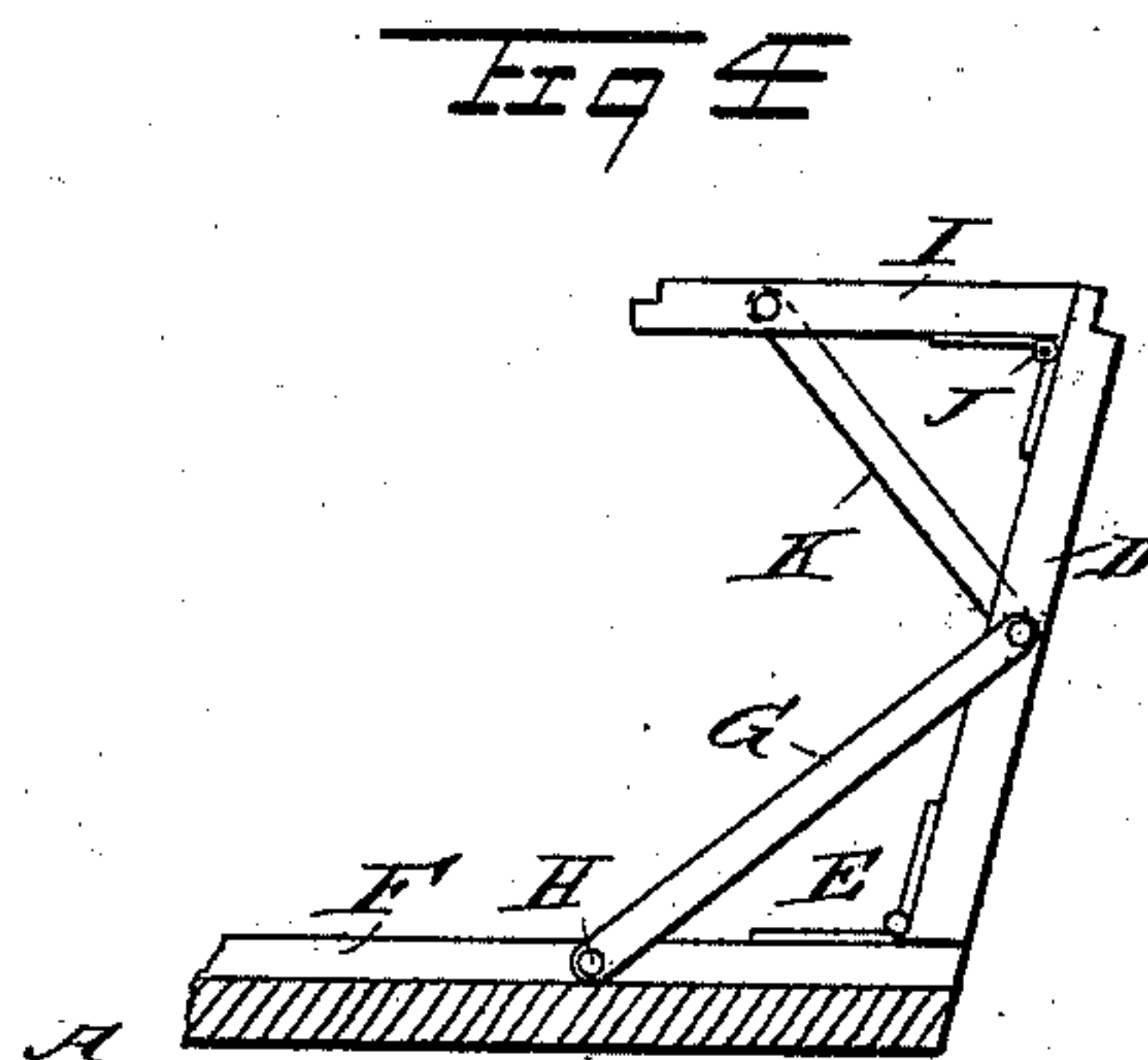
