

No. 713,089.

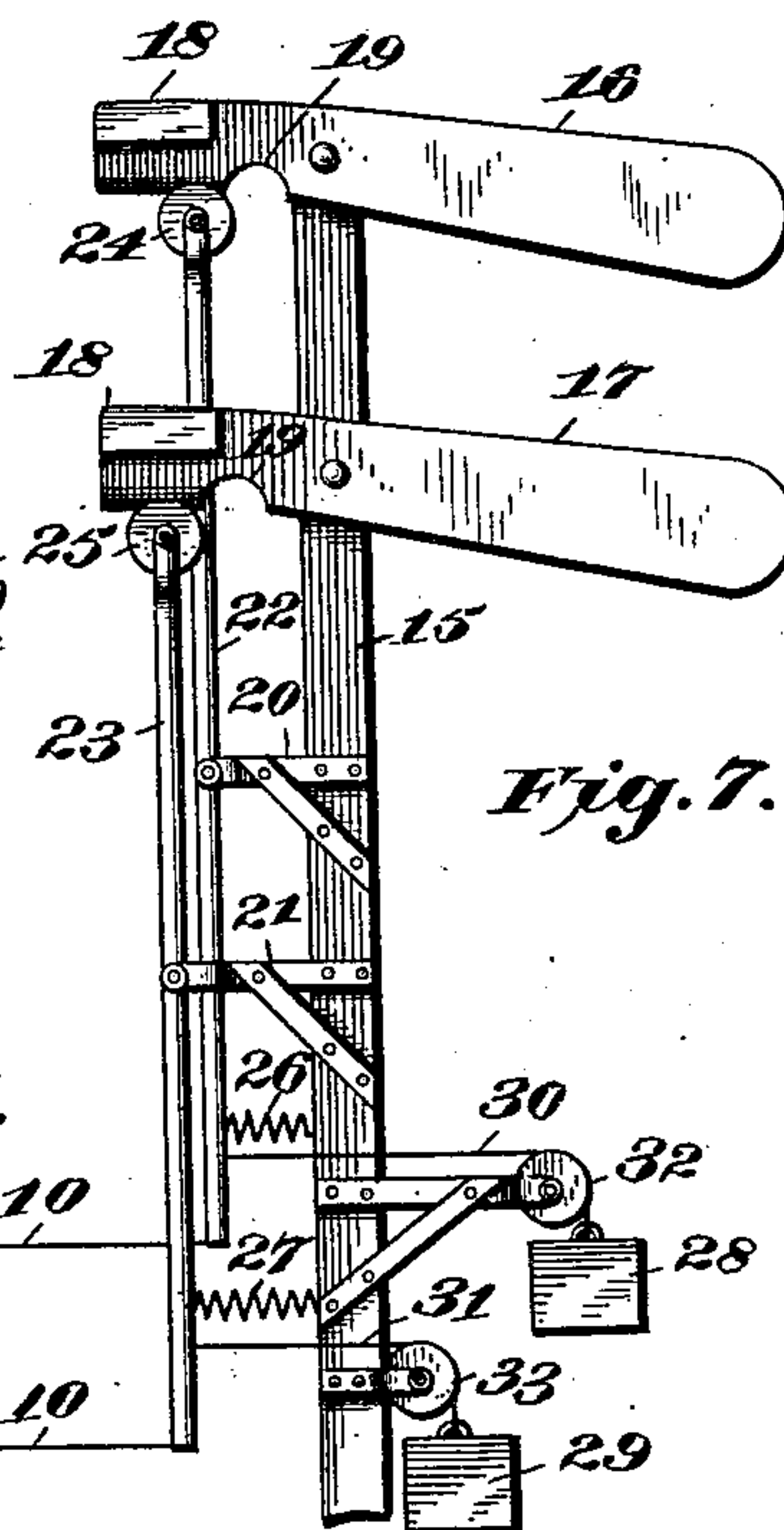
