

(No Model.)

J. B. CAMPBELL.

GATE.

No. 323,395.

Patented Aug. 4, 1885.

Fig. 1.

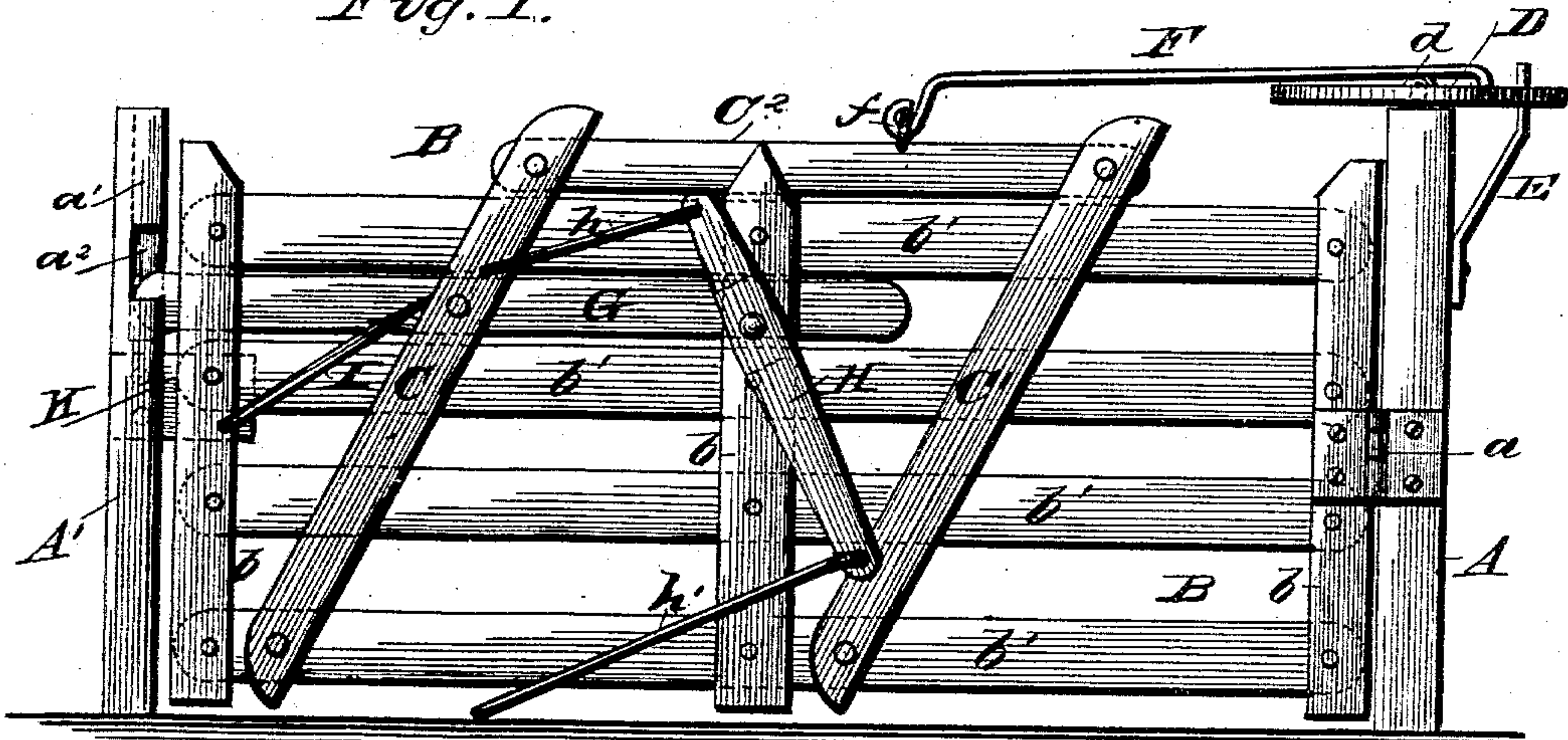


Fig. 2.

