No. 683,694. Patented Oct. 1, 1901.

T. D. LIVINGSTONE.

GATE.

(Application filed July 5, 1901.)

(No Model.)

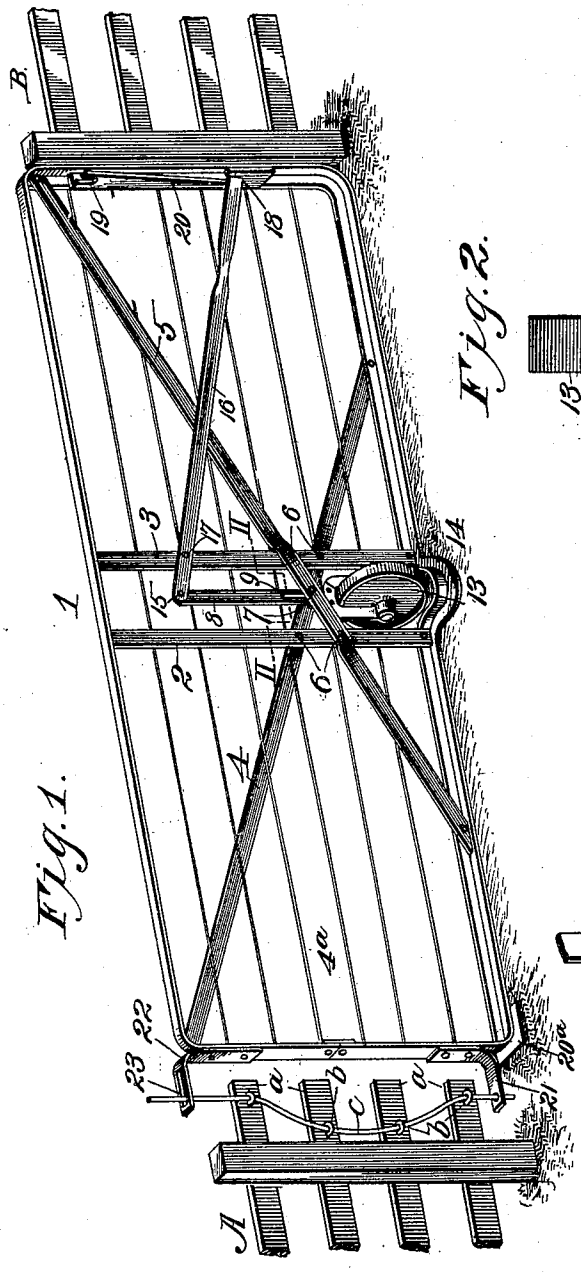


Fig. 1.

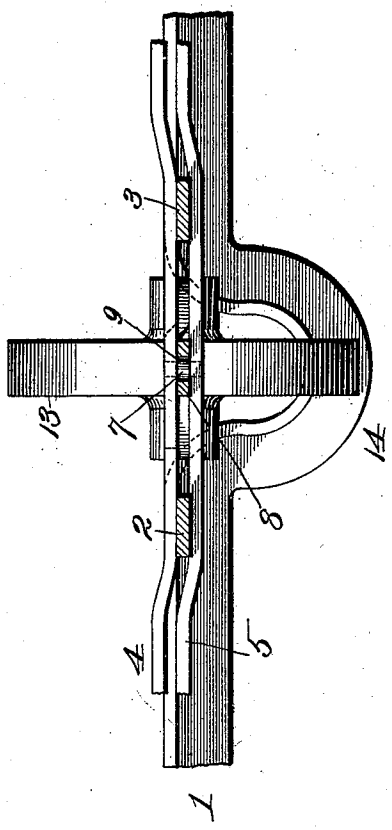


Fig. 2.

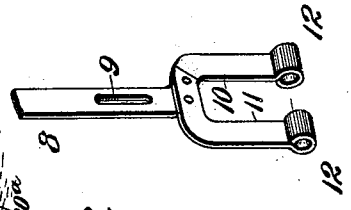


Fig. 3.

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UNITED STATES PATENT OFFICE.

THOMAS D. LIVINGSTONE, OF KANSAS CITY, MISSOURI.

GATE.

SPECIFICATION forming part of Letters Patent No. 683,694, dated October 1, 1901.

Application filed July 5, 1901. Serial No. 67,081. (No model.)

To all whom it may concern:

Be it known that I, THOMAS D. LIVINGSTONE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Gates, of which the following is a specification.

My invention relates to gates, and more particularly to that class which instead of a hinge-post is provided with a pivot-guide for the purpose of insuring the equilibrium of the gate and the concentration of its weight entirely upon a little wheel or roller arranged at a convenient point and supporting the gate as it swings open or shut, my object being to produce a gate of this character of simple, strong, durable, and cheap construction which can be easily, quickly, and cheaply applied to or removed from a fence-opening.

With this object in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a perspective view of a gate embodying my invention. Fig. 2 is an enlarged horizontal section taken on line II II of Fig. 1. Fig. 3 is an enlarged detail perspective view of the wheel or roller carrying frame.