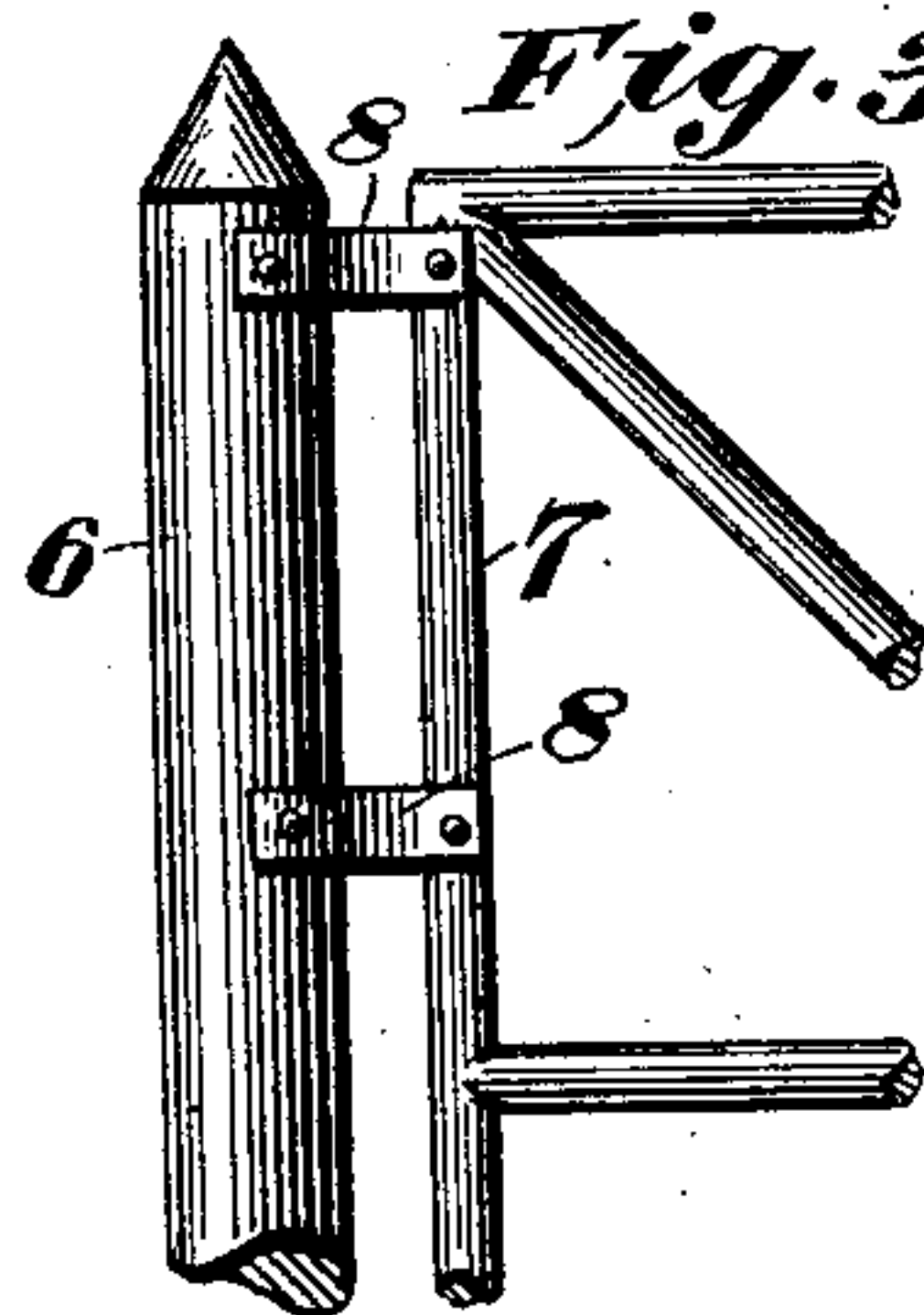
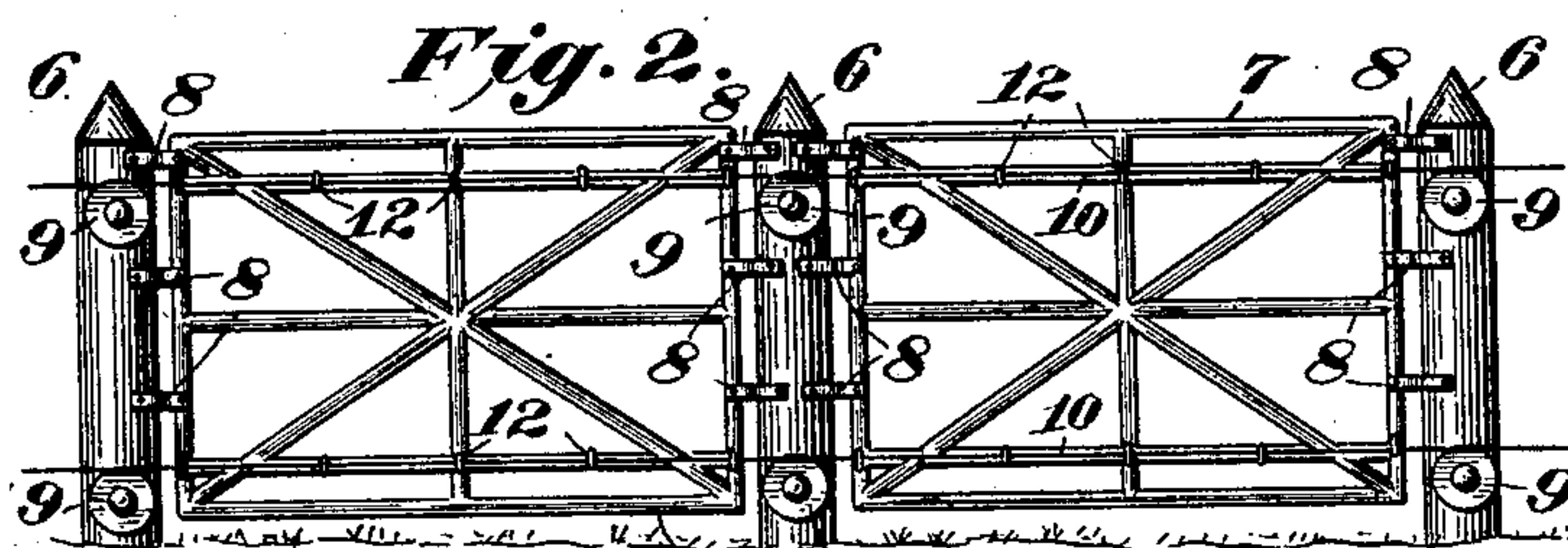
