

No. 764,385.

PATENTED JULY 5, 1904.

F. L. SMITH.
GATE HINGE.

APPLICATION FILED MAY 19, 1903.

NO MODEL.

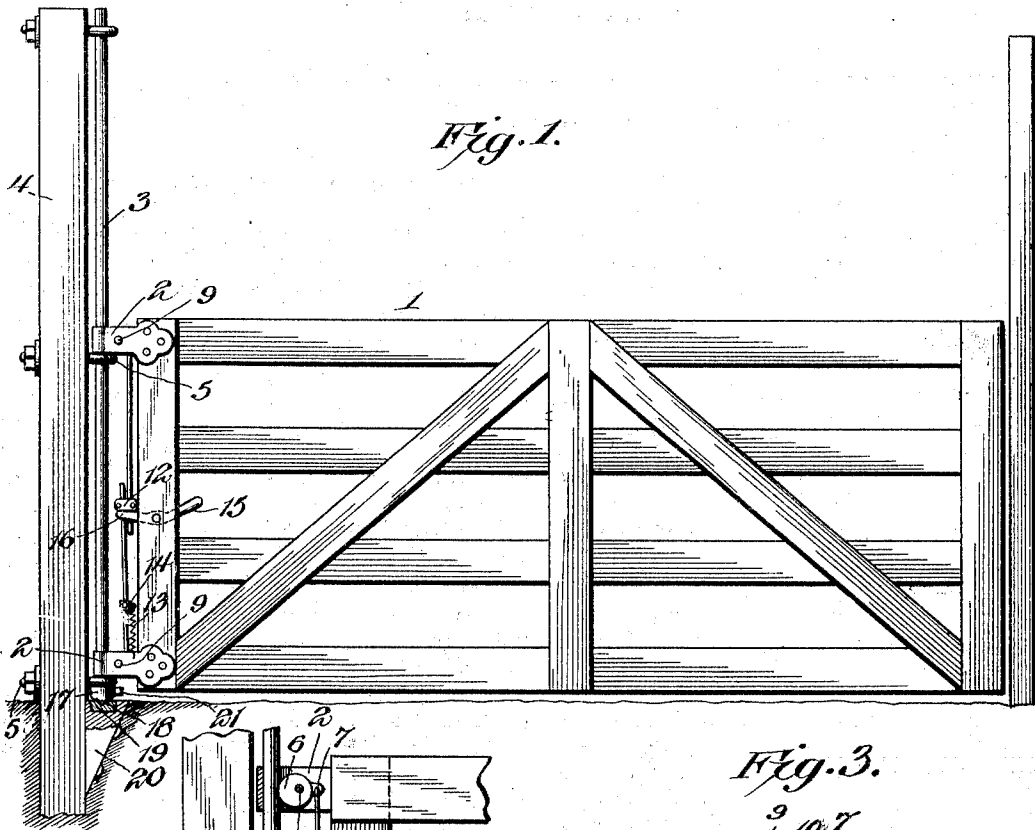


Fig. 2.

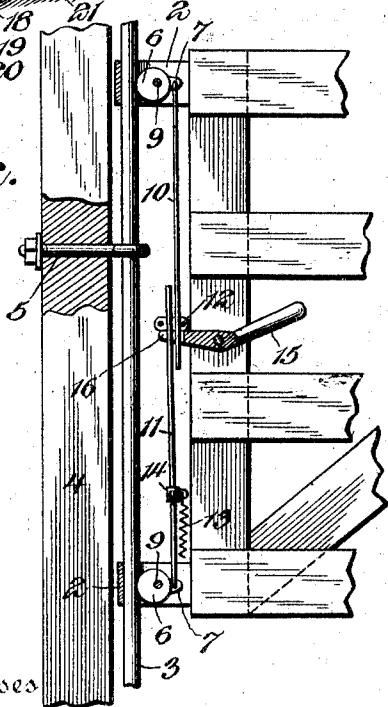


Fig. 3.

