

No. 771,496.

PATENTED OCT. 4, 1904.

J. PLATTE & J. W. JONES.
SAFETY SIGNALING SYSTEM.

APPLICATION FILED JUNE 14, 1904.

NO MODEL.

4 SHEETS—SHEET 1.

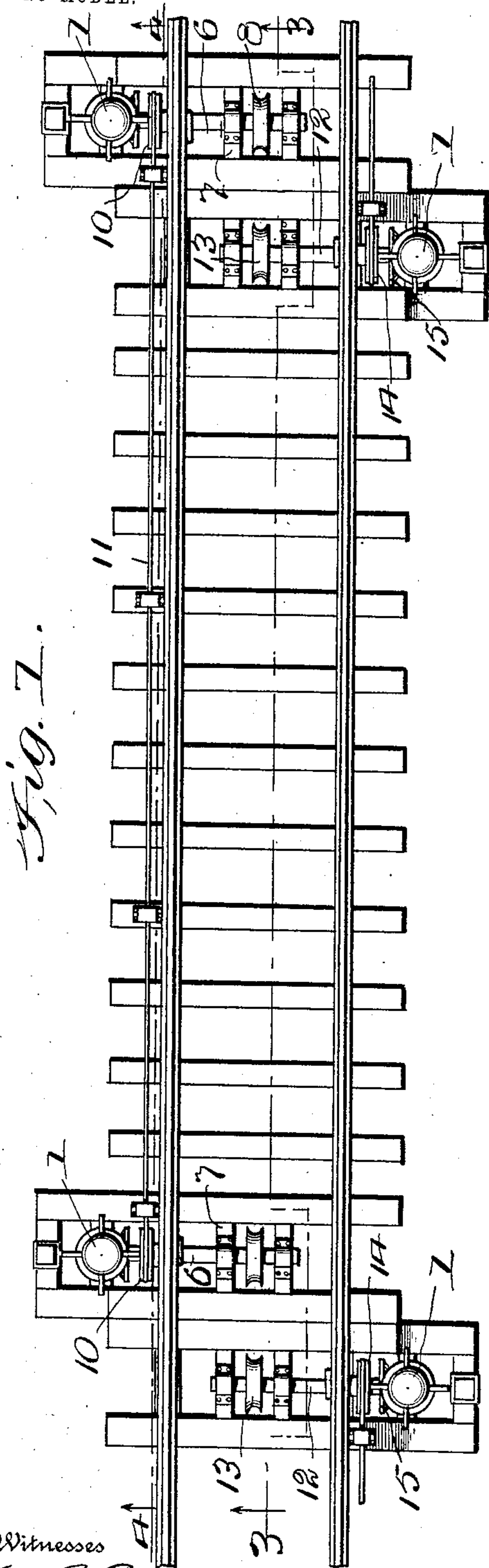


Fig. 1.

Witnesses
G. C. Barry.
H. Gould.

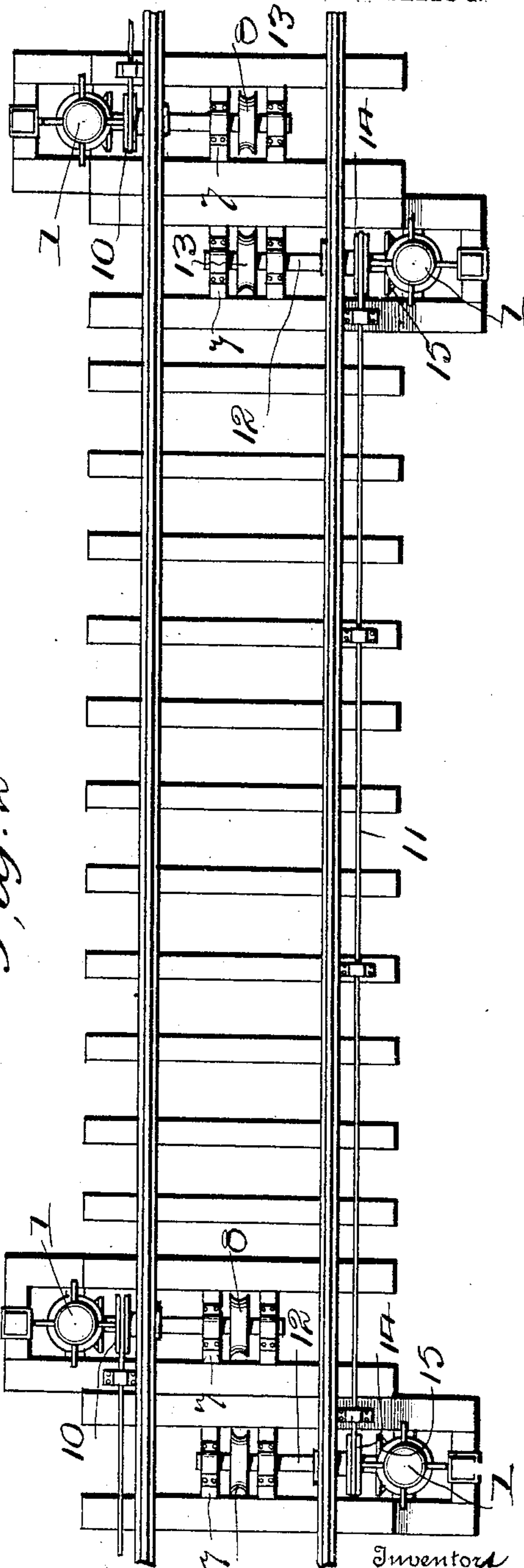


Fig. 2.

Inventors
John Platte and
J. W. Jones
By *W. J. Fitzgerald*
Attorneys.

No. 771,496.

PATENTED OCT. 4, 1904.

J. PLATTE & J. W. JONES.
SAFETY SIGNALING SYSTEM.

APPLICATION FILED JUNE 14, 1904.

