

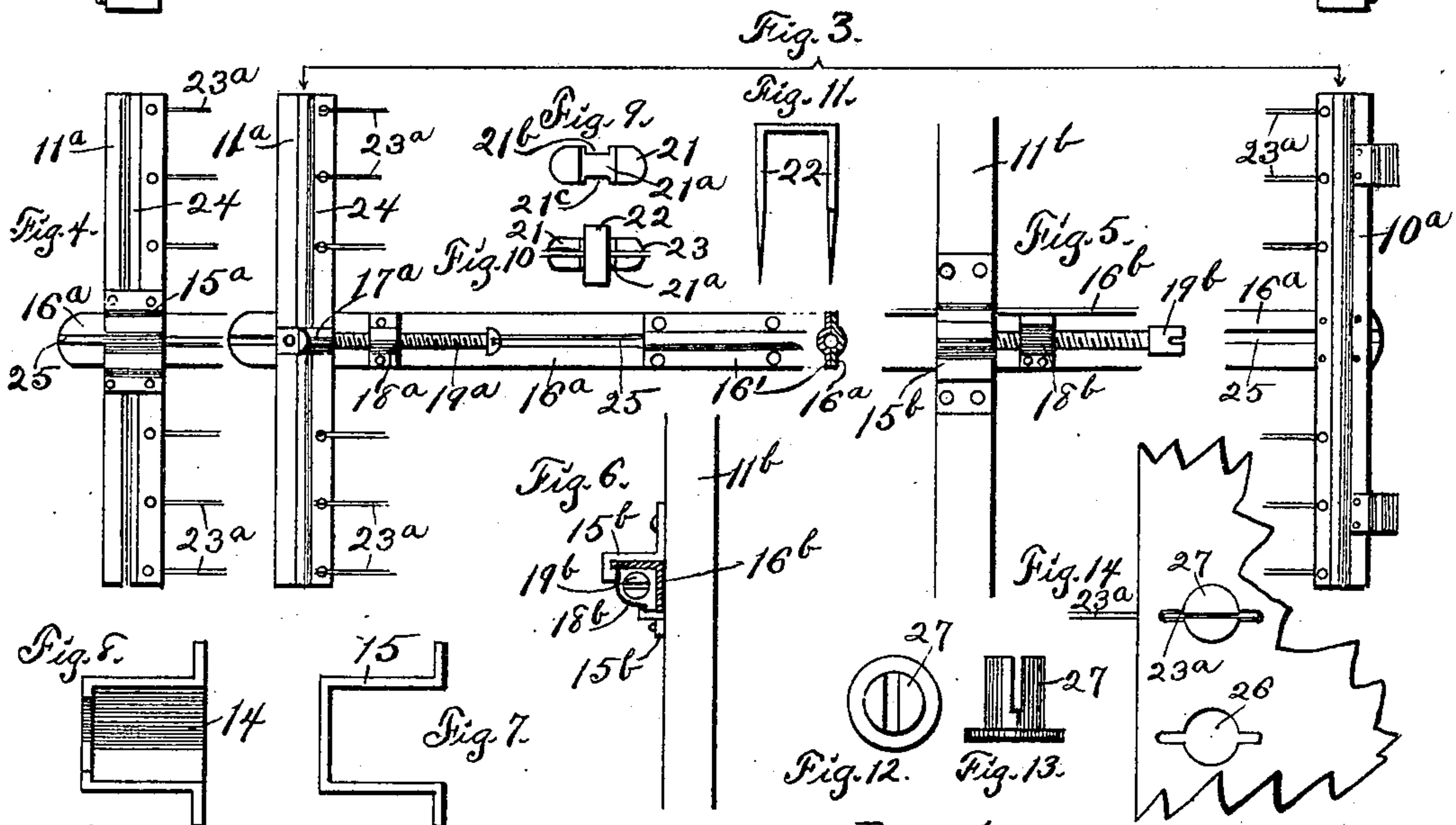
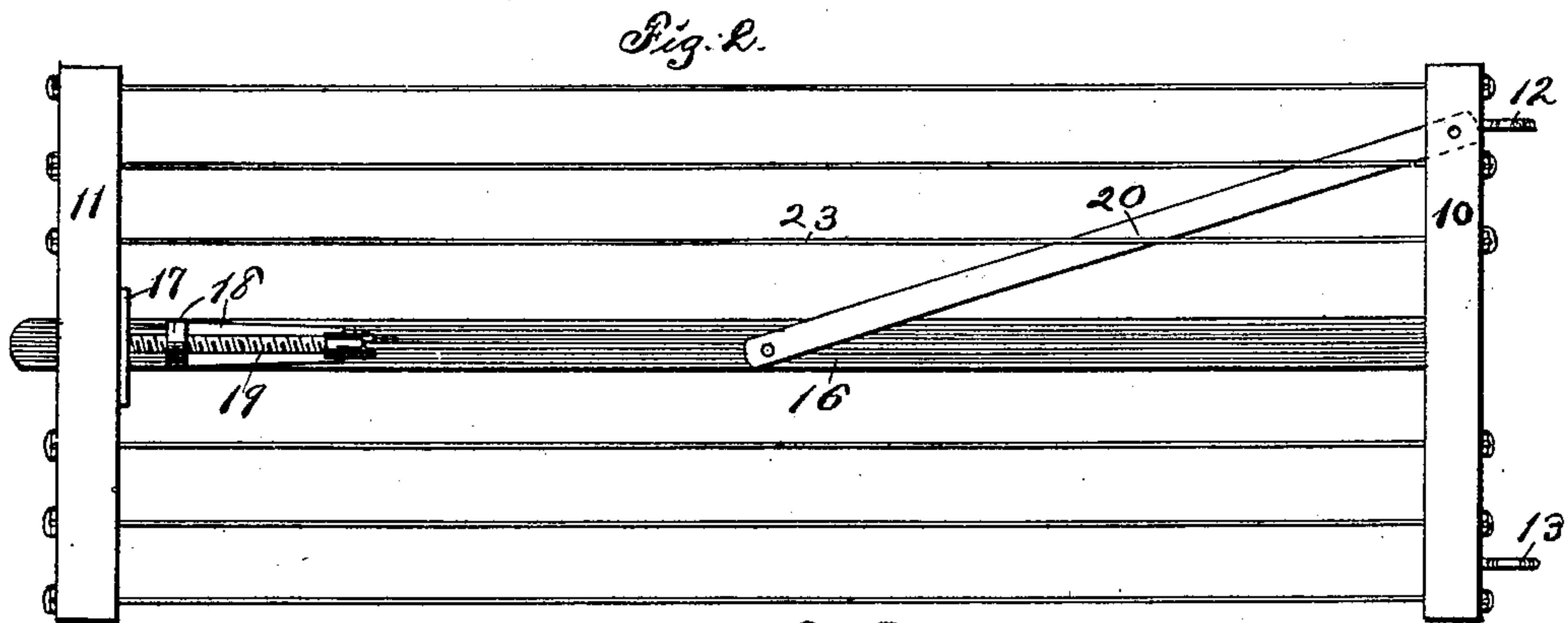
