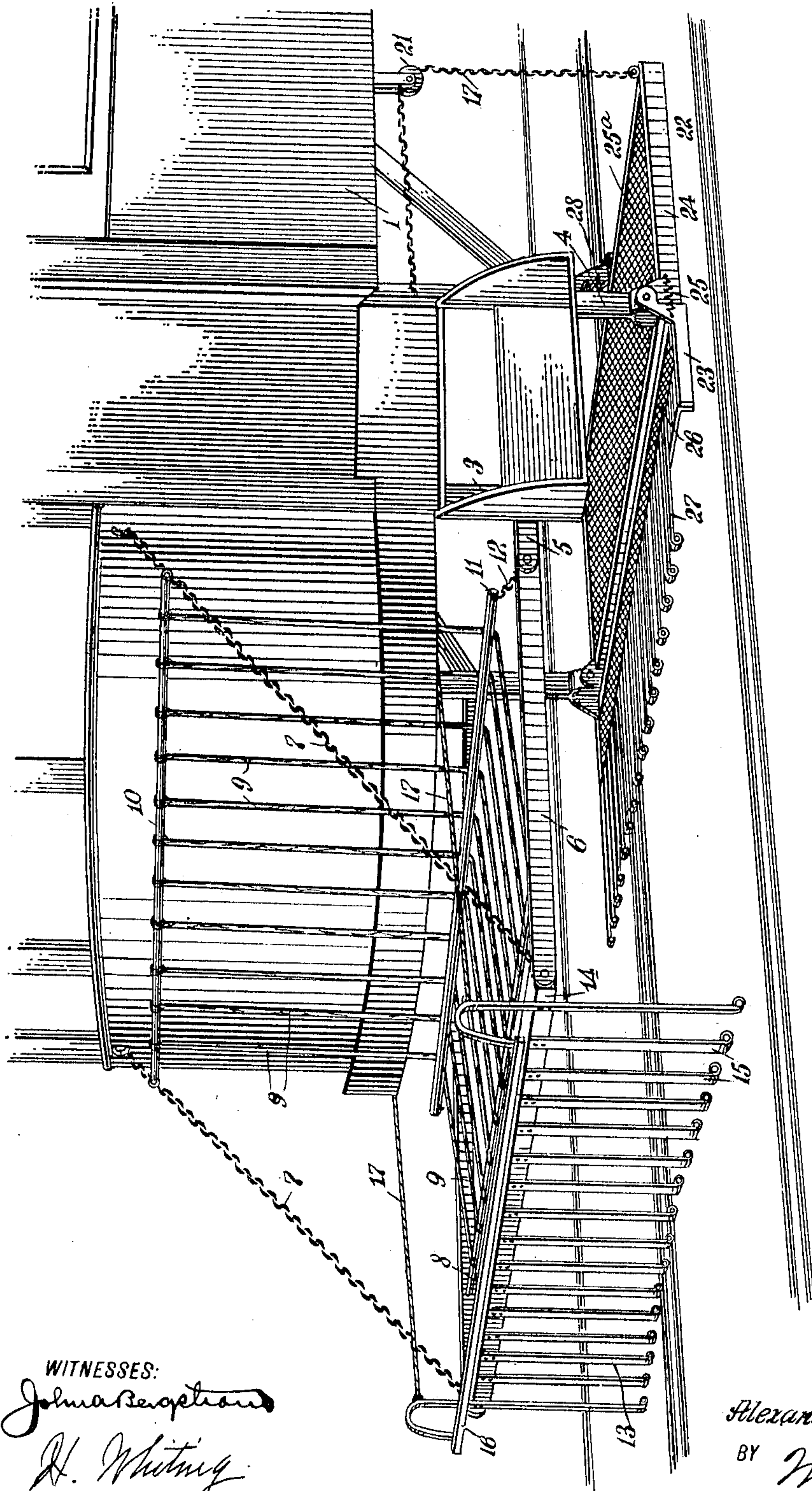


A. J. HAGAN.
AUTOMATIC CAR FENDER.
APPLICATION FILED FEB. 2, 1910.

969,753.

Patented Sept. 6, 1910.