NO MODEL.

4 SHEETS—SHEET 2.

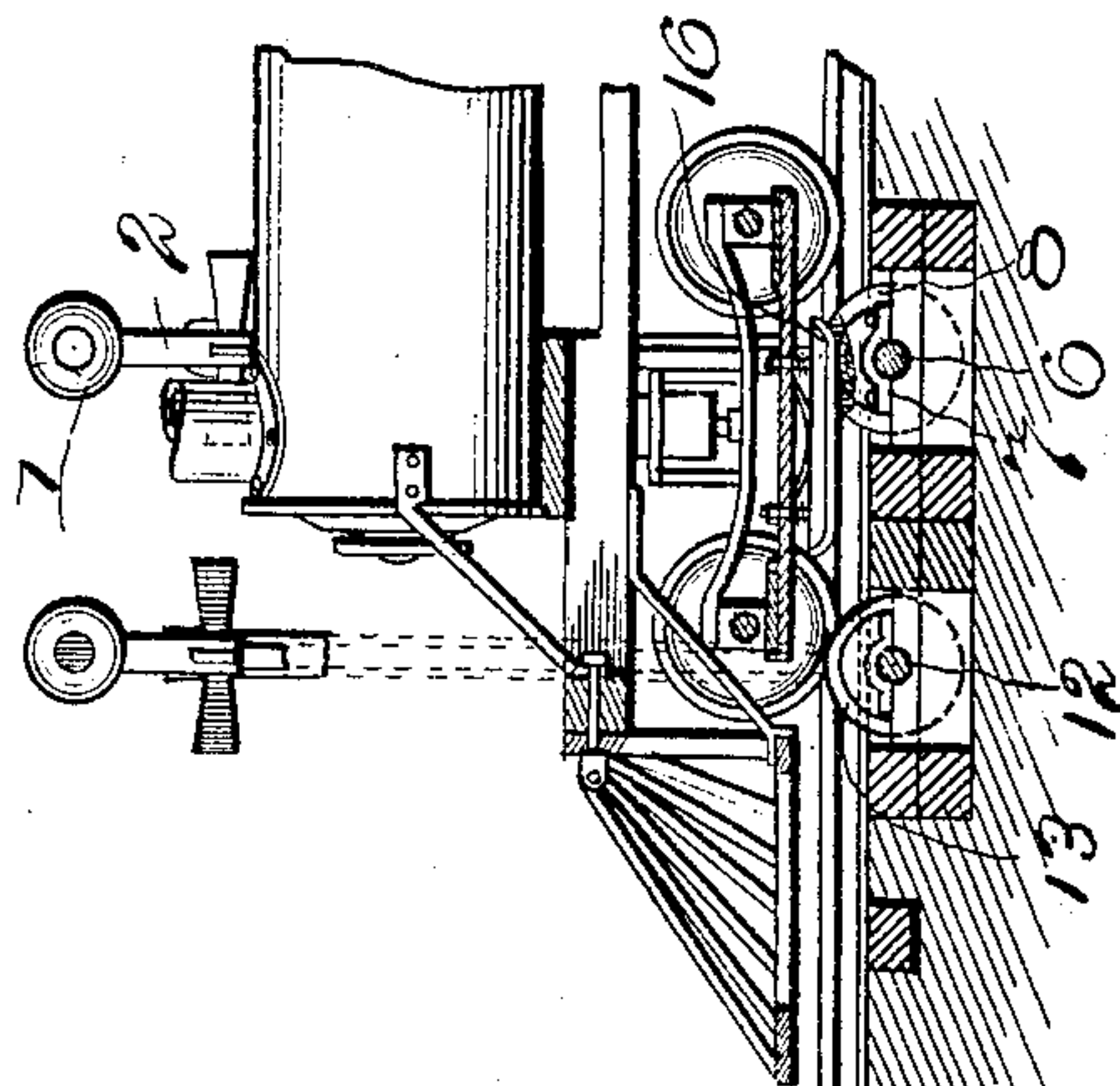


Fig. 3.

