

P. RYAN.

BRIDGE GATE OR GUARD.

No. 327,112.

Patented Sept. 29, 1885.

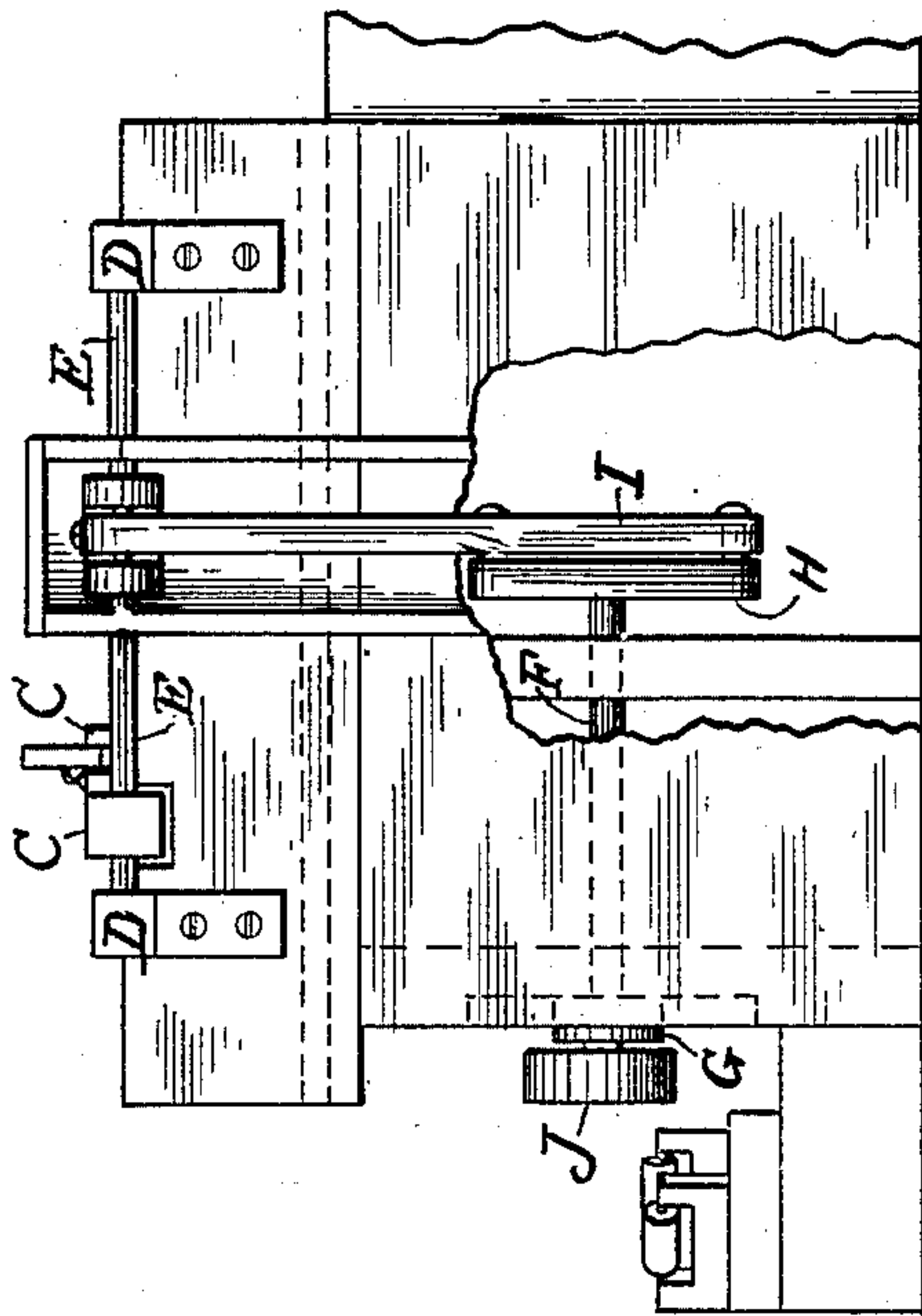
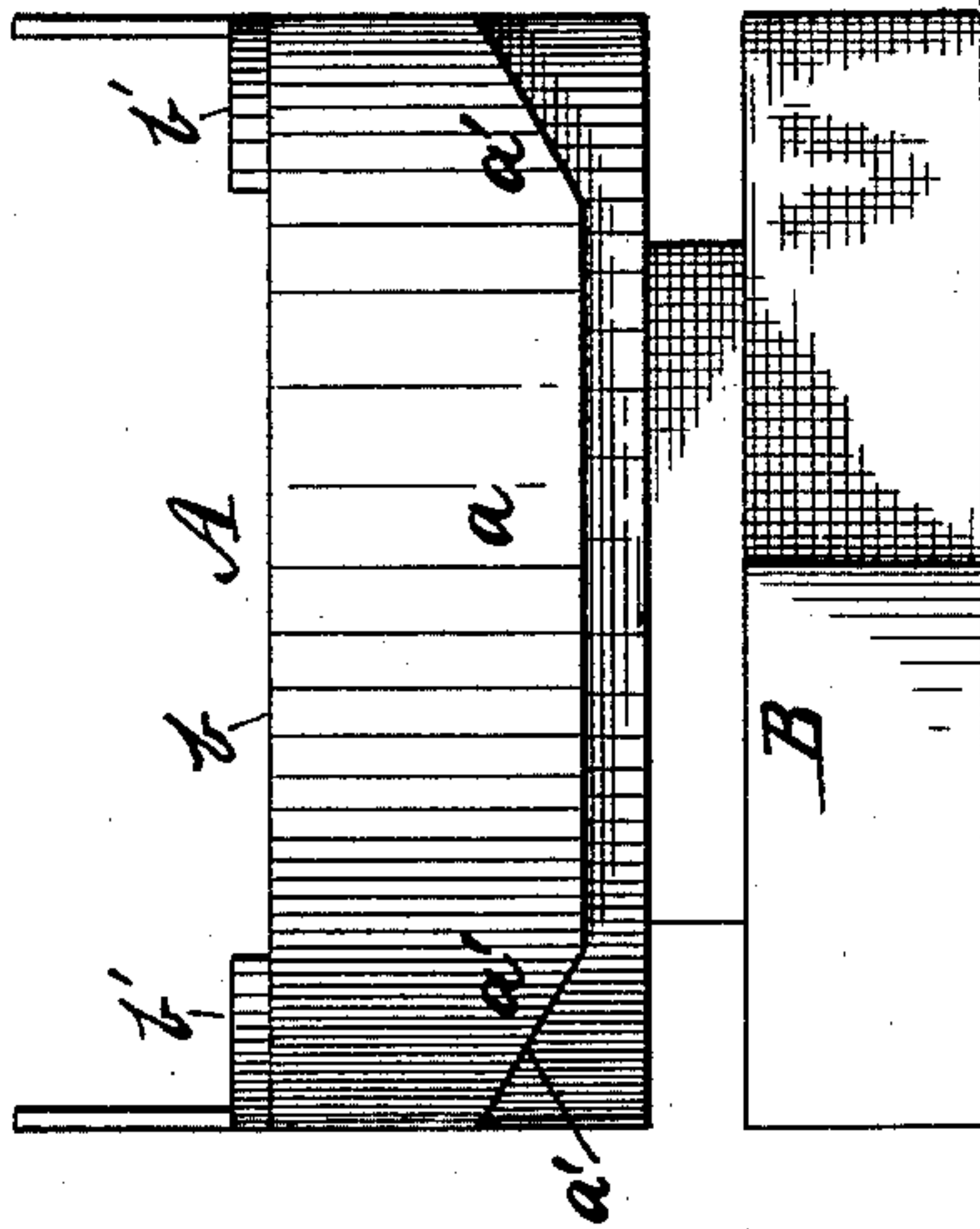


