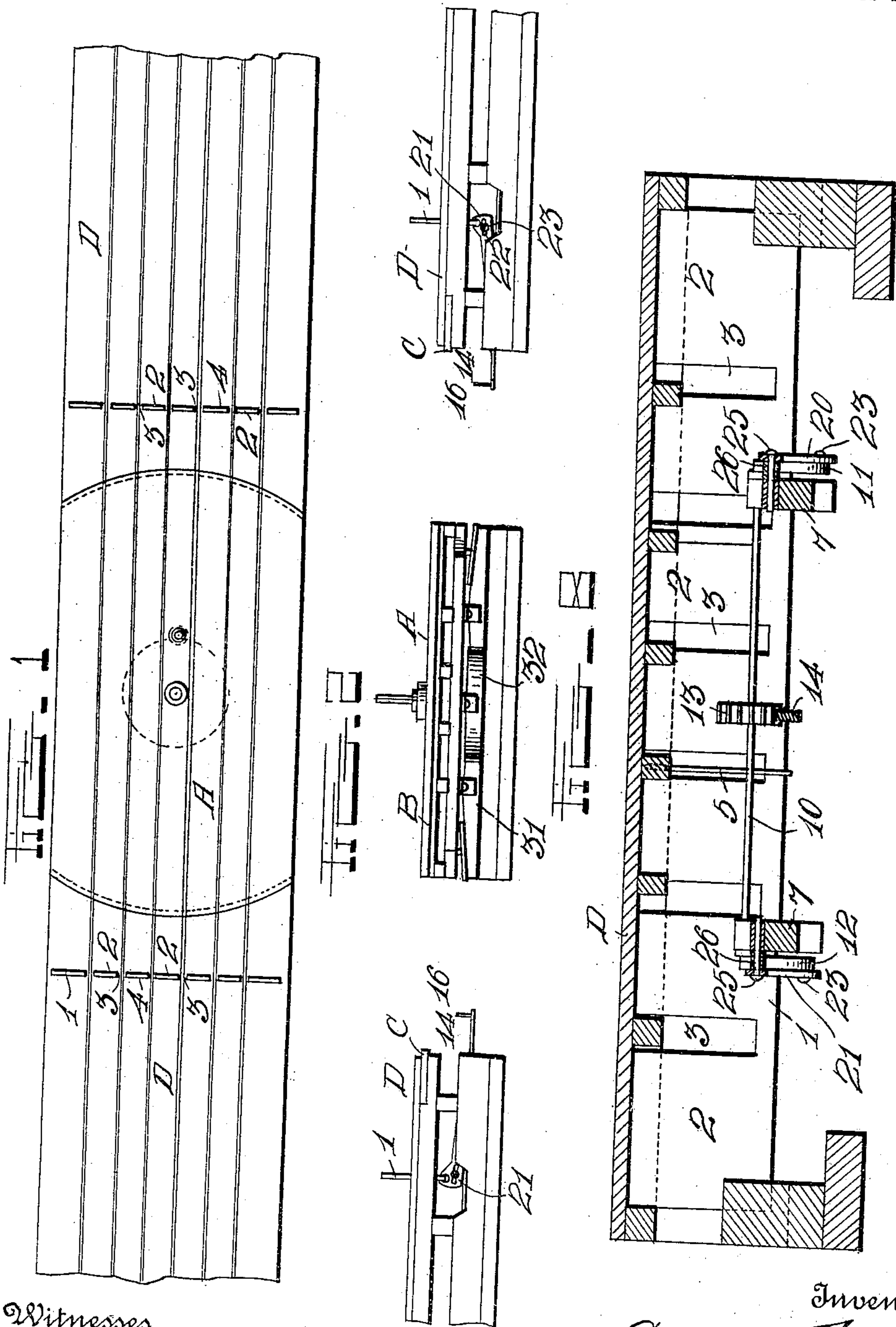


979,271.

C. FAUST.  
BRIDGE GATE.  
APPLICATION FILED MAY 12, 1910.

Patented Dec. 20, 1910.

