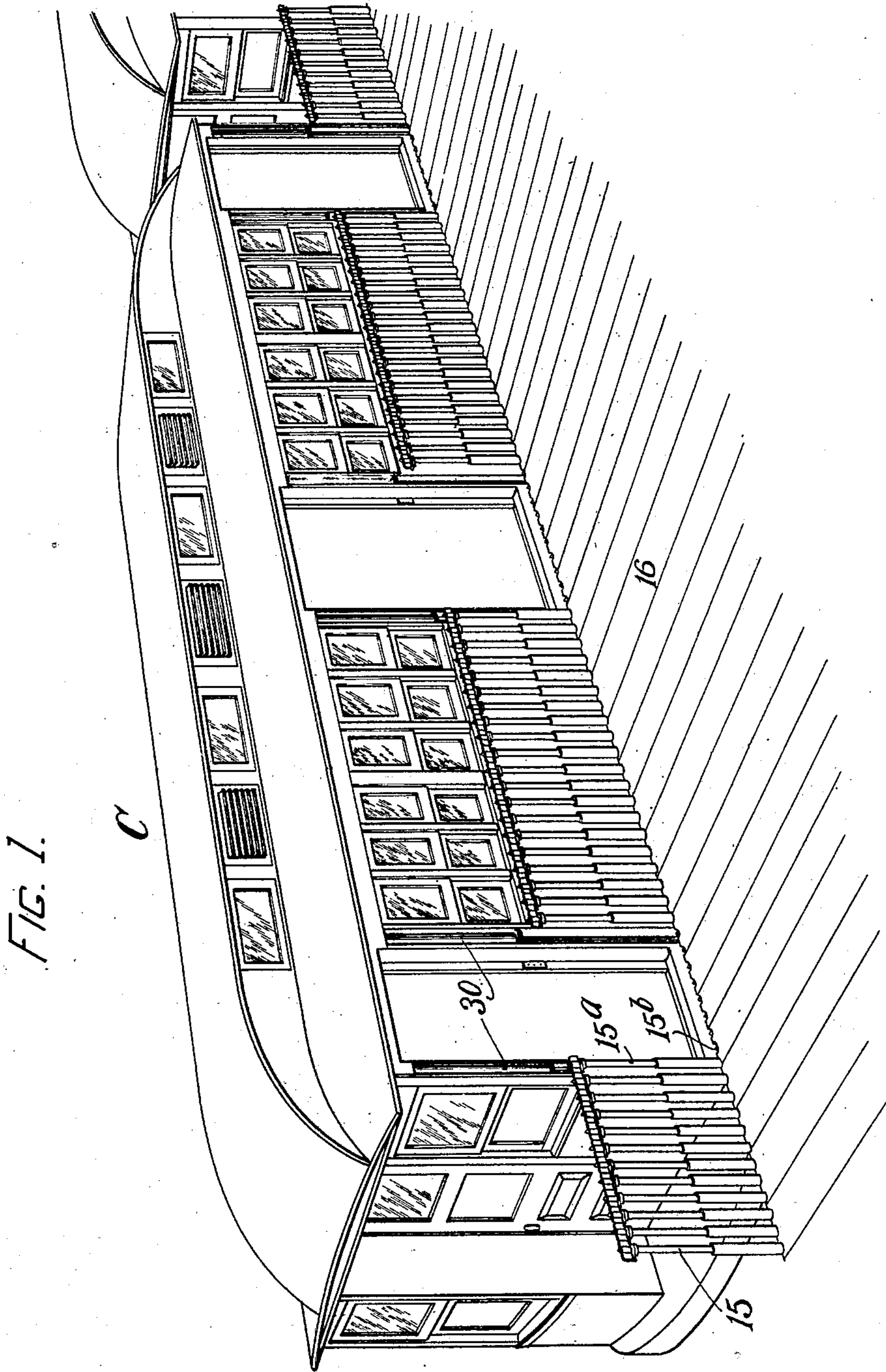


C. S. SHUTE.  
SAFETY FENCE AND GATE FOR RAILWAY PLATFORMS.  
APPLICATION FILED MAY 26, 1908.

915,122.

Patented Mar. 16, 1909.