In the said drawings, 1 designates the oblong rectangular frame of a gate, the same by preference being constructed of angle-iron embracing a single piece bent to proper form or a number of pieces bolted together, as desired, as this feature is unimportant. This skeleton frame is braced centrally by two vertical braces 2 3, arranged closely together and riveted or otherwise secured to the upper and lower portions of the frame. The gate is also stiffened and strengthened by means of angle-braces 4 5, said angle-braces extending from the upper, front, and rear corners of the gate-frame to points on the lower portion about half-way between the end portions and said vertical braces. Wires 4^a extend from one end to the other of the gate-frame and form at once a light and nice-appearing closure for the same. At the points of intersection the vertical and angle braces are rigidly united by rivets 6, a rivet or bolt 7 also connecting the angle-braces at their point of intersection and forming a guide for the vertical frame 8 by extending through the vertical slot 9 thereof. The lower end of this frame is of forked or inverted-U form, and it is preferably constructed by bending the main portion, as shown at 10, and riveting to the upper arm of the same a right-angle arm 11, projecting in the opposite direction, said arms terminating in bearing-sleeves 12 at their lower ends for the spindle of the roller or wheel 13. This wheel is arranged transversely of the gate, and to accommodate it properly the lower part of the frame where it intersects braces 2 3 is bent or bowed outwardly, as shown at 14. The upper end of the frame provides a fulcrum 15 for hand-lever 16, pivoted, as at 17, on brace 3, the opposite end of the lever being adapted to engage lower notch 18 or upper notch 19 of catch 20, secured to the front end of the gate-frame. When engaged with notch 18, the gate rests upon the ground for its full length, as shown clearly in the drawings, this being its position of rest, in which it can be fastened in any suitable or preferred manner.

When it is desired to open the gate, the lever is grasped near its front or free end and raised along the catch 20 and caused to engage notch 19. As it moves upward the gate tilts slightly upward at its front end, for the reason that the wheel 13 is immovable as regards vertical movement. When engaged with notch 19, the front end of the gate is a few inches from the ground and the rear end rests lightly on a wear-plate or stone 20^a, provided for the purpose of preventing the hinge end of the gate from making a cavity in the ground, wherein water would settle and effect a more rapid corrosion of the gate-frame. The gate travels upon the roller or supporting-wheel 13 as it is opened or closed and escapes any conflict with irregularities in the surface of the ground, because the wheel accommodates itself to the surface thereof and practically insures a movement of the gate parallel to the ground whether the surface of the latter be straight or rolling. As the disposition of the rolling support at the center of the gate practically relieves the hinge end of all duty except that of preventing its toppling over sidewise, there is no necessity at

the hinge end for the usual rigid post embedded tightly in the ground, though of course such post may be employed, if desired.

Preferably the fence A at the hinge end of the gate has its rails *a* projecting beyond a post and provided with staples *b* to hold and support the hinge-rod *c*, the lower end of the same fitting loosely in the angular hinge-plate 21, secured to the gate, and the upper end engaging the longitudinal slot 23 of the upper hinge-plate 22. This rod is sufficient to prevent the gate from slipping sidewise, and the slot 23 is of such length that the gate may be elevated and lowered without bringing the end of the slot in contact with the rod at all. The gate is lowered by simply disconnecting the lever 16 from notch 19 and permitting the weight of the gate to slide it down the face of the catch until notch 18 is reached, the gate resting lightly upon the ground at the moment of such engagement.

It is obvious that a gate of this character built of angle-iron possesses great rigidity and strength in proportion to its weight and that it can be manufactured at a low cost. It is also obvious that it can be set up in operative position at far less expense than the ordinary gate, because the usual hinge-post can be dispensed with.

From the above description it will be apparent that I have produced a gate embodying the features of advantage enumerated as desirable in the statement of invention, and while I have illustrated and described what I deem at this time my preferred construction it is apparent that various changes as regards its form, proportion, detail construction, and arrangement may be made without departing from the principle of construction and operation.

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

1. A gate pivoted to have a slight vertical as well as the usual lateral movement, and provided at its front end with a catch having notches at different altitudes, a vertical frame suitably guided and provided with a wheel or roller resting on the ground, and a lever pivoted to the gate and fulcrumed on said frame and adapted when engaging the lower notch to permit the gate to rest upon the ground, and when engaging the upper notch to hold the gate above the ground and dispose its weight upon said wheel or roller, substantially as described.

2. A gate pivoted to have a slight vertical as well as the usual lateral movement, a guide pin or rivet therein, a vertical frame having a slot engaging said guide pin or rivet, a wheel or roller mounted in the lower part of said frame and resting on the ground, a lever pivoted to the gate and fulcrumed on said frame, and adapted to have movement in a vertical plane, and a catch having a lower notch and an upper notch for engagement by said lever, substantially as described.

3. A gate pivoted to have a slight vertical as well as the usual lateral movement, and embodying vertical braces near its center, angle-braces intersecting each other between said vertical braces, a pin or rivet connecting said angle-braces at their point of intersection, a vertical frame arranged between said vertical and angle braces, and provided with a slot engaging said pin or rivet, a wheel or roller mounted in the lower end of said frame, a lever pivoted to the gate and fulcrumed on said frame, and a notched catch secured to the front end of the gate for engagement by said lever, substantially as described.

4. The combination of a hinge-rod, a gate provided with a lower hinge-plate loosely engaging the hinge-rod, and an upper hinge-plate having a longitudinal slot engaging the hinge-rod, a notched catch secured to the front end of the gate, a vertical frame supported about midway the gate and provided with a supporting wheel or roller, and a lever pivoted to the gate and fulcrumed on said frame and adapted to engage said notched catch to suspend the weight of the gate on said wheel or roller or not as desired, substantially as described.

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

THOMAS D. LIVINGSTONE.

Witnesses:

H. C. RODGERS,

G. Y. THORPE.