3 SHEETS—SHEET 1.



WITNESSES:
John A. Bingham
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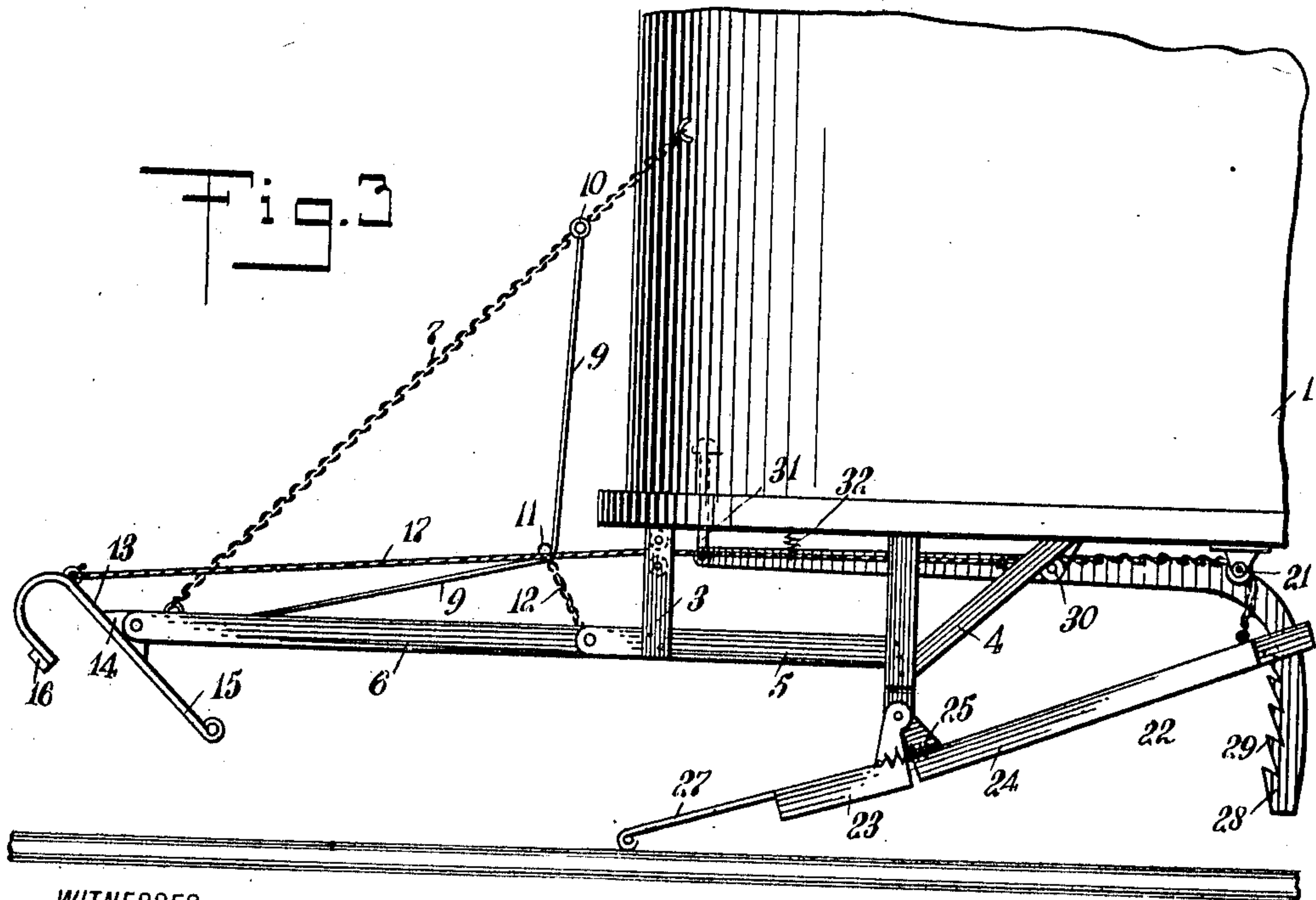
