

No. 879,431.

PATENTED FEB. 18, 1908.

B. E. AHLERS.
RAILWAY SIGNAL.
APPLICATION FILED OCT. 9, 1907.

Fig. 1.

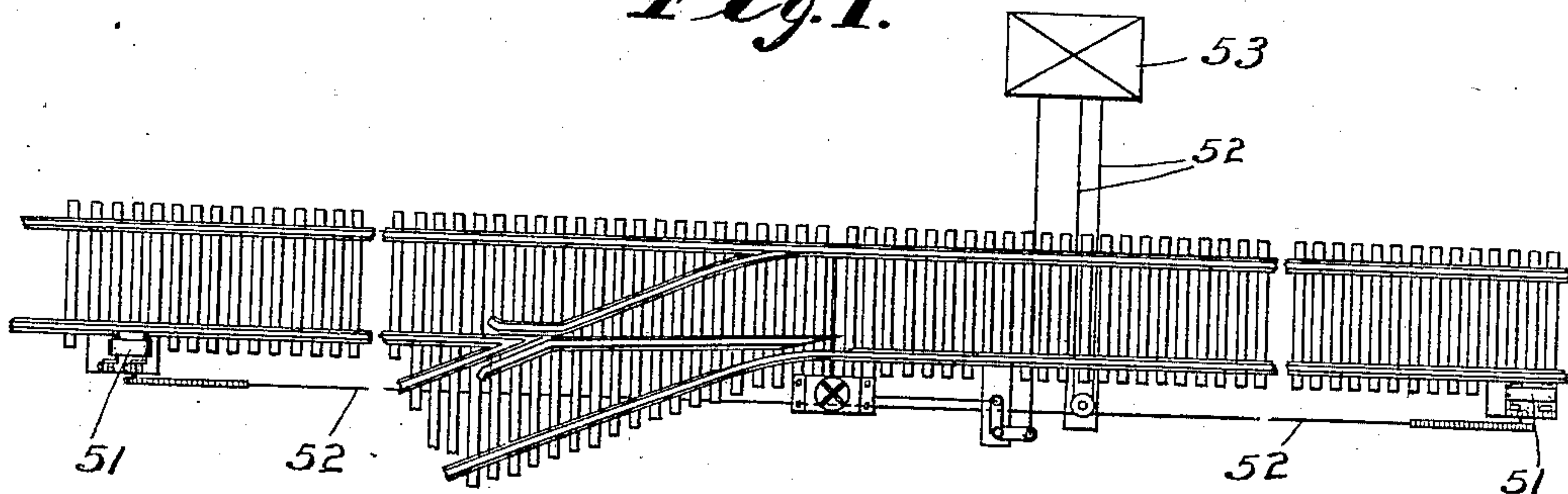


Fig. 2.

