

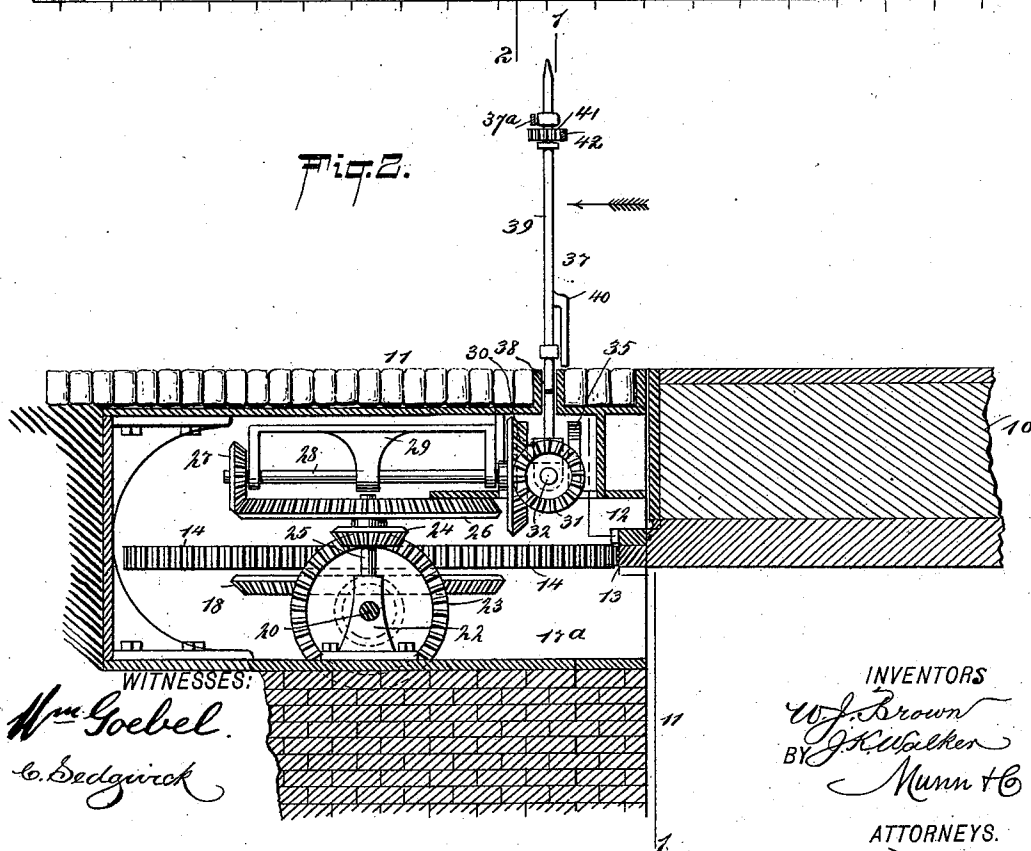
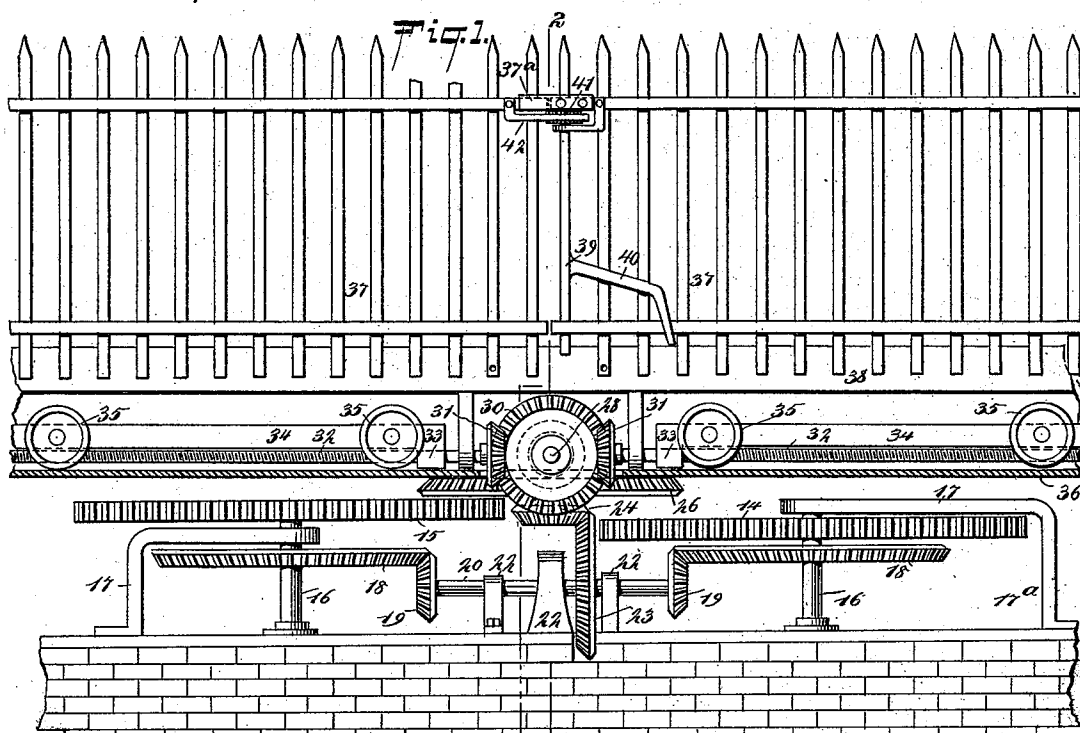
(No Model.)

