E. E. HANKEN.

GATE.

APPLICATION FILED JUNE 21, 1911.

1,012,846.

Patented Dec. 26, 1911.

2 SHEETS—SHEET 1.

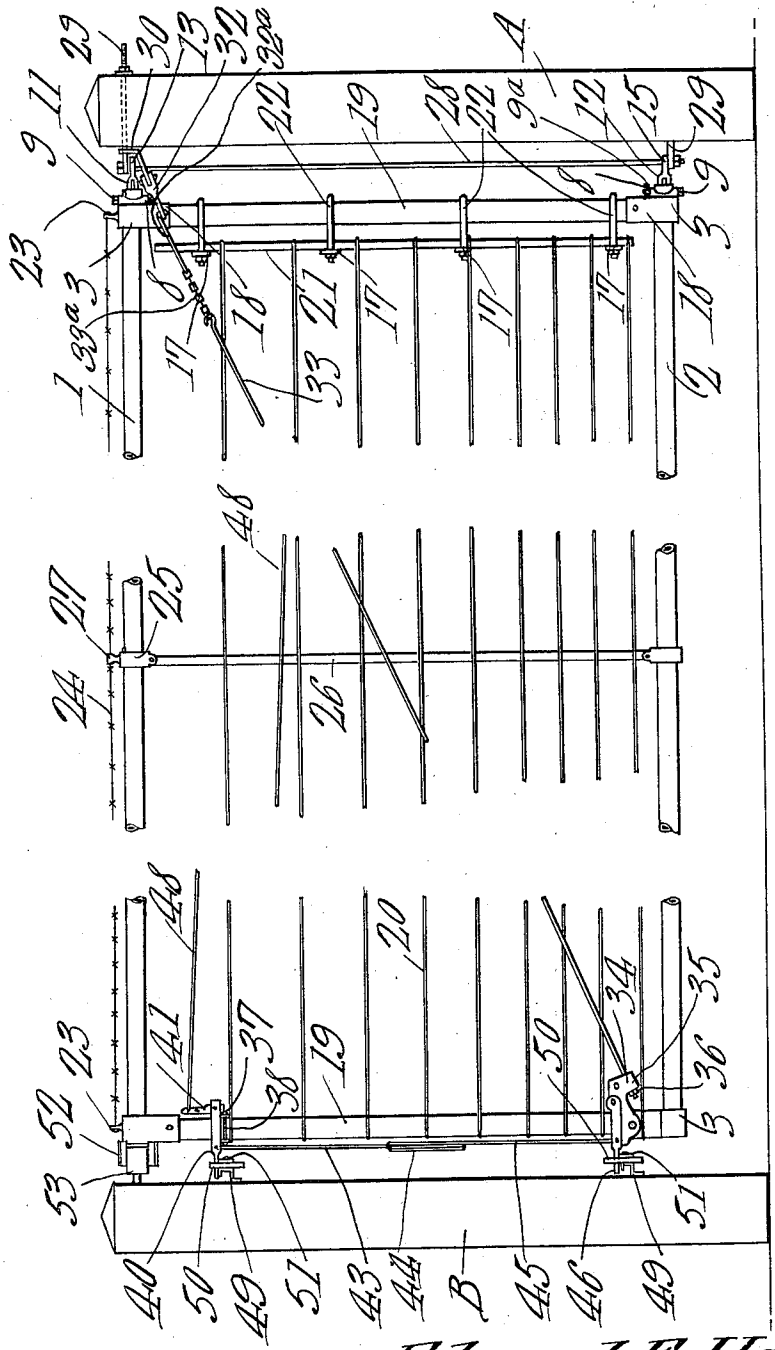

Fig. 1.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

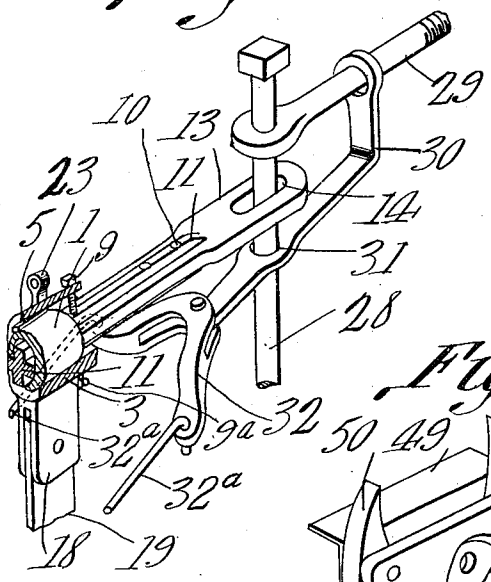

Fig. 4.

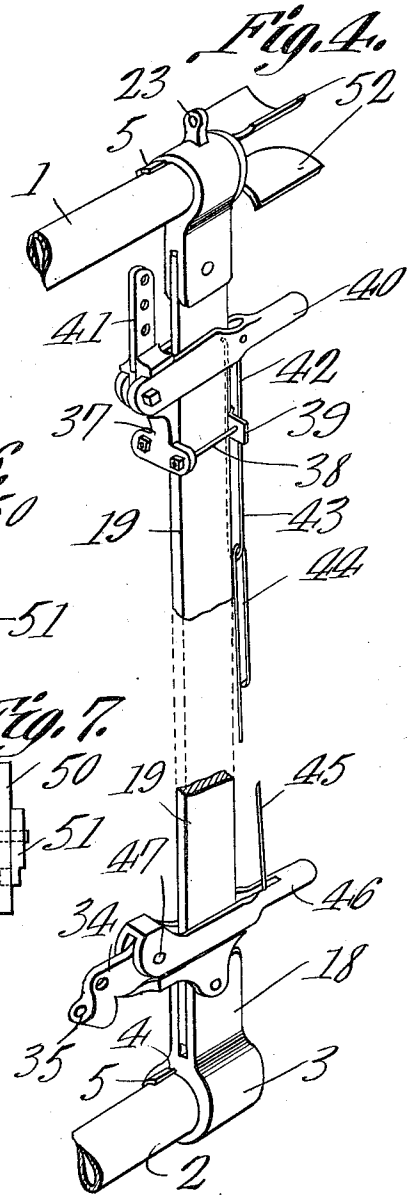

Fig. 6.

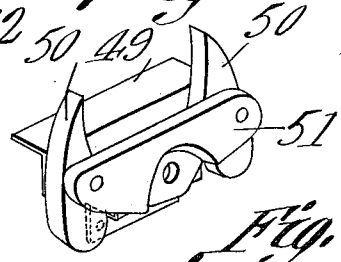

Fig. 7.

Fig. 3.

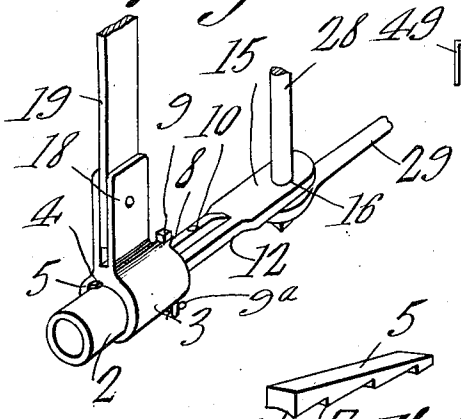

Fig. 5. Edward E. Hanken, Inventor

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UNITED STATES PATENT OFFICE.

EDWARD E. HANKEN, OF APPLETON CITY, MISSOURI.

GATE.

1,012,846. Specification of Letters Patent. Patented Dec. 26, 1911.

Application filed June 21, 1911. Serial No. 634,455.

To all whom it may concern:

Be it known that I, EDWARD E. HANKEN, a citizen of the United States, residing at Appleton City, in the county of St. Clair and State of Missouri, have invented a new and useful Gate, of which the following is a specification.