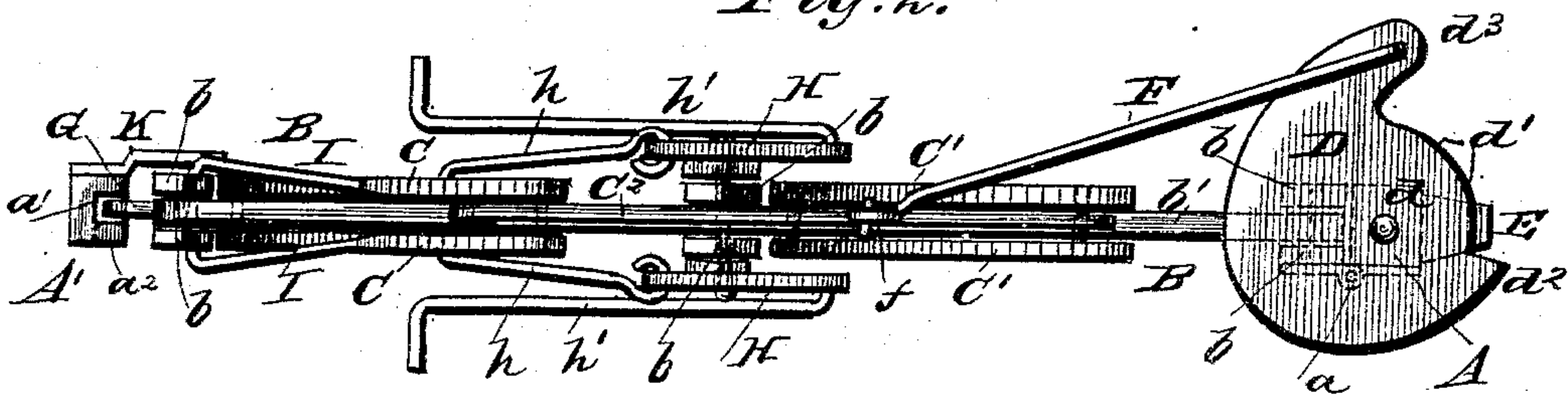
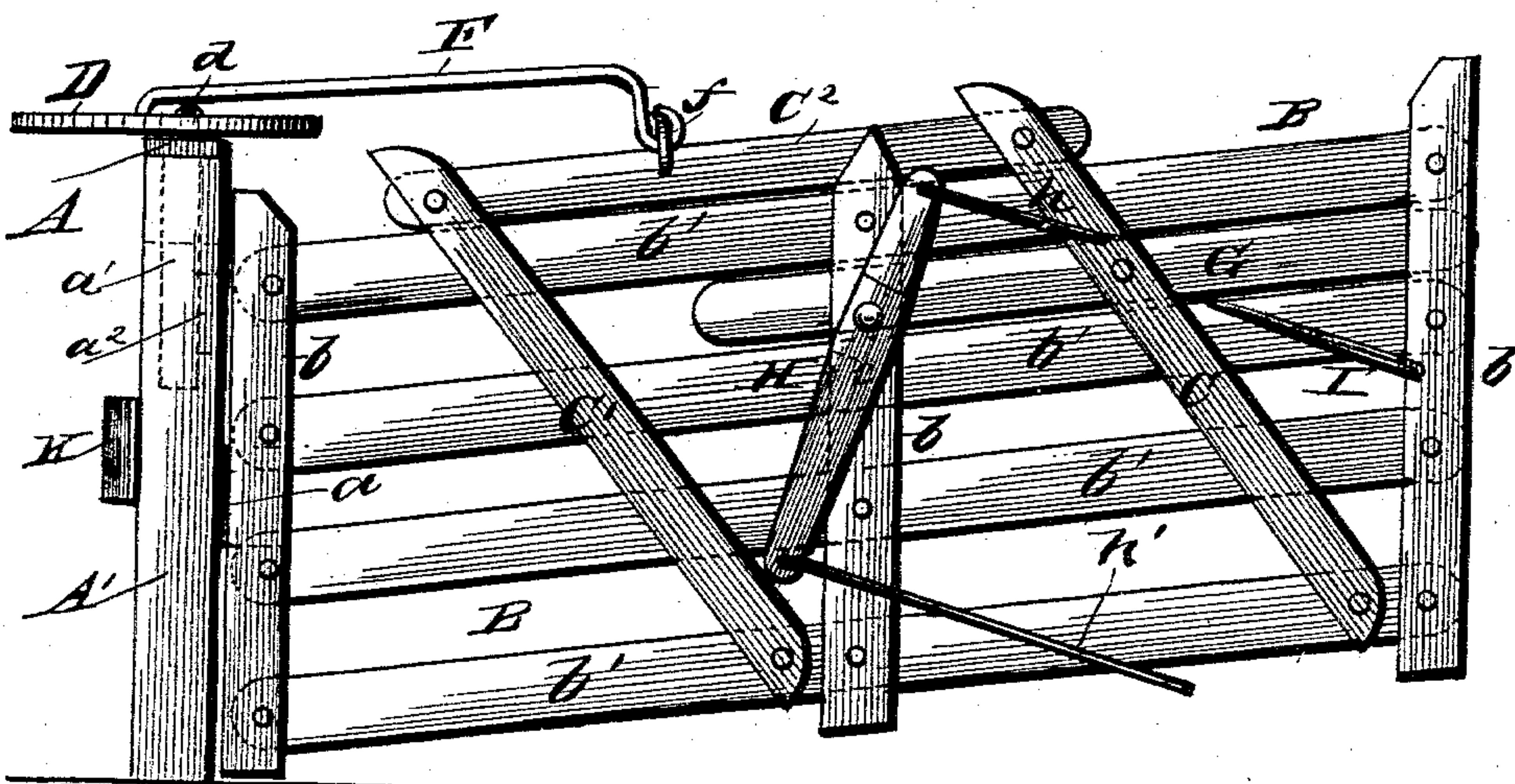