2 Sheets—Sheet 1.

W. J. BROWN & J. K. WALKER.
BRIDGE GATE.

No. 506,099.

Patented Oct. 3, 1893.



WITNESSES:

Wm. Goebel.
C. Sedgwick

INVENTORS
W. J. Brown
J. K. Walker
BY *Munn & Co.*
ATTORNEYS.

(No Model.)

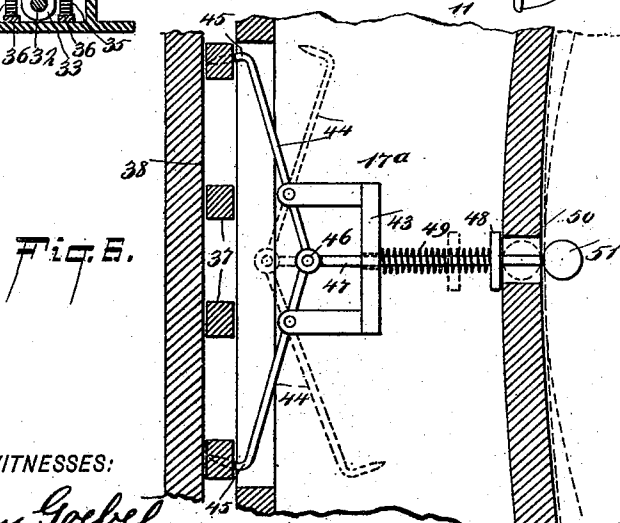
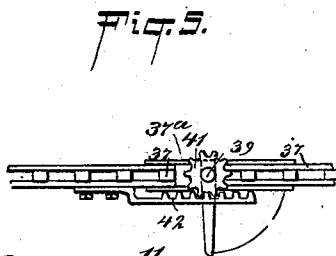
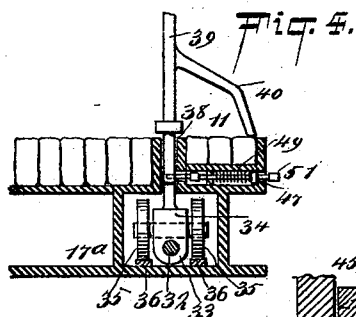
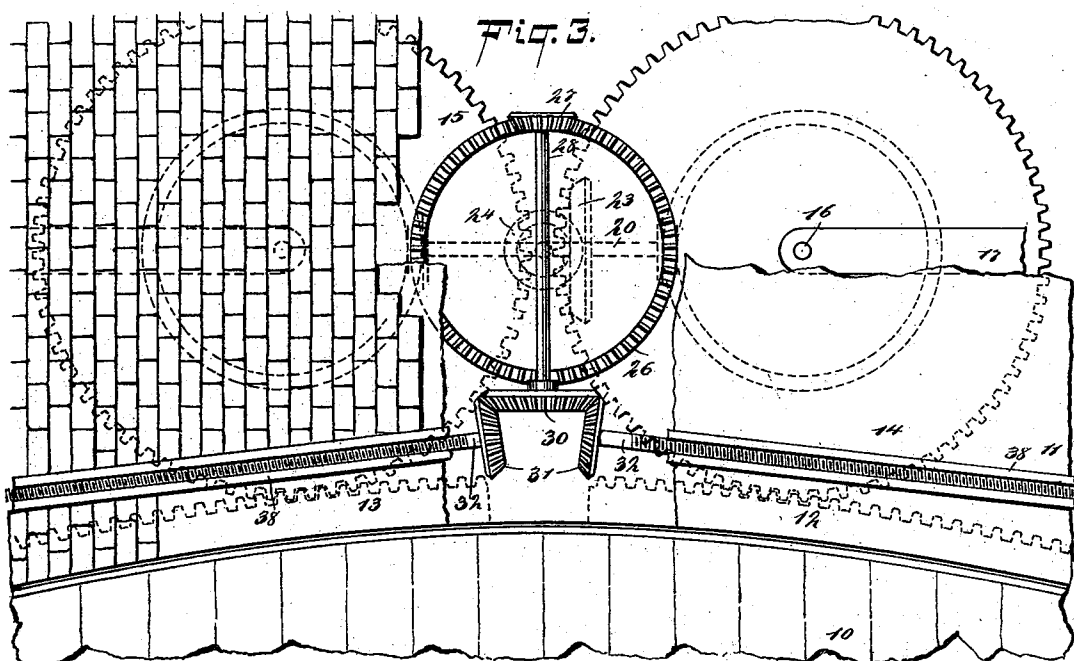
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W. J. BROWN & J. K. WALKER.