4 SHEETS-SHEET 1.



Witnesses  
C. R. Hardy  
C. A. Greubauer

Inventor  
Casper Faust  
by *A. B. Wilson & Co.*  
Attorneys

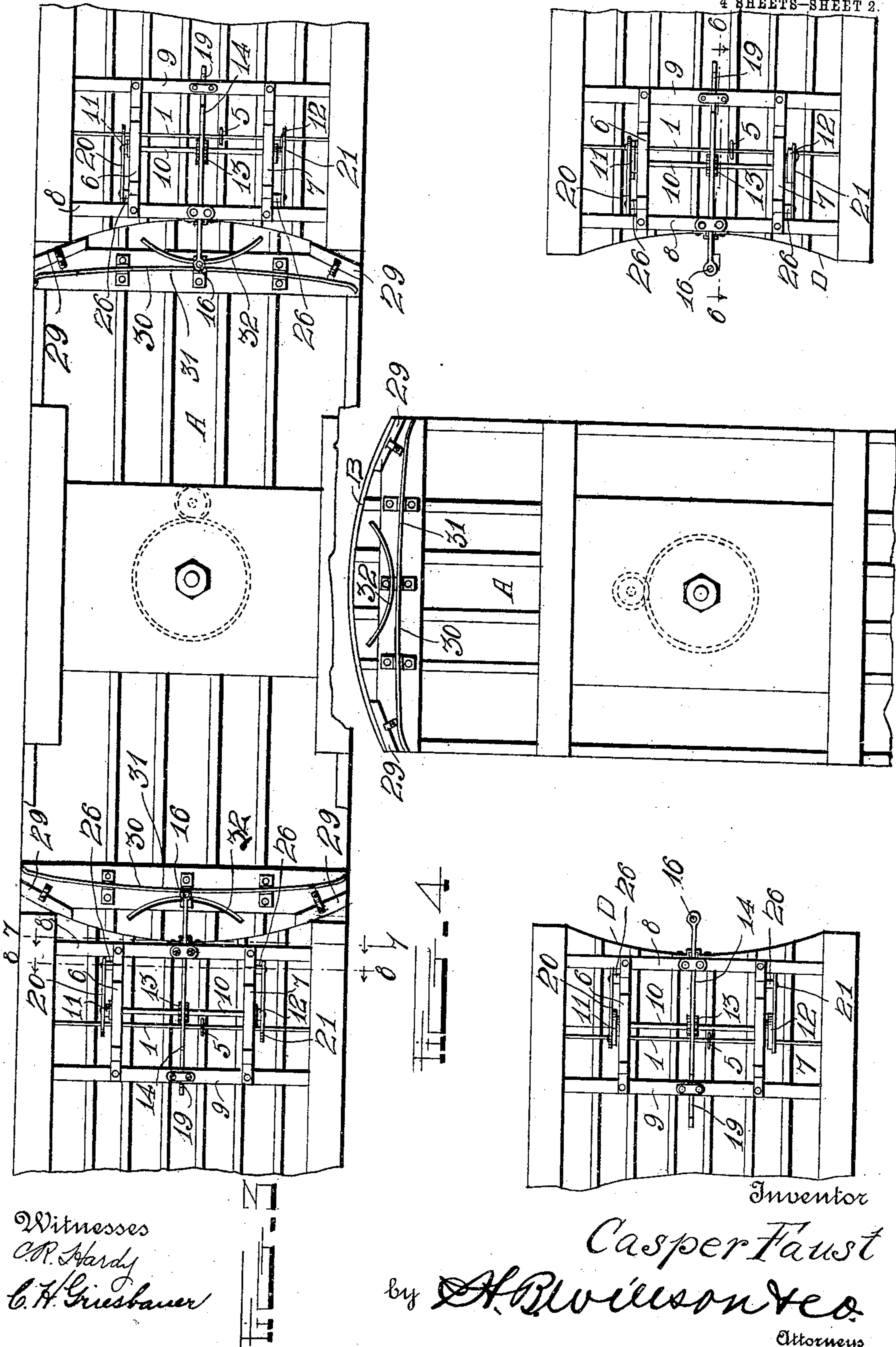
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