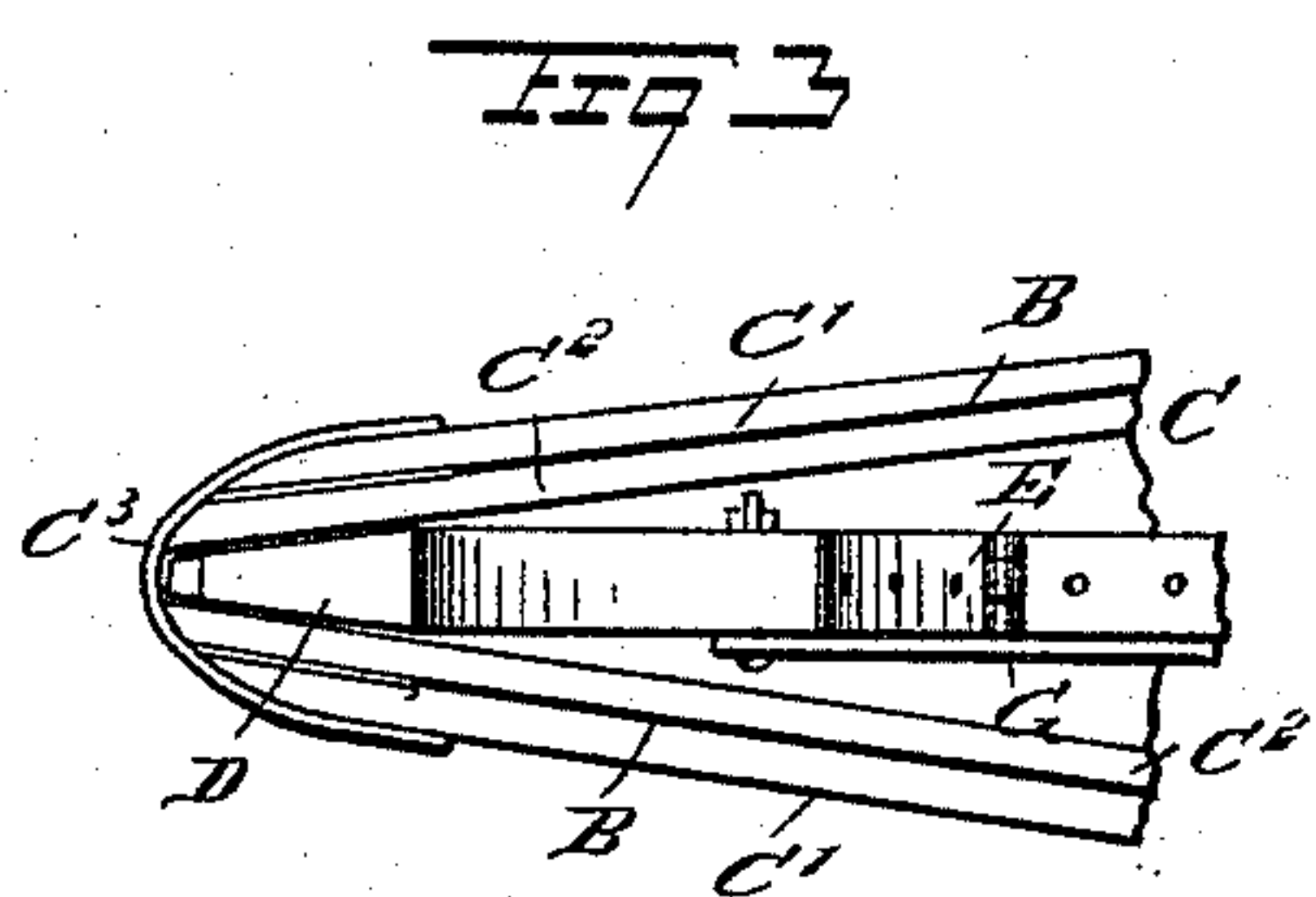
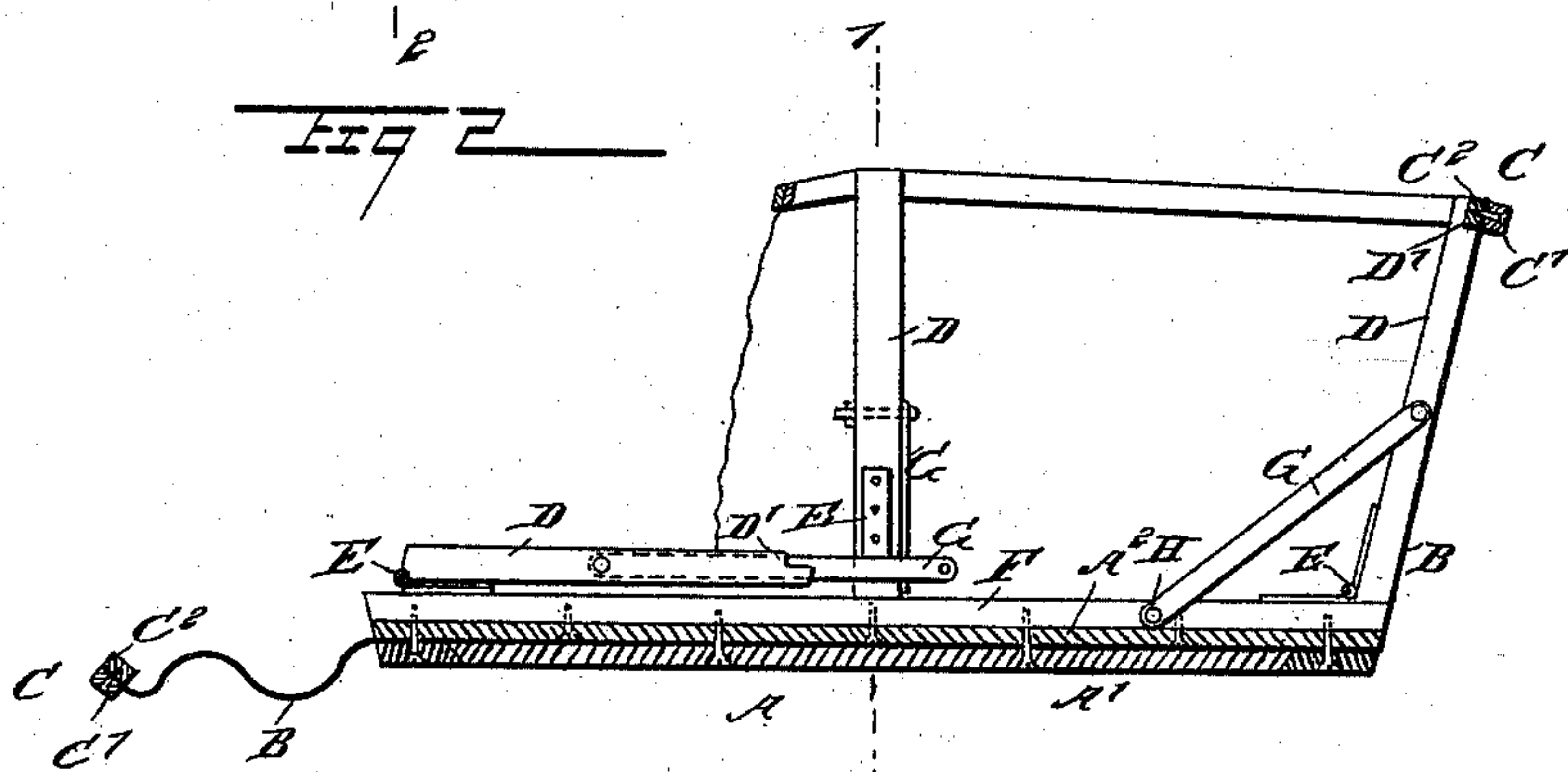