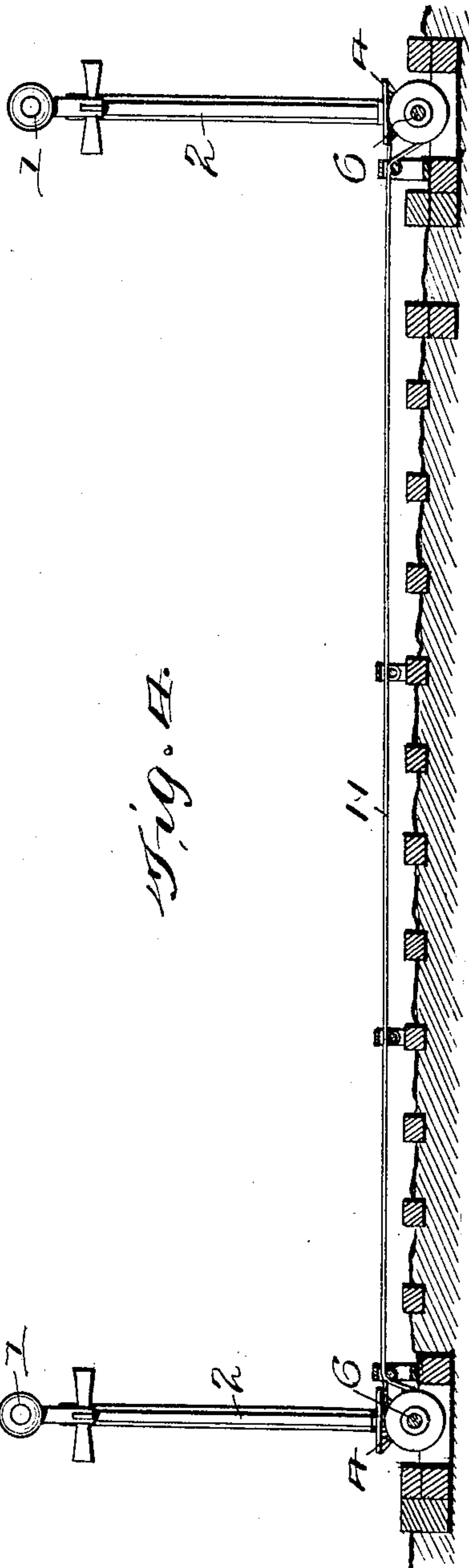
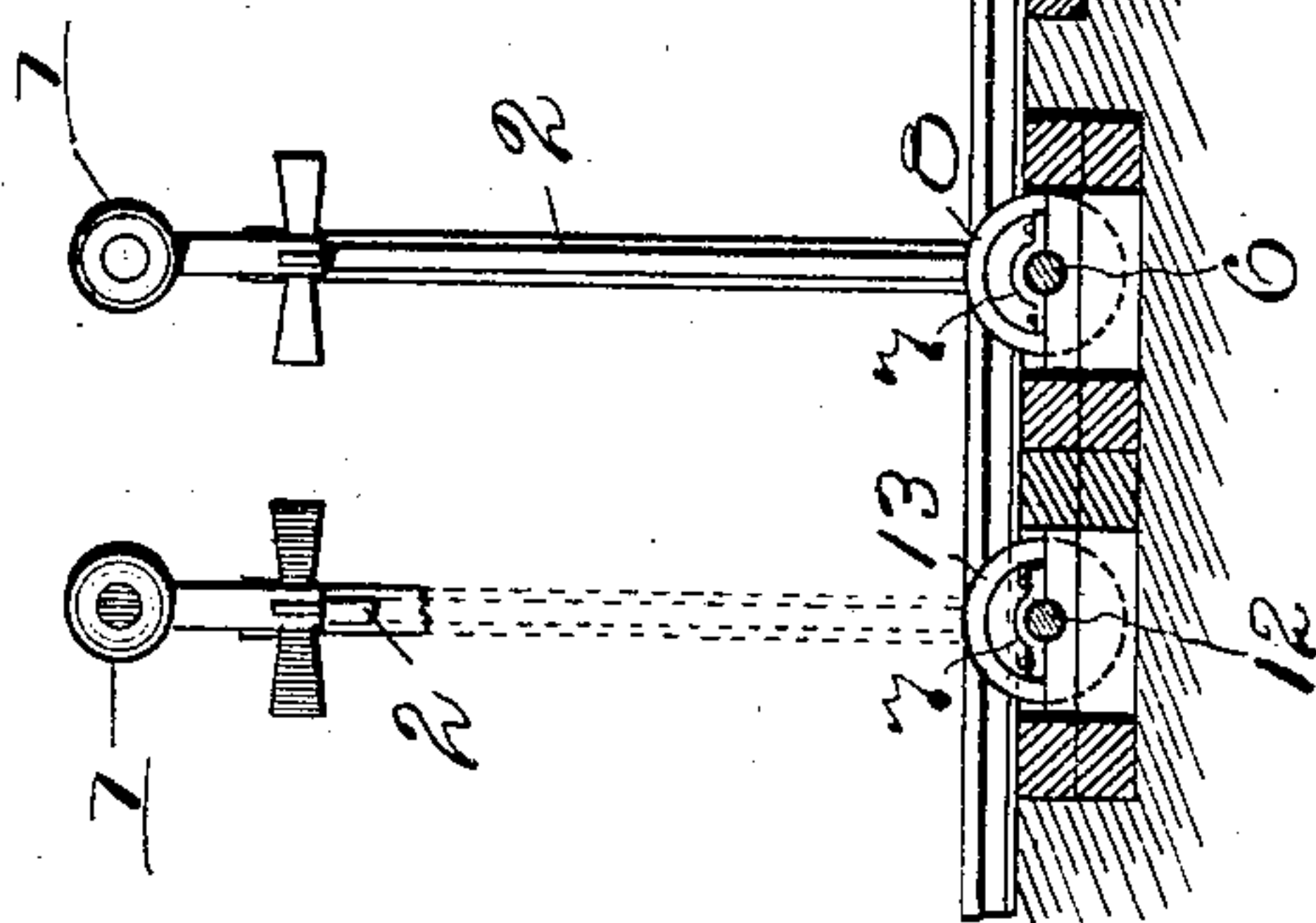


Fig. 4.



Witnesses

H. Barry.
Should.

Inventors
John Platte and
J. W. Jones

By W. F. Donaldson & Co.
Attorneys.

No. 771,496.

PATENTED OCT. 4, 1904.

J. PLATTE & J. W. JONES.
SAFETY SIGNALING SYSTEM.

NO MODEL.

APPLICATION FILED JUNE 14, 1904.