4 SHEETS—SHEET 1.



WITNESSES  
A. T. Palmer  
N. Palmer

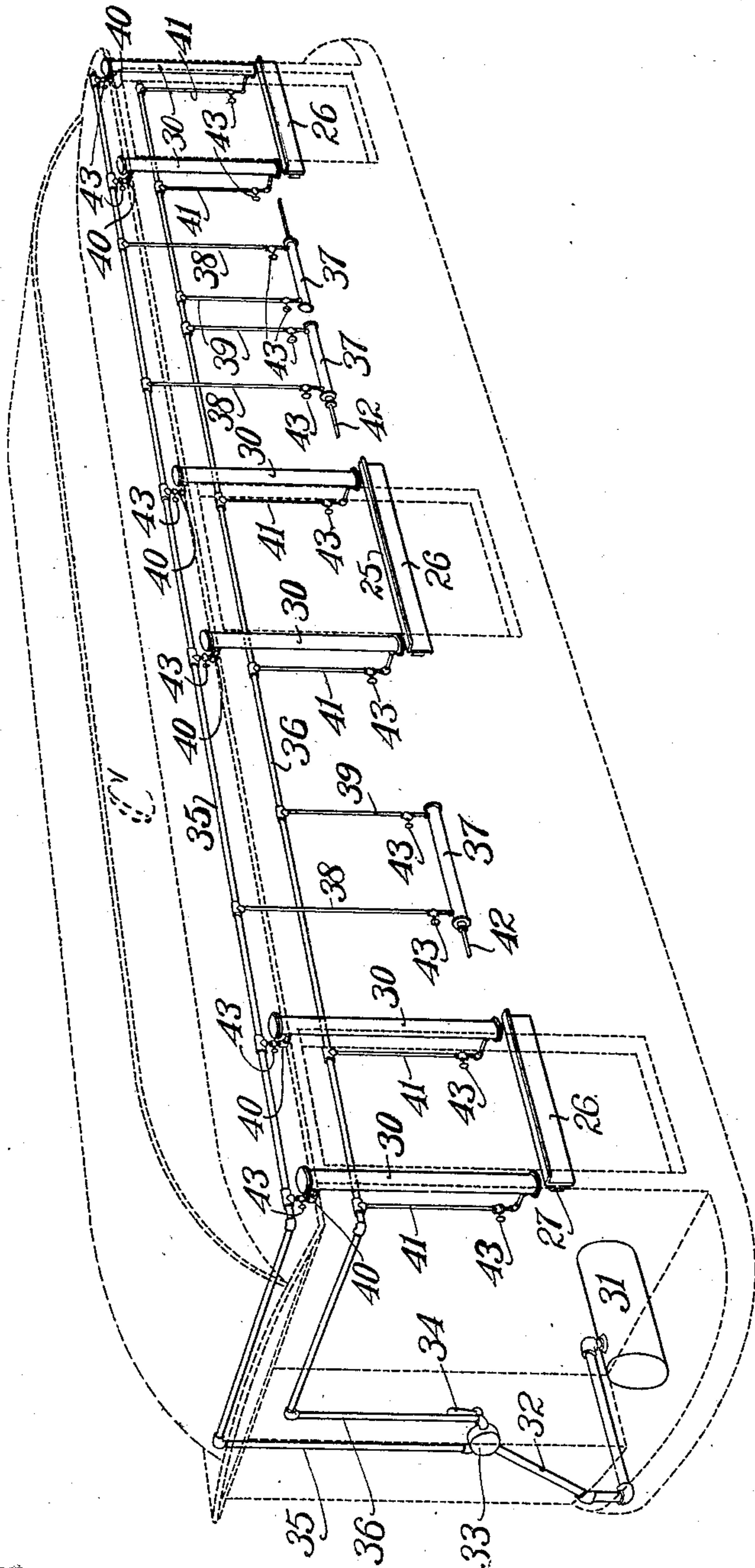
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4 SHEETS—SHEET 2.

FIG. 2.



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4 SHEETS—SHEET 3.