This invention relates to gates, one of its objects being to provide an all metal gate the end members of which are flexible so as to permit the gate to yield when brought forcibly against an unyielding object but without permanently distorting or otherwise injuring the gate.

A further object is to provide a gate having novel means for connecting the top, bottom and end members, said connections permitting the members to swing relative to each other.

Another object is to provide a gate the top and bottom members of which have extensions telescoping thereinto and provided with improved means for holding them in predetermined relation to the members, said sections being provided with hinge members.

A further object is to provide an improved form of truss so connected to the gate as to automatically raise the latch end of the gate when said gate is swung open in either direction.

A further object is to provide a latch of novel form for use in connection with the gate.

Another object is to provide improved means for attaching wires to the gate, said means serving to hold the wires taut.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a side elevation of the gate, portions thereof being removed. Fig. 2 is a perspective view of the upper hinge of the gate and of adjacent parts, a portion of the gate being shown in section. Fig. 3 is a perspective view of the lower hinge of the gate and showing the adjacent portions of said gate. Fig. 4 is a perspective view of the latch end of the gate, a portion of the gate being removed. Fig. 5 is a perspective view of the wedging key used at the corners of the gate. Fig. 6 is a perspective view of the keeper for use in connection with the latch. Fig. 7 is a side elevation of said keeper.

Referring to the figures by characters of reference 1 and 2 designate the top and bottom members respectively of the gate, said members being tubular and each projecting, at its ends, into collars 3 having key seats 4. Wedge shaped keys 5 are adapted to be driven into these seats, each of these keys having a concaved face 6 adapted to bear against the tubular member, said face being formed with teeth 7 for biting into the member so that, when the key is driven tightly into its seat, the teeth will engage the tubular member in the collar and thus securely lock the collar to said member. The collars 3 at the hinge end of the gate have ears 8 extending therefrom to receive bolts 9 adapted to be extended through openings 10 formed within extension sections 11 and 12 telescoping into the tubular members 1 and 2 respectively. Cotter pins 9^a hold the bolts against displacement. The sections 11 and 12 are preferably X-shaped in cross section and are adapted to fit snugly within the members 1 and 2, the section 11 having a flat tongue 13 formed with a longitudinal slot 14 while the section 12 has a flat tongue 15 formed with a circular opening 16.

The ears 8 hereinbefore referred to are formed integral with the collars 3. Each of the collars 3 has a pair of ears 18 extending therefrom, the ears on the upper collars being directed toward the lower collars and vice versa, these ears on the upper and lower collars being pivotally connected to end members 19 preferably formed of flat strips of spring metal. The wires 20 which are strung upon the gate are secured at one end to the member 19 at the latch end of the gate while the other ends of the wires are attached to a rod 21 engaged by jaws 17 adjustably mounted on hooked bolts 22 the hooks of which engage the member 19 at the hinge end of the gate. It is thus pos-

sible to stretch the wires by adjusting the jaws 17 on the bolts 22 and thus drawing rod 21 toward the strip 19 at the hinge end of the gate so as to hold the wires taut. Ears 23 may be extended upwardly from the upper collars 3 so as to engage and support a top wire 24. Collars 25 may be secured upon the middle portions of the members 1 and 2 and connected by a rod 26 pivoted to them, said rod being preferably of flat spring metal. The upper collar 25 may have an ear 27 similar to the ears 23 for engaging the top wire 24. A pivot rod or pintle 28 extends through the opening 16 and the slot 14 and is mounted at its ends within eye bolts 29 secured to the hinge post A of the gate. The upper bolt 29 is adjustably mounted within the post so as to permit the rod or pintle 28 to be shifted to any desired angle relative to the post A. The lower eye bolt 29 is extended under and supports the tongue 15 while the upper eye bolt extends over the tongue 13 and thus limits the upward movement of the gate along the rod or pintle 28. An angular bracket 30 is supported by the upper eye bolt 29 and has an opening 31 through which rod 28 extends. A bell crank lever 32 is pivotally connected to that end of the bracket nearest the gate and is engaged by a yoke 32^a to which a chain 33^a is attached. A truss rod 33 has a hooked end adjustably engaging the chain and this rod extends diagonally along the side of the gate and downwardly to the lower portion of the latch end of the gate. The rod is here secured to a bracket 34 attached to the ears 18 of the adjacent collar 3, said bracket having a sleeve 35 through which the truss rod 33 is extended, there being an adjusting nut 36 or the like upon the end of the rod and which bears against the sleeve. By means of this nut the rod can be tightened within the sleeve and made taut.

