

No. 824,270.

PATENTED JUNE 26, 1906.

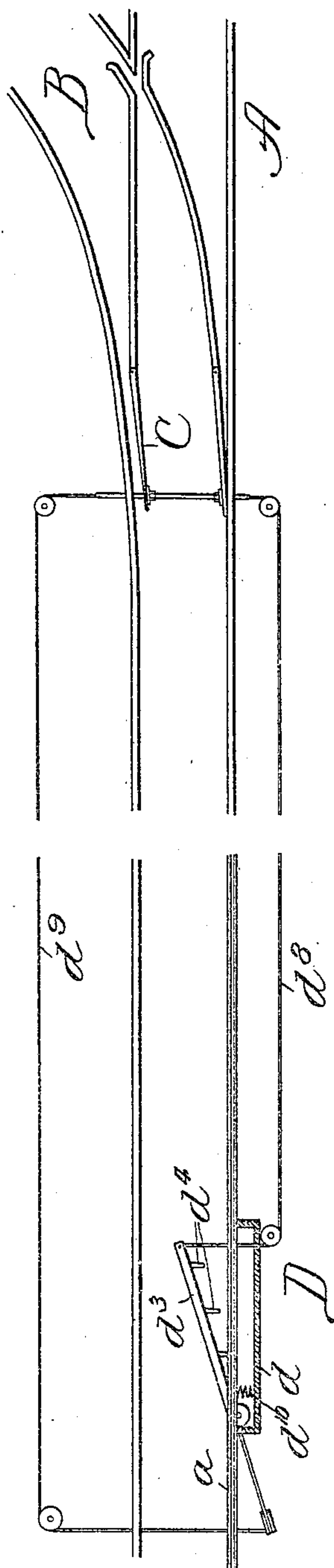
R. J. ZORGE.

ALARM SIGNAL.

APPLICATION FILED SEPT. 5, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

John Enders
Chas. H. Buell.