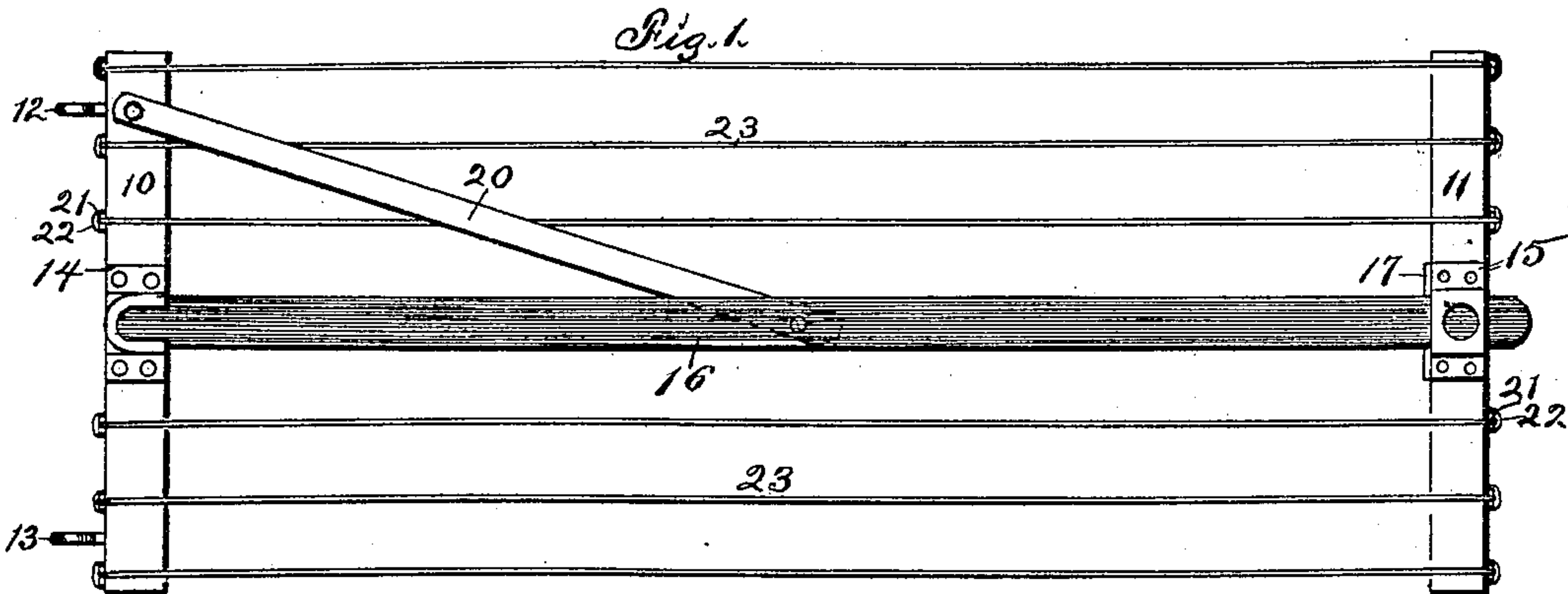
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Patented Sept. 10, 1901.