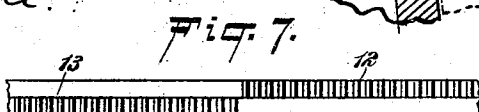
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UNITED STATES PATENT OFFICE.

WILLIAM J. BROWN AND JOHN K. WALKER, OF COAL CITY, ILLINOIS.

BRIDGE-GATE.

SPECIFICATION forming part of Letters Patent No. 506,099, dated October 3, 1893.

Application filed April 21, 1893. Serial No. 471,291. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM J. BROWN and JOHN K. WALKER, of Coal City, in the county of Grundy and State of Illinois, have invented a new and Improved Bridge-Fence, of which the following is a full, clear, and exact description.

Our invention relates to improvements in bridge fences or gates which are adapted to close the approaches to drawbridges, and the object of our invention is to produce a substantial fence, or gates which are automatically operated by the movement of any ordinary swing drawbridge, which act to close the approach to the bridge whenever the bridge is opened, which open automatically when the bridge is closed, which are secured together and braced in such a way as to prevent any person from passing through them, and also to produce a very simple, durable, and positively-working apparatus to operate the fence or gates by the movement of the bridge.

To these ends, our invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a sectional elevation on the line 1—1 in Fig. 2, showing in detail the closed gates or fence and the mechanism for operating them. Fig. 2 is a cross section on the line 2—2 in Fig. 1. Fig. 3 is a broken sectional plan of the gate or fence operating mechanism and the connections between said mechanism and the bridge. Fig. 4 is a detail cross section of the gate or fence carriage and the brace for the fence. Fig. 5 is a sectional plan of the abutting ends of the gates or fence sections and the mechanism for operating the brace. Fig. 6 is an enlarged detail sectional plan of the lock for the fence or gates; and Fig. 7 is a detail face view of the bridge racks.