Fig. 1.



Witnesses:
J. B. Halpenny.
Addie H. H. H. H.

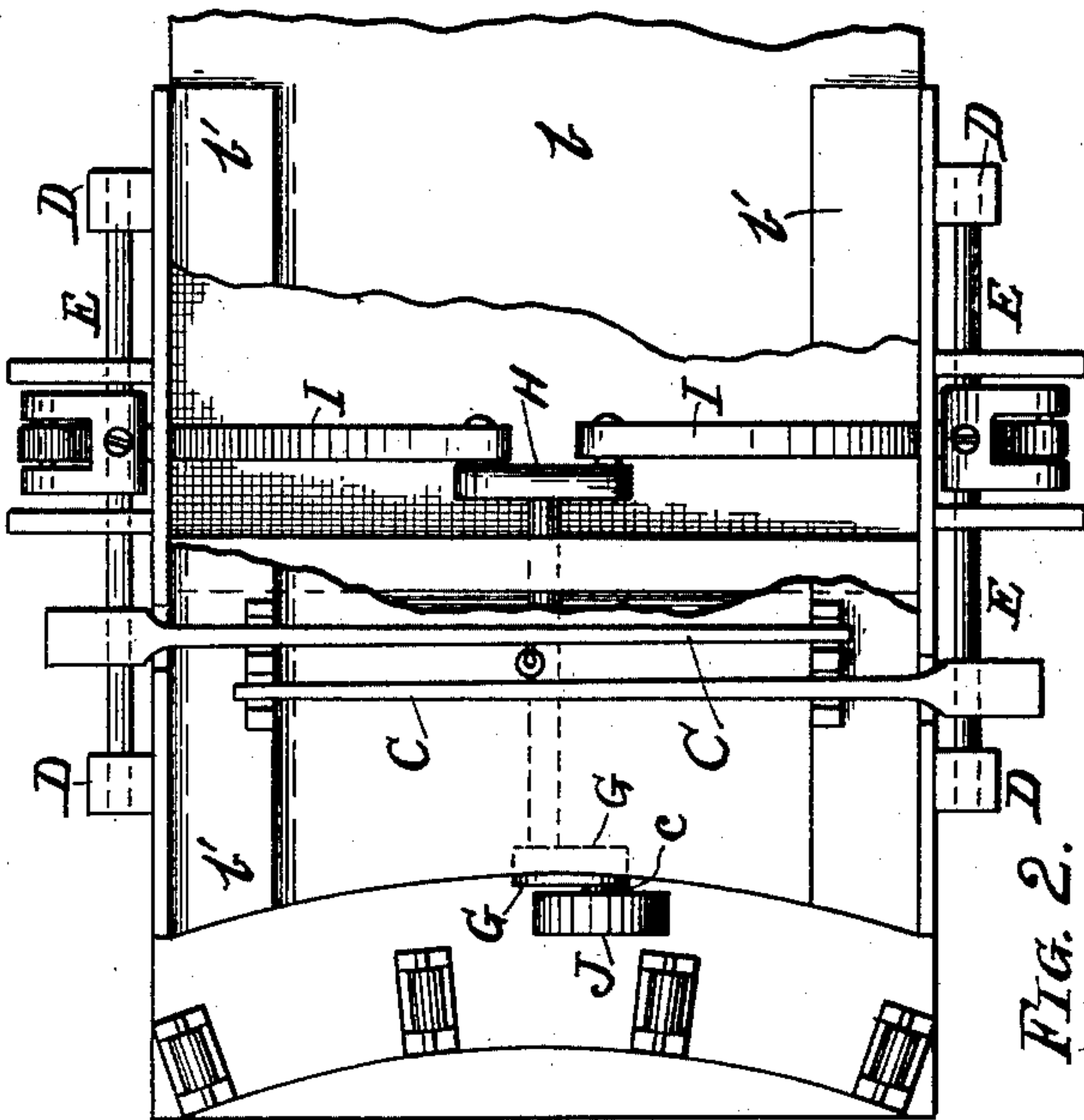


Fig. 2.