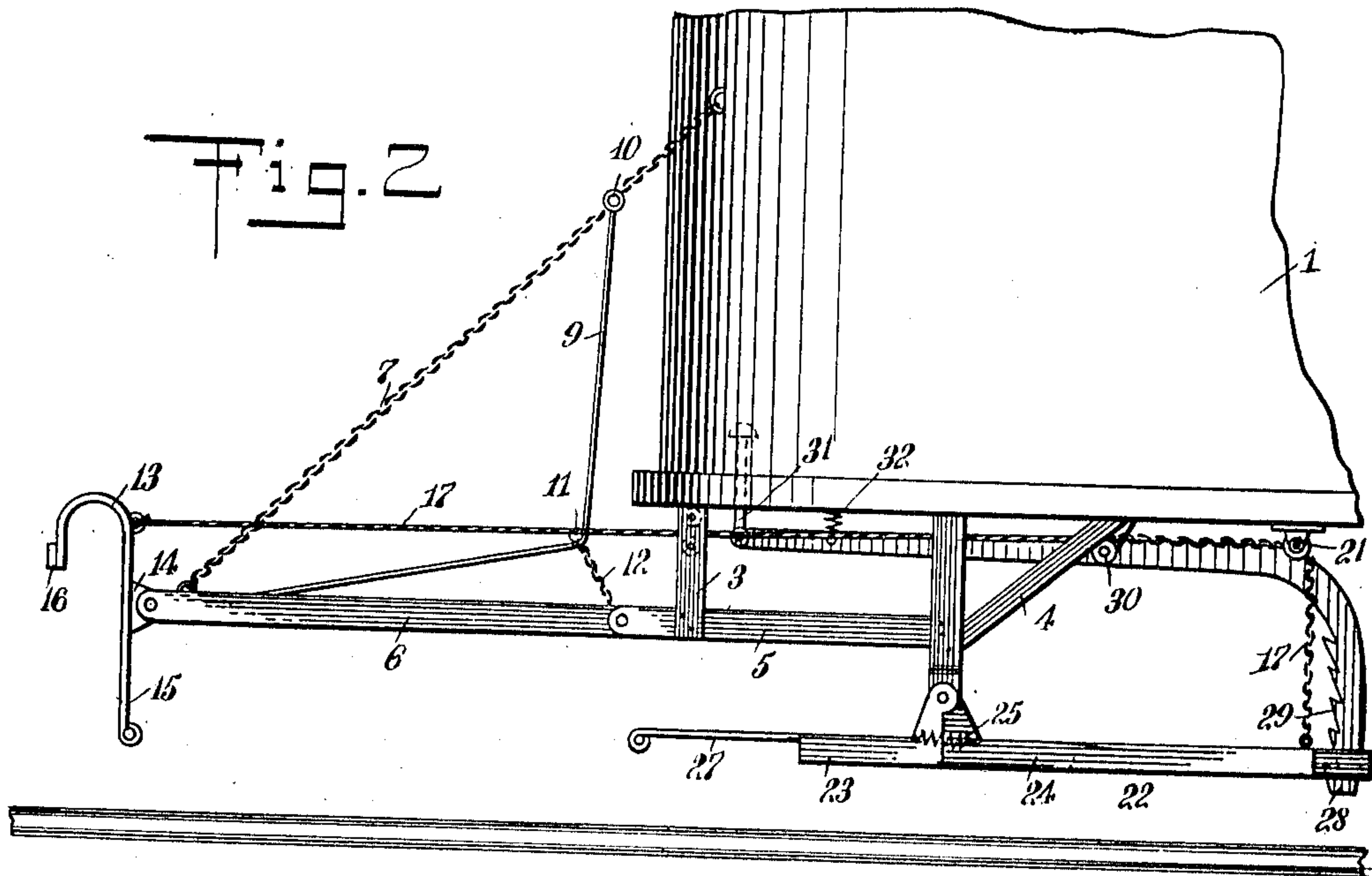
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3 SHEETS—SHEET 2.



