

(No Model.)

H. F. KLOPP.
OPERATING GATES.

No. 333,865.

Patented Jan. 5, 1886.

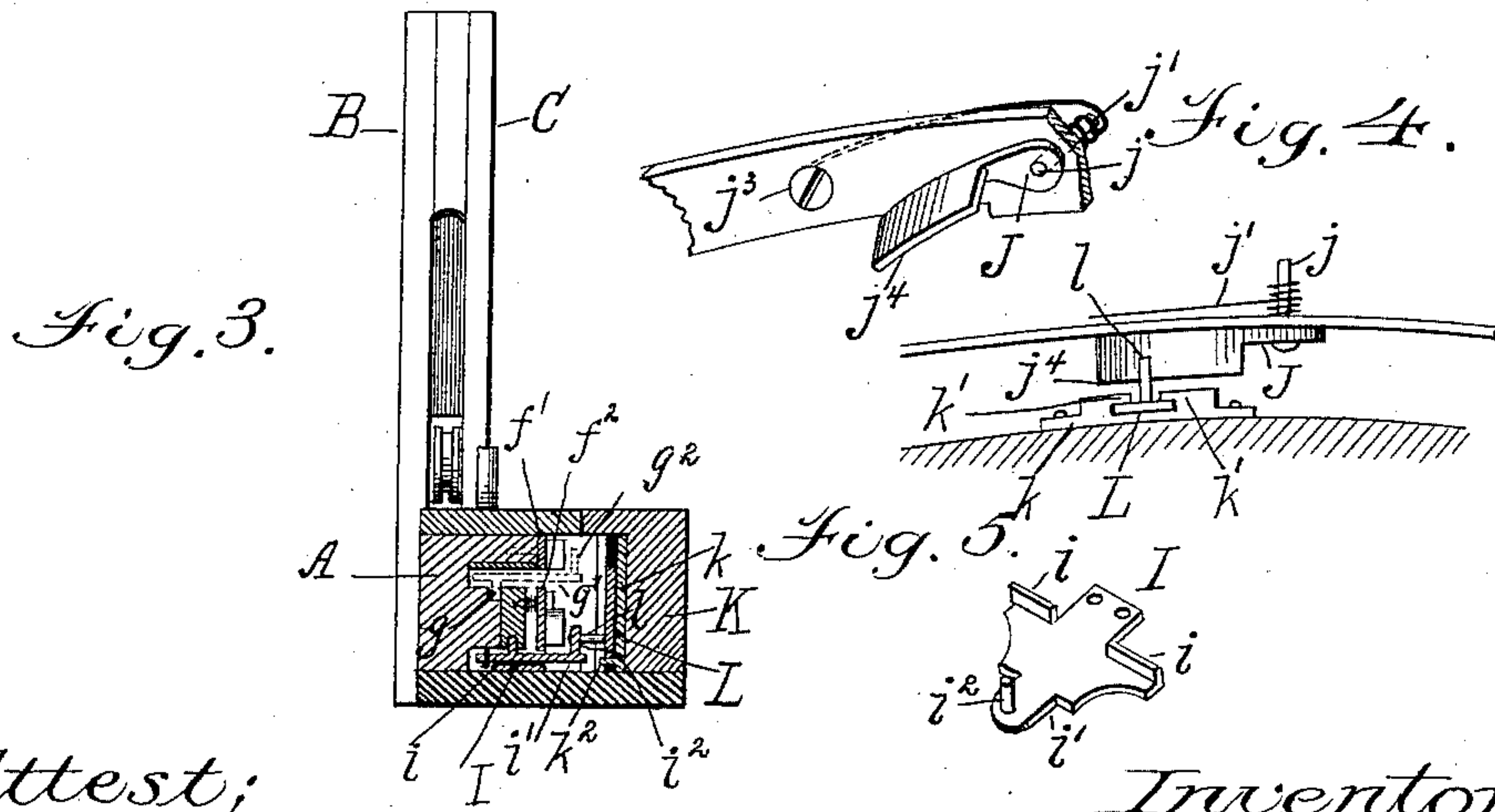