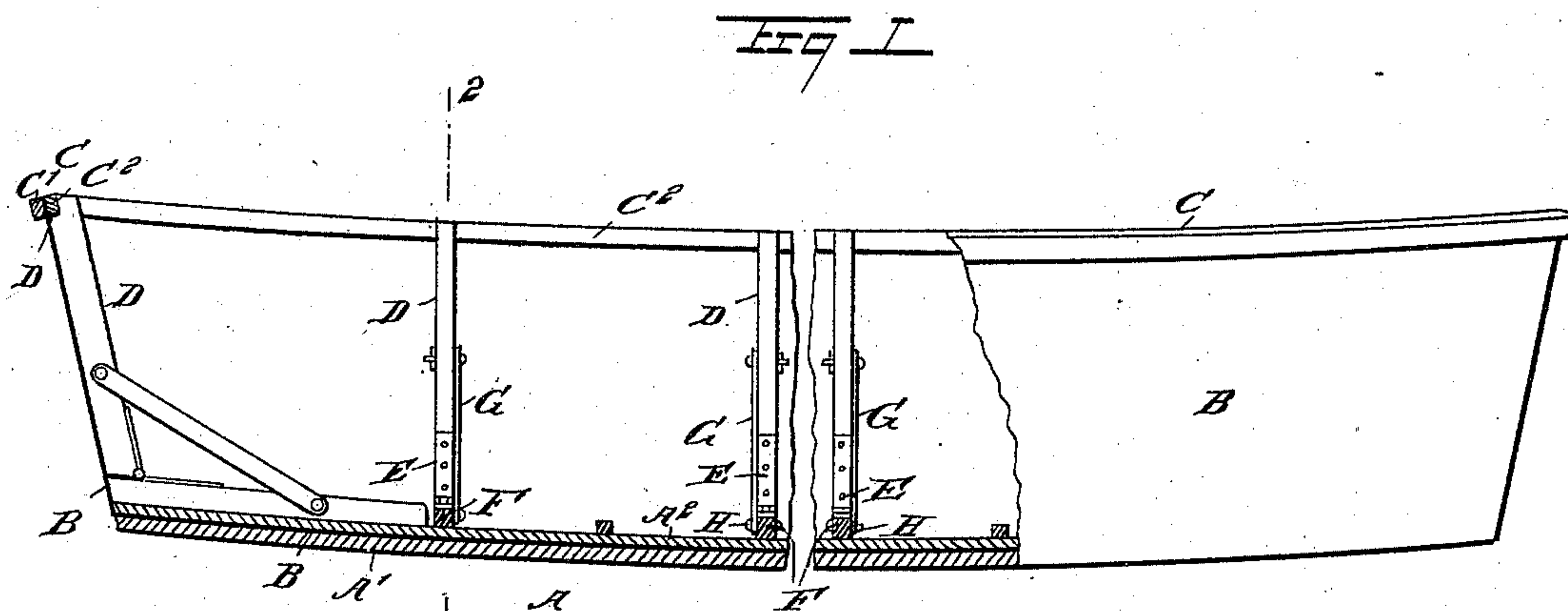