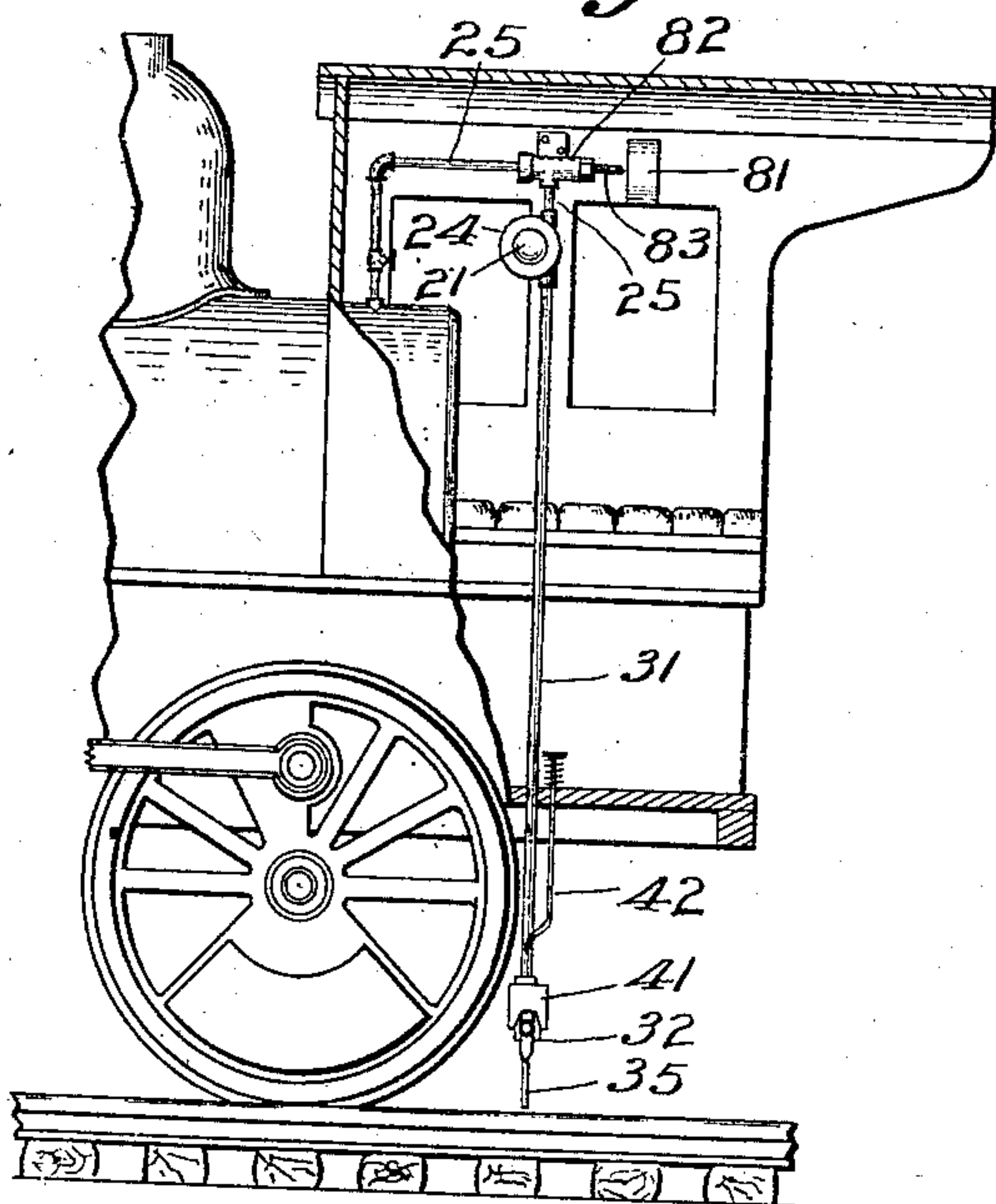


Fig. 3.

