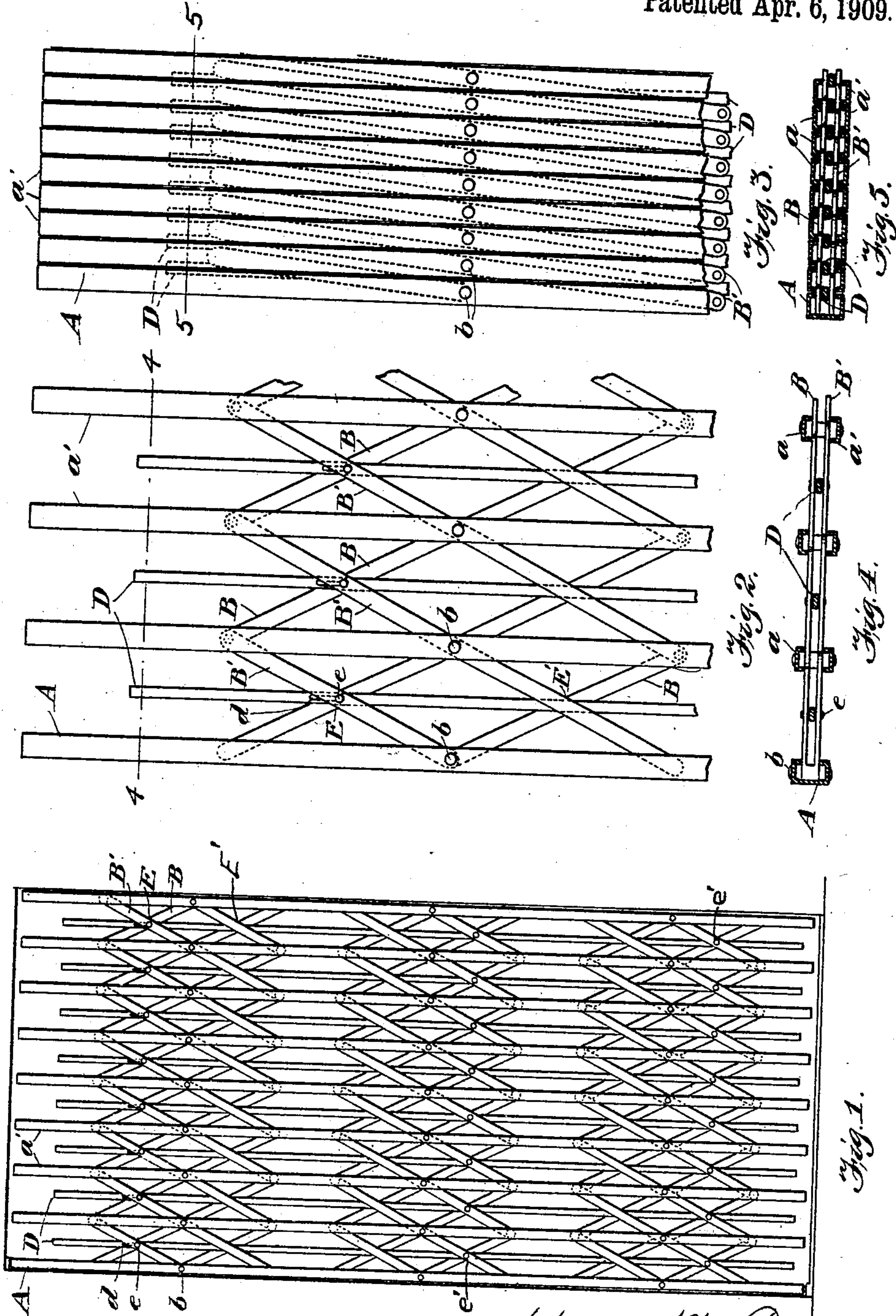


H. M. COOMES.
FOLDING GATE.
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917,713.

Patented Apr. 6, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

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FOLDING GATE.

No. 917,713.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed June 17, 1907. Serial No. 379,325.

To all whom it may concern:

Be it known that I, HENRY M. COOMES, of the town of Queens, county of Queens, and State of New York, have invented certain
5 new and useful Improvements in Folding Gates, of which the following is a specification.

This invention relates to folding gates and the like in which a series of uprights or vertical bars are pivotally connected together
10 by diagonally disposed connecting bars. By my invention I provide an additional or intermediate upright, which will more completely close the mesh of such gate without
15 substantially adding to the width of the same when collapsed, and I obtain such result with a minimum of added weight. With these ends in view, I will describe one form of gate embodying my invention and then
20 point out the novel features in claims.

In the accompanying drawings, Figure 1 is a side elevation of a gate containing my improvement, the same being in extended position; Fig. 2 is an enlarged view of a portion
25 of said gate in its extended position showing more clearly the location of the intermediate upright and its sliding connection with the diagonal connecting bars; Fig. 3 is an enlarged view of a portion of the gate
30 in its folded adjustment showing the position of the intermediate upright and of the diagonal connecting bars in dotted lines; Fig. 4 is a section on the line 4—4 of Fig. 2 and Fig. 5 is a section on the line 5—5 of
35 Fig. 3.