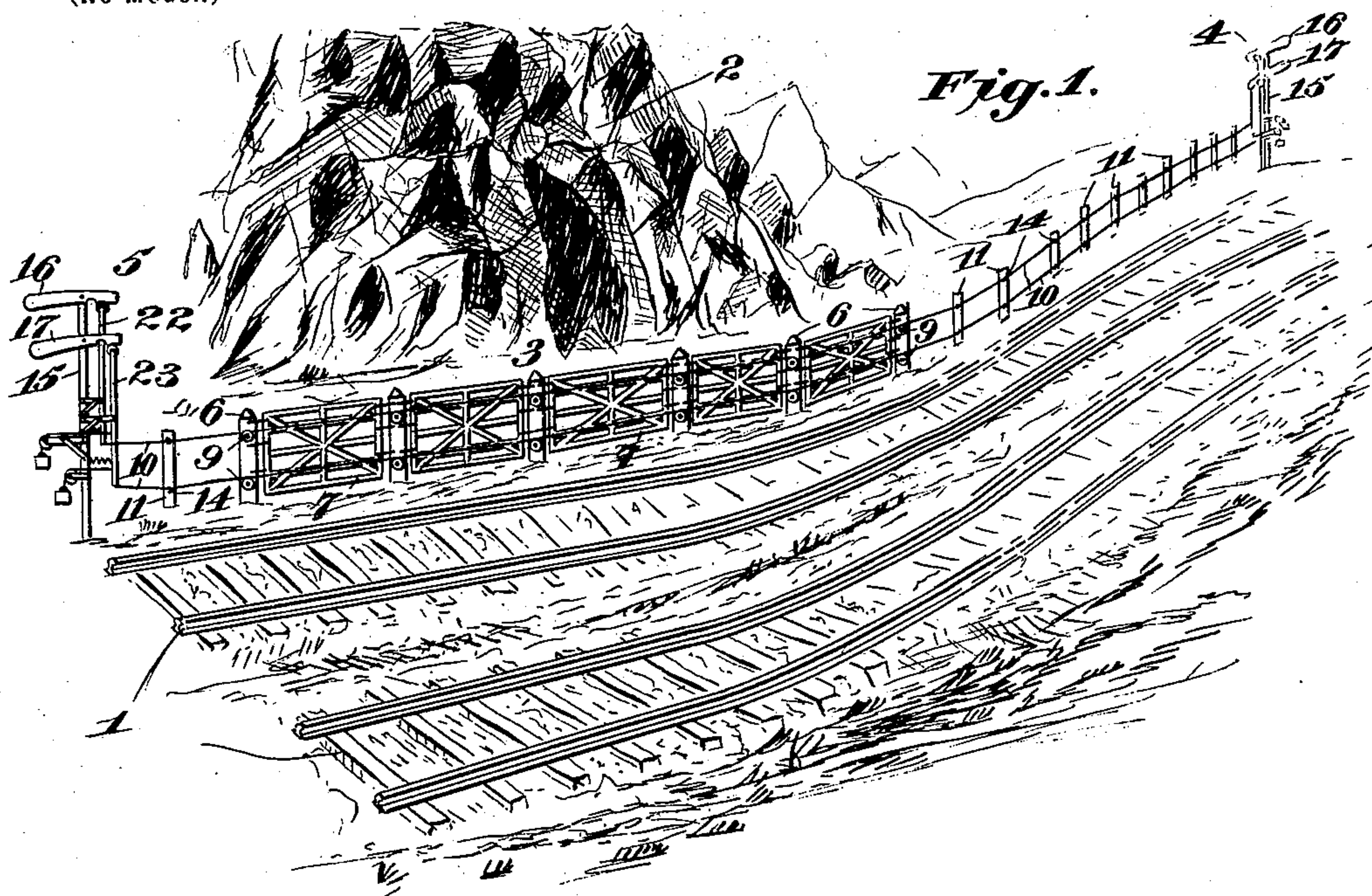
Patented Nov. 11, 1902.