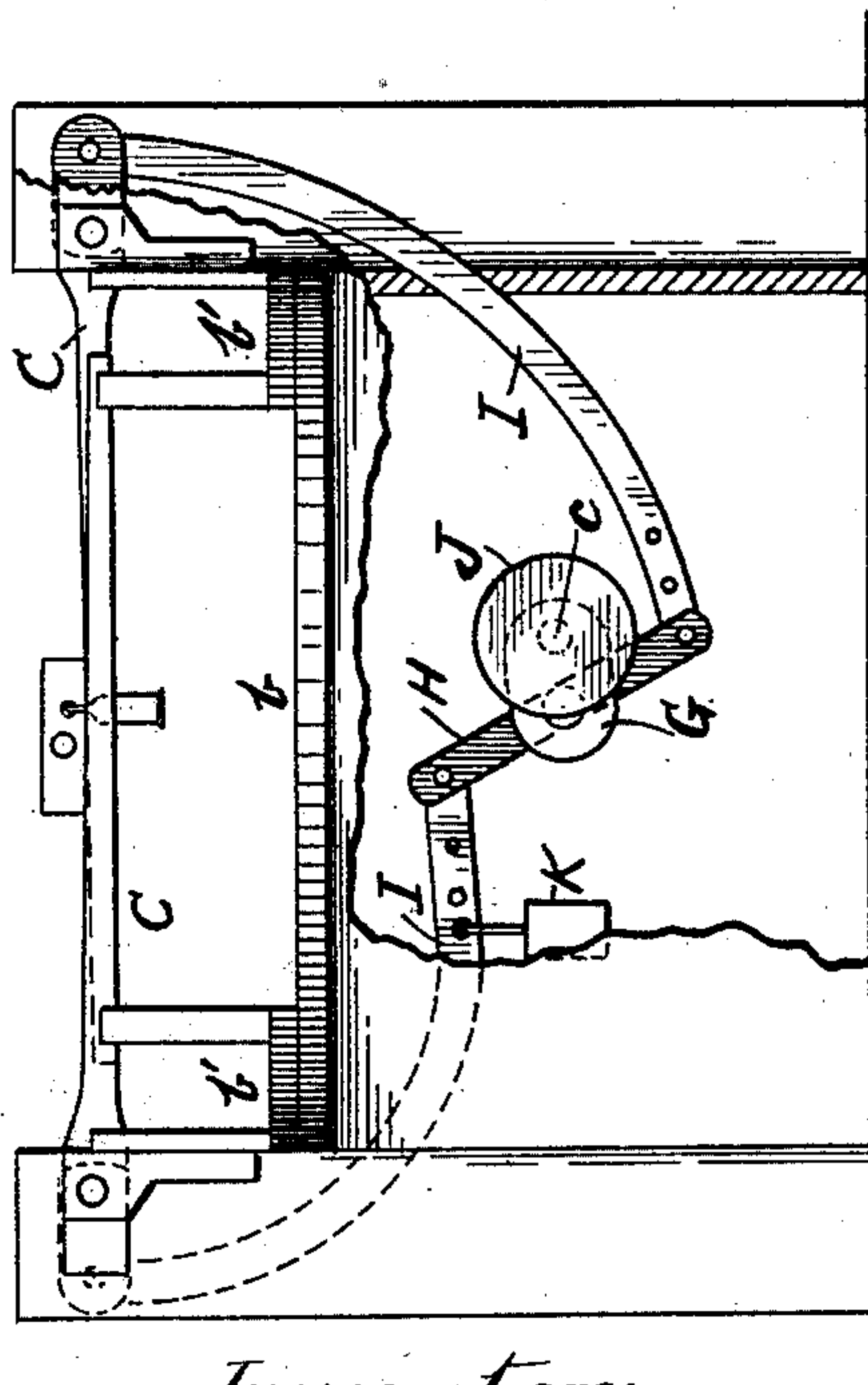


Fig. 3.

Inventor:
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his atty.

