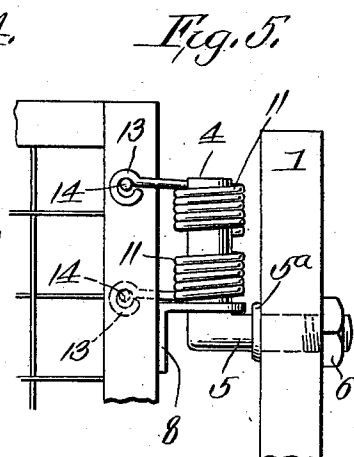
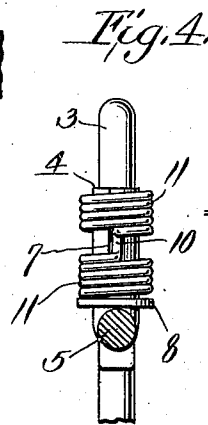
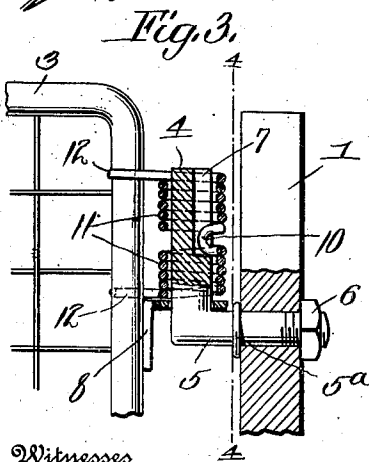
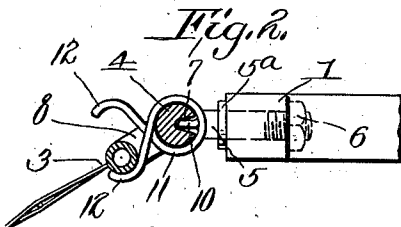
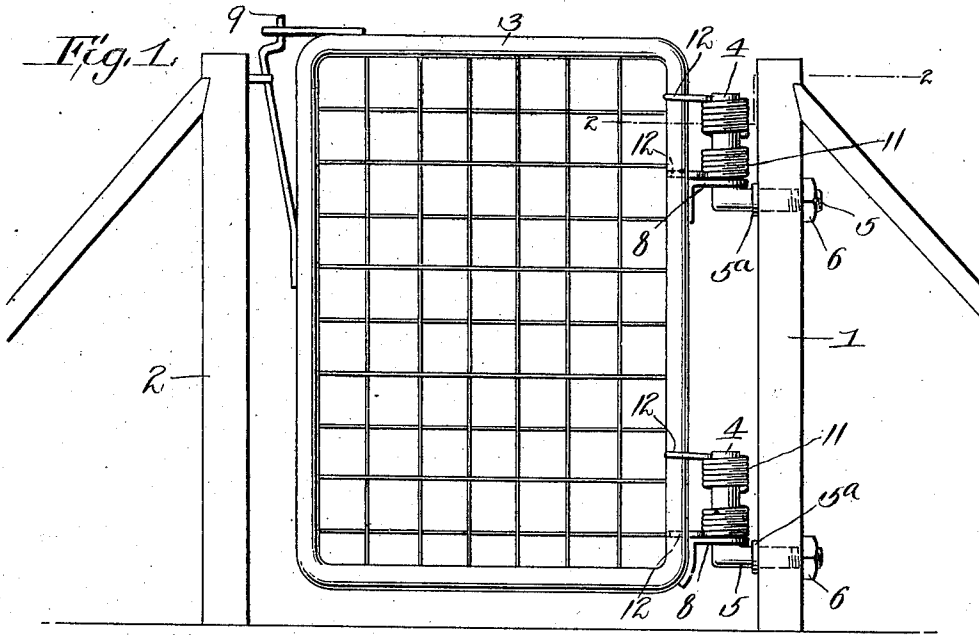


W. C. NOLTE.
GATE HINGE.
APPLICATION FILED MAY 28, 1910.

996,118.

Patented June 27, 1911.



Witnesses

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GATE-HINGE.

996,118.

Specification of Letters Patent. Patented June 27, 1911.

Application filed May 28, 1910. Serial No. 563,885.

To all whom it may concern:

Be it known that I, WILLIS C. NOLTE, a citizen of the United States, residing at DazeY, in the county of Barnes and State of North Dakota, have invented certain new and useful Improvements in Gate-Hinges, of which the following is a specification.

The present invention contemplates certain new and useful improvements in spring hinges of that type which are commonly employed in connection with gates, doors, and other swinging closures, and one of the objects of the invention is the provision of a spring hinge which is simple and inexpensive in its construction, which will operate in an effective manner to hold the gate yieldingly in a closed position, and which embodies few and durable parts such as are not liable to get out of repair.

The invention still further contemplates a spring hinge embodying novel features of construction whereby a continuous coil spring is utilized in such a manner that opposite end portions thereof are flexed independently of each other when the gate is swung in opposite directions.