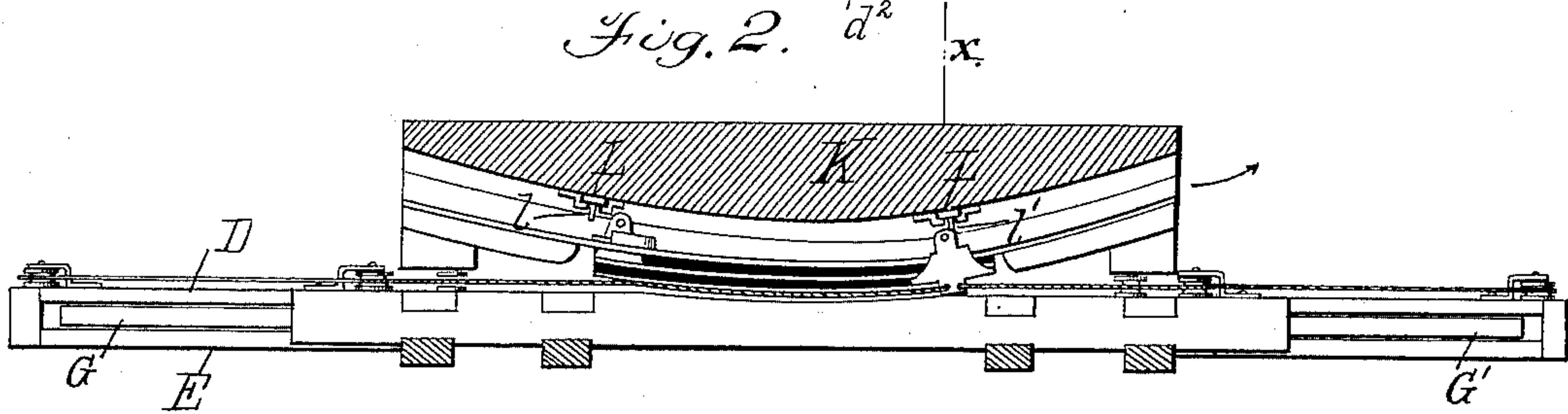
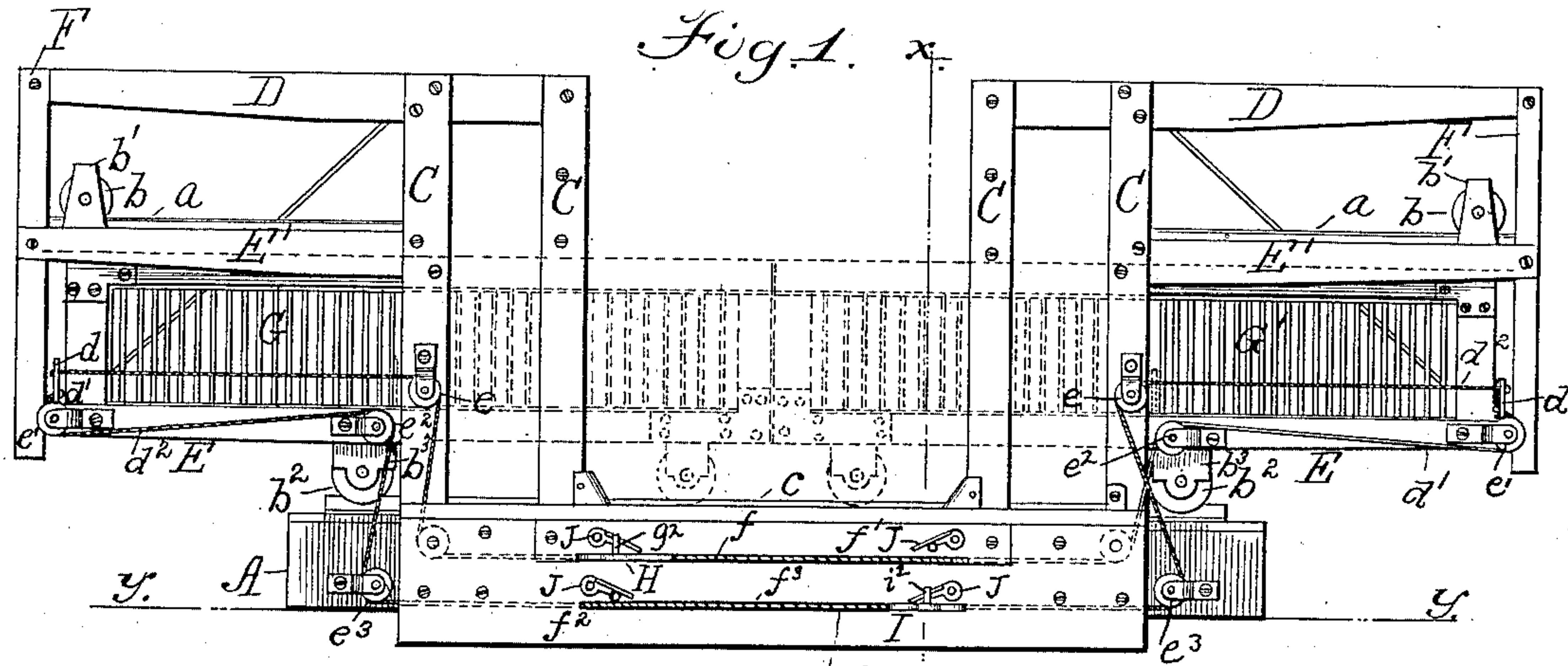
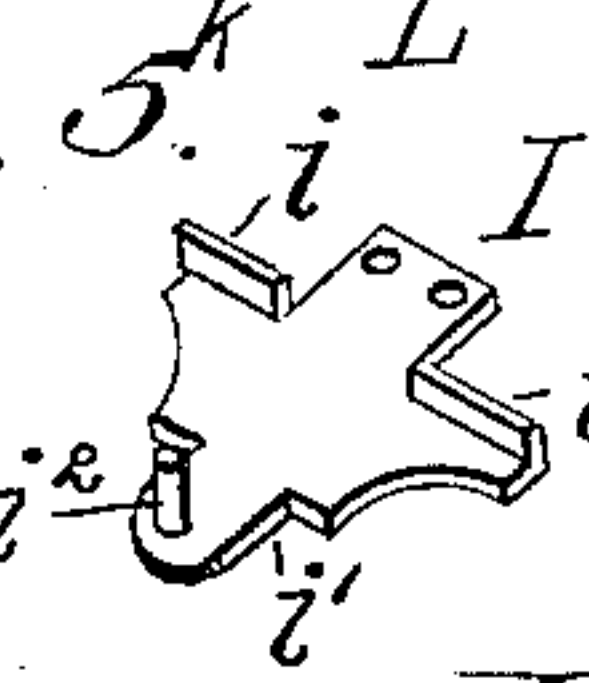