2 Sheets—Sheet 2.

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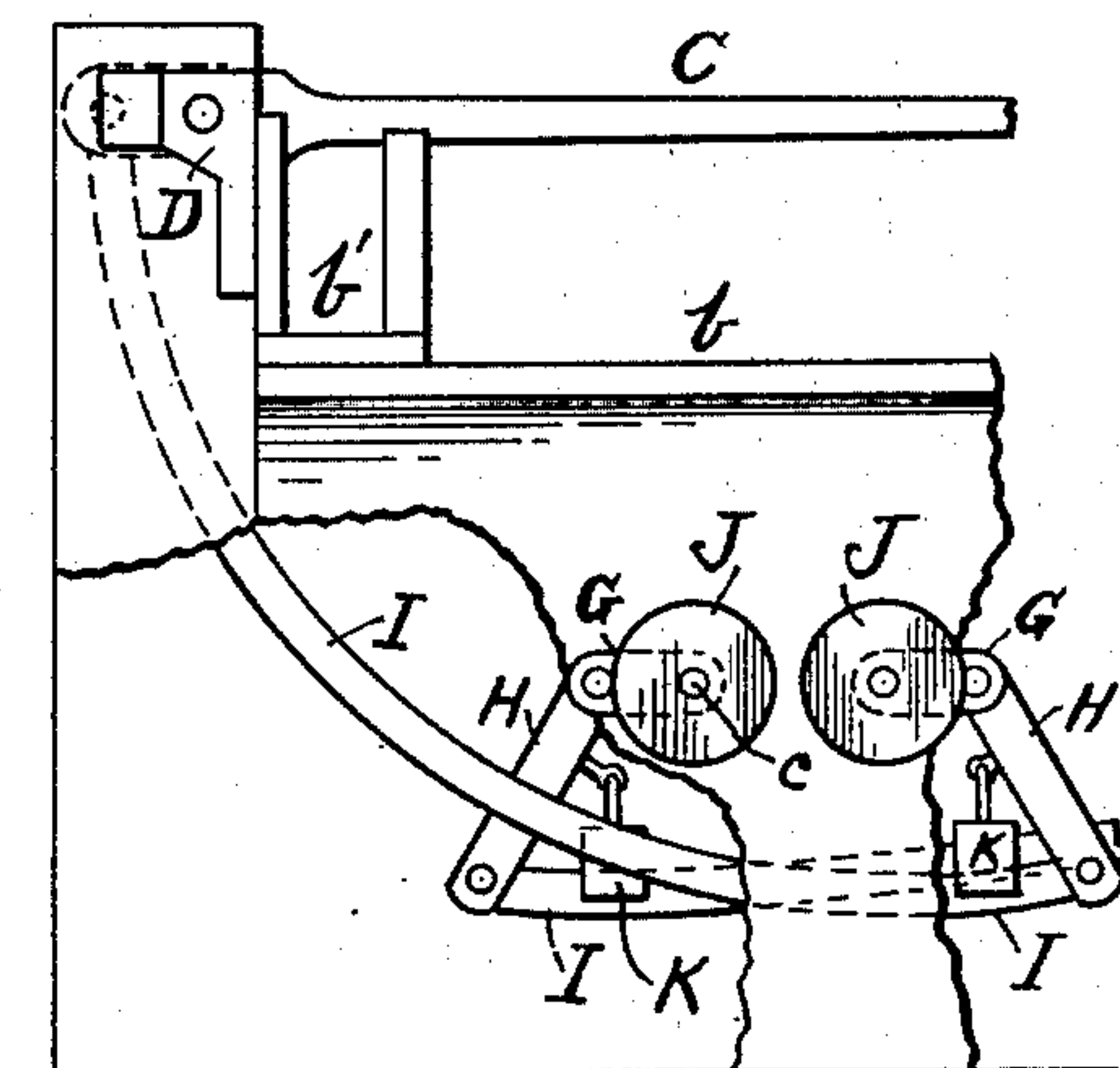
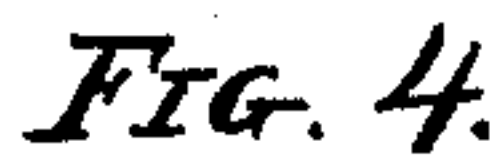


Fig. 5.