In the drawings, A designates the main uprights, which are preferably formed of two channel iron sections *a a'* arranged with their hollow faces toward each other and
40 rigidly held together in any suitable manner. Such sections are sufficiently separated from each other to receive between them the thickness of a pair of diagonally disposed connecting bars B B' and also the intermediate upright D. Several main uprights
45 may be united by one or more series of such diagonally disposed connecting bars, three of such series being shown in Fig. 1, but as the construction and operation of each
50 series are substantially the same, it will only be necessary to describe one such series, and for this purpose, I have selected the upper series of the gate. As shown in Figs. 1 and 2, the diagonally disposed connecting bars of
55 said series are preferably arranged in pairs

B B' and each pair is preferably pivoted to one main upright by means of a fixed pivot *b* and the ends thereof reciprocate up and down in channels in the inner faces of the sections of the adjacent main upright, 60 suitable means such as washers or spacing ferrules not shown being provided wherever necessary to compensate for the thickness of the opposite connecting bars and of the intermediate uprights hereinafter described. 65 Except at the side edges of the gate, the bars of each pair of such connecting bars are preferably pivoted at their centers, the ends extending on both sides of the main upright to which they are pivoted and 70 being connected to the ends of the bars of another pair, which ends move together up and down in the channeled faces of the adjacent main uprights on each side of said central main upright. The members of one 75 pair of such bars cross the members of the adjacent pair intermediate of the main upright to which they are pivoted and the adjacent main upright, and said bars so cross at two points E and E', one point 80 above and the other below the fixed pivot. It is obvious that said two points E and E' will move in opposite directions when the gate is operated to open or close a passageway. As best illustrated in Figs. 2 and 4, 85 intermediate uprights D, preferably single flat bars, are interposed between the members of such adjacent pairs of connecting bars at the points where the same cross each other, shown on Figs. 1 and 2 as E and E'. 90 Each intermediate upright may be pivotally connected to said diagonal connecting bars at one of said oppositely moving points of intersection in any series of such bars, and have a sliding connection at the other. As 95 best shown in Fig. 2, this sliding connection consists of an elongated slot, which slot receives the pivot *e* by which the said adjacent diagonal bars are pivoted together and loosely connects the said intermediate up- 100 rights therewith. Instead of pivoting said upright at E' to the bars of the same series, I preferably connect the same (Fig. 1) to the bars of the two lower series by means of the fixed pivot *e'*. When the gate is collapsed 105 or extended, it is obvious that the pivot *e*, will move up or down in said elongated slot. The manner of connecting said upright may be varied in many ways, for instance the sliding connection may be omitted alto- 110

gether and the intermediate upright interposed between and pivoted at two or more of said points of intersection moving in the same direction. It is obvious that, by reason
 5 of the peculiar position of this intermediate upright, the gate may be collapsed or folded into substantially as small compass as if no intermediate upright were present, the said intermediate upright, together with
 10 the diagonal connecting bars, being inclosed within the main uprights.

Having described my invention, I claim:

1. A folding gate, comprising a plurality of main uprights, diagonally disposed connecting bars pivoted to said main uprights so
 15 as to fold and unfold, and an intermediate upright interposed between and secured to said diagonal connecting bars, substantially as set forth.
2. A folding gate comprising a series of main uprights, a series of diagonally disposed connecting bars pivotally secured to said
 20 main uprights so as to fold and unfold, said diagonal bars crossing each other intermediate of said main uprights, and an intermediate
 25 upright interposed between said diagonal connecting bars and connected thereto at points where they cross each other, substantially as described.
3. A folding gate, comprising a series of
 30 main uprights formed of two sections, a series of diagonally disposed connecting bars pivoted between said sections and having

sliding connection with the adjacent main upright, said connecting bars crossing each
 35 other intermediate of said main uprights, and an intermediate upright interposed between said connecting bars and connected thereto at points where the said bars cross each other, substantially as set forth. 40

4. A folding gate, comprising a series of main uprights formed of two sections having channels in their inner faces, a plurality of series of diagonally disposed connecting bars, the bars of each series arranged in pairs, the
 45 members of each pair pivoted to one main upright and having sliding connection with a channel in the inner face of the adjacent main upright, and also crossing the members of an adjacent pair intermediate of said main
 50 uprights both above and below the pivoted point, and an intermediate upright interposed between and pivoted to the connecting bars of one series at a point of intersection which moves in one direction when the gate
 55 is folded, and having sliding connection with the bars of another series at a point of intersection moving in the opposite direction.

In witness whereof, I have signed my name to the foregoing specification in the presence
 60 of two subscribing witnesses.

HENRY M. COOMES.

Witnesses:

RAFFORD PITT,
 HELEN DELEHANTY.