A. J. ARTHUR.  
FARM GATE.

(Application filed Dec. 26, 1899.)

(No Model.)



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## FARM-GATE.

SPECIFICATION forming part of Letters Patent No. 682,161, dated September 10, 1901.

Application filed December 26, 1899. Serial No. 741,630. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER J. ARTHUR, a citizen of the United States of America, and a resident of Fort Dodge, Webster county, Iowa, have invented certain new and useful Improvements in Farm-Gates, of which the following is a specification.

The object of this invention is to provide an improved construction for farm-gates in which will be combined elements of lightness, durability, strength, and adjustability.

A further object of this invention is to be found in the provision of improved means for expanding a gate longitudinally to compensate for the slackening of longitudinal wires of said gate.

My invention consists of a gate constructed with longitudinal wires and suitable means for holding said wires spaced apart, together with an expanding device whereby the gate may be expanded longitudinally to stretch or tighten the wires thereof and compensate for the slackening of said wires by use.

My invention consists, further, in the construction of a gate with two or more vertical pieces, horizontal strand-wires fixed to said vertical pieces, one or more horizontal bars connected to one or all of the vertical pieces, one or more expanding devices operating between the horizontal stay bar or bars and the vertical pieces, and means for hinging the gate for oscillation.

My invention consists, further, in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is an elevation of the preferred form of the gate. Fig. 2 is an elevation of the opposite side of the gate shown in Fig. 1. Fig. 3 is an elevation, partly broken away, illustrating a gate made of steel bars. Fig. 4 is an elevation of the opposite side of the left-end portion of the gate shown in Fig. 3. Figs. 5 and 6 are detailed views illustrating the expanding device attached to a gate made of angle-iron. Figs. 7 and 8 are detailed views of the clip and socket employed to attach the vertical pieces to the horizontal stay-bar of the gate shown in Figs. 1 and 2. Figs. 9, 10, and 11 are detailed views of the means employed to attach the ends of the wires to the

vertical pieces of the gate shown in Figs. 1 and 2. Figs. 12, 13, and 14 are detailed views illustrating the means employed to attach the horizontal wires in the vertical pieces of the gate shown in Figs. 3 and 4.