WITNESSES:

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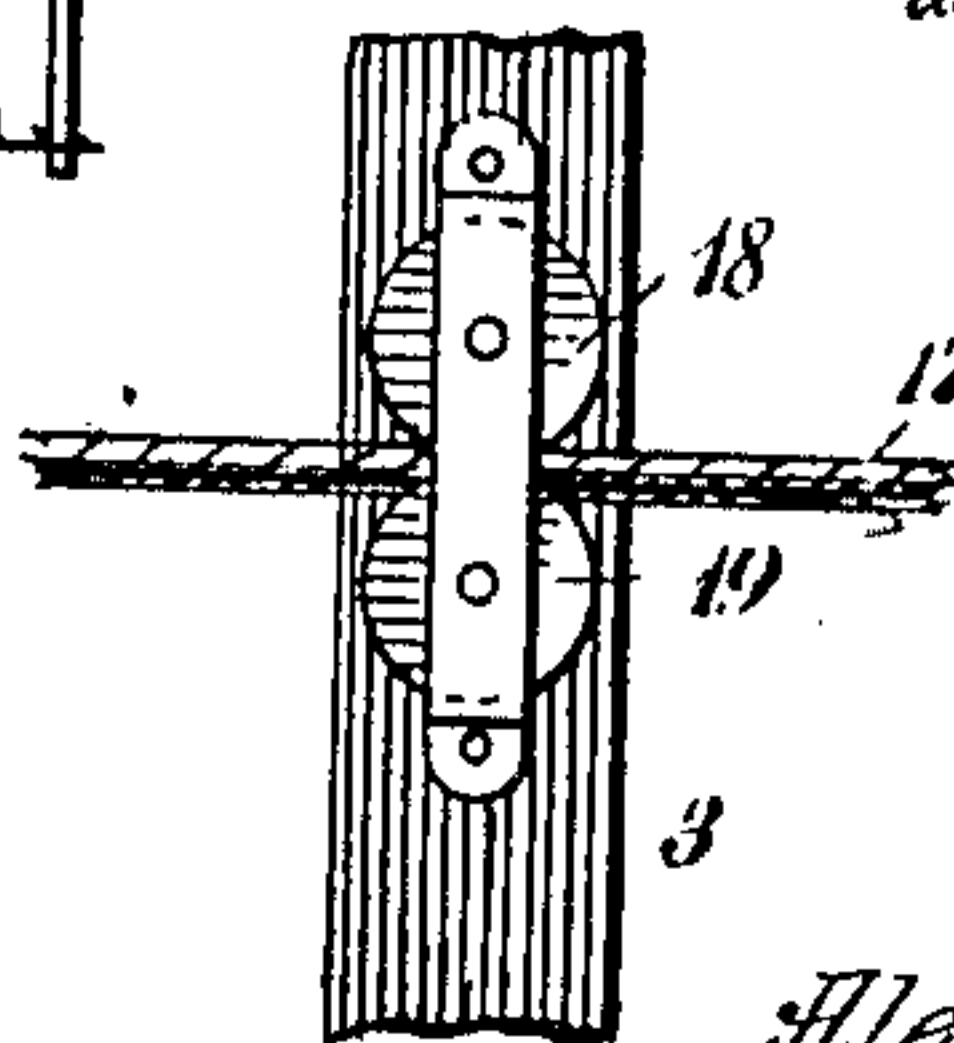