J. FRYSDINGER.

DANGER SIGNAL FOR RAILROADS.

(Application filed Apr. 9, 1902.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

JESSE FRYSSINGER, OF HANOVER, PENNSYLVANIA.

DANGER-SIGNAL FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 713,089, dated November 11, 1902.

Application filed April 9, 1902. Serial No. 102,070. (No model.)

To all whom it may concern:

Be it known that I, JESSE FRYSSINGER, a citizen of the United States, residing at Hanover, county of York, and State of Pennsylvania, have invented certain new and useful Improvements in Danger-Signals for Railroads, of which the following is a specification.

My invention relates to danger-signals for railroads.

Valuable railway rolling-stock and the lives of passengers are not infrequently lost on railroads by reason of the engineer having no warning of an obstruction on the track caused by a land-slide or falling of rocks or trees or other obstacles across the track, principally at such exposed places as cuts and where the road runs along a mountain or adjacent any other slope.

The object of my invention is the provision of means whereby signals can be displayed at any desired point of the track to indicate to the engineer that an obstruction has fallen on the track, so that ample warning will be given of the existence of such obstruction or land-slide, presence of rocks or trees on the track, to enable the train to be stopped before the danger is reached and to do this by the very act of the obstruction falling on the track.

To accomplish the foregoing object, I propose to provide at any point along the track where trees, rocks, or land-slides might fall on the track a displaceable device and to provide suitable signals a proper distance on the track from the point where the displaceable device is located which will be adapted for operation by the displaceable device when the obstruction strikes against the displaceable device. In other words, my object is to provide means for automatically signaling the presence of an obstacle on the track and to accomplish such signaling by the act of the obstacle falling on the track as contradistinguished from signaling the presence of such obstacle by the intervention of human agencies.

The invention in one of its preferred embodiments is set forth in detail hereinafter, and it is recited in the appended claims.

In the accompanying drawings, Figure 1 is a view illustrating the manner of use of the invention in connection with a railroad-track. Fig. 2 is a view of the fence employed; Fig. 3, a detail of the frangible fastening for the fence-panel; Fig. 4, a detail of the frangible member of the wire; Fig. 5, a detail illustrating how the wire is seated in the wheel; Fig. 6, a detail of the fastening for holding the wire to the fence panel and post, and Fig. 7 a detail of the signal mechanism.

Referring to Fig. 1, the numeral 1 designates a railway-track, and 2 a hill or prominence located adjacent the track where a land-slide might occur, while 3 shows the general position of the fence, and 4 and 5 the signal-towers located in both directions from the position of the fence. It will be understood that the invention is intended for use in any position where the forces of nature might cause an obstruction or obstacle to fall upon the track, and only one use of the invention—that of indicating presence of a land-slide on the track—is set forth in the present application. The fence consists of posts 6, set solidly into the ground, and panels 7. The panels will in themselves be of strong construction, so that when they are displaced they will be displaced bodily from the posts and not broken in pieces. The connection for the panels is shown in Fig. 3, and consists of the frangible plates 8, secured firmly to the panels and to the posts. These connections 8 are preferably of cast-iron and relatively thin, so that they will be brittle and break readily when the pressure of the land-slide is brought to bear on the panel as said land-slide moves toward the track. On the posts I provide grooved wheels 9, Fig. 5, which are journaled to freely turn, and by preference these wheels are located toward the top and bottom of the posts. The wires 10 run freely over suitable wheels or rollers on posts 11, leading from the signals 4 and 5 to the fence 3, Fig. 1, and these wires also rest in the wheels 9 on the posts 6 of the fence and pass freely through eyes 12 on the panels 7, and the wires are divided into sections for each panel, and at the point where the wires

