

No. 626,598.

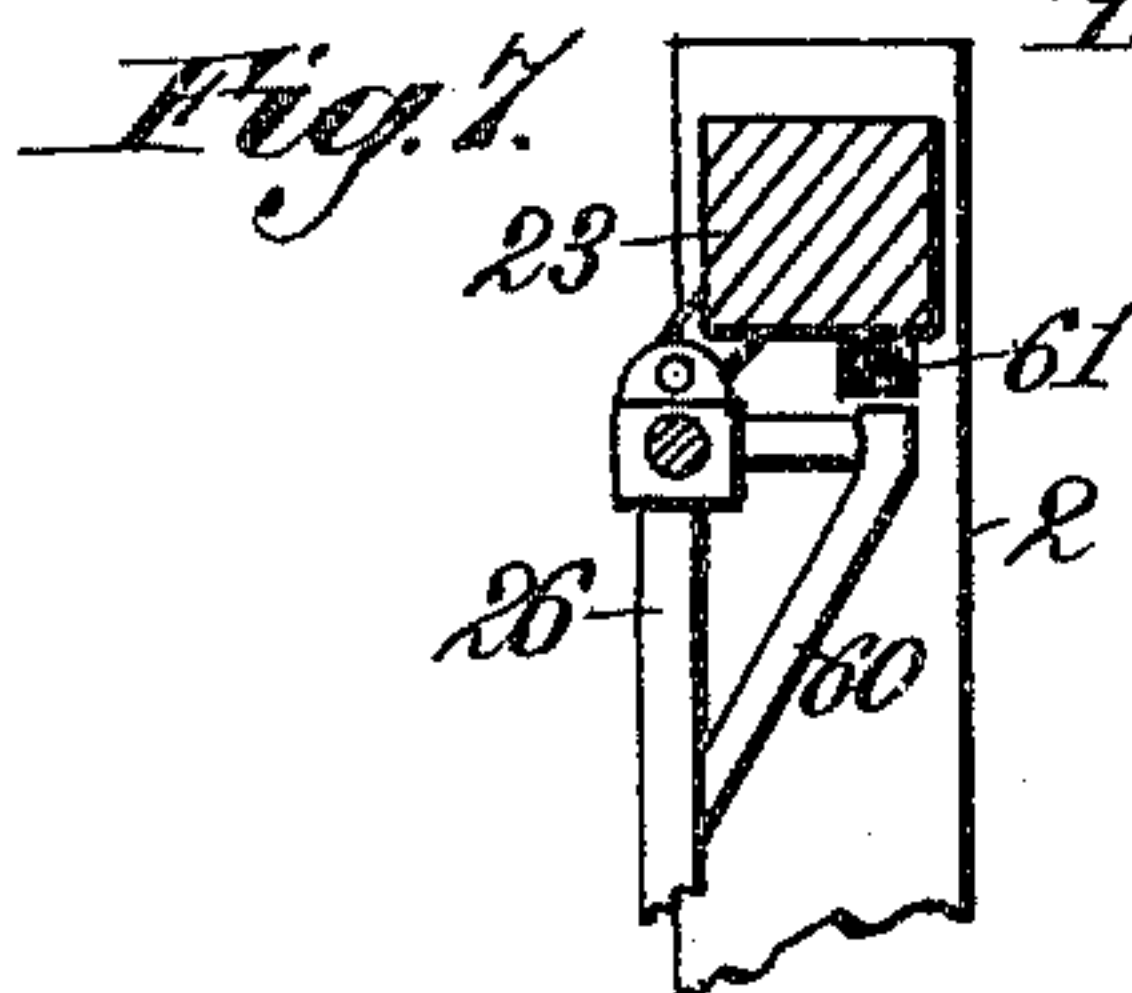
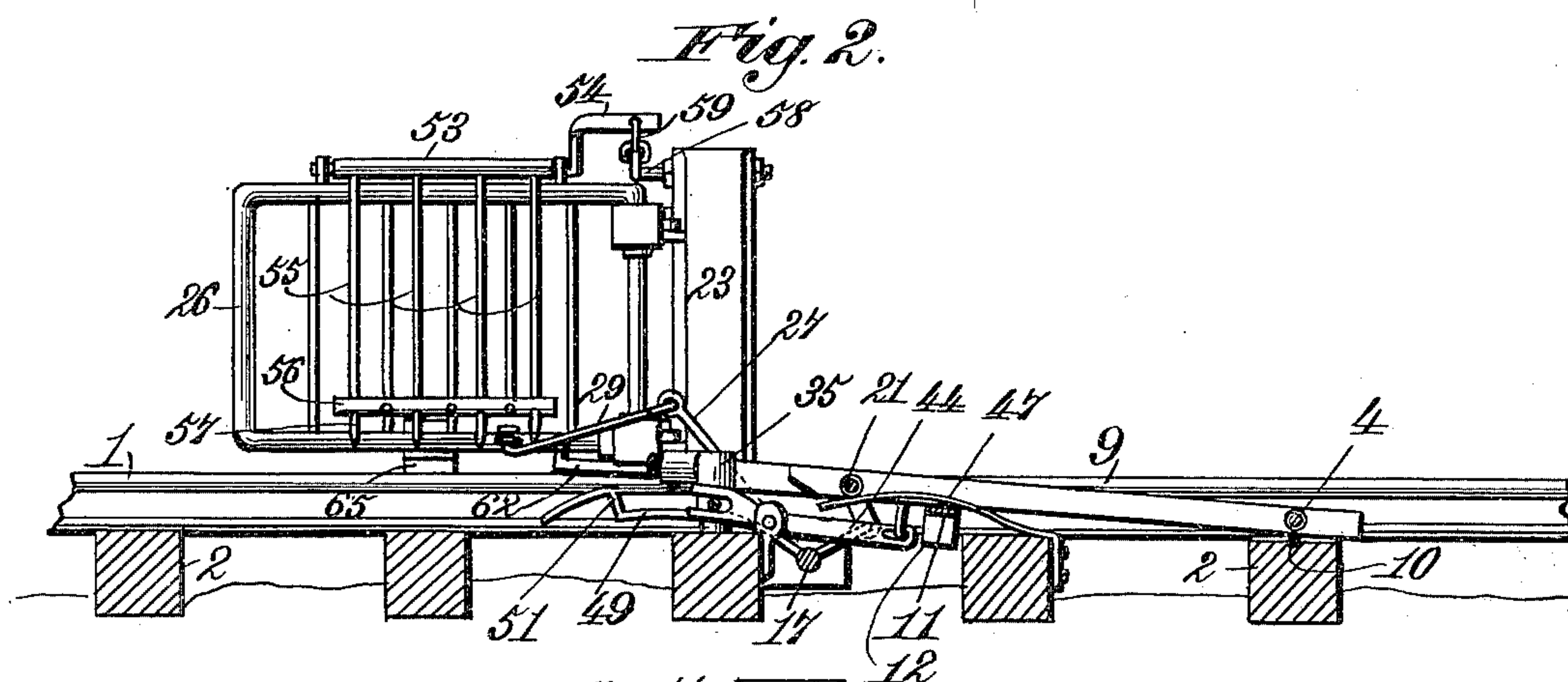