4 SHEETS—SHEET 3.

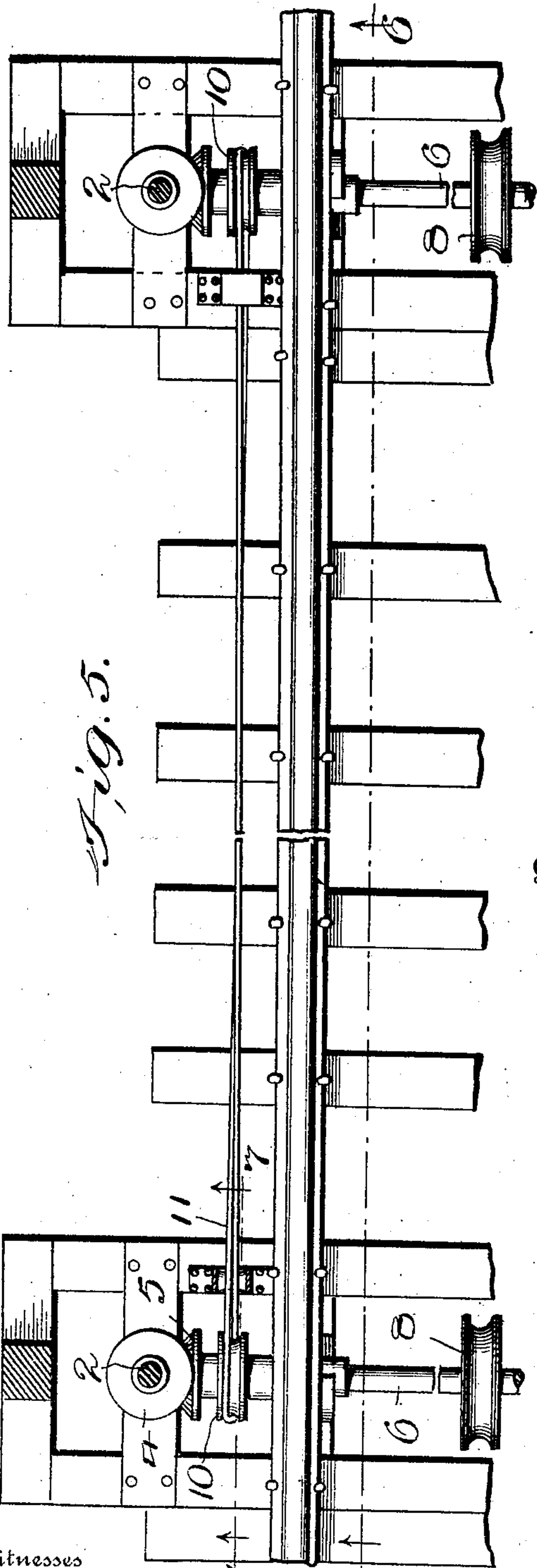


Fig. 5.

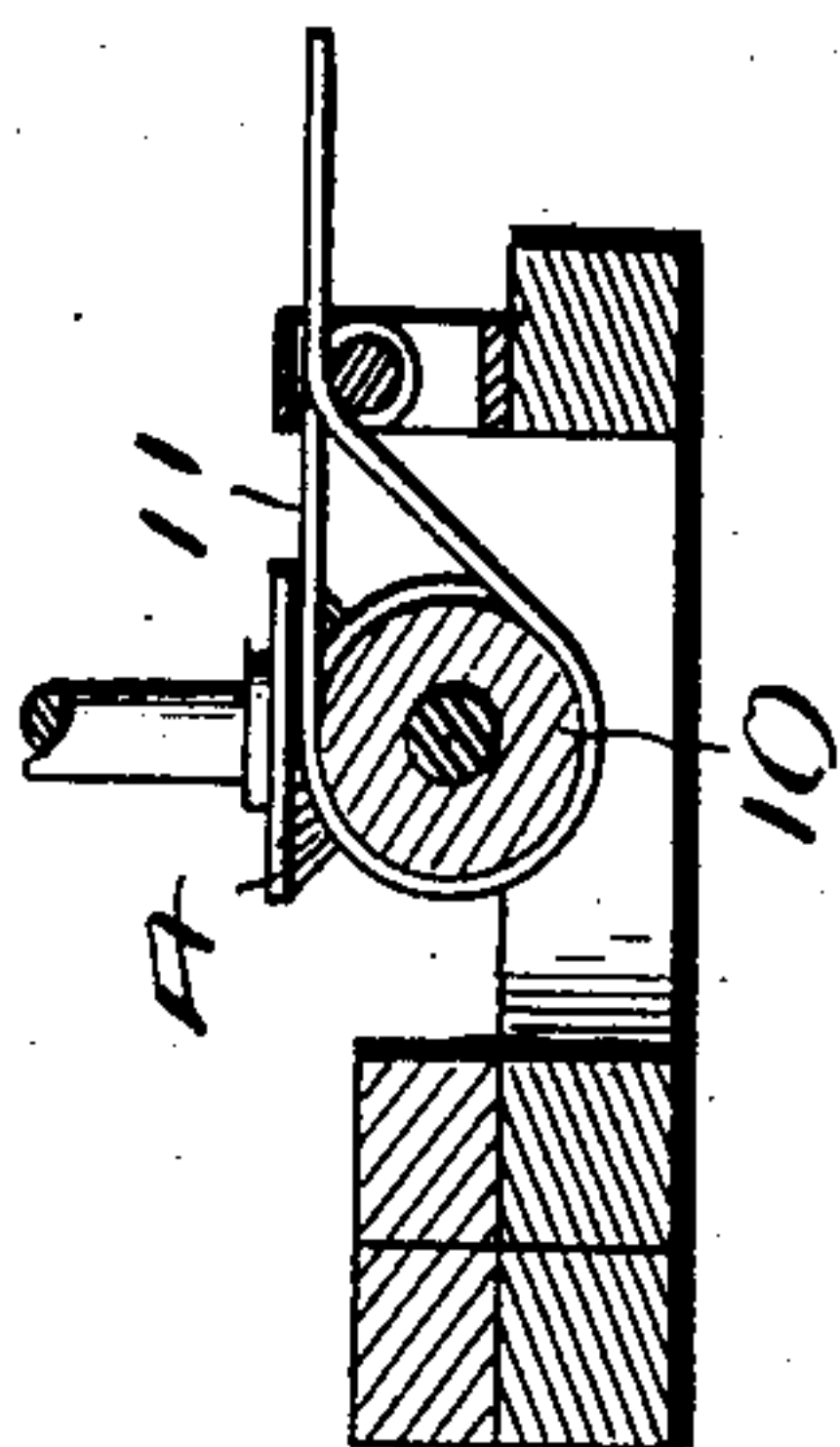


Fig. 6.