Fig. 3.



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JAMES B. CAMPBELL, OF NORMANDA, INDIANA.

GATE.

SPECIFICATION forming part of Letters Patent No. 323,395, dated August 4, 1885.

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

To all whom it may concern:

Be it known that I, JAMES B. CAMPBELL, of Normanda, in the county of Tipton and State of Indiana, have invented certain new and useful Improvements in Gates; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side elevation of my improved gate. Fig. 2 is a top view of the same, showing the gate closed. Fig. 3 is an end view of the gate, showing the same open.

This invention relates to improvements in gates; and it consists in the construction and novel arrangement of the various parts hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, A and A' represent the gate-posts, and B the gate. The gate is hinged at *a* to the post A, and the post A' is provided on its inner surface with the longitudinal recess *a'*, into which the latch enters when the gate is closed. The said recess extends vertically downward from the top of the post, for a purpose hereinafter explained, and is cut away on one side of the post near its bottom, to form the opening *a''*, through which the latch escapes when the gate is opened.

The gate B is composed of the vertical bars *b b*, arranged in opposite similar pairs at each end and near the middle of the gate, and the horizontal bars or rails *b'*, pivoted at their ends and middle between the members of the said pairs. The hinge *a* connects the post A to the bar *b* belonging to the pair adjacent to said post and on the side toward which the gate opens.

C C are similar opposite bars, pivoted together at their lower ends through the lowest rail of the gate near the front pair of opposite bars *b*, and thence running upward and rearward to a proper point above the gate, the rails *b* passing between them.

C' C' are opposite parallel bars, in all respects similar to the bars C, and pivoted together through the lowest rail *b'*, slightly to the rear of the middle pair of upright bars *b*.

C² is a horizontal bar or rail pivoted at its front end between the bars C, and at its rear end between the bars C'. When the gate is closed, the rail C² lies upon the highest rail *b'* of the gate. The bars C and C' and rail C² form together a parallel-motion device the function of which is to lift the front end of the gate as the latter is opened, as will hereinafter be explained.

D is a horizontal plate pivoted upon the top of the post A. The circumference of the said plate may be either circular or elliptic; but in either case the pivot *d* is situated eccentrically within it, being nearer to the side on which the gate opens.

d' is a recess or cut-away portion on the rear edge of the plate, situated between the shoulder *d''* and the rearward and outward projection, *d'''*, of the plate. The edge or bottom of the said recess is preferably concentric with the pivot *d*.

E is a detent bar or stop, having its lower end bolted or otherwise secured to the rear surface of the gate-post A. At a proper point below the plate D the said detent-bar bends backward and upward, and then bends vertically upward, with its upper end resting against the shoulder *d''* on the side to which the gate opens. The projection *d'''* is situated on the side to which the gate closes, and has pivoted upon it near its end the rear end of a rod, F, the front end of which bends downward and forms a hook which engages a staple, *f*, fixed into the upper edge of the rail C² near its middle. When the gate is closed, the line between the pivot-point of the rod F on the projection *d'''* and the pivot *d* of the plate D stands at right angles to the line of the gate, so that the said rod forms the hypotenuse of a right-angled triangle, of which the longer leg is the distance between the pivot *d* and the front end of the rod F.