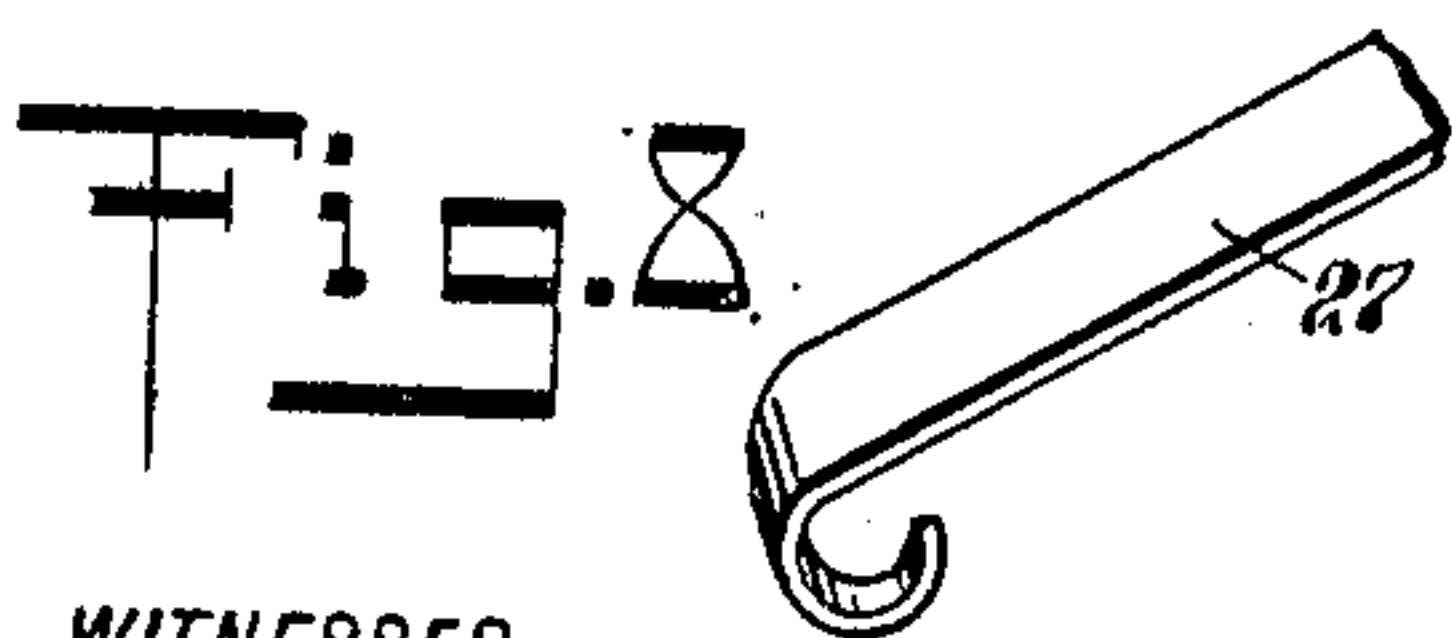
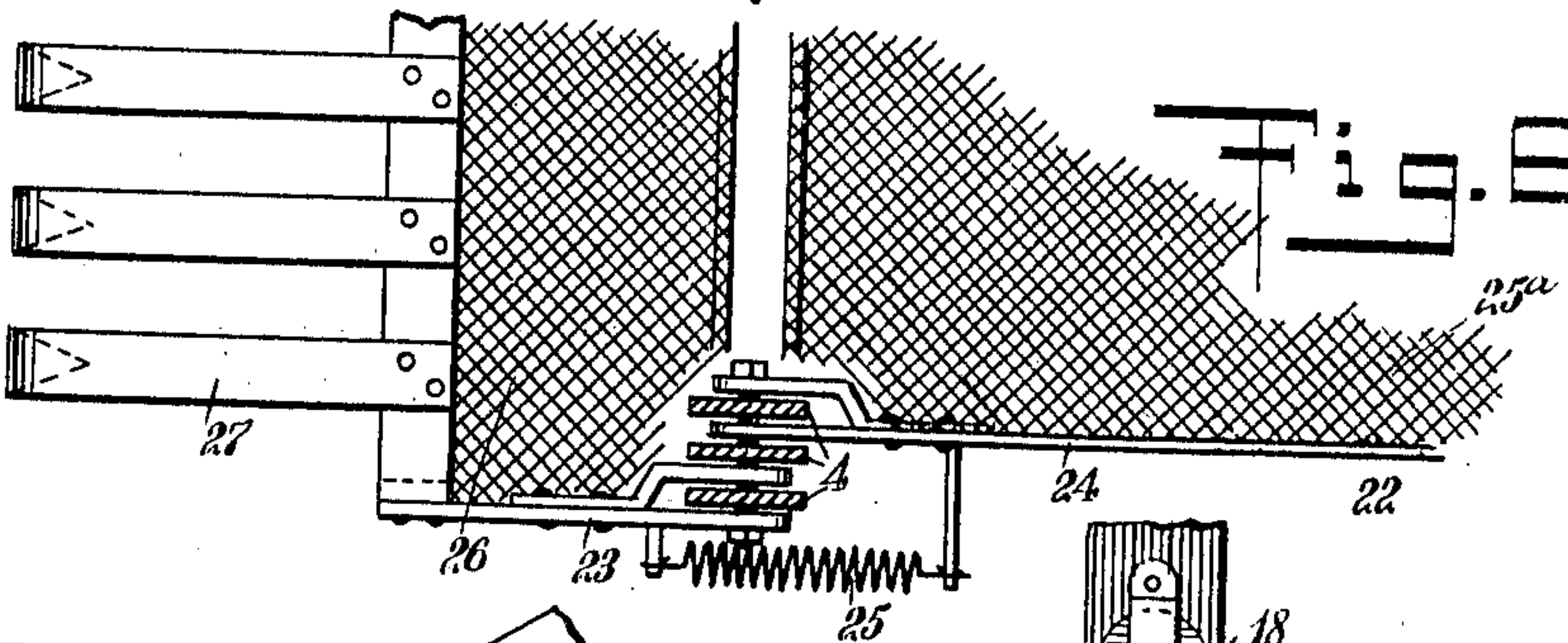