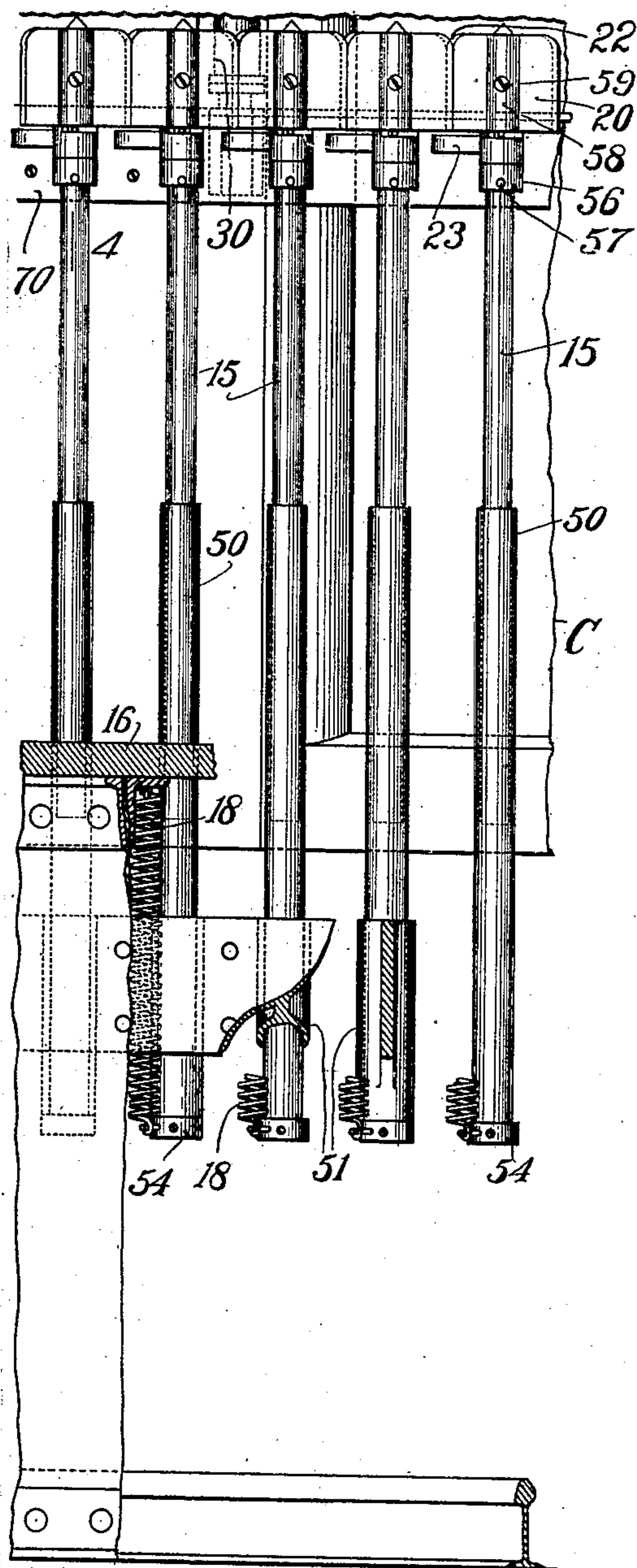


FIG. 3.

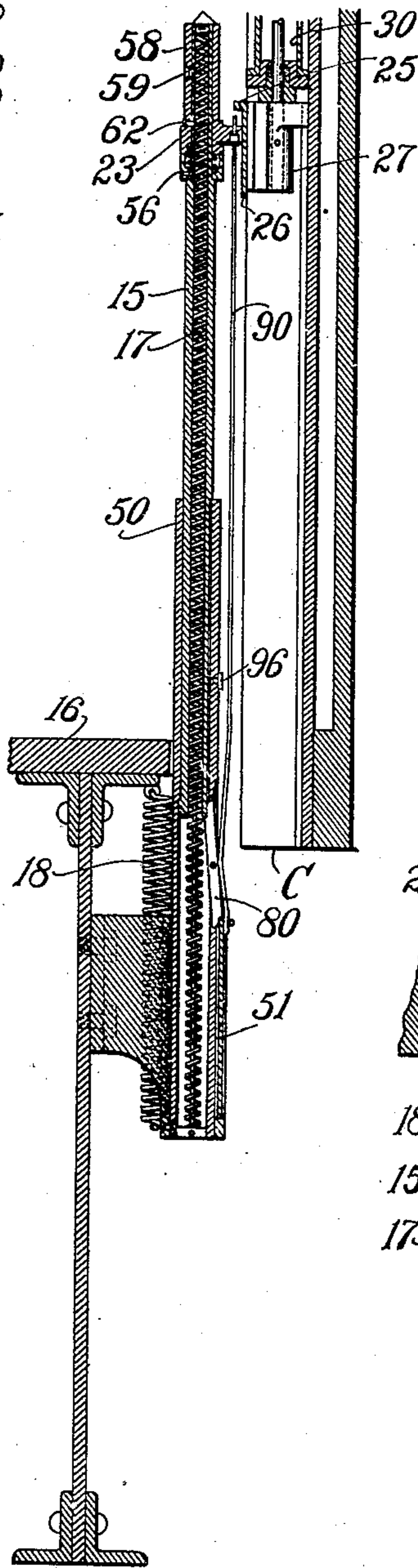


FIG. 4.

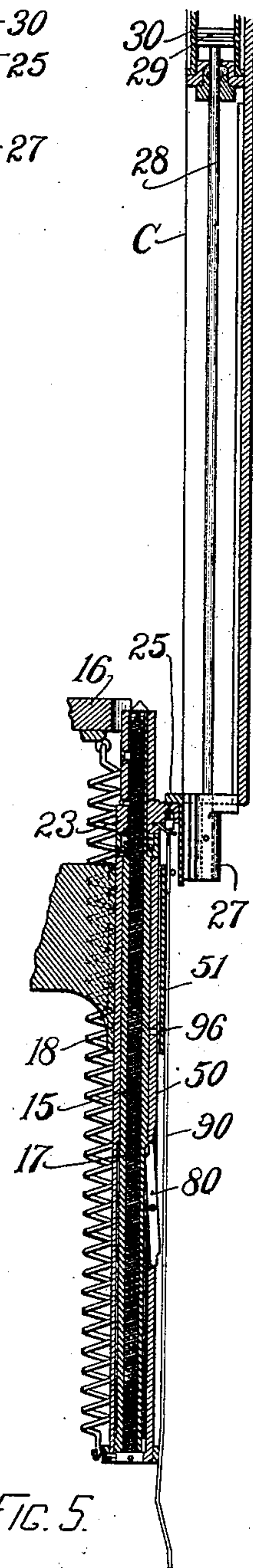


FIG. 5.