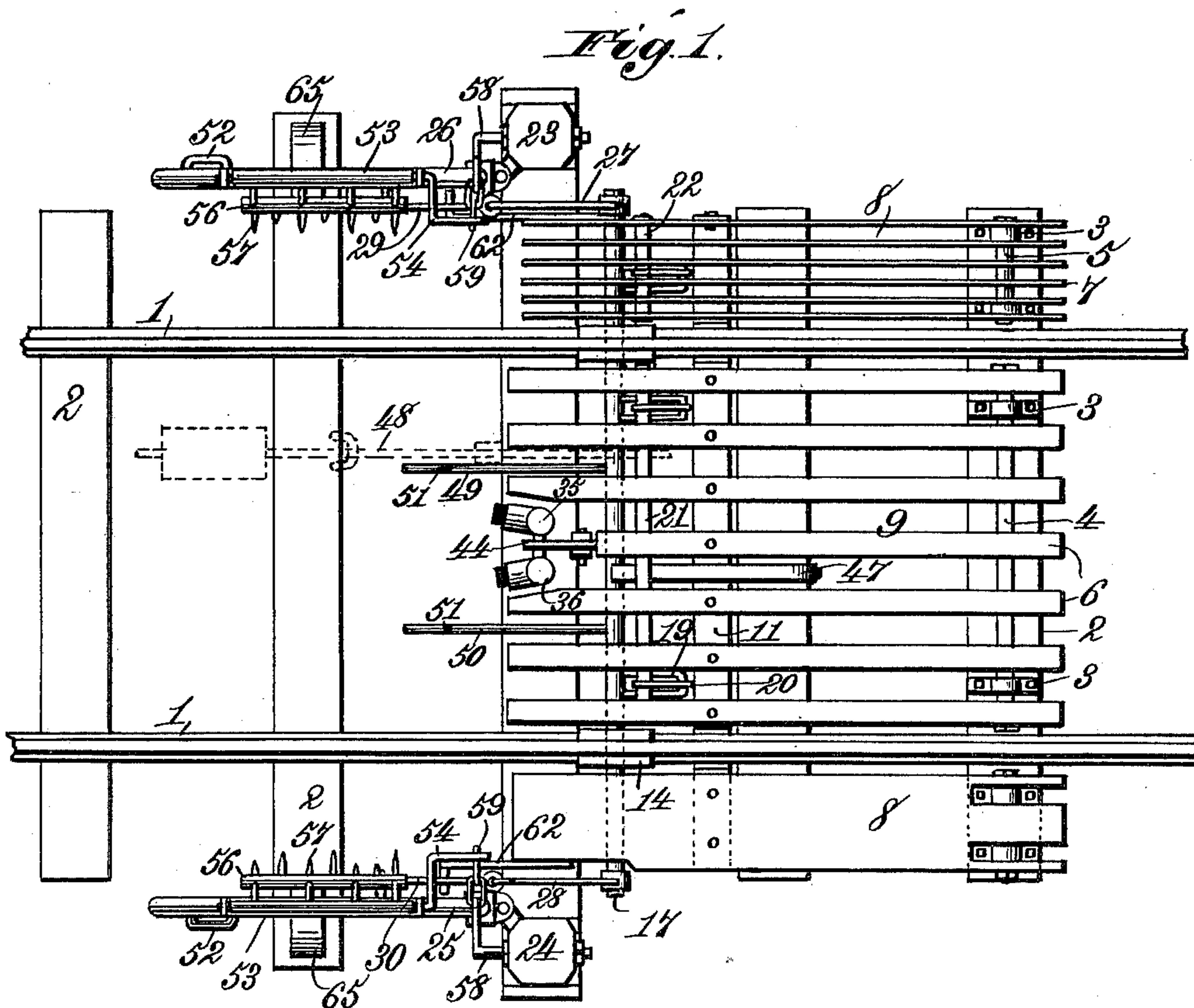
Patented June 6, 1899.