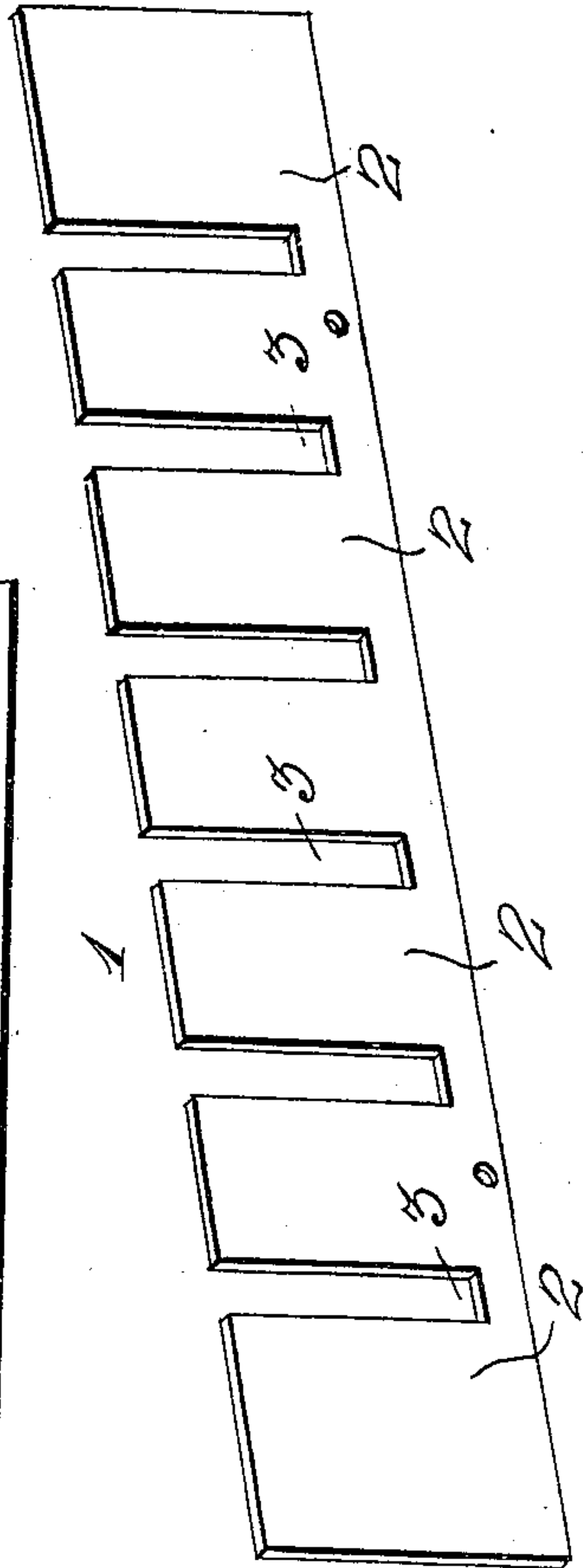
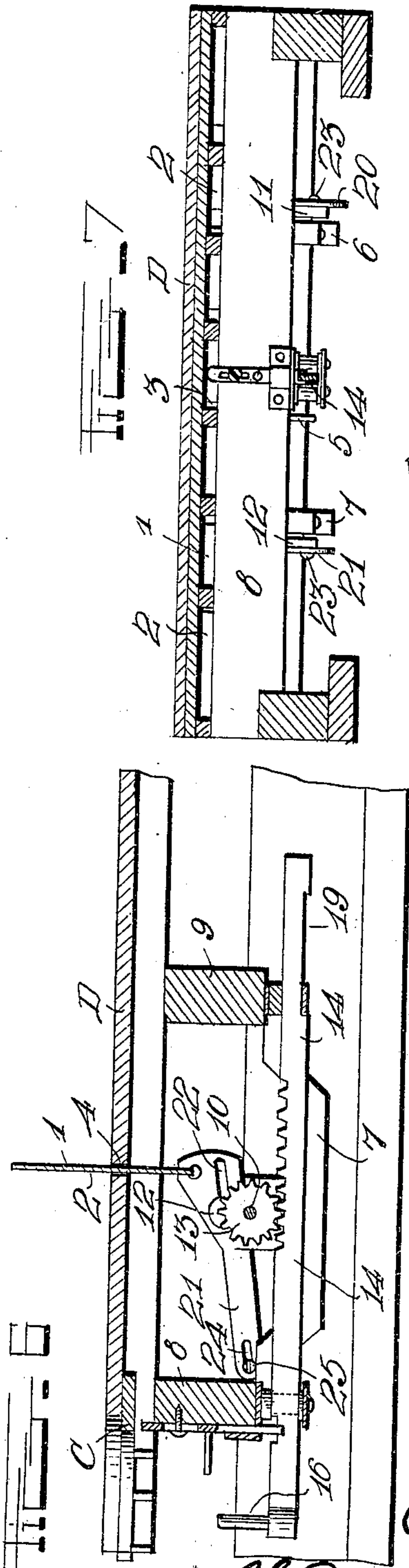
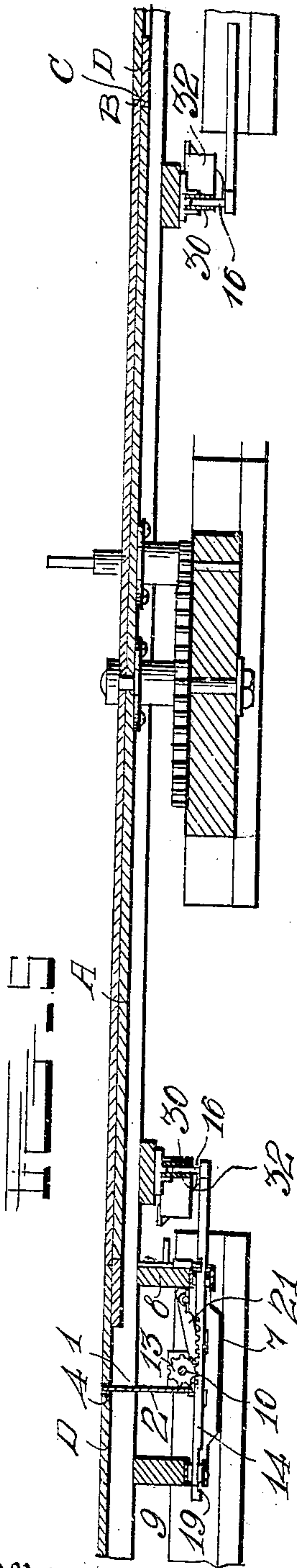


