A. FRITZ.

FOLDING GATE.

APPLICATION FILED JULY 3, 1914.

1,162,231.

Patented Nov. 30, 1915.

2 SHEETS—SHEET 1.

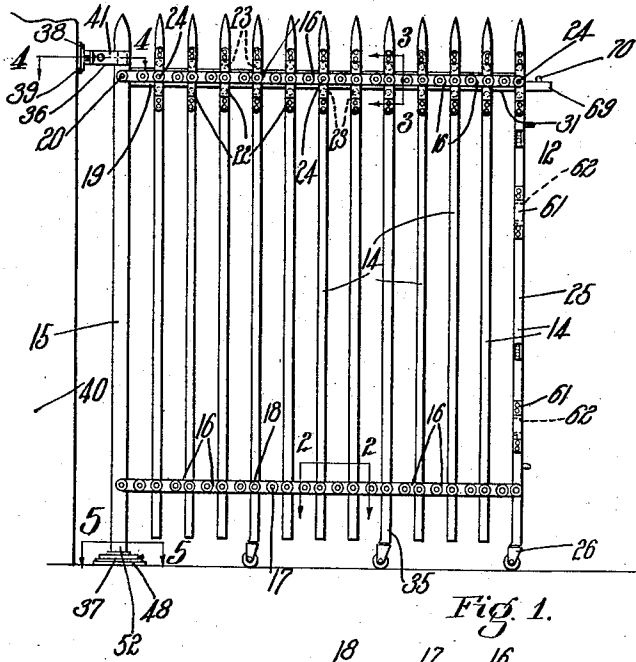
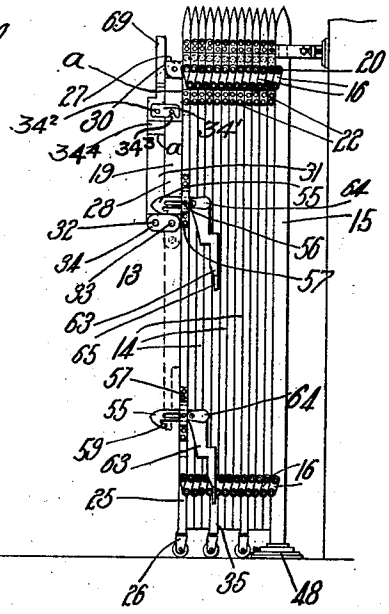


Fig. 1.



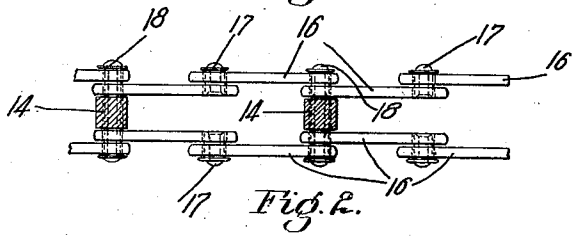


Fig. 2.

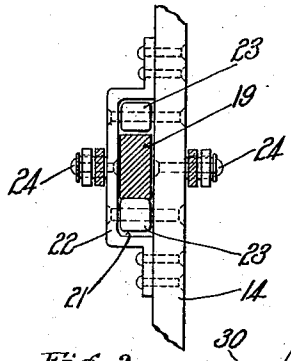


Fig. 3.

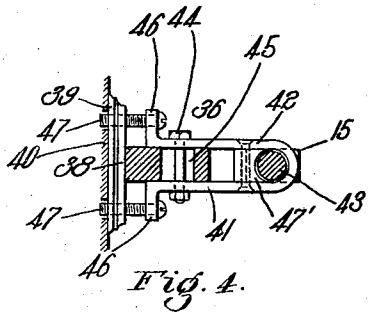


Fig. 4.

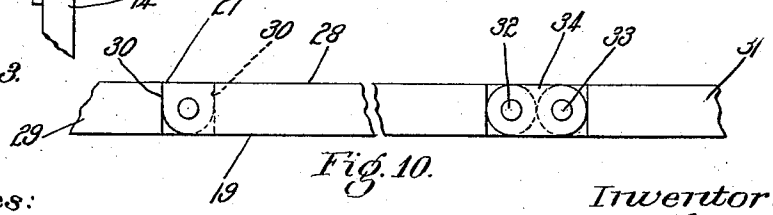


Fig. 10.