In the central portion of Fig. 3 I show a cross-section of the horizontal stay-bar of the gate, illustrating the means employed to stiffen said bar.

In the construction of the gate as shown in Figs. 1 and 2 the numerals 10 11 designate vertical pieces or ends of the gate, preferably made of wood and alike as to length and other dimensions. The vertical end piece 10 is provided with a pair of eyebolts 12 13 of common form, and said eyebolts may be carried by hooks mounted in a gate-post or may be replaced by any other desirable means of hinging. A socket 14, preferably of metal, is mounted on the central portion of one face of the end piece 10, and a clip 15, preferably made of metal, is mounted on the center portion of one face of the end piece 11. A horizontal stay-bar 16, preferably made of wood, is mounted with one end portion in the socket 14 and the opposite end portion within the clip 15, and said stay-bar crosses like faces of the end piece. A bearing-plate 17 is mounted on the inner edge of the end piece 11, and an angle-iron 18 is mounted on the adjacent face of the horizontal stay-bar 16 in an alinement with said bearing-plate. The angle-iron 18 is formed with a screw-threaded aperture in its projecting portion, and an expanding-screw 19 is seated therein, projects therethrough, and engages the central portion of the bearing-plate 17. The adjusting-screw 19 is provided with a groove to receive a screw-driver, or the head thereof may be squared for the reception of a wrench, whereby said screw may be rotated for movement within its seat. A brace 20 is placed obliquely and secured to the upper end portion of that face of the end piece 10 to which the socket 14 is attached and is fixed at its lower end to the center portion of the bar 16 and crosses that face of the bar adjacent to the end pieces. By means of the brace 20 the gate is secured against sagging at its free end portion. Blocks 21 are mounted loosely on and transversely of the outer edges of the end pieces 10 11, and each is shaped with a



notch 21<sup>a</sup> in its outer face and notches 21<sup>b</sup> 21<sup>c</sup> in its long edges and communicating with the notch 21<sup>a</sup>. Staples 22, preferably angular in cross-section, are driven through the notches 21<sup>b</sup> 21<sup>c</sup> of the blocks 21 into the outer edges of the end pieces of the gate, and the transverse or head portions of said staples cross the shank portions of said blocks. Horizontal strand-wires 23, one or more of which may be barbed, are mounted to the faces of the end pieces on which the socket 14 and clip 15 are mounted, parallel with the bar 16, and the end portions of said wires are extended around the adjacent corners of the end pieces and across and lengthwise of the blocks 21 within the transverse portions or heads of the staples 22. When the staples 22 are driven fully, the head portions thereof engage and flex the end portions of the wires 23 within the notches 21<sup>a</sup> of the blocks 21 and rigidly and securely retain said wires against longitudinal movement by the biting of the corners of the transverse portions of the staples. The adjusting-screw is screwed through its seat and caused to engage the end pieces 11 and move the same outwardly along the bar 16 to such an extent as is sufficient to tighten the wires 23. When by reason of the use of the gate or its exposure to the action of the elements the wires slacken, sag, bag, or belly, the adjusting-screw may be further borne upon the bearing-plate 17 to expand the gate through the movement of the end piece 11 outwardly along the bar 16 to an extent sufficient properly to tighten the wires. I make provision for a considerable expansion of the gate by providing that the bar 16 shall project beyond the end pieces 11 a material distance and in fitting to the gate a long adjusting-screw. The socket 14 may be omitted and a clip 15 substituted therefor and another adjusting or expanding device mounted on the bar 16, contiguous to and bearing upon the end piece 10, if so desired. The single horizontal stay-bar 16 may be replaced by two or more stay-bars, either one or all of which may be provided with expanding devices arranged to move one or the other of the vertical end pieces longitudinally of the gate. I have shown six wires on and longitudinally of the gate; but it is obvious that a greater or less number of wires may be employed to suit varying conditions of use, and said wires may be separated by equal or unequal distances, as required. In the event that the gate is used as a portion of a hog-tight fence it may be found desirable to employ more wires below the horizontal bar 16 than are employed above said bar, and under such conditions it may be found desirable, and it is in the province and scope of my invention, to place the horizontal stay-bar and its socket and clip or clips in a plane below the centers of the vertical end pieces 10 11 of the gate to equalize the strain of the wires. It will be noted that two of the wires 23 cross that face of the brace 20 adjacent to

the end piece 10 of the gate. Additional vertical pieces may be employed between the end pieces 10 11 for the purpose of stiffening the gate and sustaining the proper degree of separation of the wires.