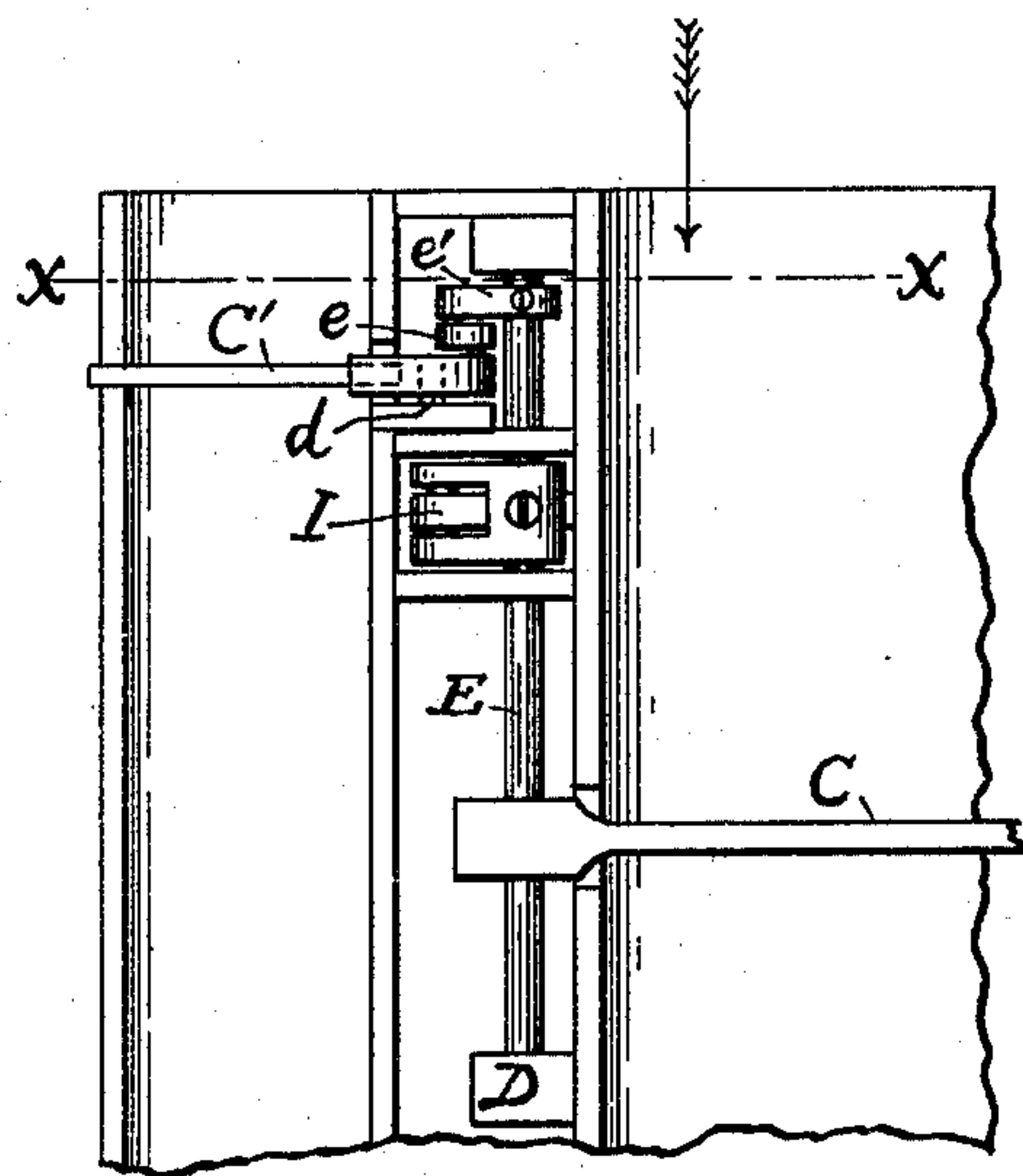


FIG. 6.

Witnesses:
J. B. Halpenny