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4 SHEETS-SHEET 3.



Witnesses  
A. R. Hardy  
C. H. Griebner.

by *A. R. Wilson & Co.*  
Attorneys

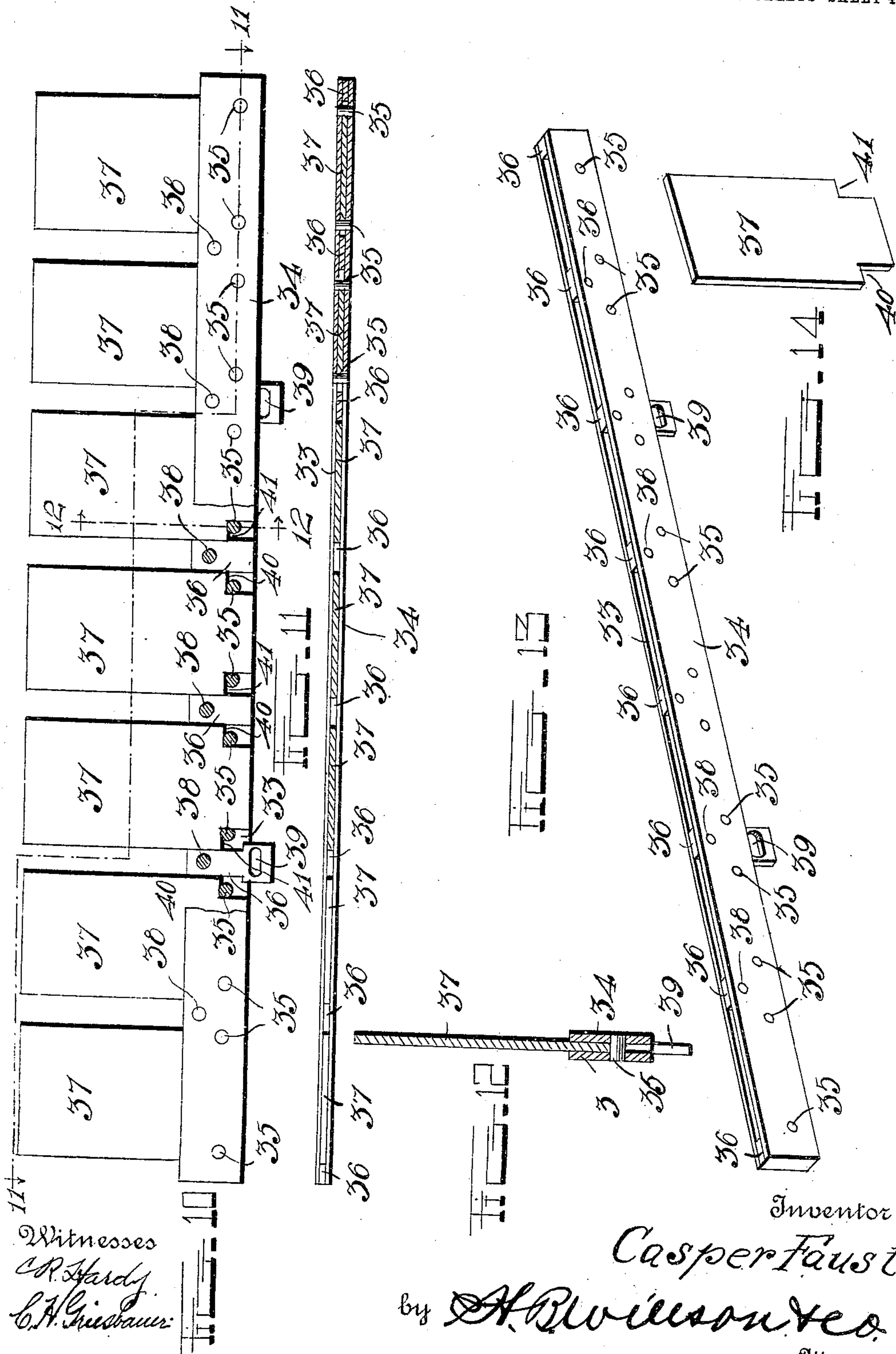
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4 SHEETS-SHEET 4





# UNITED STATES PATENT OFFICE.

CASPER FAUST, OF OSHKOSH, WISCONSIN.

## BRIDGE-GATE.

979,271.

Specification of Letters Patent. Patented Dec. 20, 1910.

Application filed May 12, 1910. Serial No. 560,948.

*To all whom it may concern:*

Be it known that I, CASPER FAUST, a citizen of the United States, residing at Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Bridge-Gates; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved automatically operated bridge gate for use in connection with swinging bridges for closing the road way approach to travel when the bridge is turned away from its approach.

The object of the invention is to provide a simply constructed and reliable gate which is automatically closed on the opening of the bridge and opened on the closing thereof.

Another object is to provide simple and efficient means for automatically locking the gate in closed position operable by the opening of the bridge and for unlocking it on the closing of the bridge.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a top plan view of a draw bridge and the adjacent roadway equipped with this improved gate the bridge being in closed position; Fig. 2 is a side elevation with the bridge shown in open position and the roadway closed by this improved gate; Fig. 3 is a bottom plan view with the bridge in closed position; Fig. 4 is a similar view with the bridge in open position; Fig. 5 is a central vertical longitudinal section with the bridge in closed position; Fig. 6 is a similar view taken on line 6—6 of Fig. 4; Fig. 7 is a transverse section taken on line 7—7 of Fig. 3. Fig. 8 is a similar view taken on line 8—8 of Fig. 3. Fig. 9 is a perspective view of one form of the gate detached. Fig. 10 is a side elevation of the preferred form of gate with parts broken out. Fig. 11 is a horizontal section taken on line 11—11 of Fig. 10. Fig. 12 is a vertical section thereof. Fig. 13 is a perspective view of

the blade holding member. Fig. 14 is a similar view of one of the blades detached.