(No Model.)

J. H. RUSHTON.
FOLDING BOAT.

No. 541,778.

Patented June 25, 1895.



WITNESSES:

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JOHN H. RUSHTON, OF CANTON, NEW YORK.

FOLDING BOAT.

SPECIFICATION forming part of Letters Patent No. 541,778, dated June 25, 1895.

Application filed February 19, 1895. Serial No. 538,926. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. RUSHTON, of Canton, in the county of St. Lawrence and State of New York, have invented a new and Improved Folding Boat, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved folding or collapsible boat, which is comparatively simple and durable in construction, adapted to be conveniently folded up for transportation, storage or other purposes, or extended for its legitimate use, and all the parts of the framework and bottom attached together to prevent any of the parts from being lost.

The invention consists principally of a solid bottom, canvas sides, a gunwale attached to the upper edges of the said sides, and braced uprights for supporting the gunwale and hinged to the said bottom.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement, with parts in section on the line 1—1 of Fig. 2. Fig. 2 is a transverse section of the same, on the line 2—2 of Fig. 1. Fig. 3 is a plan view of one end of the boat; and Fig. 4 is a transverse section of a modified form of the improvement.

The improved boat is provided with a solid bottom A, shaped according to the form desired to be given to the boat, either pointed at the ends or square at one or both ends as the case may be. The bottom A is preferably made of two layers of wood A', A², screwed or otherwise fastened together, with a fabric B of canvas or other waterproof material placed between the two layers, as indicated in the drawings. This fabric is extended beyond the edges of the bottom A, so as to form the sides of the boat, and as this fabric is collapsible, it can readily be folded on a level with the bottom when the boat is not in use. The upper edge of this fabric B, forming the sides as well as the ends of the boat, is provided with a top edge or rim C, preferably