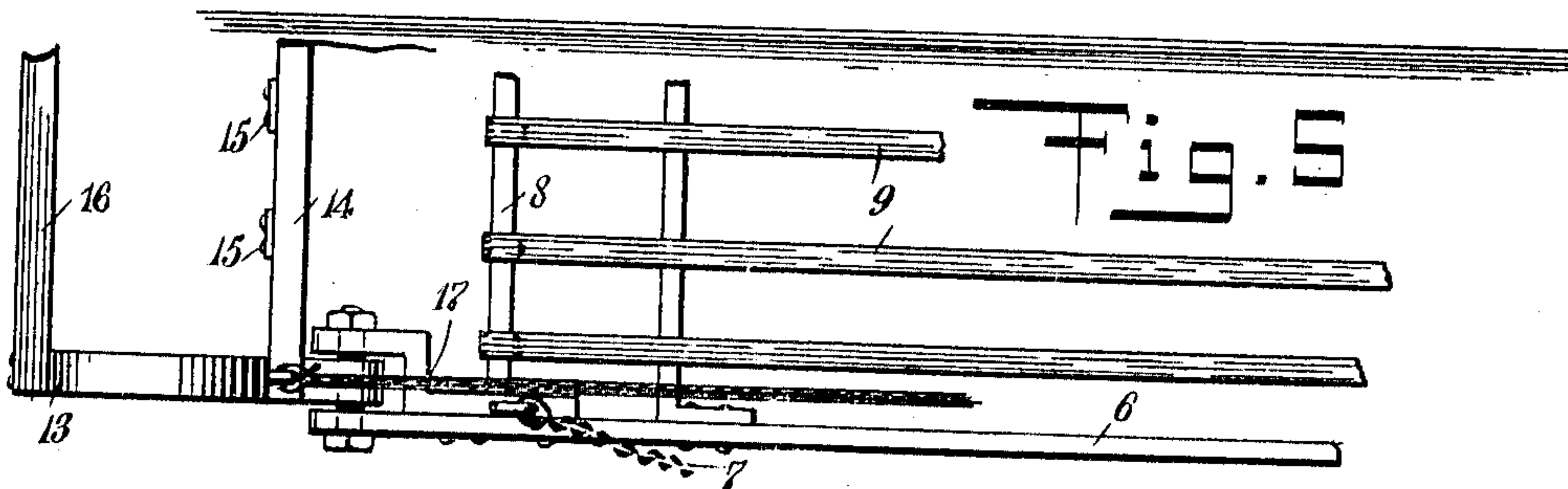
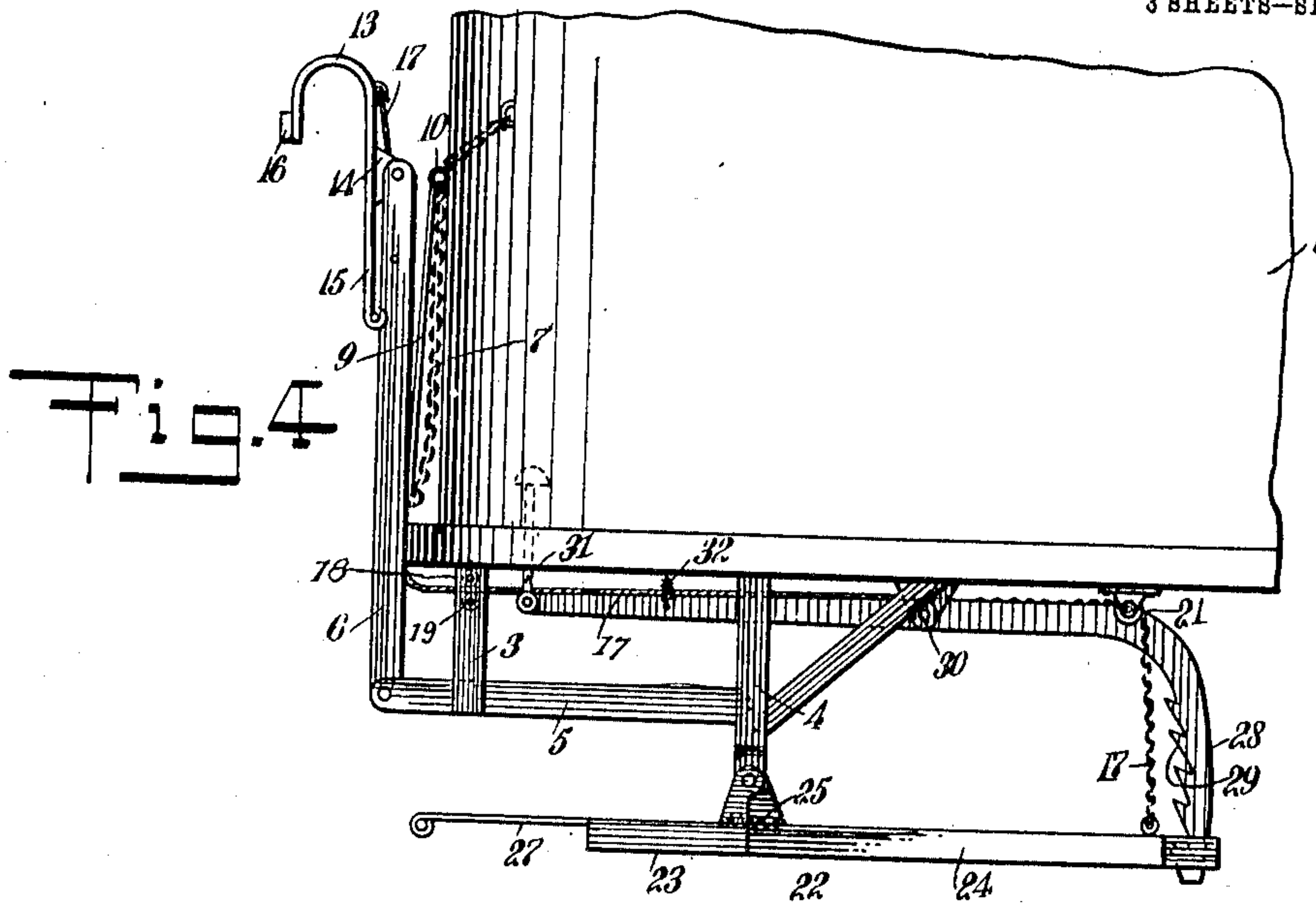
ATTORNEYS