Witnesses:

Herman R. Hoffman.

Leonard A. Powell.

Inventor:

Axel Fritz.

by his attorney

Charles V. Goodwin.

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2 SHEETS—SHEET 2.

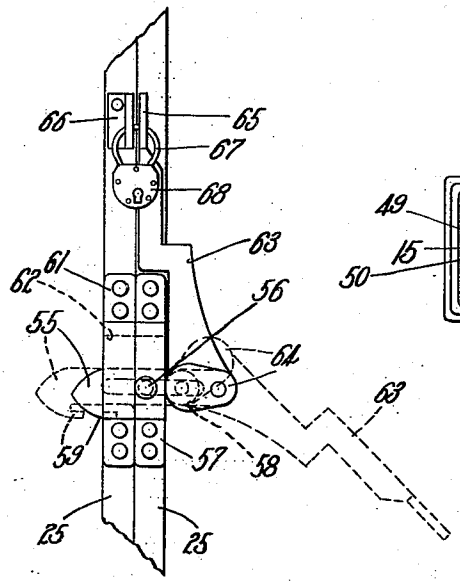


Fig. 6.

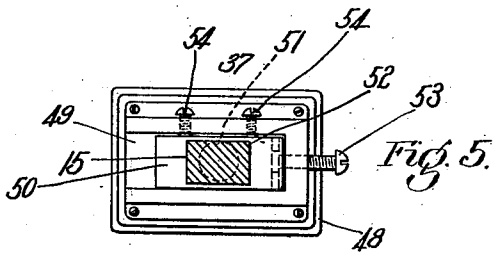


Fig. 5.

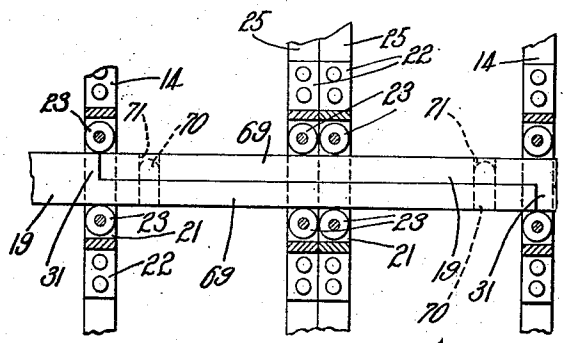


Fig. 11.

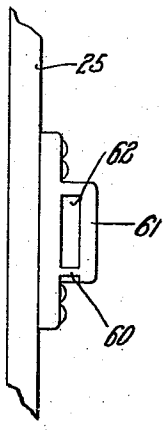


Fig. 7.

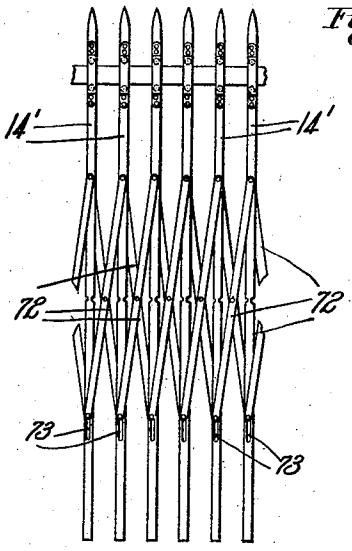


Fig. 9.

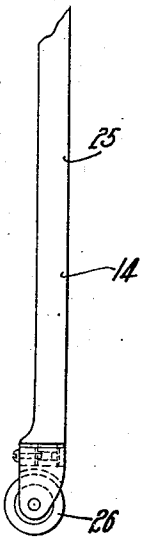


Fig. 8.

Witnesses:
Herman R. Hoffman.
Leonard A. Powell.

Inventor:
Axel Fritz,
by his attorney,
Charles S. Gooding.

UNITED STATES PATENT OFFICE.

AXEL FRITZ, OF EVERETT, MASSACHUSETTS.

FOLDING GATE.

1,162,231. Specification of Letters Patent. Patented Nov. 30, 1915.

Application filed July 3, 1914. Serial No. 848,881.