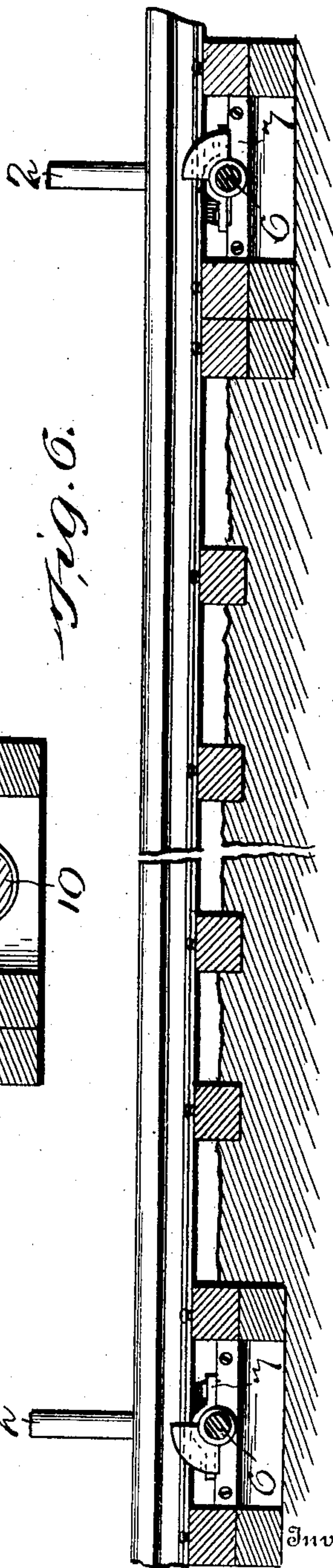


Fig. 7.

Witnesses

W. C. Barry.
W. C. Barry.

By

John Platte and
J. W. Jones
W. F. Gerald & Co.
Attorneys.

No. 771,496.