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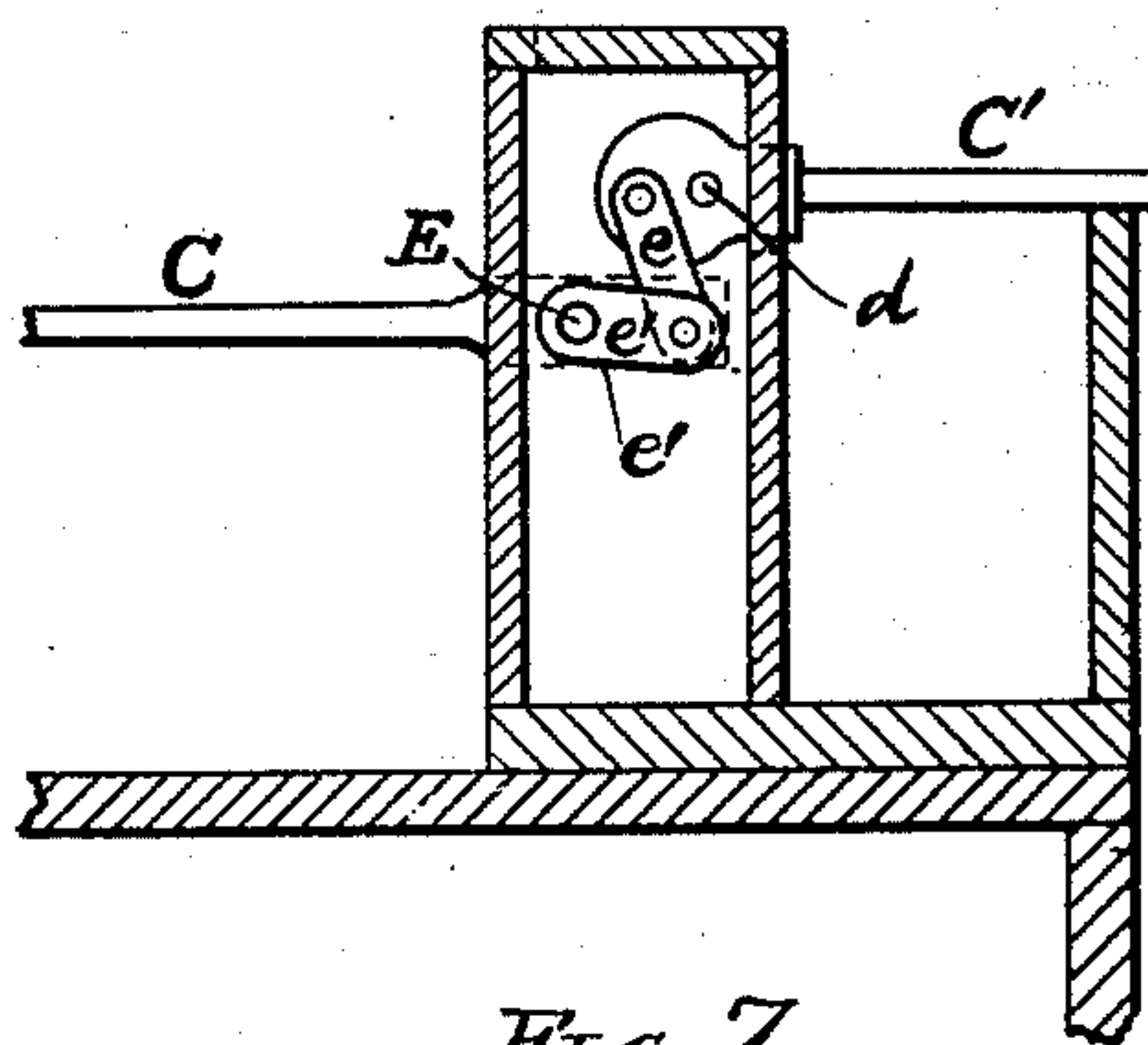