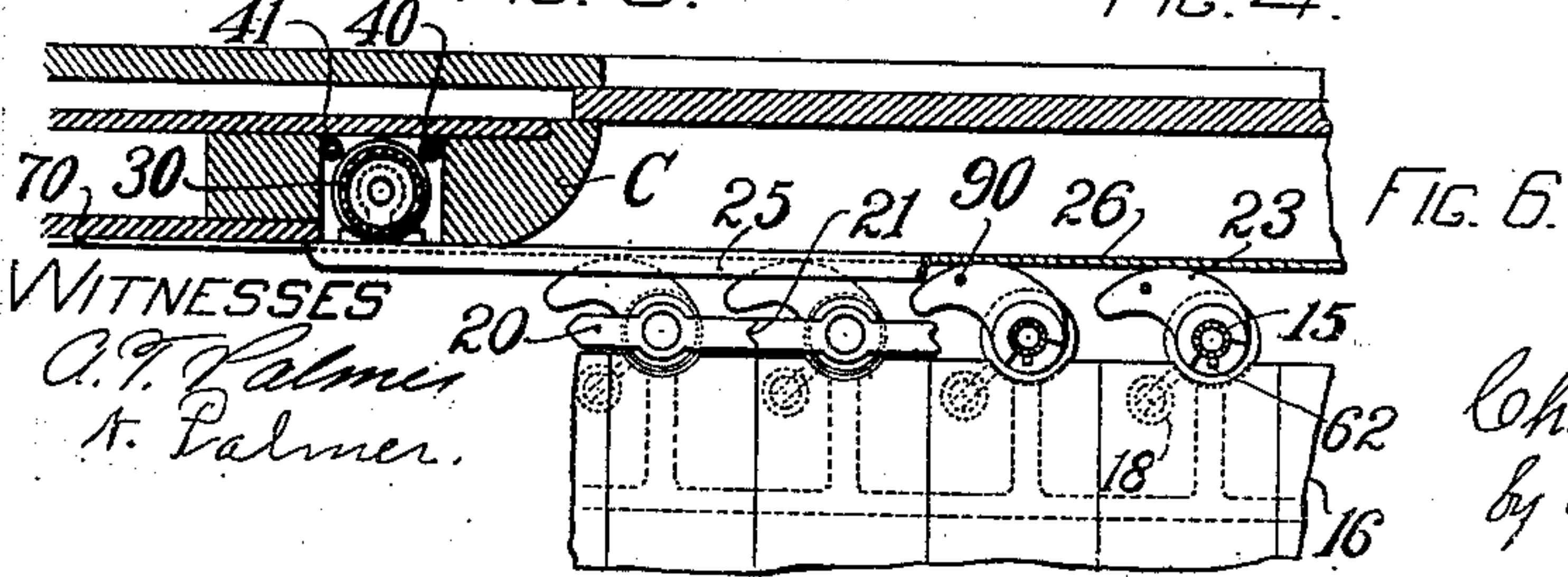


FIG. 6.

WITNESSES  
A. F. Palmer  
A. Palmer.

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Charles S. Shute  
by A. F. Palmer atty

