which is formed when the chute is let down into an operative position. The slide-gate *c* is provided at its top with a bent iron or angle piece *e*, which serves as a handle, and thereby facilitates the opening and closing sliding movements of said gate, and extending from this handle portion down over the outside of the gate is a spring-plate *f*, having corrugations or serrations *g*, adapted to be engaged by an upwardly-curved lug or finger *h*, extending from a plate bolted or otherwise fixed to the angle-iron *a*, whereby the slide-gate may be held in any of its adjusted open positions.

At the ends of the swinging end-gate are secured the wings *i*, which extend over the rear outer sides of the wagon-body and cover the joint between the end-gate and end of said body and prevent the escape of material over the ends of the gate when said gate is lowered. Across the inside of the bottom of the wagon-body is bolted or otherwise secured a plate *j*, made rigid with outwardly-extending lugs *k*, which are pierced to form eyes for the reception of the transverse rod or shaft C, which extends across the bottom of the end-gate close to the plate *j* and substantially in the plane of the inside of the bottom and forms the axis about which the end-gate opens and closes. The plate *j*, with its lugs or eyes, forms one member of the end-gate hinge, another member of said hinge being formed by the gate itself having its lower edge bent or fashioned into an outwardly-curved form to embrace the shaft C and being retained on said shaft by an angle-iron *l*, which guards the open end of the loop formed by the bending of the lower edge of the gate into a curved

form, as shown in Figs. 1, 6, and 7. The curved end of the gate is also recessed to receive the eyes or lugs of the plate *j*, thus allowing the end of the gate to be brought up
 5 close to the outer edge of the plate *j*, which edge is flush with the rear extremity of the wagon bottom or floor, and thereby forms a close joint between the bottom of the gate and the bottom of the body to prevent the escape
 10 of fine material. This arrangement also provides for the end-gate being in line with the inside of the floor, of the body, and no space is left between the rear end of said floor and the adjacent end of the end-gate for fine coal
 15 or material to pass through, neither of which features exist in those wagons where the end-gate is hinged to a wooden cross-bar in a plane below the inside floor-line of the body, and has eyes which, as shown by experience, soon
 20 wear into said cross-bar, and thus open up comparatively large spaces through which fine coal will spill.

The chute *D* lies in the central portion of the end-gate and its lower end is also curved
 25 to embrace the transverse rod or shaft *C*, upon which latter the chute is turnable in vertical planes. The inner end of the chute is confined between and is guided in its movement by the tapering flanges *d*, before mentioned,
 30 and said chute has its inclination varied at will by means of a bail *m* or like device, which crosses under the central portion of the chute and has each of its ends extending upwardly along the side of the chute and adapted to en-
 35 gage any one of several holes formed in the plates *n*, secured to the tapering flanges *d*, as shown in Fig. 1.

When it is desired to use an extension of the chute *D* to form a long chute, the object
 40 may be accomplished by the use of a lever *o*, fulcrumed on the bottom of the chute *D*, having a curved arm *p*, Fig. 5, reaching outward under the chute, and between which arm and said chute the said extension may be passed,
 45 whereby the plate supports this end of the extension. The lever *o* is provided with a pawl *r*, adapted to engage the teeth of a segment *s*, whereby the lever may be moved to the right or left to raise or lower the curved
 50 arm *p* to allow it to hold or release the extension.

From this description it will be seen that I have an end-gate construction which, though applicable to other wagons, is especially adapt-
 55 ed for dumping-wagons, and that said gate may be lowered as an entirety or its chute may be employed in connection with the sliding gate. The gate structure is simple and strong and well adapted for the delivery of
 60 coarse and heavy material and also for fine material, which, because of the close joint formed between the bottom and ends of the gate and the rear end of the wagon-body, prevents the escape of material at these points.

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

1. In a wagon the combination with the wagon-body, of lugs extending from the rear thereof in substantially the plane of the bot-
 70 tom, an end-gate having its lower edge curved and recessed to receive said lugs, and a rod passing through the curved edge of the gate and said lugs whereby a close joint is formed between the gate and end of the body. 75

2. In a wagon, the combination with a wagon-body, of a plate secured transversely across the rear of the bottom and provided with outwardly-extending lugs, an end-gate
 80 having its lower edge curved outwardly to form an eye said curved edge forming one member of a hinge and recessed to receive the lugs which form a second member of the hinge, and a rod passing through said hinge
 85 members and uniting the same to form a close joint between the gate and end of the wagon-body.

3. In a wagon, the combination of the body, a plate fixed transversely across the rear end of the floor thereof, and provided with out-
 90 wardly-projecting lugs, a gate having its lower edge curved to form loops or eyes and recessed to receive said lugs, a rod passing through said loops or eyes and lugs, and uniting the same, and an angle-iron extending
 95 transversely across the gate and guarding the open side of the loop.

4. In a wagon, the combination with the wagon-body, of a hinged gate having a discharge-opening, a gate vertically slidable in
 100 the end-gate and controlling said opening, and a chute mounted upon the axis of the gate and communicating with the gate-controlled opening in said gate.

5. In a wagon, the combination with the wagon-body, of a swinging end-gate having a discharge-opening, a vertically-slidable gate
 105 mounted in the end-gate and controlling said opening, a chute pivoted upon the axis of the end-gate, means whereby the chute is adjusted to different inclinations, and angle-irons on the end-gate having outwardly-extending
 110 flanges covering the joint between the inner end of the chute and the end-gate.

6. In a wagon, the combination with the wagon-body, of a swinging end-gate having a discharge-opening, a slide-gate controlling
 115 said opening, a chute pivoted upon the axis of the end-gate, plates secured to the end-gate and having outwardly-extending flanges covering the joint between the end-gate and inner
 120 end of the chute, and suspending-bails passing under the chute and having their ends adjustably mounted whereby the inclination of the chute may be varied. 125

7. In a wagon, having a hinged chute and chute-suspending means, a pivoted lever having an arm reaching under the chute, and a

segmental rack for maintaining the lever in its adjusted position.

8. In a wagon, an end-gate, having a discharge-opening in combination with a gate 5 vertically slidable in the end-gate and controlling said opening, an angle-bar extending across the upper portion of the end-gate, a bent plate forming a handle at the upper end of the slide-gate, a spring-plate extending 10 down over the angle cross-bar and provided with corrugations, and a lug on the cross-bar engaging said corrugations to hold the slide-gate at various elevations.

9. In a wagon, an end-gate having a cross-

bar across its upper portion, vertical plates 15 or bars forming guide-channels, a vertical slide-gate having its edges fitting said channels, means for holding the slide-gate at different elevations, and wings at the ends of the end-gate and overlapping the rear ends of the 20 sides of the wagon-body.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

OLIVER B. REYNOLDS.

Witnesses:

H. G. RUE,

MARCUS BUNNELL.