In Figs. 3 and 4 of the drawings I show the end pieces 10<sup>a</sup> 11<sup>a</sup> of the gate made of bar-steel, with a bead 24 longitudinally of the centers thereof for the purpose of stiffening them against flexure. I also show the horizontal stay-bar 16<sup>a</sup> made of bar-steel, with a bead 25 longitudinally and centrally thereof, one end of said bar being riveted to the central portion of the end piece 10<sup>a</sup> and the other end of said bar running through a clip 15<sup>a</sup> on the central portion of the end piece 11<sup>a</sup>. I also show a bearing-block 17<sup>a</sup> fixed to the central portion of the end piece 11<sup>a</sup> and arranged for engagement by an expanding-screw 19<sup>a</sup>, mounted for travel in a screw-block 18<sup>a</sup>, fixed to the bar 16<sup>a</sup> adjacent to said end piece. When constructing in the manner shown in Figs. 3 and 4, I punch holes 26 in the end pieces 10<sup>a</sup> 11<sup>a</sup> and insert therethrough rivets 27, Figs. 12, 13, and 14, which rivets are formed with slots in their stems arranged to receive the end portions of the wires 23<sup>a</sup>, the wires traversing notches of the holes 26 and retained by compression of the rivet-stems thereon. To limit the flexure of the central portion of the horizontal stay-bar 16<sup>a</sup>, I mount thereon a stiffening-strip 16' and rivet to the said bar, the web or rib of the stiffening-piece being in opposition to the bead 25 of the bar.

In Figs. 5 and 6 I show an end piece 11<sup>b</sup>, made of angle-iron, and a horizontal stay-bar 16<sup>b</sup>, made of angle-iron and traversing a clip 15<sup>b</sup> on the end piece. The horizontal stay-bar carries a screw-block 18<sup>b</sup>, in which is mounted an expanding-screw 19<sup>b</sup>, and said screw bears at one end against clip 15<sup>b</sup>.

My invention encompasses the provision of end pieces with wires attached thereon and one or more stay-bars provided with expanding devices for separating the end pieces and tightening the wires, and it is immaterial in this respect whether wood, bar-steel, angle-steel, or other structural forms are employed to construct and produce the frame of the gate. Therefore I have illustrated the use of three structural forms of material out of which the gate-frame may be made for the purpose of showing that such may be used and are encompassed by the scope of my invention.

I claim as my invention—

1. A gate comprising vertical end pieces, horizontal wires stretched between said end pieces and mounted thereon, a horizontal stay-bar longer than said gate mounted in a socket fixed upon one of said end pieces, the other end passing through a clip fixed upon the other of said end pieces and provided with a device for expanding the gate, substantially as shown and described.

2. In a gate a horizontal stay-bar longer than said gate mounted in a socket fixed upon the



hinge-post thereof and passing through a clip fixed upon the latch-post of the gate, said stay-bar provided with a device for expanding the gate bearing against said latch-post, 5 and a brace-rod connecting the hinge-post and stay-bar, substantially as shown and described.

3. In a gate a horizontal stay-bar longer than said gate mounted in a socket fixed upon the 10 hinge-post thereof and passing through a clip fixed upon the latch-post of the gate, said stay-bar having suitably mounted thereon a screw bearing against said latch-post for expanding the gate, substantially as shown and 15 described.

4. In a gate a horizontal stay-bar longer than said gate mounted in a socket fixed upon the hinge-post thereof and passing through a clip fixed upon the latch-post of the gate, said stay-bar having suitably mounted thereon a 20 screw bearing against said latch-post for expanding the gate, and a brace-rod connecting the hinge-post and stay-bar, substantially as shown and described.

Signed by me at Fort Dodge, Iowa, this 25 16th day of November, 1899.

ALEXANDER J. ARTHUR.

Witnesses:

JAMES B. WILLIAMS,  
T. A. CUNNINGHAM.