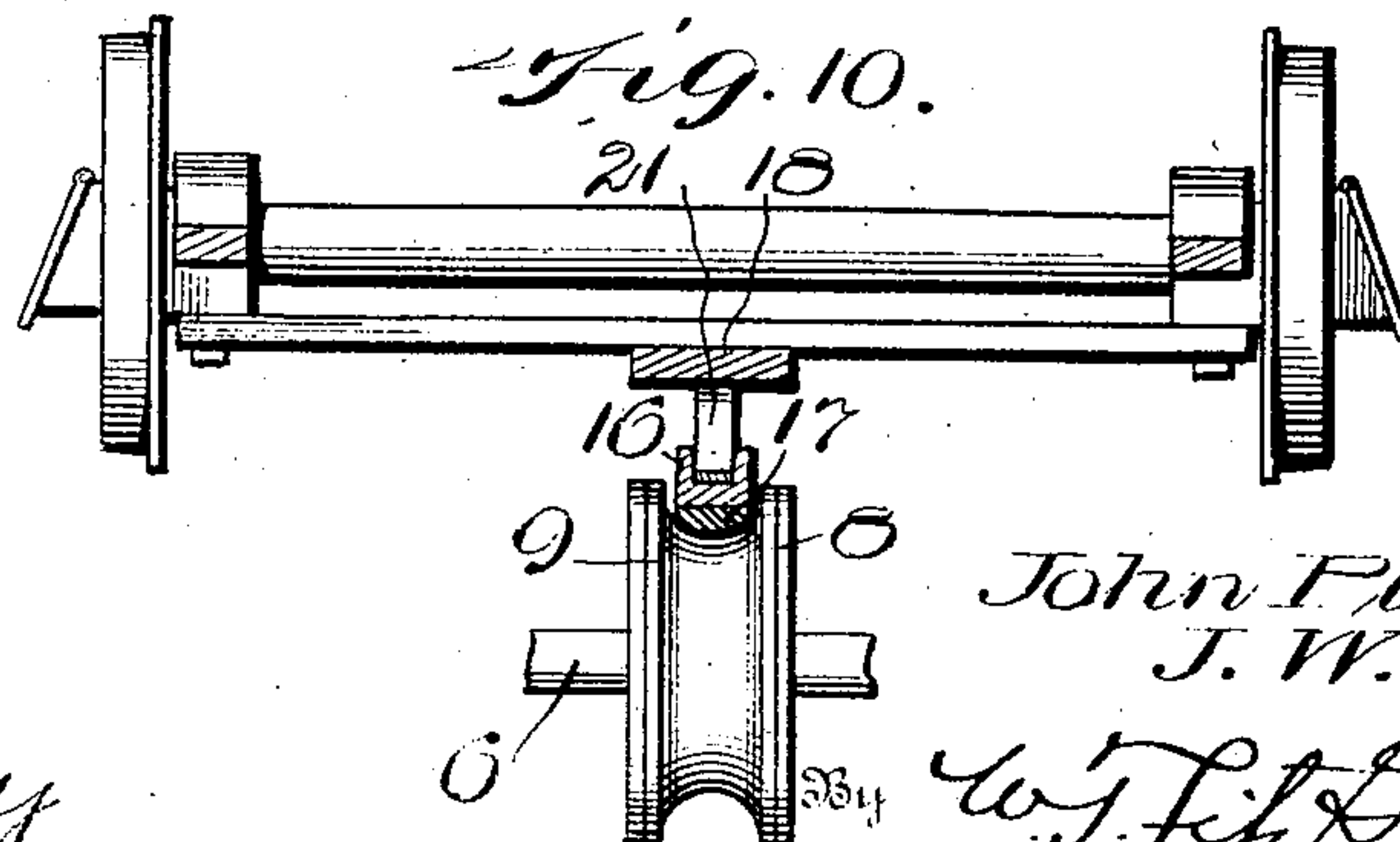
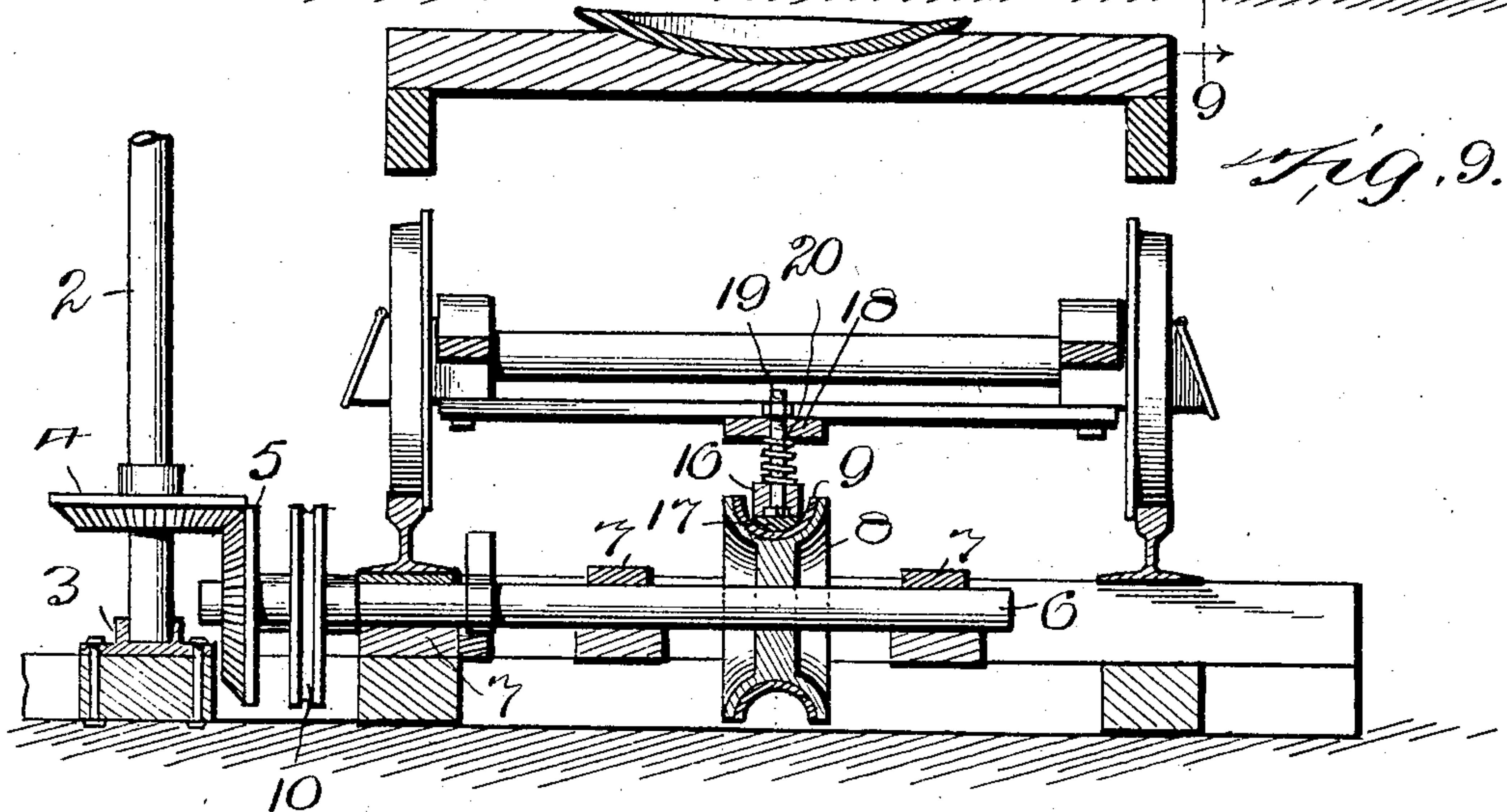
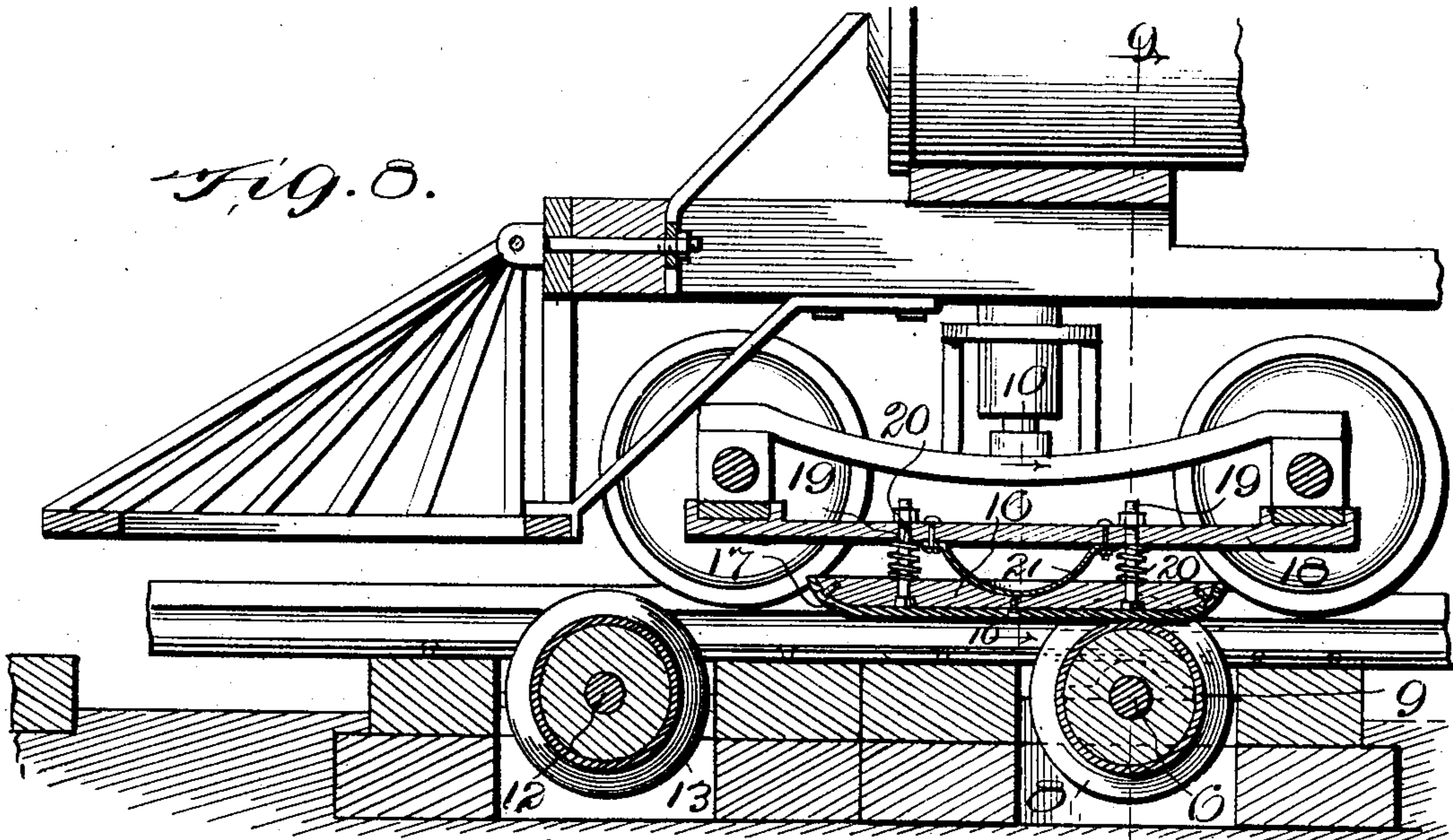
PATENTED OCT. 4, 1904.