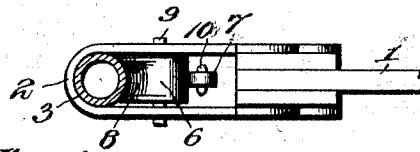
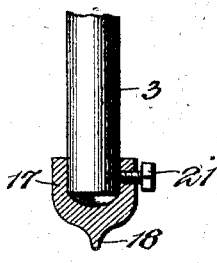
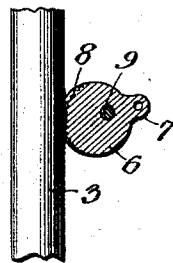


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

FREDIE L. SMITH, OF GRADAN, KANSAS.

GATE-HINGE.

SPECIFICATION forming part of Letters Patent No. 764,385, dated July 5, 1904.

Application filed May 19, 1903. Serial No. 157,875. (No model.)

To all whom it may concern:

Be it known that I, FREDIE L. SMITH, a citizen of the United States, residing at Gradan, in the county of Graham and State of Kansas, have invented a new and useful Gate-Hinge, of which the following is a specification.

The invention relates to improvements in gate-hinges.

The object of the present invention is to improve the construction of gate-hinges and to provide a simple, inexpensive, and efficient one of great strength and durability, designed particularly for use on farm-gates and adapted to be readily arranged at different elevations and capable of swinging in such positions whereby a gate may be raised in winter to clear snow and other obstructions.

A further object of the invention is to provide a gate-hinge of this character, which will enable a gate to be quickly adjusted vertically to provide a passage-way for small animals, for separating stock, and for other purposes.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of a gate provided with a hinge constructed in accordance with this invention. Fig. 2 is an enlarged elevation, partly in section, of the hinge. Fig. 3 is a horizontal sectional view on the line 3 3 of Fig. 2. Fig. 4 is a detail sectional view illustrating the construction of the clutches. Fig. 5 is a detail view of the lower end of the pintle-rod.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a gate provided at its upper and lower portions with eyes or loops 2, constructed of strap metal doubled or bent into approximately U shape, as clearly illustrated

in Fig. 3 of the accompanying drawings, and the sides of the eyes or loops may be of ornamental configuration, as indicated in Fig. 1 of the drawings, if desired. The loops or eyes receive a vertical pintle-rod 3, preferably consisting of a metal tube and secured to a post 4 by eyebolts 5, arranged near the center of the post and at the top thereof and at a point adjacent to the surface of the ground. The pintle-rod is preferably of a length equal to twice the height of the gate; but it may be of any desired length to secure the necessary adjustment of the gate.

The gate is held in its adjusted position by a pair of clutches consisting of cams 6, mounted between the sides of the eyes or loops, as clearly shown in Figs. 2 and 3 of the drawings. Each cam consists of an eccentrically-pivoted disk and is provided with a perforated lug or ear 7, arranged between the body portion of the cam and the adjacent end bar of the gate. The opposite edge or face of the cam is concave to conform to the configuration of the pintle-rod and is provided with corrugations 8, whereby the gate is securely held at the desired adjustment. The pivot 9 of the cam passes through perforations of the sides of the loop or eye and may be of any desired construction.

The cams or clutches are caused to operate in unison by an adjustable connection consisting of upper and lower rods 10 and 11, connected at their outer ends to the perforated lugs or ears 7 and adjustably connected at their inner ends by a clamp 12. The inner ends of the rods 10 and 11 are overlapped, as shown in Fig. 2, and the clamp 12 preferably consists of a pair of plates and suitable fastening devices, such as bolts or screws, for holding the plates firmly in engagement with the rods.