J. W. DODD.
CATTLE GUARD.

(Application filed Jan. 7, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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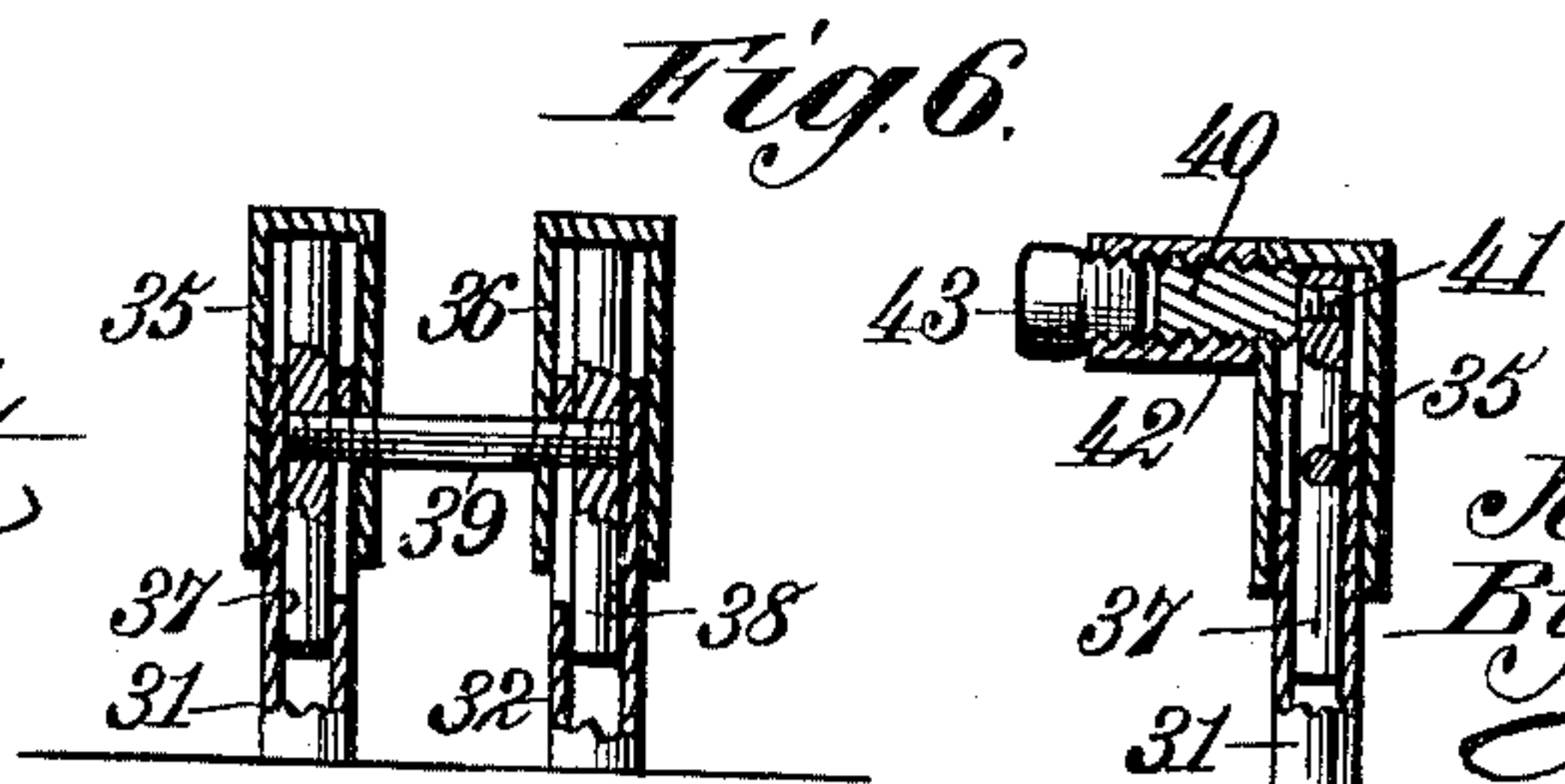
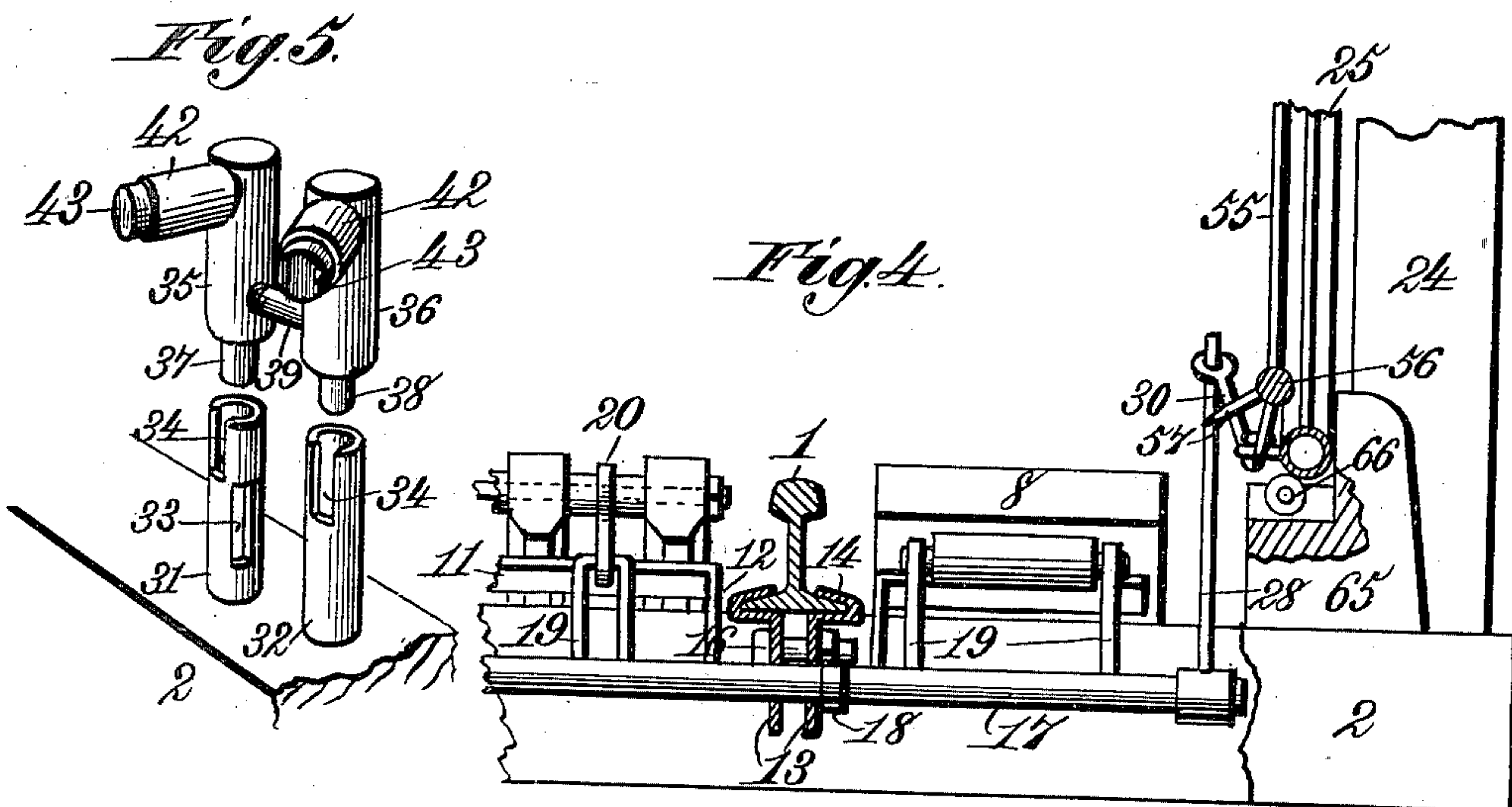
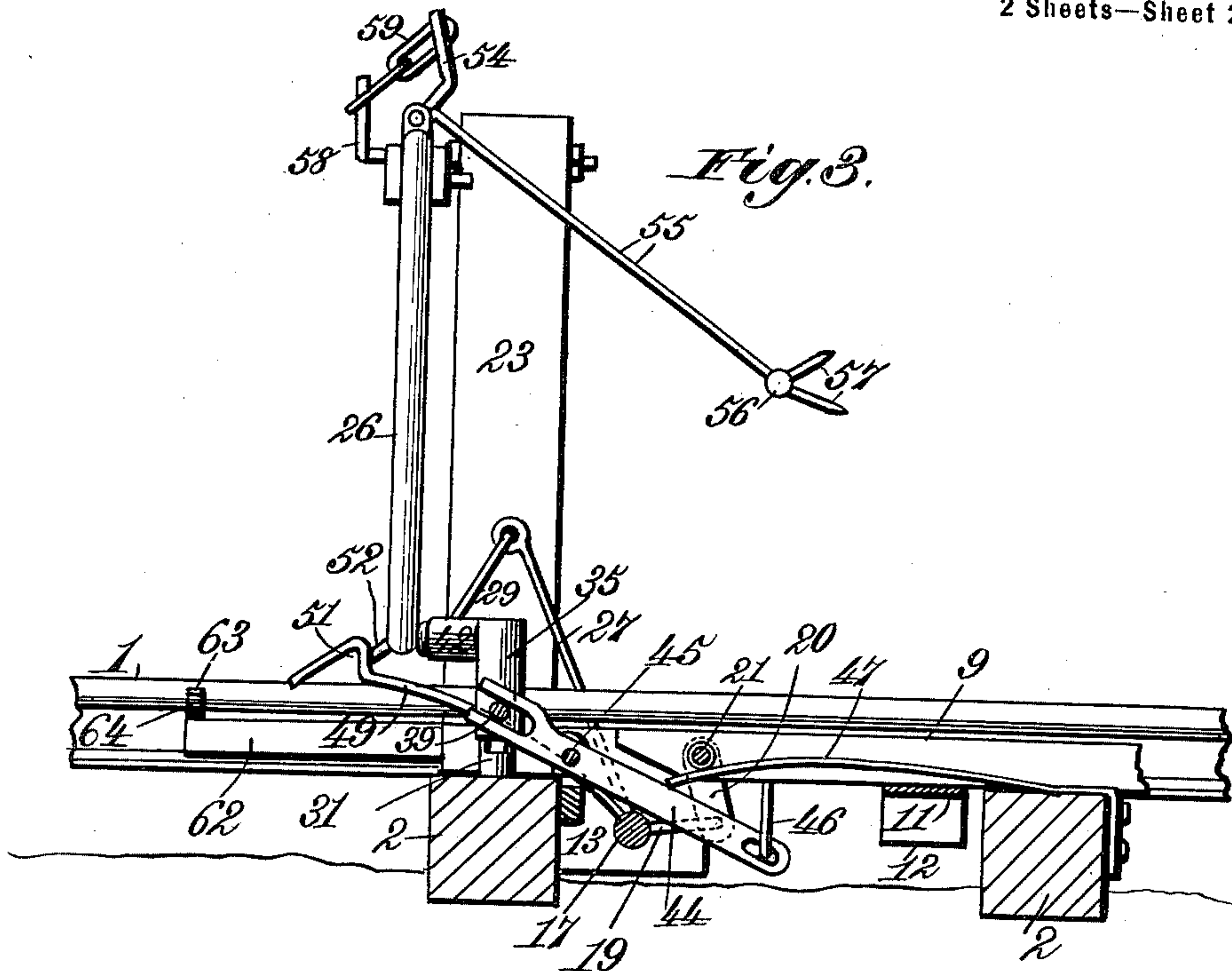
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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JOHN W. DODD, OF MARTINSBURG, WEST VIRGINIA.