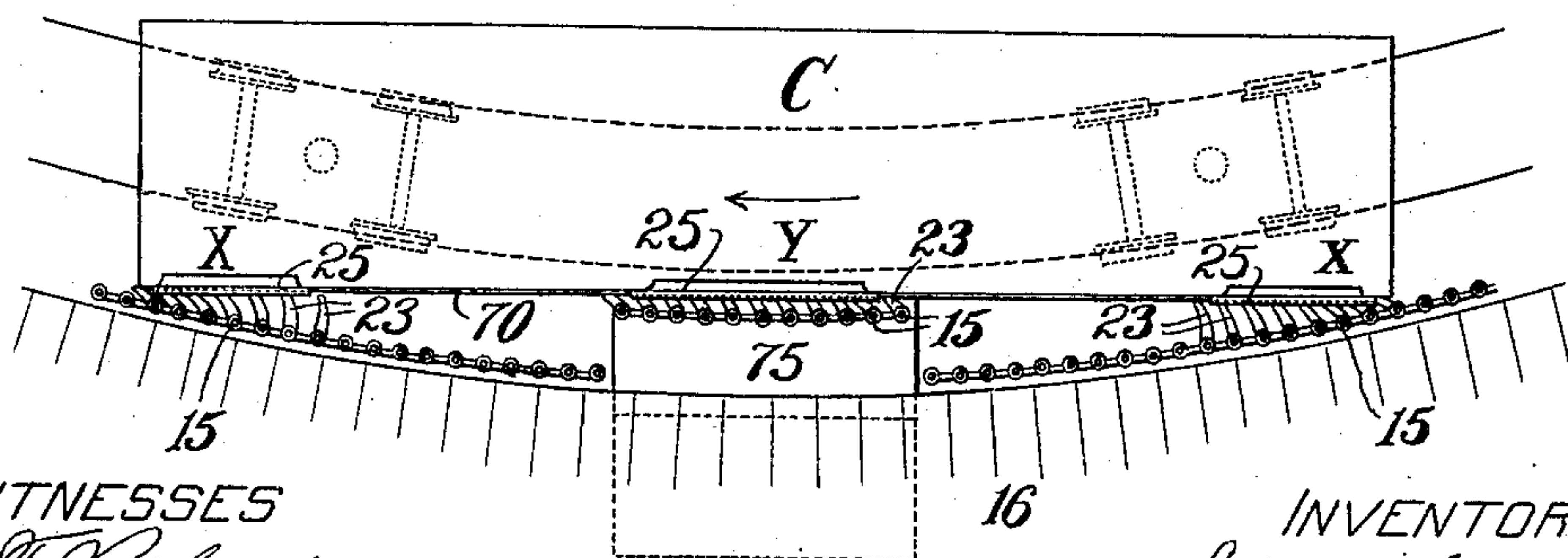
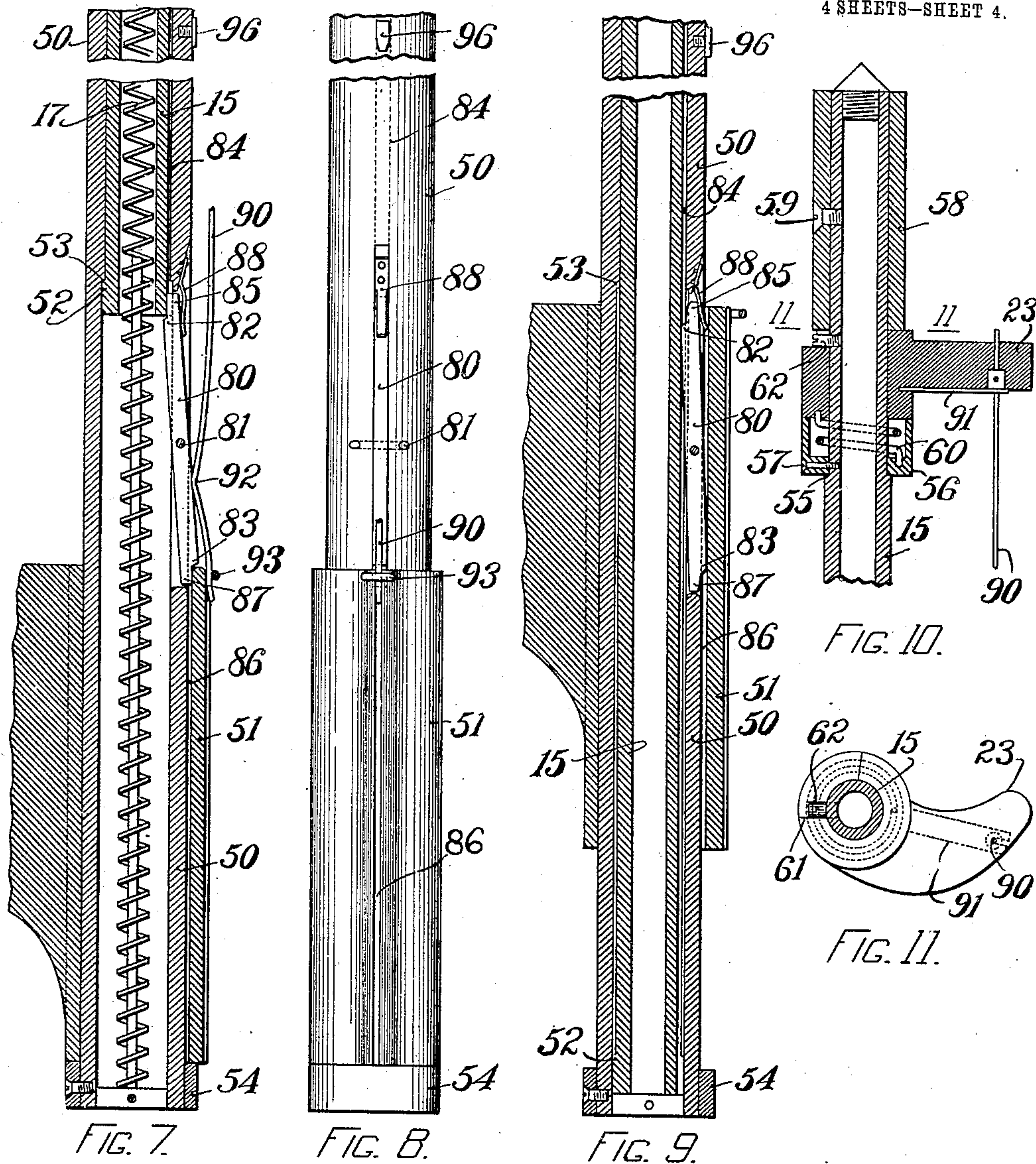


C. S. SHUTE.  
SAFETY FENCE AND GATE FOR RAILWAY PLATFORMS.  
APPLICATION FILED MAY 28, 1908.

915,122.