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3 SHEETS—SHEET 3.



WITNESSES:
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UNITED STATES PATENT OFFICE.

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AUTOMATIC CAR-FENDER.

969,753.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed February 2, 1910. Serial No. 541,526.

To all whom it may concern:

Be it known that I, ALEXANDER JOSEPH HAGAN, a citizen of the United States, and a resident of Represa, in the county of Sacramento and State of California, have invented a new and Improved Automatic Car-Fender, of which the following is a full, clear, and exact description.

This invention relates to an automatic fender for cars or the like, and an object of the invention is to provide a fender which will automatically drop to scoop up a body by the impact of the body on a trip gate.

A further object of this invention is to provide an automatic drop fender with means for readily returning the fender to its normal position.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

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

Figure 1 is a perspective view of my device; Fig. 2 is a side view in elevation, showing the fender in its raised position; Fig. 3 is a side view in elevation, showing the fender in its dropped or pick-up position; Fig. 4 is a side view in elevation, showing the front of the fender folded up out of the way; Fig. 5 is an enlarged detail plan view of the front end of the main fender; Fig. 6 is an enlarged fragmentary plan view of the front end of the drop fender, partly in section to show the pivotal connection; Fig. 7 is an enlarged fragmentary view in elevation, of the means for guiding the flexible connection between the trip and the drop fender; and Fig. 8 is an enlarged perspective view of one of the springs on the drop fender.

Referring more particularly to the separate parts of the device, 1 indicates a car of any suitable structure. Secured to the under side of the car in any suitable manner, there are provided on each side thereof a pair of brackets 3 and 4, which support forwardly-extending arms 5.

Pivotally connected to the forward end of the arms 5, there is provided a frame 6, which is supported in its lowermost position by means of flexible connections 7,

which may be of any suitable character, such as chains, and are secured at their upper ends to the body of the car 1 in any suitable manner.

Extending transversely of the frame 6, and secured thereto in any well known manner, there is provided a cross bar 8, which forms a means of attachment for a plurality of flexible strips 9, which may be of any suitable strong, resilient material, such as canvas. The opposite ends of these strips 9 are secured in any well known manner to a cross bar 10, which is supported by the flexible chains 7, intermediate the ends thereof.

In order to hold the flexible strips 9 in a receptive cradle-like form, there is provided a floating cross bar 11, which is adjustably connected to the arms 5 by means of short lengths of flexible connections 12 of any suitable character, such as chains.

Pivotally connected to the forward end of the frame 6 in any well known manner, there is provided a trip gate 13, which is preferably formed of a transverse bar 14, to which is secured at spaced intervals a plurality of spring fingers 15, the lower ends of which are coiled back on themselves to form blunt extremities. The two outer spring fingers 15 are extended up beyond the bar 14, and curved over to form a suitable support for a transverse bar 16, which is held in spaced relation with the fingers 15 and the bar 14. The trip gate 13 has secured thereto in any well known manner a pair of flexible connections 17, which extend between guide pulleys 18 and 19 on the brackets 3, and also over pulleys 21 on the car body 1 to a drop fender 22. The drop fender 22 is composed of two members, 23 and 24, each of which is pivotally connected to the bracket 4 in any well known manner, such as that more fully illustrated in Fig. 6. These members 23 and 24 are yieldingly held abutting against each other by means of springs 25 on each side thereof. The member 24 is composed preferably of a frame covered by a suitable network of wire 25^a, which forms a yielding support for a body which may be thrown thereon. The forward member 23 is also formed for a portion of its length with a frame covered with a network of wire 26, which also forms a resilient support for a body cast thereon. Extending from the forward ends of this framework there are also provided a plu-

5 rality of spring fingers 27, which are adapted to conform to the unevenness of the ground when the fender is lowered, and have their lower ends formed to a point and turned back on themselves, as more clearly illustrated in Fig. 8.

