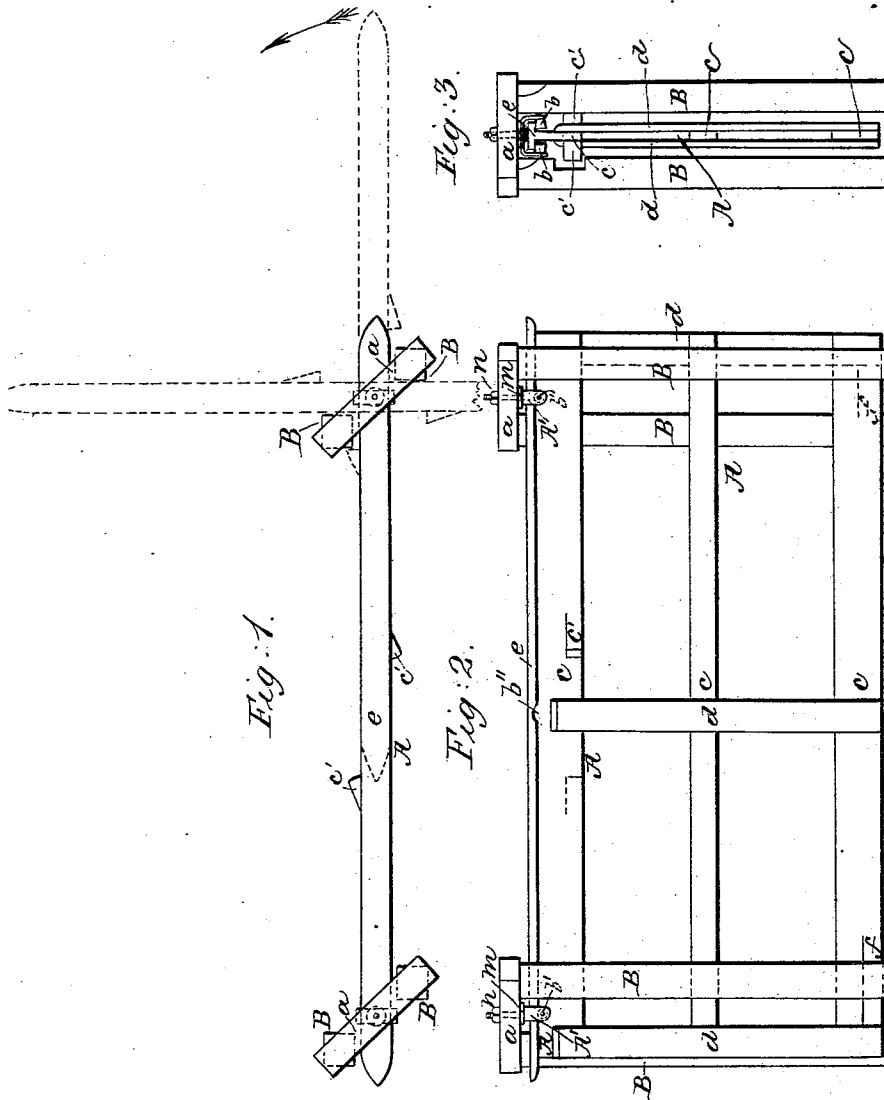


E. & A. BUCKMAN

Gate.

No. 61,605.

Patented Jan. 29, 1867.



United States Patent Office.

EDWARD AND ALEXANDER BUCKMAN, OF EAST GREENBUSH, NEW YORK.

Letters Patent No. 61,605, dated January 29, 1867.

IMPROVEMENT IN FARM GATES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, E. BUCKMAN and A. BUCKMAN, both of East Greenbush, in the county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Farm Gates; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a portion of this specification, in which—

Figure 1 is a plan view of a gate constructed according to my invention.

Figure 2 is a side elevation of the same.

Figure 3 is an end elevation of the same.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to that class of gates which, while being opened, are made to slide longitudinally for a portion of their length and then turn around upon a vertical axis. The invention consists in so constructing a gate of this description that it may slide in either direction and turn upon an upright axis at either side of the gateway, as may be desired, thus converting it into a "right and left-hand" gate capable of being opened in either direction, as circumstances may require. The invention further consists in certain novel arrangements of parts, whereby the most efficient operation of this feature of the invention is secured, and whereby the gate is rendered capable of being strengthened either with vertical or oblique braces without interfering with the movements thereof in opening or closing the same.

To enable others to understand the construction and operation of our invention, we will proceed to describe it with reference to the drawings.