To all whom it may concern:

Be it known that I, AXEL FRITZ, a citizen of the United States, residing at Everett, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Folding Gates, of which the following is a specification.

This invention relates to improvements in folding gates and has for its object to provide a strong, durable and inexpensive gate which may be made any length and which may be extended to its full length or only a portion thereof as desired.

Another object of the invention is to provide means for drawing the outer end pales of the sections of the gate together and to lock said pales in said position.

Still another object of the invention is to provide means for pivotally supporting the sections of the gates and for adjusting the pivoted pales of the gate relatively to the perpendicular.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims.

Referring to the drawings: Figure 1 is an elevation of a pair of gates embodying my invention, one of said gates being extended to its full length, while the other of said gates is folded. Fig. 2 is a section taken on line 2—2 of Fig. 1 illustrating the manner in which the lower ends of the pales are connected together by links. Fig. 3 is a section taken on line 3—3 of Fig. 1 illustrating the manner in which the upper ends of the pales are connected together. Fig. 4 is a section taken on line 4—4 of Fig. 1 and illustrating the pivot for the upper end of the pivot pale and showing the adjustment therefor. Fig. 5 is a section taken on line 5—5 of Fig. 1 illustrating the pivot for the lower end of the pivot pale and also illustrating the adjustment therefor. Fig. 6 is a detail view of a portion of the outer pales of the gates illustrating the means for drawing said pales together and locking the same in place, the dotted lines in said figure illustrating the latch and the means for operating said latch in readiness to be operated to draw the pales together. Fig. 7 is a detail view of the strike plate which is engaged by the latch. Fig. 8 is a detail view of the lower end of one of the pales illustrating a caster attached thereto. Fig. 9 is a detail view of a plurality of pales illustrating a modified form of link. Fig. 10 is a detail view of the pale supporting bar. Fig. 11 is a detail sectional elevation of the ends of the pale supporting bars illustrating the manner in which said bars are locked together when the gates are closed.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 12 and 13 illustrate two sections of a gate, one of which preferably 12 is shown extended, while the other is shown folded. The sections as shown in Fig. 1 are constructed of a plurality of pales 14, 14 preferably arranged parallel and adapted to be moved laterally relatively to each other. One of said pales, preferably the end pale 15, constitutes a pivot pale about the axis of which the gate is adapted to be swung. The pales constituting said gate are connected together preferably at opposite sides and adjacent opposite ends by pairs of links 16 which permit said pales to be moved laterally relatively to each other and to the pivot pale 15 a limited distance, this distance being limited by the straightening of the links 16 as shown at 12 Fig. 1.

Each of the pairs of links 16 is pivotally connected together at 17 and to the pales 14 preferably by rivets 18, said rivets 18 also constituting the pivots for the links extending in opposite directions from each pale. The links 16 are constructed of such a width that the pales 14 will be permitted to be moved close together when folded so as to touch one another as illustrated at 13 Fig. 1, thus occupying the least amount of space possible, this space being governed by the diameters of said pales. The links 16 are however merely for the purpose of limiting the lateral relative movements of said pales, but have nothing whatever to do with the controlling of the vertical movements thereof. To control said vertical movements a bar 19 is provided, said bar being attached at 20 to one of said pales, preferably the pivot pale 15, and having slidable engagement with each of said movable pales in transverse slots 21 preferably formed in brackets 22 secured to one side of each of said pales. Rollers 23 are arranged at the upper and lower ends of said slots to engage the upper and lower edges of said bar. The upper series of links which connect the adjacent pales is preferably arranged even

with the bar 19 and when so placed the links upon the side of said pales to which the brackets 22 are secured are pivoted by rivets 24 to the brackets 22 instead of directly to the pales 14. The bar 19 extends from the pivot pale 15 through the slots in each of the pales 14 and terminates adjacent with the outer face of the outermost pale 25 of the series of pales constituting said gate when said gate is extended as shown in Fig. 1.

The outermost pale 25 is provided at its lower end with a caster 26 which supports said pale and incidentally the pales intermediate said outer pale and the pivot pale 15 through the instrumentalities of the bar 19 and the upper rollers on said pales. At least this a the case when a narrow gate is to be used. The bar 19 is jointed at a point 27 just outside of the outer faces of the outermost pale 25 when the gate is folded, see Fig. 1, said joint being provided to permit the portion of the bar projecting beyond said pales being lowered into the position shown in dotted and full lines in the right hand portion of Fig. 1.