FIG. 7.

Inventor:
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By F. F. Warner
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UNITED STATES PATENT OFFICE.

PATRICK RYAN, OF CHICAGO, ILLINOIS.

BRIDGE GATE OR GUARD.

SPECIFICATION forming part of Letters Patent No. 327,112, dated September 29, 1885.

Application filed April 16, 1885. (No model.)

To all whom it may concern:

Be it known that I, PATRICK RYAN, a citizen of the United States of America, residing at Chicago, in the county of Cook and State

of Illinois, have invented certain new and useful Improvements in Bridge Gates or Guards, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1 is a side elevation or view showing an open bridge and one of its abutments, and also showing the improvements constituting my invention. Fig. 2 is a top view of one of the abutments, and also showing my improvements as they there appear. Fig. 3 is an end view of the parts shown in Fig. 1. Fig. 4 is a like representation, showing the guards raised. Fig. 5 is also a rear view, showing the guards lowered, and also showing a modification of construction of the parts more or less directly acted upon by the bridge. Fig. 6 is a detail top or plan view of some of the working parts; and Fig. 7 is a section in the plane of the line xx of Fig. 6 viewed in the direction indicated by the arrow there shown. The several figures show some of the parts more or less broken away, in order more clearly to show the working parts intended to be represented therein, respectively.

Like letters of reference indicate like parts.

A represents the bridge, and B is the pier on which it turns. This bridge has at each end a horizontally-protruding part, a , having beveled or inclined parts $a' a'$. The roadway is represented at $b b$, and $b' b'$ are the footways or walks.

C C are pivoted arms or vertically-swinging guards extending in opposite directions across the abutment, and so located that when lowered they will close the approaches to the bridge and leave them open or unobstructed when raised.

D D are blocks or bearings, and E E are horizontal shafts turning therein, and the outer ends of the arms are rigidly applied to these shafts, respectively.

F is a shaft turning in bearings in the central portion of the abutment. G is a single crank-arm or an arm extending in one direction from the shaft F, and rigidly attached to one end of the said shaft, and H is a double crank-arm rigidly attached to the other end of the same shaft.

I I are curved arms or connecting-rods jointed or pivoted to the ends of the arm H and to the outer ends of the guards C C, respectively.

J is a roller turning on a pin or stud, c . K is a weight hung to the arm H.