made of wood and composed of the gunwale C' and the inwale C², secured one to the other, with the upper edge of the canvas between the gunwale and the inwale. Now, in order to hold the fabric B in a stretched position when the boat is to be used, I provide a series of supporting timbers called uprights or knees D, each formed at its upper end with a notch D' engaging the under side of the inner face of the inwale C² as is plainly indicated in the drawings. Fastening devices such as hooks and eyes, may be employed to connect the gunwale and the inwale firmly to the upper end of the knee. The lower end of each of the uprights D is connected at its inside by a hinge E, with a rib F, secured to the bottom A of the boat, as is plainly shown in the drawings, the said rib F being preferably extended across the bottom for the side uprights and a rib is placed longitudinally at each end of the boat for the uprights or knees at the ends.

The ribs, besides strengthening the bottom of the boat to prevent the same from warping, also support bolts or pins H, engaged by the lower ends of braces G, pivotally connected with the corresponding uprights or knees D at or near their middle, as plainly indicated in the drawings. Each brace G when moved sidewise, can be disengaged from the end of the bolt H, so as to permit of folding the corresponding upright D inwardly upon the rib F, as indicated at the left in Fig. 2. Each brace G serves to hold its corresponding upright D in a proper inclined position, to hold the rim C of the boat in proper position, and the canvas side stretched between the edge of the bottom A and the rim C.

It will be seen that by the arrangement described, the several parts are rigidly connected with each other, so that when the parts are folded up as described, they cannot get lost, and in setting up the boat the several parts are easily put into proper position without causing the user of the boat to hunt for the individual parts.

The fabric B may not be placed entirely between the two layers A', A², as it may be extended only a short distance between the layers, from the edges inward.

In making the boat with a square end or ends, I dispense with the arrangement of

stem and gunwales as shown in Fig. 3, and substitute therefor the arrangement shown in Fig. 2 with the addition of cross pieces or gunwales connecting the two sides C' and the canvas which may be a continuation of either the side or bottom fabric.

Strips of wood called battens may be attached to the canvas sides and run from stem to stern, being placed between and parallel to the gunwales and bottom, thus strengthening the sides, such battens not interfering with the folding properties of the boat.

The gunwale and inwale of each side (port and starboard) being bent to proper shape, while in separate strips and then firmly fastened together, retain their shape. The gunwale and inwale are firmly fastened together at their ends by metal bands C³, as indicated in Fig. 3, the said strips being attached to the outer face of the gunwale C', as will be readily understood by reference to the said figure. Two bands or strips are preferably employed at each end and the inwales, port and starboard, are first fastened together independently of the gunwales.

As shown in Fig. 4, each upright D may be provided at its upper end with an inwardly extending bar I, connected to the upright by a hinge J, and held in a horizontal position by a brace K, connected with the pivot for the brace G on the upright D. This inwardly projecting bar I is adapted to receive the lengthened sides of the fabric B, so as to form a partial deck for the boat.

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

1. A folding boat, comprising a solid bottom formed of two layers, a fabric secured between the layers of the bottom and forming

the sides and ends of the boat, a rim secured to the edge of the fabric and formed of a gunwale and inwale ribs secured on the bottom, knees hinged at the inside to the ribs with their lower ends resting upon the said ribs and having their upper ends notched to engage the inwale, and braces hinged to the knees and having their inner lower ends detachably secured to the ribs, substantially as described.

2. In a folding boat, the combination with the bottom, fabric secured to the bottom and forming the sides and ends of the boat, a gunwale secured to the edge of the fabric, and uprights hinged to the bottom and having their upper ends engaging the gunwale, of inwardly extending bars hinged to the upper ends of the uprights, and braces secured to the bars and to the uprights, substantially as and for the purpose set forth.

3. A folding boat, comprising a solid bottom, a fabric attached to the said bottom and extended beyond the edges thereof to form the sides of the boat, a rim formed of a gunwale and an inwale attached to one another, with the upper edge of the fabric between the two, an upright engaging with its upper, notched end the said inwale, a rib secured to the said bottom and connected by a hinge with the corresponding upright terminating at its lower end on the said rib, a brace for connecting each upright with the corresponding rib, and an inwardly extending bar hinged to the upper end of each upright and supported by a brace therefrom, substantially as shown and described.

JOHN H. RUSHTON.

Witnesses:

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