The joint 27 is constructed in such a manner that the movable portion 28 of the bar 19 may be moved to the horizontal position shown in Fig. 10 and in alinement with the stationary portion 29 thereof, further movements of said movable member being limited by stops 30, thus it will be seen that with the outer end 31 of said bar supported by the outermost pale 25 and its caster, said movable portion will constitute a support for the intermediate pales.

It often happens that the gates are very long and not very high and when such is the case the movable portion 28 of said bar would be too long to permit its being swung downwardly to the position indicated in dotted lines Fig. 1 as it would strike the ground before it reached its lowermost position. To provide for such, said movable portion is still further jointed at 32 and 33, the portion intermediate said joints constituting a link 34, thus permitting said movable portion to be folded as indicated in full lines Fig. 1 and in which position it is held by a hook 34^1 pivoted on one of the arms of said movable member at 34^2 and adapted to engage a pin 34^3 formed upon the other section of said movable portion. The hook 34^1 is arranged within a recess 34^4 formed in the sides of the sections of said movable member and represented by the lines *a*—*a*, which permit said hook to lie flush with the side of said bar so as not to interfere with the sliding movement of said pales. When the link 34 is employed the portion 28 will no longer be capable of supporting the intermediate pales, consequently it becomes necessary to provide one of the intermediate pales 14 or at least the pale which alines with the link 34 when said gate is extended, with a caster, the pale coinciding with this position being marked 35, Fig. 1.

In erecting a gate it often becomes necessary to vary the position of the pale 15 relative to the perpendicular and to accomplish this result hinges 36 and 37 are provided adjacent the upper and lower ends respectively of the pivot pale 15, said hinges being adjustable.

The hinge 36 preferably embodies in its construction a bracket 38 see Fig. 4 having a base 39 by means of which said bracket is secured to the wall or support 40. A lug 41 extends laterally from said base 39 toward the pivot pale 15 and a U-shaped member or clamp 42 is adapted to straddle a cylindrical portion 43 formed on the pale 15. The legs of the member 42 engage opposite faces of the lug 41 to which they are secured by a bolt 44 preferably extending through a slot 45 in said lug. The extremities of the U-shaped member 42 are bent outwardly at 46 to receive screws 47 having screw-threaded engagement with the base 39 by means of which said U-shaped member may be moved toward and away from said base. To retain the cylindrical portion 43 of the pivot pale 15 at the closed end of the U-shaped member 42, a block 47′ is secured within said member in contact with said cylindrical portion.

The lower hinge 37 see Fig. 5 preferably embodies in its construction a base 48 having a groove 49 extending longitudinally thereof within which is arranged a block 50, said block having a vertically disposed cylindrical hole 51 adapted to receive the lower end 52 of the pale 15. A screw 53 having screw-threaded engagement with the base 48 is adapted to rotatably engage said block and as said screw is rotated and moved thereby longitudinally on said base, said block will likewise be moved. Set screws 54 in said base are adapted to be moved to engage said block and clamp the same in a predetermined position.

In gates of this nature it is sometimes difficult to bring the outermost pales 25 of the two sections of the gate together in order that they may be locked. To accomplish this a latch 55 see Fig. 6 has been provided, said latch being pivotally and slidably mounted upon a stud 56 secured to a bracket 57 on the member 25 of one of the sections of the gate. A slot 58 has been provided in said latch to permit the same to slide.

The outer end of the latch 55 is provided with a hook 59 which is arranged to engage a portion 60 of a strike plate 61 see Fig. 7 secured to the member 25 of the other section of said gate. As the members 25 are drawn toward each other the end of the latch 55 passes through a slot 62 in the strike plate 61 until the hook portion 59

thereof drops over the portion 60. A lever 63 is pivoted at the rear end of the latch 55, said lever having formed thereon a cam 64 which is arranged to engage the rear side of the bracket 57 during the rotation of the lever 63 on said latch and retract said latch, thus firmly securing the members 25 in close contact one with the other.