In the embodiment illustrated A represents a portion of a draw bridge of the type which revolves about an axis located at its center and has ends which are formed on curves which are concentric with said axis, said curved ends being preferably provided with a flange B which extends in the same plane with the upper face thereof and is adapted to overlap a similar flange C formed on the lower face of the abutment D which is formed with a curve and also arranged concentric with the axis of the bridge. The construction of the abutments D of this well known type of bridge depends upon the exigencies of the situation and they may be of masonry, open trestle work or any other desired construction.

A vertically movable gate 1 is here shown which rises and falls through the bridge floor being preferably constructed in the form shown in Figs. 10 to 14 of the drawings, and which will be hereinafter described in detail and having upwardly projecting members 2 which are longitudinally spaced apart as at 3, and are adapted to slide through openings as 4 in the bridge. A loop 5 depends from the bottom of the bridge and is designed to limit the downward movement of the gate 1.

Two longitudinally extending laterally spaced supporting bars 6 and 7 are mounted on transverse sleepers 8 and 9 on which the bridge is supported. A rod 10 is revolvably mounted in the bars 6 and 7 with the opposite ends thereof projecting beyond the outer faces of said bars and crank arms 11 and 12 are secured at one end to these projecting ends of said rod for a purpose to be described. A pinion 13 is fixed to said rod intermediately of its ends and meshes with a rack bar 14 slidably mounted on the lower faces of the sleepers 8 and 9 and by means of which said pinion is rotated and motion imparted to the gate 1 as will be hereinafter described. This rack bar is provided on its inner end with an upwardly projecting stud 15 on which is preferably mounted a roller 16 for engagement with a member carried by the movable bridge member A. The lower edge of this bar 14 near its outer end is provided with a recess 19 the walls of the opposite ends of which are arranged to engage



one of the supporting members for said bar to limit its sliding movement in opposite directions. Cam links 20 and 21 have the cams thereof pivotally connected with said gate 1 in any desired manner. These links are each provided with longitudinally extending slots as 22 formed at the base of the cams thereof and with which are engaged headed studs as 23 carried by the free ends of the crank arms 11 and 12 and by means of which the gate is raised and lowered. The opposite ends of these links 20 and 21 are provided with comparatively short elongated slots as 24, which are engaged with headed studs as 25 projecting laterally from the outer faces of the bars 6 and 7 and on which anti-friction rollers as 26 are preferably mounted to provide for the ready operation of the links. When the gate is in raised or operative position the crank arms 11 and 12 are a little past the center in engagement with inner ends of the slots 22 and the gate is thereby automatically locked in operative position. The gate is released by the closing of the draw bridge.

The gate 1 may be constructed as shown in Fig. 9 from a single metal bar or plate having transversely extending cut out portions 3 to form the blades or fingers 20 which are designed to move vertically in spaced openings 4 arranged transversely of the bridge and in longitudinal alinement with each other. The gate, however, is preferably constructed as shown in Figs. 10 to 14 of two bars 33 and 34 of any suitable material preferably of metal which are arranged side by side and connected together by a plurality of rivets as 35 which are arranged on opposite sides of longitudinally spaced spacing blocks as 36 arranged between said bars 33 and 34 at suitable intervals to form openings for the reception of upright removable slats 37 to be described. The rivets 35 extend through the bars 33 and 34 near their lower edges and adjacent opposite sides of the spacing blocks 36 to form seats for the removable slats 37. The blocks 36 may be of any desired or suitable thickness and spaced apart any desired distance to accommodate plates 37 of any desired width and these blocks are secured in position by rivets as 38 which extend transversely through the upper ends of said blocks and the upper edges of the bars 33 and 34 whereby in connection with the rivets 35 said bars are held securely together. Two of these spacing blocks 36 arranged at suitable points, project beyond the lower edges of the bars 33 and 34 and are provided with apertures as 39 for connection with the links 20 and 21. These bars 33 and 34 may be of any desired length according to the width of the bridge to which the gate is designed to be applied.