The operation, so far as relates to the parts now described, is as follows: Presuming the bridge to be open, the guards C C will lie horizontally across the roadway and walks, so as to prevent teams and pedestrians from passing in the direction of the bridge farther than the guards. The guards are retained temporarily in this position when the bridge is open by means of the weight K, but may be counterweighted in any well-known or suitable way for producing the same result. As the bridge is closed one of the bevels or inclines a' meets the roller J and depresses it, thereby depressing the free end of the arm G and turning the shaft F in its bearings. As the shaft F is so turned the arm H is turned therewith, and the arms or rods I I are drawn in such a direction as to raise the guards to a vertical position, so as to leave the passages or approaches to the bridge open. The guards will be retained temporarily in this vertical position when the bridge is closed, for the reason that the protruding part or ledge a then rests on the roller J and retains it in its depressed or lower position. The action of the bridge upon the other parts which control the position of the guards is quite sudden, but yet produces no injurious shock or strain, and the approaches are guarded before the bridge is sufficiently open to admit of people walking off of the abutments.

It will be perceived on reference to the drawings that both guards C C extend entirely across the roadway. This is not essential, as the free or inner ends of the guards may meet, or nearly meet, at or near the center of the roadway. In fact, only one guard may be employed, but I deem it preferable to employ two in the manner shown, so that they may be made comparatively light, and yet oppose a sufficient barrier to teams running away.

Sometimes it may be desirable to guard the footways to the bridge by means of supplemental guards, instead of by means of one or more guards extending across the footway and also across the roadway. This I accomplish

by the means shown in Figs. 7 and 8, wherein C' represents a supplemental arm or guard extending across the footway. This guard turns on a fixed pin or stud, *d*, and is connected by means of a link, *e*, to an arm, *e'*, rigidly secured to the shaft or rod E. The guards C and C', as will be perceived, will be raised and lowered together.

In Fig. 5 I have shown a modification of the means employed for raising and lowering the guards, which modification consists merely in duplicating some of the parts already described. In other words, this modification consists in duplicating the parts hereinbefore referred to as the shaft F, arm G, roller J, and its axle, arm H, (excepting that in the modification the arm H is a single crank-arm or extends in only one direction from its shaft,) and the weight K. The arms I I are jointed or pivotally connected to the arms H H, respectively, so that each arm I operates in connection with its own set of operative parts.

A signal of any well-known or suitable kind may be used in conjunction with the guards, and L represents a signal light or lantern for indicating the position of the guards at night; but as such a signal is not a necessary part of my invention, I have not here particularly described or shown the same.

Special counterbalancing-weights need not necessarily be employed, as the parts themselves or some one or more of them may be of such weight or have their pivots or bearings so located that the guards will move automatically and properly to their horizontal position when the rollers J J are released by the bridge. The rollers J J may be either somewhat higher or lower than represented, and the inclines *a' a'* may be either above or below the bridge-bottom.

It may be of advantage to make two or more holes in the arms H H, so that the arms I I may be connected thereto at the proper points with facility.

I am aware of the features of construction shown and described in Letters Patent of the United States of America No. 201,316, dated

March 12, 1878, and granted to Peter B. Wight, for the improvements in draw-bridge gates therein set forth; and I am also aware of the features of construction shown and described in Letters Patent of the United States of America No. 193,825, dated August 7, 1877, and granted to Michael McGrath, for the improvements therein set forth, and I do not, therefore, here intend to claim any of the said features of construction, broadly; but,

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

1. The combination of the shaft F, having arms rigidly mounted thereon, the roller J, pivoted to one of the said arms, an arm, I, pivoted to another of the said arms, a vertically-swinging arm or guard, C, pivoted or jointed at one end to the arm I, and a swinging bridge having thereon a ledge, *a*, and inclines *a' a'*, substantially as and for the purposes specified.

2. The combination of the shaft F, having arms rigidly mounted thereon, the roller J, pivoted to one of the said arms, an arm, I, pivoted to another of the said arms, a vertically-swinging arm or guard, C, pivoted or jointed at one end to the arm I, a supplemental vertically-swinging arm or guard, C', linked to an arm on the shaft F, and a swinging bridge having thereon a ledge, *a*, and inclines *a' a'*, substantially as and for the purposes specified.

3. The combination of the shaft F, having arms rigidly mounted thereon, the roller J, pivoted to one of the said arms, an arm, I, pivoted to another of the said arms, a vertically-swinging arm or guard, C, pivoted or jointed at one end to the arm I, a counterweight, and a swinging bridge having thereon a ledge, *a*, and inclines *a' a'*, substantially as and for the purposes specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

PATRICK RYAN.

Witnesses:

F. F. WARNER,
J. B. HALPENNY.