10 In order to lock the drop fender 22 in its pick-up position, there is provided a latch lever 28, which has thereon a number of teeth 29, which are adapted to engage the rear end of the fender 22, and hold it in any of its adjusted positions. The lever 28 is pivotally connected at 30 in any well known manner to the body of the car 1, and extends forwardly, where it is pivotally connected to a treadle 31. The treadle 31 is for the purpose of depressing the forward end of the lever 28, and thus removing the teeth 29 from engagement with the fender 22, allowing it to fall into its normal position. In order to return the latch lever 28 from its normal position ready to lockingly engage the fender 22, there is provided a tension spring 32, which is connected to the body of the car 1 at one end, and to the forward end of the lever 28 at the other end.

25 The operation of the device will be readily understood when taken in connection with the above description. There is preferably provided one of these fenders at each end of the car. The fender at the front end is extended in the position indicated in Fig. 2, when running in a normal condition. The fender at the rear end of the car is collapsed up against the car end in a manner clearly illustrated in Fig. 4, so that the extended parts will be out of the way. When the car approaches an obstruction, the trip gate 13, being at the foremost end, will come in contact with the obstacle first. If this obstacle should happen to be a man standing up, the trip gate 13 will tend to invert him into the cradle formed by the frame 6 and the strips 9, which will resiliently give under his weight, minimizing the shock, and causing him little injury. If, however, the obstacle should be a low one, such as a person lying on the ground, the impact of the body against the lower end of the trip gate 13 will swing it to the position indicated in Fig. 3, whereby the rear end of the drop fender 22 will be raised and the forward end depressed to the position indicated in Fig. 3, where the parts will be in a receptive position for the body, scooping it up with the least possible injury. The fender 22 is automatically locked in its pick-up position by the lock lever 28 engaging the rear end of the fender. Should the obstruction be the body of a person, the car will have to be stopped, and the person helped or pulled out of the fender 22. If, however, the dropping of the fender to the pick-up position is caused by the dip of the gate 13 into the

65 ground, due to the uneven running of the car, or if the fender is dropped by a boulder striking the trip gate 13, it is not necessary for the motorman to leave the car; he can merely put his weight onto the treadle 31, thereby drawing the locking lever 28 out of engagement with the fender 22, which will automatically drop by gravity into its normal position. 70

Having thus described my invention, I claim as new and desire to secure by Letters Patent:— 75

1. In a device of the class described, the combination with a support, of a frame connected to said support, flexible suspension means for said frame, a plurality of flexible strips connected to said frame and suspension means, and a floating bar loosely engaging said strips and capable of movement relative thereto, for holding said strips in a cradle-like form. 85

2. In a device of the class described, the combination with a support, of a frame pivotally connected to said support, flexible suspension means for said frame, flexible strips connected to said frame and said suspension means, a bar loosely engaging said strips intermediate their ends and capable of movement relative thereto, and flexible connections between said bar and said frame. 90

3. In a device of the class described, the combination with a support, of a frame pivotally connected to said support, flexible suspension members for said frame, a transverse bar connected to said frame, a transverse bar connected to said suspension members, a plurality of flexible strips connected to said bars at each end, a transverse bar engaging said flexible strips intermediate their ends, and a flexible connection between said last-mentioned bar and said frame. 100

4. In a device of the class described, the combination with a car, of supporting brackets depending from said car, a frame pivotally connected to the forward end of said brackets, flexible suspension members for said frame, a plurality of flexible strips connected to said frame and said suspension members, a trip pivotally connected to said frame, a fender pivotally connected to said brackets, a flexible connection between said trip and said fender, whereby said trip is adapted to actuate said fender, means for locking said fender, and means for releasing said locking means from the interior of said car. 110

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 120

ALEXANDER JOSEPH HAGAN.

Witnesses:

J. P. Cox,

J. A. AGUIRRE.