The bridge 10, is an ordinary swinging drawbridge, which may be turned by any ordinary swinging mechanism. It swings opposite the customary approach or abutment 11, and on its ends and in different horizontal planes are the racks 12 and 13, which are

adapted to engage the large gear wheels 14 and 15 which are journaled on shafts 16 held in brackets 17 in a suitable casing 17^a of the abutment. The double arrangement of gears and racks is to enable the bridge to operate the gears and the gate or fence mechanism connected therewith when the bridge swings in either direction and each rack extends only across one-half the bridge end as shown in Fig. 7. The shafts 16 are provided with beveled gear wheels 18, which mesh with pinions 19 on a horizontal shaft 20, which is journaled in suitable supports 22 in the casing 17^a, and which carries a vertical beveled gear wheel 23, meshing with a horizontally-turning gear wheel 24, carried on a vertical shaft 25, which is journaled in suitable supports and carries at its upper end a relatively large and horizontally turning gear wheel 26, meshing with a gear wheel 27 on a horizontal shaft 28, which shaft is held in suitable supports 29 and is parallel with the shaft 20, and at right angles to the travel of the bridge sections or gates.

The shaft 28 carries at one end a gear wheel 30, and this meshes with two oppositely arranged gear wheels 31, each of which turns a screw shaft 32, these shafts extending horizontally beneath the movable fence sections or gates and turning in suitable supports. The screw shafts have threaded on them the depending ends 33 of the fence or gate carriages 34, which carriages have trucks adapted to run on tracks 36 in the upper part of the casing 17^a, as best shown in Fig. 4, although the trucks may be omitted if desired.

The carriages are for the purpose of moving the fence sections or gates 37, which as shown in the drawings, are constructed like an ordinary picket fence, but which may be of any necessary or desired construction, and may, in fact, be made flexible so as to be rolled up instead of being moved bodily. The fence sections 37 move toward or away from each other, being held to slide in slots 38 in the upper portion of the casing 17^a and near the bridge 10, the sections being arranged so as to move across the street. The fence sections abut end to end and one has a socket 37^a to receive the other, see Fig. 5, and the connection between them is thus strengthened. The gates or fence sections are secured to the carriages 34 so that they will be

moved by them, and one of the gates or fence
 sections has at its inner end a revoluble shaft
 39, which is held in a vertical position, and
 which carries at its lower end a brace 40,
 5 adapted when the gates or fence sections are
 closed, to swing out at right angles to the
 same, as shown in Fig. 4, so as to make a
 strong brace for the central portion of the
 fence or gate. On this shaft 39 is a pinion
 10 41, which is adapted to engage a rack 42 se-
 cured to the opposite fence section or gate,
 and when the two sections or gates come to-
 gether, the rack striking the pinion turns the
 shaft and throws out the brace, while when
 15 the sections or gates are pulled apart, the re-
 verse action takes place and the brace is
 closed against its fence section.

In Fig. 6, we have shown in detail a lock-
 ing device which is adapted to firmly lock
 20 the fence sections or gates together when
 they are closed so as to prevent any possible
 separation, although other locking devices
 may be used without departing from the prin-
 ciple of the invention. As here shown, a
 25 bracket 43 is arranged near the central por-
 tion of the fence, that is, at a point between
 the two sections and illustrated in Fig. 4,
 and pivoted in opposite sides of this bracket
 are horizontally swinging latch levers 44,
 30 having bent outer ends 45 to enter holes in
 the pickets or slats of the gates or fence, but
 the levers may be made to engage the slats
 in any convenient way. At their inner ends
 these levers 44 are pivoted to a slide bolt 47,
 35 which extends outward through the bracket
 43, and which has a collar 48 behind which
 is a spiral spring 49, and the pressure of
 the spring is such as to throw the slide bolt
 normally outward, thus moving the inner
 40 ends of the latch levers toward the bridge
 and throwing the outer ends of the latch le-
 vers into engagement with the gate or fence
 sections. In the abutment or casing inclos-
 ing the slide bolt is a recess or slot 50, and
 45 on the end of the slide bolt is a circular
 abutment plate 51, or a roller, which is adapt-
 ed to move through the slot and to engage
 the adjacent end of the bridge. It will be
 seen then, that when the bridge is in align-
 50 ment with the street, so as to be open for
 traffic, it will rest against the abutment plate
 51, so as to move the slide bolt 47 and throw
 the latch levers 44 out of engagement with
 the gates and into the position shown by dot-
 55 ted lines in Fig. 6. As soon, however, as the
 bridge leaves the street, the spring 49 throws
 out the slide bolt and forces the latch levers
 into engagement with the fence sections or
 gates, thus locking them.