A bracket 37 is mounted on the member 19 at the latch end of the gate and adjacent the upper end of said member, said bracket being held in position by tie bolts 38 which extend through a clamping plate 39 engaging the member 19. A latch 40 has a forked end embracing the member 19 and pivotally connected to the bracket 37, there being an arm 41 extending upwardly from the pivot end of the pin 40. A rod 42 is pivotally connected to and extends downwardly from the pin 40 and has a loop 43 slidably engaging a loop 44 formed at the upper end of a rod 45. This last mentioned rod is pivotally connected to a locking pin 46 having a slotted portion embracing the lower end portion of the member 19 and pivotally connected to the bracket 34, as indicated at 47. The brackets 34 and 37 are so shaped as to limit the downward swinging movement of the pins 40 and 46 and when these pins are in their normal positions, the upper end of the loop 44 engages the lower end of the loop 43. It will be apparent therefore that pin 46 can be swung upwardly independently of the pin 40 but said pin 40 cannot be elevated without causing corresponding movement of the lower pin 46. An operating wire or cord 48 may be connected to the arm 41 and extended to the hinge end of the gate, this wire or cord constituting means whereby the pin 40 can be swung upwardly and thus lift rod 42 and cause a corresponding movement of the pin 46.

The keepers used in connection with the latch pins are mounted on the latch post B of the gate and have been shown in detail in Figs. 6 and 7. One keeper is provided for each of the latch pins and each keeper consists of a bracket 49 formed of sheet metal or the like and secured to the post B in any manner desired. Oppositely disposed dogs 50 are pivotally connected to the side portions of the bracket 49 and to a face plate 51, these dogs being movable against stop devices adjacent their lower ends whereby the upper ends of the dogs are held against movement out of the path of the locking pins although said ends can be swung out of the path of the pins when the gate is being closed.

It will be apparent that when the wire or cord 48 is pulled longitudinally the latch pins will be simultaneously elevated out of engagement with the dogs of the keepers and the gate can then be swung open in either direction. As bracket 30 does not swing with the gate but remains fixed relative to post A, and as the connection between the bell crank lever 32 and the bracket is located at a point removed from the pintle or pivot rod 28, it will be obvious that as the gate swings to open position, the rod 33 will pull on the bracket 34 and thus cause the latch end of the gate to lift out of normal position. When the gate is released the weight of the gate at its latch end will pull on the rod 33 to such an extent to cause the gate to resume its normal position between the posts, the latch pins 40 and 46 moving over the nearest dogs 50 of the keepers and against the opposed dogs, thus causing the gate to be automatically secured in closed position. By adjusting the eye bolt 29 through post A the angle of the gate relative to the post can be varied at will. One or more guide plates 52 may be secured to the upper member 1 at the latch end thereof, these plates being adapted to ride against a guide roller 53 extending from the upper portion of the post B and which serves to support the gate while the pins 40 and 46 are in engagement with the keepers. It will be apparent that when the latch end of the gate is elevated during the movement of the gate to open position, the members 1 and 2 will swing relative to the

end members 19, this being permitted in view of the pivotal connection between said members.

By having the sections 11 and 12 telescoping into the sections 1 and 2, the gate can be elongated so as to properly fit between the posts A and B.