run over the wheels 9 there are provided frangible connecting members 13, Fig. 4, to which the wire sections are secured. These frangible connecting-sections 13 are preferably of about the same size as the wires and form a continuation of the wire sections—that is to say, the ends of the wire sections are connected to the ends of the frangible connecting members 13. These members 13 are located in the grooves of the wheels, and they are of sufficient length to extend completely across the face of the posts 6 (one being provided for each post at the top and bottom) and lap over onto the fence-panel 7. The outermost eyes 12 and other eyes 14 on the posts hold the frangible members 13 loosely yet securely. Provision is thus made for all expansion and contraction of the wires and the members 13, as they can slip loosely through the eyes and on the wheels; but should a land-slide, for instance, bear down upon the panels they will be forced away from the posts 6 because the connections 8 will snap, as will also the frangible members 13, (which are preferably made of cast-iron,) so that as the entire panel is torn away from the posts the wires will be severed at some or all of the frangible members 13, thereby releasing the wires 10.

The signal mechanism, which is especially adapted for use in connection with the displaceable fence-panels, is shown in Fig. 7. The numeral 15 designates the signal-post, to which the semaphore blades or paddles 16 and 17 are pivoted, they being provided with weighted heads 18, having notches 19. The numerals 20 and 21 designate arms extending out from the signal-post, and to these arms are pivoted or fulcrumed the levers 22 and 23, having the wheels 24 and 25 journaled at their upper ends and adapted to coact with the heads and notches of the respective semaphore-paddles. The numerals 26 and 27 represent coil-springs connecting the levers 22 and 23 to the signal-post, while 28 and 29 are weights having cords 30 and 31 connected to the respective levers 22 and 23 and running over pulleys 32 and 33 on the signal-post. These weights may be added to or diminished so as to give the proper tension, their purpose being to keep the wires 10 properly taut at all times, while the function of the springs (which will be amplified by the weights) is to operate the levers to throw the wheels 24 and 25 from under the weighted heads of the semaphore-blades when the panels of the fence are torn from the posts, thus permitting the semaphore-blades to come to horizontal position, indicating to the engineer that there is an obstacle on the track. Should the pressure on the fence-panels not be sufficient to tear them from the posts or break the wires, the pull exerted on the wires 10 will cause the levers 22 and 23 to swing in the opposite direction and cause the wheels 24 and 25 to enter the notches

19, which will also bring the paddles to horizontal position and indicate the danger. In consequence the signals will be operated whether the panels are broken from the posts and the wires broken or not, thus insuring a warning to the engineer whenever danger is ahead. It will be understood that signal-lights will be used on the semaphores, so that the signal will be as plain by night as by day.

I am aware that the invention might assume other forms and constructions from those set forth and operate in the same general manner, and I therefore lay claim to all modifications falling within the spirit and scope of my invention.

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

1. In an automatic signal of the class described, the combination with a movable barrier, of a signal, a breakable operative connection between the barrier and the signal, and means for operating the signal when said connection between the barrier and signal is broken.

2. In an automatic signal of the class described, the combination with relatively stationary posts, of a fence panel or section, frangible or detachable connections securing the panels to the posts, a signal, and an operative connection between the signal and the panel.

3. In an automatic signal of the class described, the combination with relatively stationary posts, of a fence panel or section, frangible or detachable connections between the panel and the posts, a signal, a wire for operating the signal which is attached to the post and to the panel, and a frangible or breakable section for said wire where the panel adjoins the post.

4. In an automatic signal of the class described, the combination with relatively stationary posts, of a panel or section detachably connected to the posts, a signal, a wire connected to the signal, pulleys or wheels on the posts on which the wire runs, and eyes on the panel and post through which the wire runs.

5. In an automatic signal of the class described, the combination with relatively stationary posts, of a panel or section detachably connected to the posts, a signal, a wire connected to the signal, pulleys or wheels on the posts on which the wire runs, eyes on the panel and post through which the wire runs, and means for keeping the wire under tension to compensate for contraction and expansion of said wire.

6. In an automatic signal of the class described, the combination with a movable barrier, of a signal comprising a semaphore, a lever adapted to coact with the semaphore, a wire extending from the lever to the barrier, a weight having a cord connected to the lever,

a pulley over which the cord runs, all adapted for keeping the wire under tension and operating the semaphore.

5 7. In an automatic signal of the class described, the combination with a movable barrier, of a pivoted semaphore having a weighted head and a notch, a pivoted lever having a wheel bearing on the head and adapted to enter the notch, a wire connecting the lever

to the barrier, a weight coacting with the lever to keep the wire under tension, and a spring coacting with the lever. 10

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JESSE FRYSSINGER.

Witnesses:

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