60 It will be seen from the foregoing descrip-
 tion that the bridge may be turned in either
 direction, and as it swings away from the
 street it will actuate the gear mechanism de-
 scribed so as to turn the shafts 32, and move
 65 the gates or fence sections together, and when
 it swings into alignment with the street from
 either side, it will actuate the said gear mech-

anism and screw shafts so as to open the gates
and fence sections.

It is obvious that the gearing for actuating 70
 the gates may be arranged in many different
 ways to produce the same result, without de-
 parting from the principle of our invention;
 and it is also evident that the construction
 of the gates or fence sections may be greatly 75
 changed without affecting the invention; we
 therefore, do not limit ourselves to the par-
 ticular mechanism shown and described.

Having thus described our invention, we
 claim as new and desire to secure by Letters 80
 Patent—

1. The combination with the gate having
 at its outer edge a swinging brace, of an op-
 erating mechanism for automatically swing-
 ing the brace into operative position to sup- 85
 port the gate when the latter is swung into
 its closed position.

2. The combination with the two gates, and
 mechanism for moving them toward and from
 each other, of a swinging brace mounted on 90
 one gate at its outer or free end and a rack
 and pinion mechanism carried by the abut-
 ting ends of the two gates for automatically
 swinging the brace into and out of operative
 position when the gates are moved toward 95
 and from each other, substantially as set
 forth.

3. The combination, with a swinging draw-
 bridge, of separable fence sections adapted
 to extend across the approach to the bridge, 100
 a gear mechanism for actuating the sections
 by the movement of the bridge, an outwardly-
 swinging brace carried by one of the fence
 sections, and a gear mechanism for actuating
 the brace by the movement of the fence sec- 105
 tions, substantially as specified.

4. The combination, with the separable
 fence sections, of a revoluble shaft journaled
 on one of the sections, a brace carried by the
 shaft and adapted to extend outward to the 110
 ground, a pinion carried by the shaft, and a
 rack carried by the other fence section to en-
 gage the pinion, substantially as specified.

5. The combination, with the swinging
 drawbridge, of the movable fence sections 115
 adapted to travel across the approach to the
 bridge, revoluble screw shafts arranged to
 turn beneath the fence sections, an operative
 connection between the screw shafts and the
 fence sections, whereby the turning of the 120
 shafts moves the sections, and a gear mech-
 anism actuated by the movement of the
 bridge and arranged to turn the screw shafts,
 substantially as specified.

6. The combination, with the swinging 125
 drawbridge, of revoluble screw shafts ar-
 ranged beneath the approach to the bridge, a
 gear mechanism for turning the screw shafts
 by the swinging of the bridge, carriages actu-
 ated by the screw shafts, and fence sections 130
 mounted on the carriages and held to slide
 across the bridge approach, substantially as
 specified.

7. The combination, with the swinging

drawbridge, and the separable fence sections held to move across the approach to the bridge, of the swinging latch levers adapted to engage the fence sections, a spring-pressed
5 slide bolt pivoted to the latch levers and adapted to normally throw them into engagement with the fence sections, and an abutment plate carried by the slide bolt and extending into the path of the bridge, substantially as specified.
10

8. The combination with the gates and mechanism for operating them from the

bridge, of latches engaging the gates when closed, a bridge actuated operating mechanism connecting the two latches for simultaneously releasing them and means for throwing
15 said latches into locking engagement with the gates, substantially as set forth.

WILLIAM J. BROWN.
JOHN K. WALKER.

Witnesses:

WILLIAM G. SUFFERN,
T. B. TROTTER.