C is the latch-bar, lying between and parallel to the upper two rails *b'* of the gate, and pivoted to and between the front inclined bars, C C. The rear end of the latch-bar passes between the middle vertical bars *b* of the gate, and its front end between the front vertical bars, and enters the recess *a'* when the gate is closed. The said vertical bars keep the latch-bar in position and direct its motion.

H H are similar opposite bars, pivoted on each side of the gate to the middle vertical bars b between the upper two rails b' . The said bars incline backward from their upper ends, to which are pivoted the rear ends of the link-rods h , the front ends of which are pivoted upon the inclined bars C at a point opposite the lower edge of the highest rail b' .

To the end of the lower arm of each bar H, which is considerably longer than its upper arm, is fixed a rod, h' , which runs thence forward and slightly downward, and has its front end bent at right angles outward from the gate, as shown. The said rods serve a purpose hereinafter explained.

I I are detent-rods, made in one piece, the middle portion of which passes through transverse holes in the front vertical bars b , and the ends of which are bent parallel, and may be brought to bear against the front edges of the inclined bars C so as to prevent their moving forward. To further this purpose, the points of the said ends are spread and made into lateral edges, so that they will take firmer hold of the said bars. K is a detent fixed to the post A' , to prevent backward strain upon the hinge a . As the rails b' are pivoted between the pairs of upright bars b , and the point of the latch-bar is free to slide upward in the recess a' , it is evident that by lifting on the front part of the gate the same will rise, the rails turning on their pivots between the rear pair of vertical bars as fulcrum-points. The bars C C' and the rails C² accommodate themselves to this motion, the bars becoming more inclined and the rail sliding backward upon the highest rail b' of the gate. Thus sufficient space will be made below the latter for small stock to pass through. When the gate is closed, the fact of the rails being pivoted between the vertical bars causes the lower end of the front pair of vertical bars to rest on the ground and takes the weight off the hinge or hinges. In opening, the gate is raised sufficiently to allow the point of the latch-bar to pass out of the opening a^2 . Then, as the gate swings open, the rod F tends to rotate the plate D in the same direction; but this is prevented by the detent-bar E bearing against the shoulder d^2 . Therefore the rod F will draw the rail C² backward, increase the inclination of the bars C and C', and lessen the distance between its own pivot-point on the projection d^3 and the pivots of the said bars on the lowest rail of the gate. The rails b' must then turn upward on the rear vertical bars b , and the gate will be lifted sufficiently to pass over ordinary obstructions; and, as the

latched bar is pivoted between the inclined bars C, it will be slid backward out of the way. When the rod F passes beyond or to the rear of the pivot d , the bearing of the detent-bar E against the shoulder d^2 will be relieved, the plate D will partially rotate in a direction opposite to that in which the gate opens, the projection d^3 will cease its pull on the rod F, and the gate will fall, its front vertical bars resting on the ground and taking the strain of the weight off the hinges. When the gate is fully opened, the bent ends of the rods h' will rest upon the ground and support it laterally; but while being opened the action of bars C and H and link-rods h will lift them clear of the ground and out of the way. The detent-bars I are used to stay the bars C when the gate is open, as hereinbefore explained.

Having described my invention, I claim—

1. A gate composed of parallel rails pivoted at each end between two opposite vertical bars the rear pair of which are hinged to the rear gate-post, in combination with the parallel-motion device composed of the bars C and C', pivoted to the lower rail of the gate, and the bar C², pivoted to the upper ends of the former bars, and mechanism, substantially as described, secured to the rear gate-post, connected with the rail C², and adapted to automatically draw the parallel-motion device rearward and lift the front of the gate as the latter is opened.
2. The combination, with the front and rear gate-posts, and a gate hinged to the latter at or near its edge, and composed of horizontal rails pivoted between vertical end and center rails, of the parallel-motion device composed of the rails C C', pivoted at their lower ends to the lower rail of the gate, and the rail C², pivoted to the rails C C', the detent-plate D, pivoted upon the rear gate-post, the detent-bar E, engaging the shoulder d^2 of the plate D, and the rod F, connecting the projection d^3 of the plate D with a proper point of the rail C², substantially as specified.

3. The combination, with the posts A A', gate B, bars C, C', and C², and mechanism, substantially as described, acting from the rear gate-post to automatically draw the bar C² rearward of the bars H, links h , and supporting-rods h' , substantially as specified.

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

JAMES B. CAMPBELL.

Witnesses:

JOHN H. ROOD,
L. S. SCOTT.