As the latch end of the gate is supported directly from the eye bolt 29 by rod 33 and the parts connected thereto, it will be apparent that the upper end of the gate can be lengthened or shortened by adjusting the section 11 relative to the top member 1 without causing the latch end of the gate to move toward or away from the ground. As the bolts 9 are held in place by cotter pins 9^a, it will be seen that this adjustment can be effected without the use of any tools. The guide plates 52 and the roller 53 not only cooperate to relieve the post A of the weight of the gate when said gate is closed, but they also prevent the latch end of the gate from being lifted by stock and thus released.

What is claimed is:—

1. A gate including rigid upper and lower members, and end members of flexible material connecting the upper and lower members.

2. A gate including upper and lower non-flexible members, and resilient end members constituting connections between the upper and lower members and pivotally connected to them.

3. A gate including upper and lower tubular members, flexible connections therebetween, extension sections telescoping into the upper and lower sections and separate from and projecting beyond the connections, and means for locking said extension sections against movement relative to the upper and lower sections.

4. A gate including upper and lower tubular members, flexible connections therebetween, extension sections telescoping into the upper and lower sections and separate from and projecting beyond the connections, and means for locking said extension sections against movement relative to the upper and lower sections, and a hinge member carried by each projecting portion of said extension sections.

5. A gate including upper and lower tubular members, collars embracing the end portions thereof, end members pivotally connected to the collars and constituting connections between the upper and lower members, and wedging keys interposed between the collars and the upper and lower members and constituting means for binding said collars upon the upper and lower members.

6. A gate including upper and lower members, collars upon the end portions thereof and having spaced ears, end members pivotally connected to the ears of the collars and constituting connections between the upper and lower members, and a wedge shaped key insertible into each collar and having a toothed concaved face for engaging the member within the collar.

7. A gate including upper and lower members, flexible connections therebetween, extension sections telescoping into the upper and lower members and separate from and projecting beyond the connections, each of said projecting portions of the sections having an integral hinge member, one of said members being slotted, hinge members for engaging a gate post, and a pivot rod carried by the last mentioned hinge members and extending through the hinge members on the extension sections, the slotted section being slidably and pivotally mounted on the rod.

8. A gate including upper and lower members, connections therebetween, extension sections telescoping into the upper and lower members and each of said sections having an integral hinge member, one of said members being slotted, hinge members for engaging a gate post, a pivot rod carried by the last mentioned hinge members and extending through the hinge members on the extension sections, the slotted section being slidably and pivotally mounted on the rod, a bracket engaging the pivot rod and one of the hinge members on the post, and means connecting said bracket and the gate for automatically elevating the latch end of the gate when said gate is swung to open position in either direction.

9. The combination with a gate including pivotally connected top, bottom and end members, hinge members, a pivot rod carried thereby, and hinge members connected to the gate and mounted on said rod, one of said members being adapted to slide as well as swing on the rod, of a bracket extending beyond the pivot rod, and an adjustable and pivotal connection between said bracket and the lower corner of the latch end of the gate, said connection and bracket constituting means for elevating the latch end of the gate when said gate is swung in either direction to open the gate.

10. A gate including pivotally connected top, bottom and end members, fixed hinge members, a pivot rod carried by said hinge members, hinge members movable with the gate and pivotally engaging the rod, one of said movable hinge members being slidably mounted on the rod, a bracket carried by one of the fixed hinge members and held against movement by the pivot rod, a lever fulcrumed upon the bracket, and a truss rod connection between the ends of said lever and the latch end of the gate.

11. The combination with a gate including top, bottom and end members hingedly connected, of fixed hinge members, a pivot rod carried thereby, movable hinge members

engaging the rod, one of said movable members being shiftable longitudinally upon the rod, a centrally fulcrumed lever, means for supporting said lever at a point removed from the pivot rod, a truss rod connecting the ends of said lever to the latch end of the gate, and adjusting devices engaging said rod.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWARD E. HANKEN.

Witnesses:
F. H. MILLER,
W. B. LESLIE.