CATTLE-GUARD.

SPECIFICATION forming part of Letters Patent No. 626,598, dated June 6, 1899.

Application filed January 7, 1899. Serial No. 701,506. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. DODD, a citizen of the United States, residing at Martinsburg, in the county of Berkeley and State of West Virginia, have invented new and useful Improvements in Cattle-Guards for Railway-Crossings, of which the following is a specification.

This invention relates to certain improvements in the cattle-guard for railways described and claimed in Letters Patent No. 596,962, granted January 4, 1898, to myself and S. S. Smallwood.

One of the objects of the present invention is the provision of means automatically operated by the movement of the gates to prevent stock from butting or pushing against the gates after they have been closed and also tending to cause the stock to leave the platform.

A further object of the invention relates to the provision of means operating in the depression of the platform to temporarily lock the gates in position when closed.

A further object of the invention relates to the provision of improved bumper mechanism.

Still further objects of the invention have relation to certain details of construction, all of which will more clearly hereinafter appear.

In the accompanying drawings, illustrating my invention, Figure 1 is a plan view of the device. Fig. 2 is a longitudinal sectional view. Fig. 3 is a similar view showing the gate in a closed position. Fig. 4 is a transverse sectional view on the line 4 4 of Fig. 1. Fig. 5 is a detail view of an improved form of bumper for receiving the impact of the gates when closing. Fig. 6 represents sectional views of the same, taken at right angles to each other; and Fig. 7 is a detail view of a modification.