When it is desired to adjust the gate, the lugs or ears 7 are swung upward to carry the cams out of engagement with the pintle-rods, and the gate is then free to move upward and downward. As soon as the gate is adjusted the clamps or clutches are released and permitted to reengage the pintle-rods. The weight of the adjustable connection between the cams or clutches is sufficient to carry the

latter into engagement with the pintle-rod; but in order to render such operation positive a coiled spring 13 may be employed. The coiled spring 13 is preferably arranged adjacent to the lower loop or eye, and its upper end is connected with the lower rod 11, and its lower end is secured to the lower eye or loop. The upper end of the coiled spring may be secured to the rod 11 in any desired manner, an adjustable collar 14 being preferably employed. The collar 14 is preferably provided with a set-screw for engaging the rod 11, and it has a perforated ear, into which the upper end of the spring is linked. The lower end of the spring is linked into a perforation of one of the sides of the lower loop or eyes.

The cams or clutches for engaging the pintle-rod are preferably operated by means of a lever 15, fulcrumed between its ends between the inner end bars of the gate, as illustrated in Fig. 2 of the drawings, and provided at one arm with a handle and having its other arm bifurcated at 16 to receive the overlapped ends of the rods. The bifurcated end of the lever is located beneath the clamp for connecting the adjacent ends of the upper and lower rods 10 and 11. The handle-arm is adapted to be swung downward to rotate the cams or clutches for carrying the same out of engagement with the pintle-rod, and as soon as the lever is released the spring will throw the cams or clutches into engagement with the pintle-rod.

The pintle-rod is provided at its lower end with a cap 17, having a depending tapered portion forming a pivot or journal and fitting in a bearing-recess 18 of a metal plate 19. The metal plate 19 is arranged within a recess of a block or bracket 20, which is secured to the fence-post, as shown; but any other suitable means may be employed for supporting the lower end of the pintle-rod, which is adapted to turn freely in the bearings formed by the eyebolts when the gate swings. The cap, which forms a socket for the lower end of the pintle-rod, is provided with a clamping-screw 21 for engaging the pintle-rod, as clearly shown in Fig. 5 of the drawings.

The upper and lower rods or sections of the adjustable connection between the pivotally-mounted clutches are adapted to permit the gate-hinge to be applied to gates of different heights.

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

1. A device of the class described comprising

a support provided with bearings, a pintle-rod arranged in the bearings, means for hinging a gate to the pintle-rod, said means being adapted to permit the gate to be adjusted vertically, and a clutch movable independently of the said means engaging the pintle-rod for holding a gate at the desired adjustment, substantially as described.

2. A device of the class described comprising a pintle-rod, eyes receiving the pintle-rod, clutches carried by the eyes and consisting of pivoted cams, and means for operating the clutches, substantially as described.

3. A device of the class described comprising a pintle-rod, eyes receiving the pintle-rod, clutches engaging the latter, and means for operating the clutches, substantially as described.

4. A device of the class described comprising a pintle-rod, eyes, pivoted clutches carried by the eyes, an adjustable connection between the clutches, and an operating device for actuating the said connection, substantially as described.

5. A device of the class described comprising a pintle-rod, eyes receiving the pintle-rod, pivoted clutches carried by the eyes, rods connected with the clutches and having overlapped ends, a clamp connecting the overlapped ends, and an operating-lever engaging the clamp, substantially as described.

6. A device of the class described comprising a pintle-rod, eyes receiving the pintle-rod, pivoted clutches carried by the eyes, an adjustable connection between the clutches, and a spring for actuating the clutches, substantially as described.

7. A device of the class described comprising a pintle-rod, eyes receiving the pintle-rod, a support having a bearing, and a cap secured to the lower end of the pintle-rod and provided with a depending pivot portion arranged in the said bearing, substantially as described.

8. A device of the class described comprising a post, a bracket secured to the post and provided with a recess, a bearing-plate fitted in the recess, a pintle-rod, and a cap secured to the lower end of the pintle-rod and having a depending pivot fitted in the said bearing, substantially as described.

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

FRED. L. SMITH.

Witnesses:

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M. E. MOWRY.