With these and other objects in view, the invention consists in certain combinations and arrangements of the parts such as will more fully appear as the description appears, the novel features thereof being pointed out in the appended claims.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a side elevation of a gate having the improved spring hinge applied thereto. Fig. 2 is a horizontal sectional view on the line 2—2 of Fig. 1. Fig. 3 is an enlarged side elevation of one of the hinges, portions being broken away and shown in section. Fig. 4 is a vertical sectional view on the line 4—4 of Fig. 3, and Fig. 5 is a side elevation of a slightly modified form of the hinge.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

Referring to the drawing, the numeral 1 designates a gate post, 2 a latch post, and 3 a gate of any suitable construction which is mounted between the gate post and latch post so as to swing in either direction. A pair of pintles 4 are carried by the gate

post 1, the said pintles preferably being circular in cross section and being provided at their lower ends with the laterally extending arms 5 which are secured to the gate post in some suitable manner. In the present instance, these laterally extending arms 5 pass through the gate post and are formed with shoulders 5^a which engage one side of the gate post, the extremities of the arms being threaded to receive nuts 6 which engage the opposite side of the gate post and cooperate with the shoulders 5^a to hold the pintles 4 rigidly in position. The upper end of each of the pintles 4 is formed with a longitudinally disposed groove 7, while the lower end of each of the pintles loosely receives an arm 8 projecting from the gate 3. These arms 8 may be secured to the gate in any suitable manner or formed integral therewith, and turn freely upon the pintles 4 so that the gate may be opened in either direction about the pintles as an axis.

The swinging end of the gate may be provided with a spring latch 9 of any conventional construction for holding the gate in a closed position.

The grooves 7 extend from the top of the pintles 4 to an intermediate point in the length of the latter and receive crimped portions 10 of coil springs 11 which are fitted over the pintles. Each of these springs 11 is coiled continuously in the same direction from one end thereof to the opposite end, an intermediate portion of the spring being provided with a crimped portion 10 which projects inwardly and fits within the groove 7. The lower end of this groove 7 is designed to engage the crimped portion 10 so as to support the spring and prevent the same from having any binding action upon the pivoted arm 8 and interfering with the swinging of the gate. The two extremities of each of the coil springs 11 are extended laterally at 12 and bear loosely against opposite sides of the gate 3. When the gate is swung in one direction, as indicated in Fig. 2, the gate engages one of the arms 12 and flexes one end of the coil spring, the opposite end of the coil spring remaining unflexed, while when the gate is swung in the opposite direction, the other end of the coil spring is flexed and the first mentioned end thereof remains unflexed. The two end portions of each of the coil springs 11 are thus flexed independently of each other when the gate is swung in opposite

directions, and the flexing of either end of the coil spring is not sufficient to injure the same or have a tendency to reduce the resiliency thereof. As indicated in Fig. 2, the 5 extremities of the arms 12 are curved so as to engage the frame of the gate which is shown as formed of tubular material. Should the frame of the gate be formed of wood, as indicated in Fig. 5, the extremities 10 of the ends 12 of the springs 11 would be provided with the eyes 13 which would loosely receive pins 14 upon the gate. These pins 14 would prevent the arms 12 from being drawn out of engagement with the 15 gate when the spring was flexed, but would readily slip through the eyes 13 when the gate was swung in the opposite direction.

It will thus be obvious that I have provided a spring hinge embodying a single 20 coil spring which is constructed and mounted in such a manner that the two end portions thereof are flexed independently of each other when the gate is swung in opposite directions, the two end portions of the 25 spring cooperating with each other to hold the gate yieldingly in a closed position.

Attention may be directed to the fact that the coil springs 11 fit loosely over the pintles 4 so that they may be easily and 30 quickly removed and replaced by other springs at any time, should such become necessary. It will also be obvious that, if desired, the coil springs 11 may be removed and the hinges used temporarily without 35 the same, the said hinges then acting the same as the ordinary bolt and eye hinge. It will thus be obvious that the hinges could be used even though the springs should be 40 applied to the pintles without the use of special tools and without the necessity of utilizing the services of a mechanic. The spring and a grooved supporting iron which carries the spring (same as pintle) may be 45 used alone in connection with gates and hinges now in use. Thus by simply adding the spring and grooved supporting iron the old gate and hinge will have the same effect as a complete spring hinge. The spring 50 supporting iron being grooved and bent at right angles and fastened to post as bolt or wood screw, but does not carry the weight of the gate.

Having thus described the invention, what 55 I claim as new and desire to secure by Letters Patent, is:

1. In a hinge, the combination of a pintle formed with a longitudinally disposed groove extending from one end thereof, a

60 swinging member hinged upon the pintle, and a coil spring adapted to be slipped removably over the end of the pintle, the said coil spring engaging the swinging member and being formed with an inwardly projecting portion received within the groove 65 of the pintle to hold the spring against bodily rotation thereon.

2. In a hinge, the combination of an upright pintle formed with a longitudinally 70 disposed groove extending from the upper end thereof and terminating at an intermediate point in the length of the same, a swinging member hinged upon the pintle, and a coil spring slipped over the upper end 75 of the pintle and engaging the swinging member, the said coil spring being formed with a crimped portion which is received within the groove of the pintle and rests upon the lower end of the groove so as to 80 both hold the spring against bodily rotation and form a support for the same.

3. In a hinge, the combination of a pintle formed with a groove, a swinging member hinged upon the pintle, a coil spring 85 fitted upon the pintle and having an intermediate portion thereof crimped for engagement with the before mentioned groove, the said spring being coiled continuously in the same direction between the two ends 90 thereof and the extremities of the spring being extended laterally and bearing loosely against opposite sides of the swinging member so that the ends of the coil spring on 95 opposite sides of the crimped portion thereof are flexed independently of each other when the swinging member is swung in opposite directions.

4. The combination of a pintle, a support for the pintle, a swinging member 100 hinged upon the pintle, a coil spring fitted upon the pintle and having an intermediate portion thereof in a positive engagement with the pintle, the extremities of the coil spring being extended laterally and terminating in eyes which bear loosely against 105 opposite sides of the swinging member, and pins projecting from the swinging member and loosely received between the said eyes, the end portions of the spring being flexed independently of each other when the swinging 110 member is swung in opposite directions.

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

WILLIS C. NOLTE.

Witnesses:

OSCAR HANSON,
E. E. SMEDSHAMMER.