J. PLATTE & J. W. JONES.
SAFETY SIGNALING SYSTEM.

NO MODEL.

APPLICATION FILED JUNE 14, 1904.

4 SHEETS—SHEET 4.



Witnesses

J. C. Barry
G. Gould

Inventors
John Platte and
J. W. Jones

W. J. Fitzgerald & Co.
Attorneys

UNITED STATES PATENT OFFICE.

JOHN PLATTE AND JOHN W. JONES, OF ST. CHARLES, MISSOURI.

SAFETY SIGNALING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 771,496, dated October 4, 1904.

Application filed June 14, 1904. Serial No. 212,588. (No model.)

To all whom it may concern:

Be it known that we, JOHN PLATTE and JOHN W. JONES, citizens of the United States, residing at St. Charles, in the county of St. Charles and State of Missouri, have invented certain new and useful Improvements in Safety Signaling Systems; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention has relation to railway signals; and it consists of certain novel features of combination and construction of parts, the preferred form or embodiment whereof will be hereinafter set forth, and pointed out in the claims.

The main object of our invention, among others, is to provide a signaling system of comparatively simple construction, but which shall be reliably efficient in every detail of operation.

A further object of our invention is to provide a signaling system which will operate in both directions to isolate or block off a train, whereby it will be protected within a specified territory or portion of the trackway.

Other objects and advantages will be hereinafter made clearly apparent, reference being had to the accompanying drawings, which are to be considered a part of this application, and in which—

Figure 1 shows a top plan view of a railway-track with our system installed. Fig. 2 is a similar view showing the next succeeding link in our railway system following the link or portion illustrated in Fig. 1. Fig. 3 is a longitudinal sectional view taken on line 3 3 of Fig. 1. Fig. 4 is a similar view taken on line 4 4 of Fig. 1. Fig. 5 is a detail view showing a plan of our signal on a slightly-enlarged scale from that presented in Fig. 1. Fig. 6 is a longitudinal sectional view taken on line 6 6 of Fig. 5. Fig. 7 is a detail in section taken on line 7 7 of Fig. 5. Fig. 8 is a detail view in section, showing the relative position of the locomotive and the actuating-shoe carried thereby designed to operate the signaling system in both directions and on

both sides of the trackway, the trackway being constructed and supplied with signal apparatus as illustrated in Figs. 1 and 2. Fig. 9 illustrates a sectional view of Fig. 8 as taken on line 9 9. Fig. 10 illustrates a detail in section of Fig. 8 on line 10 10.

For convenience of reference to the various details and coöperating accessories of our invention numerals will be employed, the same numeral applying to a similar part throughout the several views.

As a general proposition it may be stated that our invention is an automatic danger-signal to be operated by one train, so that other trains ahead or to the rear will be advised not to proceed farther until they receive the safety-signal. Our danger-signal is to be placed upon steam-roads, trolley-lines, &c., and its purpose is to prevent rear-end or head collisions, the signaling apparatus proper being located upon suitable supports, as posts, erected any preferred distance apart and operated by cables actuated by an arm or shoe upon the locomotive or car.

Referring to the numerals on the drawings and calling particular attention to Figs. 1 and 2, 1 indicates the signal proper, which may be made in any preferred way, but which in this instance consists of a lantern mounted upon suitable supporting-posts 2 of any preferred character, the said signaling-lamp having its casing perforated upon diametrically opposite sides with four openings, two of which are normally red and two of which are normally white. The post 2 is rotatably mounted in any preferred way, as by having its lower end seated in the bearings 3. Near the lower end of the post 2 we provide the beveled gear 4, which is disposed in mesh with the gear 5, keyed upon the shaft 6, which latter is seated in suitable bearings 7, located in the trackway, the said shaft being disposed transversely to the track.