The gate is represented at A, and the gate-posts, of which there are two at each end of the gate, are shown at B, each pair of these posts being situated in a line oblique to the position of the gate when closed, as shown more clearly in figs. 1 and 2. The two posts constituting each pair are situated at a distance apart sufficient to allow the longitudinal movement of the gate A between them, and also the turning of the same, as will be hereinafter fully set forth, and have secured upon their upper ends a cross-piece or cap, *a*. Suspended from the under side of each of these caps, *a*, by a vertical bolt or pivot, is a forked swivel, A', and pivoted at the lower end of each of the arms of this swivel upon the inner side thereof, and on a horizontal axis, is a friction-roller, *b*. The diameter of these friction-rollers at their inner sides is greater than at their outer sides, so that their faces are bevelled, as shown in fig. 3. The gate A is constructed of longitudinal bars, *c*, secured together by uprights, *d*, the upper ends of which do not extend quite up to the under side of the horizontal top strip or rail *e*, in order that a sufficient space may be left under the lateral edges of the said rail to permit the passage of the same over the friction-rollers *b*, the aforesaid horizontal rail *e* being secured longitudinally upon the top of the gate and constituting the guide by which the gate is suspended. The under side of this guide-rail, *e*, upon each side of the gate, is bevelled, as shown at *a'* in fig. 3, in order to correspond with the bevelled faces *a* (hereinbefore described) of the friction-rollers *b*, upon which they are supported, as shown more plainly in figs. 2 and 3. Instead of constructing this guide-rail *e* of a single strip, as just set forth, it may consist of two longitudinal cleats nailed upon opposite sides of the topmost bar *c* at or near the upper edge thereof. The gate is passed longitudinally between the gate-posts B with its opposite ends situated, one between the two posts of the contiguous pair of such posts, as more fully represented in figs. 1 and 2, with the guide-rail *e* resting upon the friction-rollers *b*, as more clearly indicated in fig. 2, the gate being thus suspended from the said rollers. In this position the gate is closed and prevented from sliding or being moved from slight or accidental causes, as, for instance, the rubbing of cattle against it, by means of notches or recesses, indicated in dotted lines at *b'*, in fig. 2, and formed in the under surface of the guide-rail *e*, near the ends thereof, in such a way that when the gate is closed in the manner just herein described, the friction-rollers *b* will fit into the aforesaid notches or recesses *b'* and thus render necessary the exertion of some small degree of force in sliding the gate at the commencement of opening the same. Similar notches *b''* are formed in the under surface of the guide-rail *e*, or at the middle thereof, the office of the said notches *b''* being to steady the gate and keep it from slipping while being turned around, as will be presently explained. Situated one upon each side of the uppermost bar *c*, of the gate, is a strap, *c'*, which is designed to prevent the gate from being moved too far longitudinally in opening the same. In opening the gate it is pushed lengthwise in one direction or the other, as may

be desired, the guide-rail *e* sliding upon the friction-rollers *b*, connected with the gate-posts toward which the gate is pushed until the said rollers catch in the notches *b''*, whereupon, the gate being in the position shown in dotted red lines in fig. 1, and nearly balanced upon the said rollers, is swung around into a position nearly or quite at right angles to its position when closed, as shown in red outline in fig. 1, the vertical bolt or pivot of the bracket *A'*, from which it is suspended, turning to permit this turning movement of the gate. In closing the gate it is first swung back into the position indicated in the dotted lines in fig. 1, and then pushed longitudinally back to its first position, the outermost end of the guide *E* resting upon the friction-rollers *b*, of the bracket *A'*, opposite that upon which the gate has just been turned, as just hereinbefore explained; the friction-rollers *b* fitting into the notches or recesses *b'*, and preventing the longitudinal movement of the gate from slight accidental causes, as hereinbefore set forth. In order to prevent the uprights *d*, especially those near the ends of the gate, from striking the posts *B*, as the gate *A* is passed between the said posts during its longitudinal movements, inclined planes, *f*, formed of suitably shaped blocks of wood, are attached to the lowermost bar, *c*, thereof, in such manner as to so guide the bottom of the gate during such movements thereof that the aforesaid uprights, *d*, will be kept clear of the posts *B*. The bevelled under surface of the guide-rail *e*, acting upon the bevelled faces of the friction-rollers *b*, tends to press the said rollers inward, and thus counteracts the tendency of the arms of the swivels *A'* to be spread apart by the weight of the gate upon the rollers *b*, at the same time that the gate, being suspended upon the said rollers by the laterally projecting edges of the guide-rail *e*, any desired variety of braces, either vertical or oblique, may be employed to strengthen the gate, which would be inadmissible in case the friction-rollers, *b*, worked underneath one of the longitudinal bars, *c*, thereof. Furthermore, as the gate is suspended from the top thereof it is left comparatively free to adjust itself to any change in the position of the posts *B* arising from the heaving of the ground from the effects of frost, and is consequently less liable to injury from such changes than if the points of suspension were nearer the bottom of the gate. In order to prevent the gate when open from being turned around and partially-closed by the action of the wind, or similar accidental causes, an annular washer, *m*, of India rubber, or equivalent elastic material, is interposed between each of the swivels, *A'*, and the cap or cross-piece *a* to which it is attached, the swivel being drawn up against the said washer, *m*, by means of a nut, *n*, screwed upon the upper end of its pivot with such a degree of tightness as to produce sufficient friction upon the swivel to prevent it from turning from slight causes, and yet allow it to turn when the gate is swung around by hand as hereinbefore explained.

What we claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the posts *B*, and swivelled suspending rollers, *b* in relation with each other and with the gate *A*, whereby the gate may be opened in either direction, substantially as herein set forth.
2. The guide-rail *e*, secured at the top of the gate, bevelled upwards and inwards on its under side from both edges, and operating in relation with the tapering friction-rollers *b* suspended in swivels *A'*, substantially as herein set forth for the purpose specified.
3. The inclined planes *f*, arranged with reference to the vertical braces *d*, and supporting posts *B*, of a double-acting gate, substantially as herein set forth for the purpose specified.

EDWARD BUCKMAN,
ALEX. BUCKMAN.

Witnesses:

ABM. MILLER,
PETER G. CLARK.