Patented Mar. 16, 1909.

4 SHEETS—SHEET 4.



WITNESSES  
A. T. Palmer  
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FIG. 12.

INVENTOR  
Charles S. Shute  
by A. V. Spencer  
att'y



# UNITED STATES PATENT OFFICE.

CHARLES S. SHUTE, OF BOSTON, MASSACHUSETTS.

## SAFETY FENCE AND GATE FOR RAILWAY-PLATFORMS.

No. 915,122.

Specification of Letters Patent.

Patented March 16, 1909.

Application filed May 26, 1908. Serial No. 435,099.

*To all whom it may concern:*

Be it known that I, CHARLES S. SHUTE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Safety Fences and Gates for Railway-Platforms, of which the following is a specification.

This invention relates to improved construction of fences and gates for insuring safety to the public at elevated railway stations, where trains run and stop on depressed tracks located much below the adjacent platforms. Patrons at such stations are exposed to imminent danger of falling into the intermediate chasm and upon the live rail therein, and of being run over by any of the numerous trains, the ordinary practice providing no barrier or guard against such danger, and a permanent fence with ordinary gates being objectionable, owing to the difficulty of stopping trains always at the same point and to the varying length of cars.

The characteristic feature of the present invention is a fence adapted to occupy a normally raised position along the edge of each platform and provided with movable or disappearing gates corresponding to the side doors of the cars whenever a train is at the station, such gates preferably comprising a series of independent, vertically-movable pickets. Adequate means are provided for lowering and raising such pickets and gates, the illustrations indicating coiled springs for supporting the structure in normal elevated position and compressed air or other fluid pressure mechanism for depressing the gates. It will be understood that I do not limit myself to these operating means.

The drawings illustrate pickets formed in two telescoping sections, which I much prefer, while I do not limit myself thereto, as a single tube or bar of proper breadth may be made to serve.

Various devices embodying or illustrating parts of my invention are hereinafter described in detail, with reference to the accompanying drawings, and are particularly referred to in the appended claims.

The principal point to consider in a fence adapted to this situation is that the structure shall be sufficiently strong and rigid and provided with substantial gates such as will serve as an adequate protection to per-

sons using the platform, but still readily adapted to be raised and lowered, either in series or singly as in the case of pickets with sufficient width to independently constitute a gateway when removed. The drawings show a mean between the two possible extremes as will later be explained.

In the drawings, Figure 1 is a perspective view of a car and one platform showing the erected fence and depressed gates peculiar to my invention. Fig. 2 is a perspective diagram showing the car in dotted lines with full lines indicating piping etc., for compressed air equipment for operating the gates. Fig. 3 is a side elevation, on an enlarged scale, showing a series of my posts in assembled position adjacent to the platform and car, a portion of the latter being seen beyond. Fig. 4 is a vertical section in the plane of one of the pickets, as on line 4—4 of Fig. 3,—the section through parts of the car being in a different plane to show operating means positioned for action. Fig. 5 is a similar section showing the post depressed. Fig. 6 is a plan view of Fig. 3. Figs. 7 and 8 are views on a more enlarged scale, of Figs. 4 and 3 respectively, showing the lower end of one of my posts. Fig. 9 is a view similar to Fig. 7 showing the post partially depressed. Figs. 10 and 11 are respectively a sectional elevation and a plan view of the upper end of one of my posts. Fig. 12 is a diagram illustrating the adaptation of my invention to curve platforms.

Referring to Figs. 1, 3 and 4, the pickets comprising the fence and gates are shown as tubes, equally spaced along the edge of the platform 16, provided with springs 17 and 18 to maintain them in elevated position, and means, later described, whereby they may be depressed singly or in series. I prefer to provide lateral wings 20 between the various pickets, partly to bridge the space between them, but mainly to form an interlock whereby each picket contributes to the rigidity of its neighbor, thus making a connected fence, but one which may be unlocked between any two adjacent pickets. The spacing of the pickets 15 and the width of wings 20 may be such that but one picket with its connected wings need be depressed to form a gateway of the width of a car door, thus making my fence a series of gates adapted to be independently operated; but I pre-



fer, and have here shown, pickets so spaced as to be operated in series. The wings 20 are shown interlocked at 21, (Figs. 3 and 6) and, as the end picket of a depressed series, as 15<sup>b</sup> in Fig. 1, automatically unlocks from picket 15<sup>a</sup> in descending, I round the upper edges of wings 20, as seen at 22, Fig. 3, so that 15<sup>b</sup> upon rising, will readily reengage with 15<sup>a</sup>, the parts being kept in alinement by means to be described.