The outer end of the lever 63 is provided with an eye 65 located in a position to aline with an eye 66 on the other member 25 when said members are locked together. A shackle 67 of a padlock 68 is then passed through both of said eyes to lock the same together.

Usually in folding gates it has been difficult where two sections are employed to properly aline the abutting pales, or in fact to keep the pales of one section of said gate in the same plane with the pales of the other section thereof. In the present gate this difficulty has been overcome by extending the bars 19 beyond the outermost pale of their respective sections a distance equal to the spacing of the adjacent pales of said gate as at 69. The ends of said bars are somewhat reduced in width so that their combined widths are equal to the width of the main portion of said bars, see Fig. 11, and when the gates are to be closed said ends are matched and the outermost pales 25 drawn together over said matched portion. One of said bars or the reduced portion thereof is provided with dowel pins 70 which are adapted to fit corresponding recesses 71 in the other member and positively position and lock said bars in alinement.

In Fig. 9 I have shown a modified form of gate in which adjacent pales 14′ are pivotally connected together by a single pair of links 72, said links being pivotally connected at their upper ends, and slidably connected at their lower ends to the pales 14′ in slots 73, said slots limiting the lateral relative movement of said pales.

While I have herein shown and described one specific embodiment of my invention for illustrative purposes, and have disclosed and discussed in detail the construction and arrangement incidental to one specific application thereof, it is to be understood that the invention is limited neither to the mere details or relative arrangement of parts, nor to its specific application herein shown, but that extensive deviations from the illustrated form or embodiment of the invention may be made without departing from the principles thereof.

Having thus described my invention what I claim and desire by Letters Patent to secure is:

1. A folding gate having, in combination, a series of pales, a bar pivotally attached to one of said pales and extending transversely of said series, a bracket secured to each of said pales, said brackets having slots adapted to receive said bar, rollers arranged in the slots of each of said brackets adapted to engage upper and lower edges of said bar, and links connecting said series of pales together and adapted to permit a lateral relative movement therebetween.

2. The combination with a pair of coöperating folding gate sections, each having a plurality of pales movable laterally relatively to each other, guide bars for said gate sections having slidable engagement with said pales, the upper portion of the guiding bar for one of said sections and the lower portion of the guiding bar for the other section adapted to overlap each other and forming a section equal to the full size of said bars, and means to retain said bars in alinement with each other to permit said pales to slide from one of said bars to the other.

3. The combination with a pair of coöperating folding gate sections, each having a plurality of pales movable laterally relatively to each other, guide bars for said gate section having slidable engagement with said pales, the upper portion of the guiding bar for one of said sections and the lower portion of the guiding bar for the other section adapted to overlap each other and forming a section equal to the full size of said bars, and a plurality of dowel pins adapted to lock said members in alinement one with the other, whereby the pales of one of said gate sections may be moved from one of said bars to the other.

4. In combination, a pair of folding gate sections, each of said sections comprising an upright pivot pale, a guide bar secured to said pivot pale, a plurality of pales connected with said pivot pale and movable laterally on said guide bar relatively to said pivot pale, the outermost pale of said plurality of pales constituting a support for the outer end of said guide bar, and an adjustable pivot for said pivot pale adapted to permit the pales of one of said gate sections to be adjusted laterally with respect to the perpendicular to move the pales of said gate sections into parallel relation to each other.

5. A folding gate having, in combination, an upright pivot pale, a plurality of series of pales arranged parallel with said pivot pale and adapted to be moved laterally outward or inward relatively to said pivot pale to respectively extend or fold said gate, a caster secured to the outermost pale of each of said series of pales and constituting supports therefor, and a guide bar secured to said pivot pale and having sliding engagement with said movable pales, said guide bar consisting of a plurality of sections connected together by pivotal joints, the outer end of each of said sections with respect to said pivot pale constructed and arranged to be supported by one of said supporting pales

when said gate is unfolded, the joints of said guide bar being constructed and arranged to permit said bar to be collapsed when the outermost pale of said gate has been moved toward said pivot pale to a point between one or more of said joints and said pivot pale.

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

AXEL FRITZ.

Witnesses:
CHARLES S. GOODING,
SYDNEY E. TAFT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."