Preferably central to the track-rails we key to the shaft 6 the actuating-wheel 8, which may be made any preferred character; but in the present instance we have illustrated it as being a grooved pulley-wheel the face of which is provided with some frictional sub-

stance as a covering and as indicated by the numeral 9. The shaft 6 has also keyed thereto near its outer end a grooved pulley-wheel 10, and as there are two of the shafts 6, located any distance apart, as a mile or thereabout, said pulley-wheels are connected together by the operating-cable 11, whereby when one of the pulley-wheels is turned the other will also be actuated in the same manner by said cable. It therefore follows from the foregoing arrangement that when the actuating-pulley 8 is turned, which result is accomplished, preferably, by a special form of shoe carried by the locomotive or car, as will be hereinafter set forth, the rotation of said wheel will induce the rotation of the pulley-wheels 10, and thereby turn the signal-carrying posts 2 to bring the white or red light into view from any point along the trackway between said signaling-posts.

We will suppose that the signaling-posts 2 and actuating accessories just described are located upon the right-hand side of the trackway, and we therefore provide a duplication of said signaling apparatus and posts upon the left-hand side of the trackway, the two signaling systems being entirely distinct or separated from each other, although actuated by the same shoe upon the locomotive or car.

In Figs. 1 and 2 we have illustrated the two separate systems, one for the right-hand side of the track and the other for the left-hand side thereof, and it will be observed that shafts 12, corresponding to the shafts 6, are similarly mounted and similarly provided with grooved pulley-wheels 13, which latter correspond to the pulley-wheels 8. The shafts 12 are also provided upon their outer ends with the cable-actuating pulley 14, corresponding to the pulley-wheels 10, just described, and also with beveled gears 15 similar in office to the gear-wheels 5—viz., the rotation of the supporting-posts upon the left side of the trackway similar in every respect to the posts 2 upon the right side of the track, inasmuch as they carry the signaling-lights "red" and "white" and designated by the numeral 1.

Referring to Fig. 8, it will be observed that we have shown a shoe or bar 16, the lower surface of which is covered with some frictional substance, as designated by the numeral 17, the shoe proper being yieldingly mounted upon the cross-bar 18, which latter is secured permanently in place to the locomotive or car in any preferred way. The shoe in the present instance is connected to the bar 18 by a pair of standards consisting of the bolts 19, extending up loosely through apertures in the bar 18, a cushioning-spring 20 being interposed between the shoe and said bar, whereby the shoe will be held normally downward, but is left free to move upward under the tension of said springs. We also provide an auxiliary spring 21, the rear end of which is bolted to

the bar 18, while the forward end is left free to move in a suitable recess provided on the under side of said bar, whereby said forward end of the spring will be left free to move, and thus compensate for the forward and downward movement of the shoe 16.

Inasmuch as the actuating-wheels 8 and 13 are erected centrally relative to the track-rails, the shoe 16 is similarly located upon the locomotive or car, and it therefore follows that said shoe will always engage both of said pulley-wheels and induce a partial or full rotation thereof, as may be necessary to operate the signaling-lamps. In passing over the first pulley-wheel the lamps upon the right side of the trackway are turned to "red," it being understood that one of the signaling-lamps will be turned "red" a mile or more ahead of the train or a proper distance ahead to enable a train to be stopped in ample time to prevent collision. When, therefore, a train has passed upon the block between the lamps upon the right side of the trackway, the engineer or motorman following knows that the train ahead is between the two signals, and he must therefore wait until said train or the engine thereof shall have passed over the signal ahead, when the shoe will turn both signals to "white," thus enabling the engineer or motorman following to know that the train ahead of him has passed off of the block, and thus giving him right of way to follow upon said block. Furthermore, when the train has passed off of the block he is immediately upon the first actuating device of the next block, which latter is located upon the left side of the trackway, and as the signaling-lamp or other device cooperating with the first left-hand signaling-post will be turned to "red" another mile or so ahead due notice is given to any approaching train upon the other end of or in advance of the left-hand signal system that a train is approaching, and he must therefore heed the danger-signal and stop his train. By this arrangement it is therefore obvious that both rear-end and head collisions may be avoided by ordinary care on the part of trainmen.

It will be understood that any suitable signaling devices in addition to the lamps may be employed for use during the day, as semaphore arms or blades properly colored may be properly secured to the posts 2, so that one will turn to "white" and the other to "red," according to the requirements of the case, and as any preferred devices may be employed for this purpose we deem it unnecessary to illustrate the same in detail.

It will thus be seen that we have provided a reliably efficient signaling system whereby the trackway is marked off into sections of proper length, whereby ample warning will be given to the trainmen both in the rear and in advance of the train occupying any given

block of the trackway, and believing that the advantages, construction, and manner of using our invention have thus been made clearly apparent further description is deemed unnecessary.

While we have described the preferred combination and construction of parts, we desire to comprehend in this application all substitutes and equivalents that may be considered as falling fairly within the scope of our invention.

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

1. The herein-described safety signaling system comprising for both sides of the trackway a pair of posts rotatably mounted in position and having upon their lower ends beveled gears; a shaft mounted in suitable bearings transversely to the trackway and having at their outer ends gear-wheels meshing with gears of the signal-posts; lamps or other signaling devices located upon said posts in position to be seen by the trainmen; suitable wheels keyed to said transversely-located shafts, in combination with a shoe yieldingly mounted upon the locomotive or car and in position to cooperate with the grooved pulley upon said shafts whereby when one of the shafts is rotated by said shoe the shaft com-

plementary thereto will be similarly rotated and thereby turn both posts to safety or danger as the case may be, all combined substantially as specified and for the purpose set forth.

2. A safety signaling system comprising posts rotatably mounted in position on both sides of the trackway, shafts mounted in suitable bearings transversely to the trackway, wheels keyed to said transversely-located shafts, lamps or other signaling devices located upon said posts in position to be seen by the trainmen, a shoe yieldingly mounted upon the locomotive or car and in position to contact the grooved pulleys upon said shafts, and means located between said transversely-disposed shafts and said posts to display the proper signal when said transversely-disposed shafts are rotated, all combined substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN PLATTE.
JOHN W. JONES.

Witnesses:

JOHN SCHULZES,
H. C. MIDDENDORF.