Various means may be employed for depressing the pickets 15 to open the gates, that illustrated in Figs. 2, 4 and 6 comprising dogs 23 attached to the upper portion of such pickets, one or more, and adapted to be engaged by the flange 25 of cross-bar 26, said bar being mounted athwart each doorway in car C by means of ears 27 rigidly attached to piston rods 28, said rods carrying pistons 29, Fig. 5, adapted for reciprocation within vertical cylinders 30.

The operating means shown in Fig. 2 consist of a suitable source of power supply, as the compressed-air tank 31, the tube 32 leading therefrom to a three-way valve 33, said valve being provided with an operating lever 34. From valve 33, which is of ordinary construction, two manifold pipes or conduits 35 and 36 serve to distribute the air to the various cylinders 30 as desired. As it is desirable to have the bar 26 depressed as the car doors are being opened, and vice versa, I have shown a series of horizontal tubular cylinders 37, 37, 37 with pistons adapted to open and close the car doors, the same being connected respectively by tubes 38 and 39 to conduits 35 and 36. Cylinders 30, 30 are likewise connected to conduits 35 and 36 by tubes 40 and 41 respectively. An inspection of Fig. 2 will show that as cylinders 37 are operated to open the car doors, (their piston rods 42 being shown as broken away just back of the door connections,) the pistons within cylinders 30 are operated to depress bars 26, and vice versa. Valves 43 are provided to permit independent operation, if desired.

Referring to the pickets 15, Figs. 3 to 11, although springs 17 and 18 serve to maintain them in elevated position, it is obvious that these springs could be replaced by other well known supporting means without departing from the spirit of my invention; furthermore, I prefer to form my depressible post in two telescopic sections for economy of space and other advantages, the lower tube 50 being slidably mounted in bearings 51 rigidly attached to some portion of platform 16 or its support, see Figs. 4 and 5. As all the pickets are or may be similar, one will be described in detail. Spring 17 serves to hold the collar 52, formed at the lower end of picket 15, against the shoulder 53 in member 50, (Fig. 7.) Spring 18 serves to like-

wise hold the collar 54, (which is secured to the lower end of member 50,) against the shoulder formed by the lower edge of bearing 51. The upper part of picket 15 has a reduced portion (Fig. 10) forming a shoulder 55, upon which rests a recessed collar 56 secured to picket 15 by screw 57. Upon collar 56 is rotatably mounted dog 23, the same being held vertically on picket 15 by the collar 58 which is secured to picket 15 by screw 59, and which is provided with the wings 20, before referred to. Within the recess of collar 56 is a torsional spring 60 adapted to hold dog 23 in position shown in Fig. 11, by means of shoulder 61 and pin 62.

When car C is brought to a stop opposite my fence, the flanges 25 on the various bars 26 will be positioned as shown in Figs. 2 and 4, in readiness to depress all of those pickets 15 whose dogs 23 come beneath it. By operating lever 34 (Fig. 2) so as to admit compressed air to conduit 35, (valves 43 being open,) the air is fed to the upper side of pistons 29 in cylinders 30, so that, as the car doors are opened, the bars 26 are depressed, their flanges 25 carrying down the properly positioned pickets 15. When such pickets are sufficiently depressed against springs 17 to bring collar 56 against the top of member 50, members 50 and 15 are carried down together, against the resistance of springs 17 and 18 until the top of each picket 15 is below the surface of platform 16, as seen in Figs. 2 and 5. Before again starting the car, lever 34 is reversed, admitting air to the opposite ends of the various cylinders, when, as the car doors close, bars 26 rise, (and with them the pickets 15,) to their normal position, by the action of springs 17 and 18. The car doors may of course be operated by means independent of those which actuate the gates.

To adapt my fence to curved platforms, where the car body will not stop parallel to same, I provide dogs 23 of sufficient length to automatically accommodate themselves to the varying distances from pickets 15 to the side of the car body. This condition is shown, in exaggerated form, in Fig. 12, where the motion of the car C is in the direction of the arrow. When the car approaches such a curved platform the dogs 23, being free to oscillate or rotate slightly on pickets 15, are wiped, as it were, against the metal plate 70 secured to car C, and against the side of bar 26 which matches it in height, so that when car C comes to a stop, the various dogs are positioned about as shown at x, Fig. 12, their ends or sides, as the case may be, coming under flanges 25 of the bars 26. Torsional springs 60 Fig. 10 bring dogs 23 to normal position after the car has departed. In cases of this sort, it is frequently the custom to provide sliding platforms 75 to bridge the open-



ings between the platform 16 and car C and I prefer to mount a series of depressible pickets along the outer edge of this platform 75, as shown at Y, they moving outwardly with same, and the dogs 23 thereon being cam-shaped so as to automatically take the positions shown.