The numeral 1 indicates the rails, and 2 the cross-ties, of an ordinary track. At the desired location I secure in one of the cross-ties, between and at the sides of the rails, staples or similar devices 3, which form journal-bearings for the rods 4 5, extending through the rear ends of the bars 6 7 of the platforms 8 9. In order to support the rear ends of these bars, I interpose between them and the cross-tie on which the platforms are

pivoted a small metal rod 10, the rods 4 5 being sufficiently loose in their bearings to permit of this rod acting as a pivotal support in the depression of the platform. I thus avoid all danger of the rods 4 5 being bent by undue weight on the platforms. The bars of the platform may also be braced in their central portion, if necessary, by a transverse iron strap 11, which extends beneath the bars and to which they are secured and which is provided with bends 12 for the rails 1. At a point beneath the front end of the platform I secure to the rails the clamp-pieces 13, formed in two parts, each part having an upper end 14, bent to conform to the lower flange of the rail, and a downward-extending portion 15, the extensions 15 being suitably apertured to receive screw-bolts 16. The device 13 is thus held clamped to the rail and no holes have to be drilled through the latter. The downward-extending portions 15 are also provided with openings which form journal-bearings for a rock-shaft 17. Suitable collars 18 are applied to the rock-shaft to prevent lateral movement of the shaft in its bearings. Secured to the said rock-shaft and extending backward therefrom at a slight incline are crank-arms 19, and pivot-links 20 pivotally connect rods 21 22, extending through the front ends of the bars 6 7, with said crank-arms.

A cross-tie somewhat longer than the ones in ordinary use is provided at the front of the platform, and on this are supported and suitably braced uprights 23 24, on the inner faces of which are supported in suitable bearings the gates 25 26, which are adapted to swing laterally.

Secured to the rock-shaft 17, near its outer ends, are upright lever-arms 27 28, which are pivotally connected by means of links 29 30 with the gates 25 26. On the cross-tie supporting the uprights and midway between the rails is located my improved bumper mechanism. This comprises two short cylindrical posts 31 32, which are provided on their inner sides with longitudinal slots 33 and in their upper outsides with open slots 34. The numerals 35 36 indicate two cylindrical sleeves, which are adapted to fit over the posts 31 32 and which have secured within them the plungers 37 38, which enter the posts 31 32.

The parts described are operatively connected by means of a bolt 39, screw-threaded at each end, which when the sleeves 35 36 have been placed over the posts 31 32 has its opposite ends passed through said sleeves and the slots 33 and screwed into the plungers 37 38, this connection of course being effected before the posts 31 and 32 are secured to the cross-ties. The bolt 39 will therefore slide up and down in the slots 33 in the operation of the device, which slots will limit the movements of said sleeves. In the upper ends of the sleeves 35 36 are secured screw-threaded plugs 40, which have reduced screw-threaded portions 41, engaging in the plungers 37 38, said plugs being received in the slots 34 of the posts 31 32 when the parts are assembled. Screwed on each plug 40 is a thimble 42, each of which carries in its outer end a rubber block 43, against which the gates strike when closed. A lever-arm 44, pivotally supported in its central portion in bearings 45, has one end bifurcated to receive the bolt 39 and its other end extended beneath the platform 9, by which it is adapted to be depressed through the medium of a screw-eye or similar device 46, secured in one of the bars 6 and having its eye pivotally secured in the end of said lever-arm.

Secured to one of the cross-ties is a leaf-spring 47, which extends upward and outward, and at its free end bears against the under side of the rod 21. In addition to or in place of the spring 47 I may employ a pivoted weighted arm 48 of the well-known construction.

Secured at one end to the rock-shaft 17 are spring-arms 49 50, which have their outer ends bent to form catches 51. These arms are adapted to be raised by the rock-shaft 17 when the latter is turned by the depression of the platform to close the gates, and in this position the catches 51 will engage lugs 52, one of which is carried by each gate, and thus prevent the gates or either of them from being pushed open.