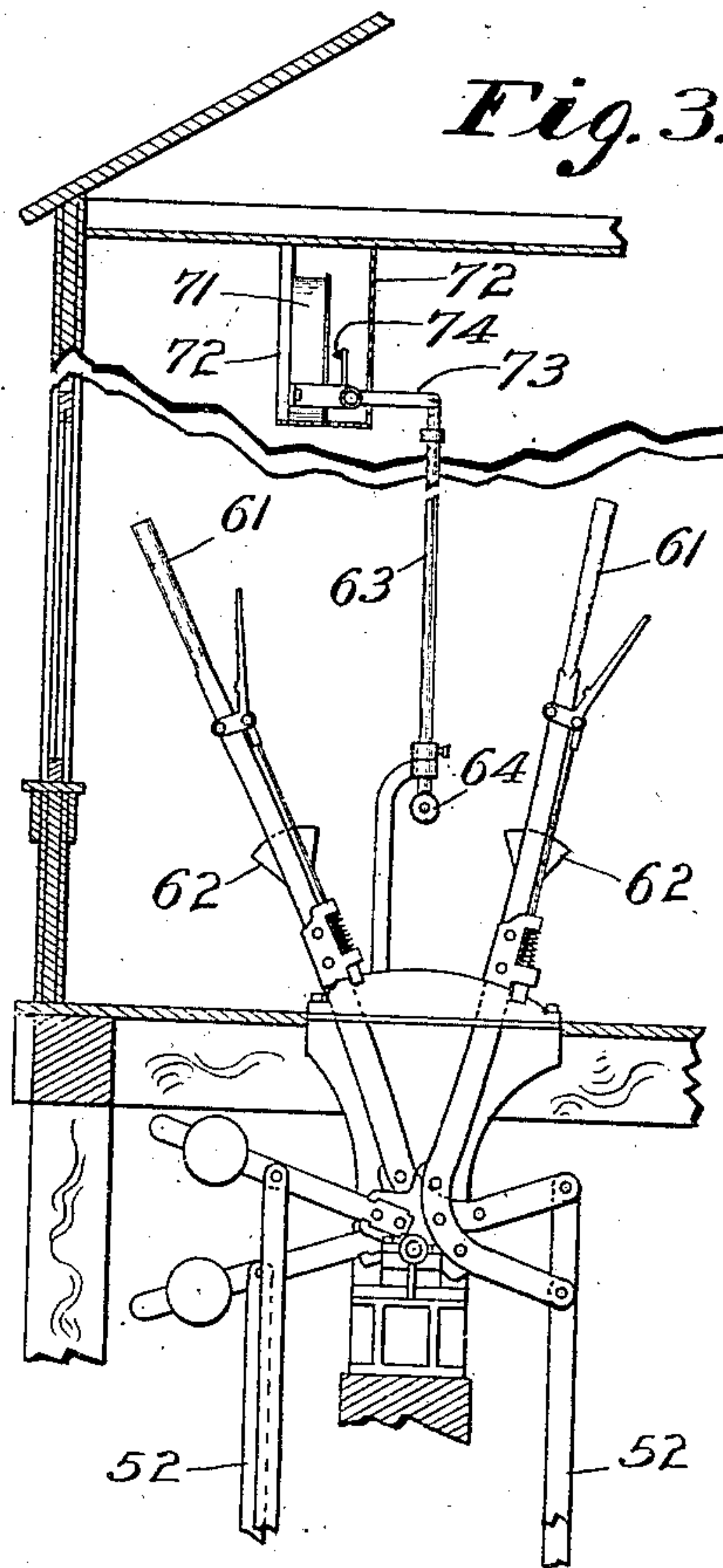
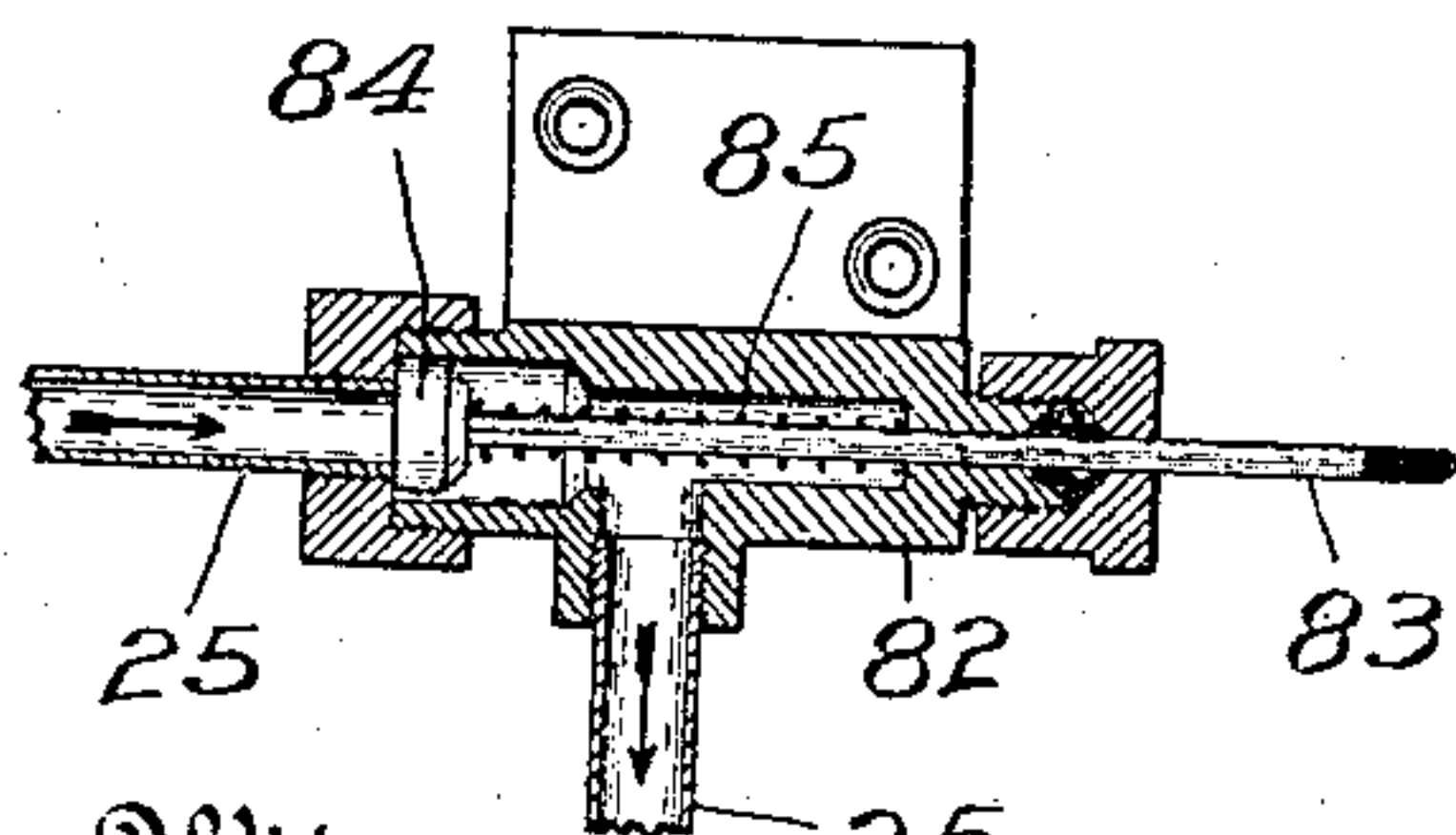