The slats 37 are constructed as shown in

Fig. 14 from rectangular plates preferably of metal having the opposite corners of one end cut out to form seats 40 and 41 for engagement with the transversely arranged rivets 35 between the bars 33 and 34 whereby said slats are held in position against downward movement. These slats 37 are preferably made to fit tightly between said bars 33 and 34 to prevent their accidental disengagement therefrom but which may be removed when necessary to supply a new slat.

In the form shown the removable bridge member A is provided on its lower face adjacent the curved end thereof with two transversely extending spring members 30 and 31 which are in the form of resilient metal plates rigidly secured at a point midway the ends thereof to said movable member A with their opposite ends free to engage the roller carrying stud 15 on the inner end of the rack bar 14. These members 30 and 31 are arranged in longitudinal alinement and the inner ends thereof are spaced apart a distance sufficient to permit the roller 16 to pass therebetween during the operation of the bridge as will be hereinafter described. An arc shaped spring plate 32 is rigidly secured to the lower face of the movable bridge member A at a point directly opposite the space between the members 30 and 31 and the curved outer face thereof being adjacent said members 30 and 31 and over which the roller 15 is designed to operate and which also serves as a guide for said roller in its passage from one of the members 30 and 31 to the other.

In the operation of this improved gate the parts being in the position shown in Fig. 3 with the roller 16 arranged between the inner ends of the members 30 and 31 the movement of the member A in either direction will cause the roller 16 to be engaged with the outer face of one of said members 30 or 31 whereby the rack bar is forced rearwardly thereby rotating the pinion 13 a sufficient distance to move the gate 1 upwardly through the floor of the bridge by means of the cam links 20 and 21 and the crank arms 11 and 12 connected with the rod 10 to which said pinion is fixed. When the movable bridge member A is swung back into closed position the outer face of the spring member 30 engages the inner face of the roller carrying stud 15 on the rack bar 14 and the continued inward movement of said member A causes the rack bar to be moved forwardly thereby turning the pinion 13 and lowering the gate 1 into the position shown in Fig. 5.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be understood without requiring a more extended explanation.

Various changes in the form, proportion



and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

I claim as my invention:

1. The combination of a movable gate, a sliding rack bar, a rotatably mounted rod, a pinion fixed on said rod meshing with the rack bar, a movable connection between each end of said rod and the gate, a pivotally mounted element and means carried by said element to reciprocate the rack bar and move the gate.
2. The combination of a movable gate, a reciprocatory bar, a pair of link bars movably mounted at one end, means connecting said links at their other ends with the reciprocating bar, said links being loosely connected with the gate, a pivotally mounted element, and means carried by the reciprocating bar engaging said element whereby the bar is reciprocated and the gate moved to its open or closed position.
3. The combination of a movable gate, a reciprocatory rack bar, a rotatably mounted rod, a pinion fixed thereon meshing with the rack bar, a crank on each end of said rod, links longitudinally slotted at one of their ends for movable connection with said cranks, said slotted ends of the links being connected to the gate, a movable element, a projection on one end of the bar, and means carried by said movable element engag-

ing said projection to reciprocate the bar and move the gate to open or closed position.

4. The combination of a vertically movable gate, a rack bar mounted to slide in a plane at right angles to the plane of movement of said gate, a pinion meshing with said rack bar, a revolubly mounted rod fixed to said pinion, a crank arm connected with said rod, a link loosely connected with said crank arm and with said gate and means for reciprocating said rack bar to open and close the gate.

5. The combination of a vertically movable gate, a rack bar, mounted to slide in a plane at right angles to the plane of movement of said gate, a pinion meshing with said rack bar, a revolubly mounted rod fixed to said pinion, a crank arm connected with said rod, a link loosely connected with said crank arm and with said gate, an upwardly projecting member carried by said rack bar at one end thereof, and a movable member provided with means for engaging said upwardly projecting member for reciprocating said rack bar to open and close the gate.

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

CASPER FAUST.

Witnesses:

JOHN KLOECKNER,  
VERNA WOLVERTON.