The mechanism for preventing stock from pushing against the gates comprises the following parts: Journaled on the upper bar of each gate is a rock-shaft 53, having a bent arm or crank 54. Extending downward from said shaft 53 are a number of bars 55, which are connected at their lower ends to a rod 56, projecting from which are a number of spikes 57. Secured on the upper end of each upright 23 24 is an arm 58, and a link or links 59 connect said arms with the cranks 54. By inspecting Figs. 1 and 3 it will be apparent that as the gates are closed by the depression of the platform the rock-shafts 53 will be caused to turn by means of the link connection between the cranks 54 and the stationary arms 58, and the bars 55, carrying the spiked rod 56, will be caused to assume the position shown in Fig. 3. Said spiked rod will prevent any near approach of stock to the gates, and by reason of the spikes no pressure can be ex-

erted by the stock against said rods sufficient to open the gates. Furthermore, any contact of stock with the spikes will cause them to pain and tend to induce them to leave the platform. By releasing the links 59 from engagement with the arms 58 the bars 55 may be allowed to fall and rest against the gate.

In lieu of the bumper mechanism shown in Fig. 5 I may employ a construction such as shown in Fig. 7. In this arrangement each gate is provided at its rear end with a bracket-arm 60, which when the gates are closed will come in contact with a rubber or spring bumper 61, secured on each upright 23 24.

In order to prevent the accidental closing of the gates by the action of the wind, I rigidly secure to each side platform 8, toward the front end thereof, a bar 62, which said bars project outward from the platforms, as shown, and at their outer ends each bar is provided with a right-angular extension, affording a stop 63, which normally projects upward in the plane of movement of the bottom of the gate, as shown in Fig. 2, so that unless the platform is depressed any inward movement of the gates will be prevented by the contact of their lower rails with the stops 63. While ordinarily in the opening movement of the gates they will swing past the stops 63 before the latter have risen high enough to oppose their movement, I nevertheless provide against stopping the gates in case the stops should rise high enough to come in contact with them by inclining the upper side of each of said stops, so that should the gates strike these stops they would ride up the incline thereon and pass over them.

In Fig. 4 I have shown means frictionally engaging the gates for holding them stationary in the open position. The numerals 65 indicate, respectively, two stops secured near opposite ends of a cross-tie to limit the outward movement of the gates. In the above figure I have shown one of these stops as having a roller 66 journaled therein, which projects slightly above the lower rail of the gate, so that the gate in opening will ride up on and partly over this roller and be held in the space between said roller and the side of the stop, as shown in the figure referred to. Both stops 65 will of course be provided with a roller 66.

The general operation of the apparatus being the same as that described in the patent above named need not be stated herein.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a cattle-guard, the combination with laterally-swinging gates and means for operating the same, of a rock-shaft journaled on the upper end of each gate, a series of bars connected to said rock-shaft and carrying at their outer ends spikes, and means operating in the closing of the gates to turn said rock-shaft and thereby elevate said bars, substantially as described.

2. In a cattle-guard the combination with uprights supporting laterally-swinging gates

and means for operating said gates, of a rock-shaft journaled on the upper end of each gate, a series of bars connected to said rock-shaft and carrying at their outer ends spikes, a crank-arm on each rock-shaft an arm on each upright, and links connecting said arms and crank-arms, whereby in the closing of the gates said rock-shafts will be turned to elevate said bars, substantially as described.

3. In a cattle-guard, the combination with a depressible platform, of a rock-shaft journaled beneath said platform and adapted to be rocked thereby, laterally-swinging gates suitably supported in proximity to said rock-shaft and operatively connected thereto, and spring-arms carried by said rock-shaft and adapted to be turned thereby, in the closing of the gates, to engage the said gates and hold them in a closed position, substantially as described.

4. In a cattle-guard, the combination with a depressible platform, laterally-swinging gates, and the gate-operating mechanism ac-

tuated by said platform, of bumper mechanism for receiving the impact of the gates when closing, comprising two stationary cylindrical posts having slots on their inner faces, two sleeves adapted to slide over said posts and having plungers entering the same, thimbles secured on said sleeves and carrying at their outer ends bumper-blocks, a bolt passed at opposite ends through said sleeves and the slots in said post and having its ends screwed into said plungers, and a lever pivoted beneath said platform and having one end bifurcated and engaging said bolt and its opposite end connected with said platform, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN W. DODD.

Witnesses:

GEO. W. REA,

GEO. E. SULLIVAN.