Fig. 4



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RAILWAY-SIGNAL.

No. 879,431.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed October 9, 1907. Serial No. 396,560.

To all whom it may concern:

Be it known that I, BERNARD E. AHLERS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Railway-Signals, of which the following is a specification.

My present invention consists in certain improvements in and additions to that shown and described in my Letters Patent No. 865,983, dated September 17, 1907.

My principal object is to provide in connection with such an apparatus registering devices operated thereby by means of which both the signal man in the tower and the engine man on the locomotive may have a record of each signal given. This is important for several obvious reasons; but the most important consideration is that in case any error is committed resulting in a disobedience of a signal when given, both the signal man and the engine man are in a position to show by a record made at their own station just when the signal was given, whether or not it was received, and all questions concerning such matters thus are automatically rendered beyond dispute.

Referring to the accompanying drawings, which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is a plan view of a section of railway track, with two strikes for operating the signals in question arranged at points distant from each other, and on opposite sides of a switch, together with a switch-tower from which said strikes (as well as the switches) may be operated; Fig. 2 a fragmentary view of a locomotive having my signaling and recording apparatus situated in the cab thereof; Fig. 3 a fragmentary section of the switch-tower showing the switch levers and the recording apparatus therein, and Fig. 4 a detail sectional view of the valve-device in the engine cab which operates the recording needle, and which also serves to govern and regulate the flow of steam to the signal.