To avoid accidental and premature opening of the gates I provide means to prevent a too ready depression of pickets 15, and for this purpose have arranged in each member 50 a stop bar 80 pivoted at 81 in a slot in member 50. This bar has cam shaped shoulders 82 and 83 at the ends which are adapted to engage respectively collar 52 and the upper shoulder of bearing 51, as best shown in Figs. 7 and 9. Picket 15 has a groove 84 cut in its lower end adapted to engage a projecting end 85 on stop bar 80 when the picket is up, and the shoulder 82 when it is depressed as in Fig. 9. Bearing 51 has a similar groove 86 adapted to engage an extension 87 of shoulder 83 when the picket is up and shoulder 83 itself when depressed. In the drawings, notably Fig. 5, it will be noticed that stop bar 80 is carried entirely below bearing 51 when the post is entirely depressed. To maintain the alinement of the parts under these conditions, I provide an auxiliary guiding lug 96, secured to member 50, and so positioned that it will enter groove 86 in bearing 51 before stop-bar 80 has left it. Shoulders 82 and 83 will yield automatically, against spring 88, under extra pressure such as will exist when the compressed air is employed, but serve to hold the picket against such pressure as might be applied when a person carelessly leans on it. If it is desired to make this lock more positive, I provide unlocking means for overcoming the initial hold of shoulders 82 and 83, thus making easier the depressing work of the bars 26. It will be seen that there is normally no pressure on shoulders 82 and 83, as springs 17 and 18 serve to entirely support the parts. Bar 80 is therefore prepared to yield readily to pressure sufficient to overcome that of spring 88. To obtain this initial pressure I mount in dog 23, a vertical rod 90, which is normally held by spring 91 so that its upper end projects slightly above the surface of said dog, (see Figs. 4 and 10.) When bar 26 descends it first engages rod 90, depressing it sufficiently so that its lower end, (which is bent inwardly at 92, Fig 7,) will press against bar 80 to move its lower end inwardly and its upper end outwardly. By the time flange 25 of bar 26 reaches dog 23, shoulders 82 and 83 are sufficiently released to readily yield further and assume the position shown in Fig. 9, in which bar 80 is held by grooves 84 and 86, as before described. A guard 93 attached to bearing 51 serves to hold the portion 92 against bar 80, such rod 90 yielding

readily, (due to its elasticity,) when compelled to descend to the position shown in Fig. 5.

I do not limit myself to the form of lock and release shown.

Of course springs 17 and 18 could be made sufficiently strong to obviate the necessity of the above auxiliary means, but I prefer not to tax the depressing means too severely.

I disclaim the construction and mode of operation set forth in U. S. patents to Carey, No. 373,643, dated Nov. 22, 1887, and to Hahn, No. 370,188, dated Sept. 20, 1887, as foreign to my invention. I also, for the same reason, disclaim all that is shown in the Sullivan patent, No. 495,850, dated April 18, 1893.

I claim as my invention:—

1. A fence for railway platform edges having movable gates spaced to correspond with the side doors of the car and means for actuating such gates and doors simultaneously.

2. A fence for railway platform edges having sliding parts adapted to form gates opposite the side doors of the car wherever it may stop, in combination with means carried on the car for actuating such parts to open and close the gates.

3. A fence for railway platform edges having vertically movable gates corresponding in location with the side doors of the car, in combination with means for actuating such doors and gates either in unison or successively.

4. A fence for railway platform edges having telescoping pickets in series, any desired number of which are adapted to form depressible gates, sinking to the platform level when the car doors are to be opened and at other times forming portions of the erected fence, in combination with means for actuating such parts.

5. A fence comprising a series of vertically movable pickets normally held in elevated position; spring-actuated means for holding such pickets in elevated position, and means for depressing any suitable number of such pickets to form a gateway in said fence.

6. A fence comprising a plurality of interlocked pickets normally held in elevated position and adapted to be independently depressed; independent means attached to each picket for holding it in elevated position, and depressing means adapted to engage a suitable number of said pickets and form a gateway in said fence.

7. A fence for railway platforms having a succession of independently depressible posts normally held in upright position, independent means attached to each post for holding same in elevated position and means mounted on a movable car adapted to depress a suitable number of said posts to form a gate-



way in said fence; in combination with adjustable means attached to each post for insuring its depression independently of its distance from said means attached to said  
5 car.

8. A fence for railway platform edges comprising a succession of vertically movable members normally held in elevated position, means for depressing some of said members  
10 to form gateways opposite the car doors, and an automatic check adapted to cause an increase of resistance to such depressing means.

9. A fence for railway platform edges, comprising a succession of vertically movable

members, normally held in elevated position 15 and means for depressing some of said members to form gateways opposite the car doors, in combination with auxiliary means for supporting the elevated parts and with automatic releasing devices operated by the de- 20 pressing means to counteract such auxiliary means at the proper time.

In testimony whereof I have affixed my signature, in presence of two witnesses.

CHARLES S. SHUTE.

Witnesses:

A. H. SPENCER,  
N. W. LADD.