Fig. 4.



Attest;

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OPERATING GATES.

SPECIFICATION forming part of Letters Patent No. 333,865, dated January 5, 1886.

Application filed February 2, 1884. Serial No. 119,641. (No model.)

To all whom it may concern:

Be it known that I, HANS F. KLOPP, 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 Operating Gates; and I do hereby 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to automatic sliding gates, and more especially to that class of gates designed for use in connection with a draw-bridge; and the said invention consists in the improvements and combination of parts hereinafter set forth and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is an elevation of my improved gate and operating appliances, looking from the position of the drawer. Fig. 2 is an inverted sectional plan on the line yy , Fig. 1. Fig. 3 is a section on the line xx , Fig. 1; and Figs. 4 and 5 are detail views.

A cross-bar, A, forms a portion of the abutment, and has mounted thereon vertical standards B C, which support horizontal bars D E E', which have secured at their outer extremities a bar, F. A guide-rail, a , is secured to each bar E' at the inner side thereof, so as to permit a pulley, b , journaled in a hanger, b' , secured at one end of gates G G', located between the several standards and bars B C, D E E' and F, above described, to rest on said rail. The lower forward end of each gate is supported by a roller, b^2 , journaled in a bracket, b^3 , secured to the said gate. The roller b^2 rests, and is designed to travel upon, a guide-rail, c , extending transversely across the abutment A. The outer lower end of each gate G G' is provided with a bracket or plate, d , which is perforated for the attachment of the end of two cords, d' d^2 . The cord d' of the gate G passes from the bracket d over a pulley, e , secured on the side of one of the standards, C, and then passes down through the base A, around a pulley (shown in dotted lines, Fig. 1) journaled in a recess in the said

base, and is then secured to one end of a plate, H, sliding in a slot, f , formed between metal sections f' f^2 , bolted on the face of the abutment A. The said plate H is provided with depending ears g , (dotted lines, Fig. 3,) which rest in a guide-groove therefor, and is further provided with a shank or neck, g' , which projects through the slot f and carries a vertical pin, g^2 . The cord d^2 passes around a pulley, e' , journaled at the rear end of the gate G, and thence over a pulley, e^2 , at the forward end of the said gate, then down and around a pulley, e^3 , and finally attached to a plate, I, located in a lower plane than the plate H, but in all respects similar thereto, with the exception that its ears i extend upward into a guide-groove therefor, instead of downward, as in the other case. The plate I is also provided with a shank, i' , which extends through a slot, f^3 , formed in the face-plate f^2 , and carries a vertical pin, i^2 .