In these drawings the signal bell 21, the housing 24, the steam pipe 25 leading to said housing, the exhaust pipe 31 leading from said housing, and the valve and accessories at the lower end of the pipe 31 (consisting in part of shell 32, lever 35, shifter 41, and rod 42) are or may be all similar to the corresponding parts in the device of my said Patent No. 865,983, and need not therefore be

further described herein. The strikes 51 alongside the railway track, the connectors 52, and the switch tower 53 are or may be likewise of this same general character. In the present drawing (Fig. 3) I have shown something of the interior of the switch tower, including two switch levers 61. Each of these switch levers carries a cam 62, and situated in the path of said cam is the lower end of a rod 63, which is preferably armed with an anti-friction roller 64. As a lever 61 is moved back and forth, the cam thereon will come in contact with the lower end of this rod 63 or its roller 64, and operate to thrust said rod upwardly a certain predetermined distance. Suitably located in the tower is a recording clock 71 inclosed in a suitable case 72, and the upper end of the rod 63 is connected to a bell crank lever 73 having a point 74 which is adapted to puncture or mark upon a suitable recording dial on the clock. By this means a record is made of the exact time each switch-lever is moved.

A similar recording clock 81 is secured inside the cab of the locomotive. Interposed in the steam pipe 25 is a valve structure 82, the valve proper of which carries a puncturing rod or recording needle 83, the point of which extends out into proximity with a recording dial carried by the clock 81. As shown in Fig. 4, this needle has on its inner end a valve-like head 84 which is positioned in front of the inflowing steam coming in through pipe 25. It is surrounded by a coiled spring 85 which urges it back towards said steam ingress pipe. As fully explained in my former Patent No. 865,983, the steam in exhaust pipe 31 can not escape until the valve at the lower end of said pipe is opened, as by contact of lever 35 with one of the strikes 51. Consequently, until said valve is opened, the steam pressure is equal on both sides of the valve head 84, and the spring 85 will hold it to its retracted position. Upon the opening of the valve in valve shell 32, however, the pressure in pipe 31 disappears, and the pressure in pipe 25, acting on valve head 84, will thrust recording needle 83 forward suddenly into contact with the recording dial of clock 81, and causing a mark or puncture on said dial. The spring 85 will, however, at once move back this valve head and recording needle a portion of the distance, and, so long as the valve in valve shell 32 is held open, there will be a moderate flow of steam around valve

head 84. I have found that this serves excellently to regulate this flow and prevent the steam from too rapidly revolving the bell or signal in addition to the performing the primary office of making a record.

By this invention, therefore, I am able to secure a permanent record at both the point of delivery and the point of receiving the signal; so that not only the operatives but also any superintending officer may at any time ascertain the precise facts concerning the giving and delivering of such signals.

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

1. The combination, in a railway signal, of a signaling device carried by the train, a signaling station, means for operating the signaling device on the train from the signaling station, and means situated in said signaling station actuated by said signal-actuating means for recording the signals as given.

2. The combination, in a railway signal, of a signaling device carried by the train, a recording apparatus associated therewith, a

signaling station, recording apparatus associated therewith, and signal-actuating means actuated from the signaling station for operating the signal on the train and for actuating the recording apparatus both on the train and in the signaling station whereby a record is made at both points of each signal at the time it is given.

3. The combination, in a railway signal, of a signaling device, carried by the train, a recording apparatus associated therewith, a signaling station, recording apparatus associated therewith, and signal-actuating means actuated from the signaling station for operating the signal on the train and for actuating the recording apparatus associated with said signal-actuating means.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this fifth day of October, A. D. one thousand nine hundred and seven.

BERNARD E. AHLERS. [L. s.]

Witnesses:

CHESTER BRADFORD,
THOMAS W. McMEANS.