The arrangement of the cords d' d^2 on the gate G' is the reverse of that of the gate G, the cord d' in this instance passing around the pulleys e' e^2 on the rear and front of the gate and down over the pulley (shown in dotted lines to the right of Fig. 1) to the plate H, while the cord d^2 passes directly to the pulley e and thence to the plate I by way of a pulley, e^3 , upon abutment A. A plate, J, pivotally secured by a bolt, j , to the plates f' f^2 , is located above each end of the slots f f^3 , and is retained in a position inclining toward the center of the base by a spring, j' , one end of which is coiled around the bolt j , while the other end is looped to embrace one of the bolts j^3 , that secures the sections f' f^2 to the base. Each plate J has a projecting portion, j^4 , for a purpose to be described hereinafter.

The end K of the drawer-section is provided with two brackets, k , each of which has two parallel ribs, k' , between which vertically plays a plate, L. A pin, k^2 , located near the bottom of each plate k between the ribs k' , prevents the plate L from dropping out. A pin, l , is located near the bottom of one of the plates L, and a pin, l' , near the top of the other plate L.

The arrangement of the cords, pulleys, and plates A and I is such that when the gates are opened, as shown in Fig. 1, the plate H is

at the left-hand end of the upper slot, f , while the plate I is at the right-hand end of the lower slot, f^3 , as seen in Fig. 1. The draw-section K then moves in the direction indicated by the arrow, Fig. 2, and the pin l of the plate l , engaging the pin g^2 of the plate H, moves the same along the slot f toward the other end of said slot, resulting in traction on the rope d' of the gate G and the rope d^2 of the gate G', thus moving said gates toward each other until they meet at the center of the base and close the approach to the draw. When the gates meet each other, as above described, the plate H has arrived at the other end of the slot f , when the pin l , coming in contact with the upper face of the plate J, travels up said plate by reason of its plate L being elevated in its bearings and drops over past the plate J, out of engagement with the pin of the plate H. The draw-section K then continues on until it is completely open. Upon the return of the drawer-section K the pin l comes in contact with the projection j^4 of the nearest plate J, and, lifting said plate against the spring-pressure, again engages the vertical pin of the plate H, so that the continued movement of the drawer-section causes said plate to return to its first position, and thus result in the opening of the gates.

If in the operation of opening the drawer the section K had been first moved in a direction opposite to that first above described, the pin l' of the other plate, L, would have engaged the vertical pin of the plate I, and moved said plate to the opposite end of said slot, resulting in the closing of the gates.

From the foregoing description it will be apparent that the construction is such that a slight movement of the draw-section K in either direction is sufficient to cause the complete closing of the gates G G', which cannot be opened until the drawer returns to its normal position.

I claim—

1. In a gate-operating mechanism, the combination, with a pair of plates constructed to slide laterally in recesses in the abutment and connected to the gates by lines and pulleys, as described, of a pair of vertically-adjustable plates or catches mounted upon the draw and constructed to engage the sliding plates, and oblique spring-guides, also mounted in the abutment and constructed to release the catches from the sliding plates, substantially as described.

2. The combination, with the sliding gates G G' and the slotted plates $f f'$ upon the abutment A, of the cords $d' d^2$, the plates H I, sliding in the slots of the abutment and connected by said cords to the gates, the vertically-adjustable plates L L', constructed to engage plates H I, the spring-plates J, and the pulleys for leading the cords from the sliding plates to the gates, substantially as set forth.

3. The combination, with the abutment A, carrying the plates $f f'$, with their slots $f^2 f^3$, the frame B C D E E' F, the gates G G', and the pulleys, of the cords $d' d^2$, connecting plates H I with the gates, the spring-plates J, and the brackets k , carrying the vertically-moving plates L L', as specified.

4. The combination, with abutment carrying the gate-frame, the sliding gates, and the slotted plates, of the plates constructed to slide in the slots and provided with the pins, the spring-guides, and the brackets mounted upon the draw and carrying the plates L L', having the pins $l l'$, as and for the purposes set forth.

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

HANS F. KLOPP.

Witnesses:

HILGER BECKER,
WILHELM BAETZ.