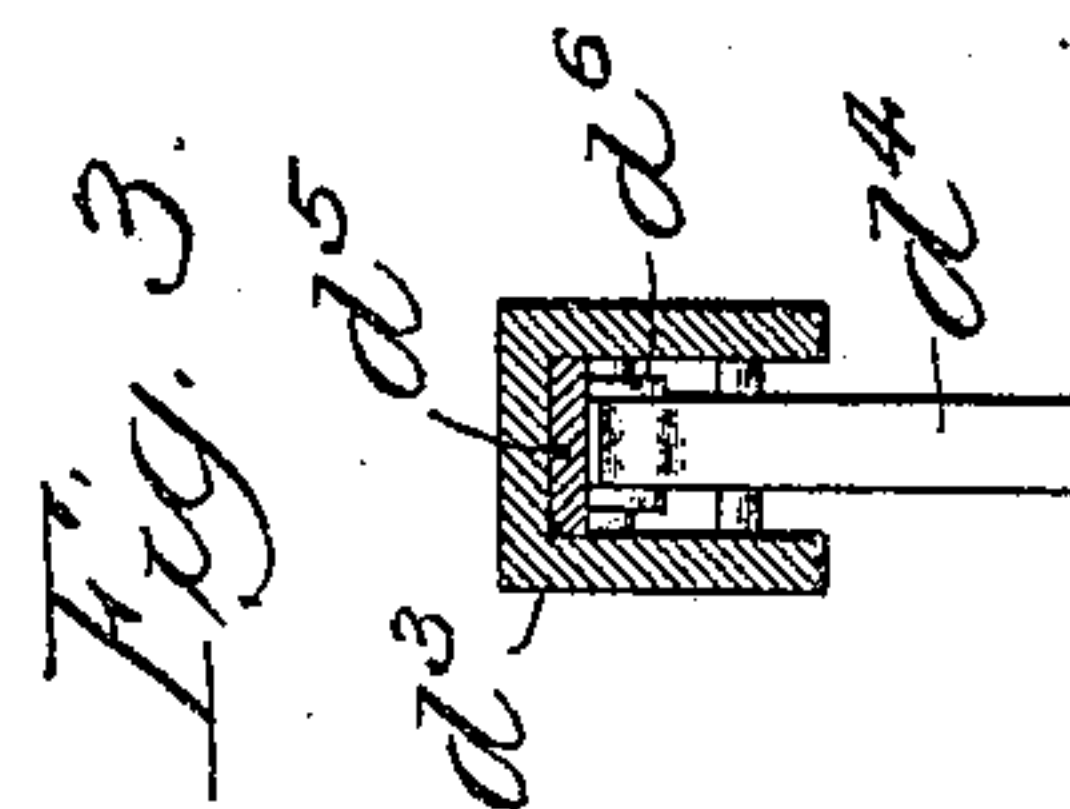
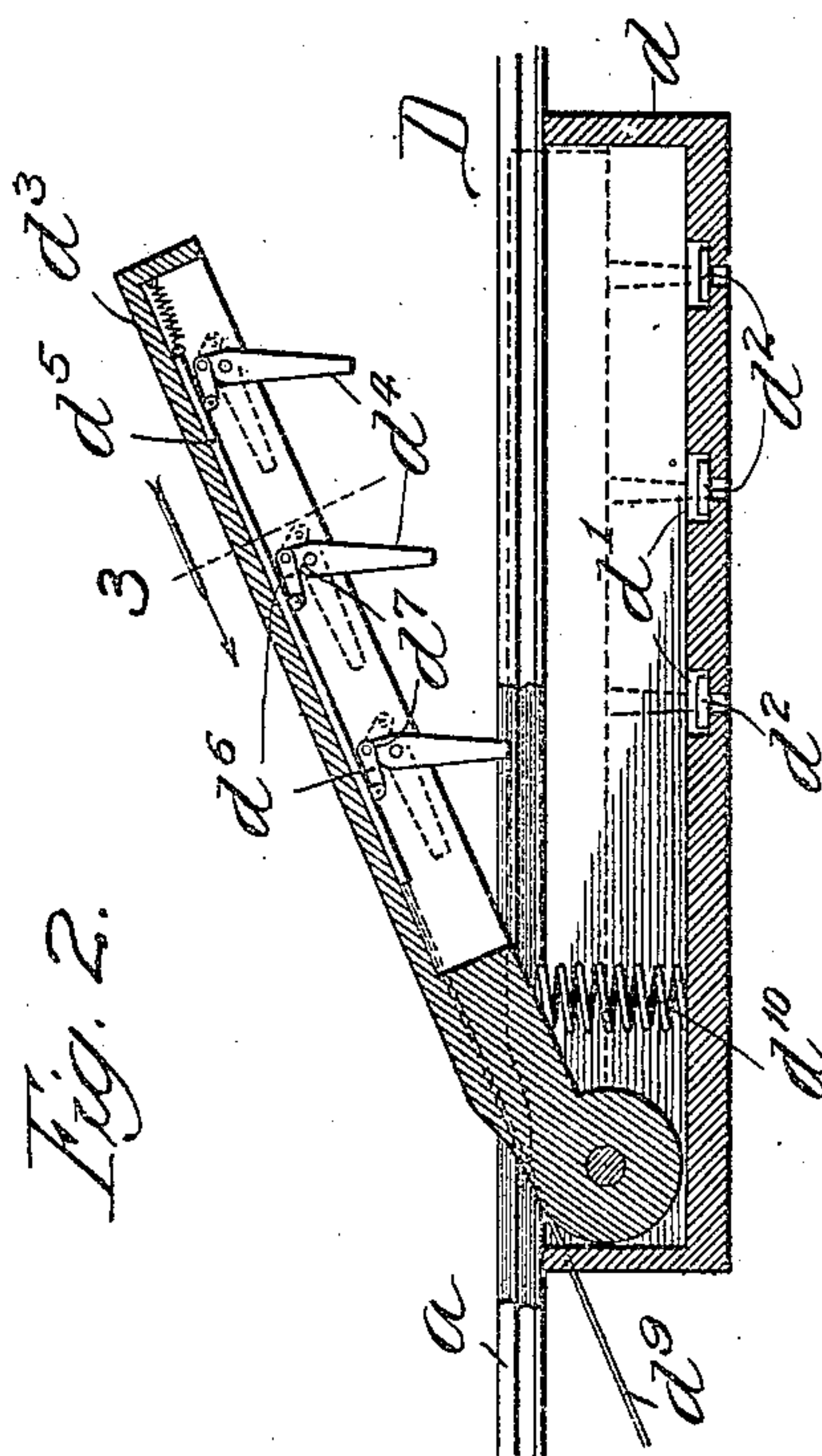


Fig. 2.



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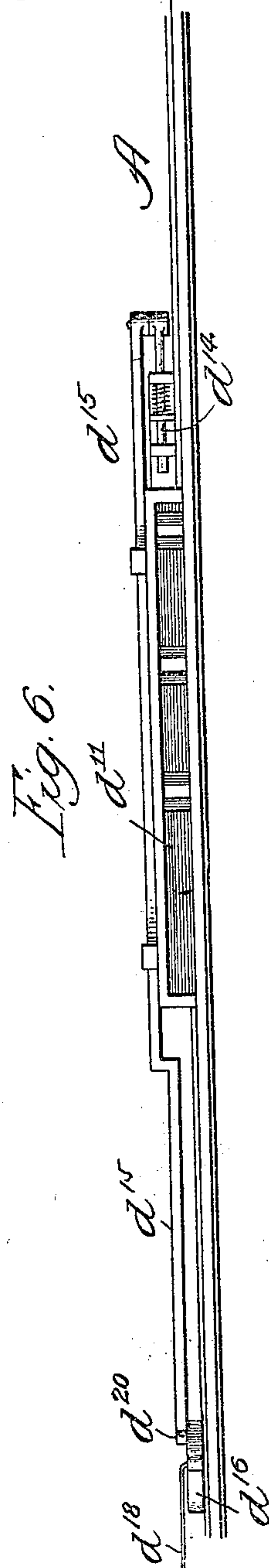
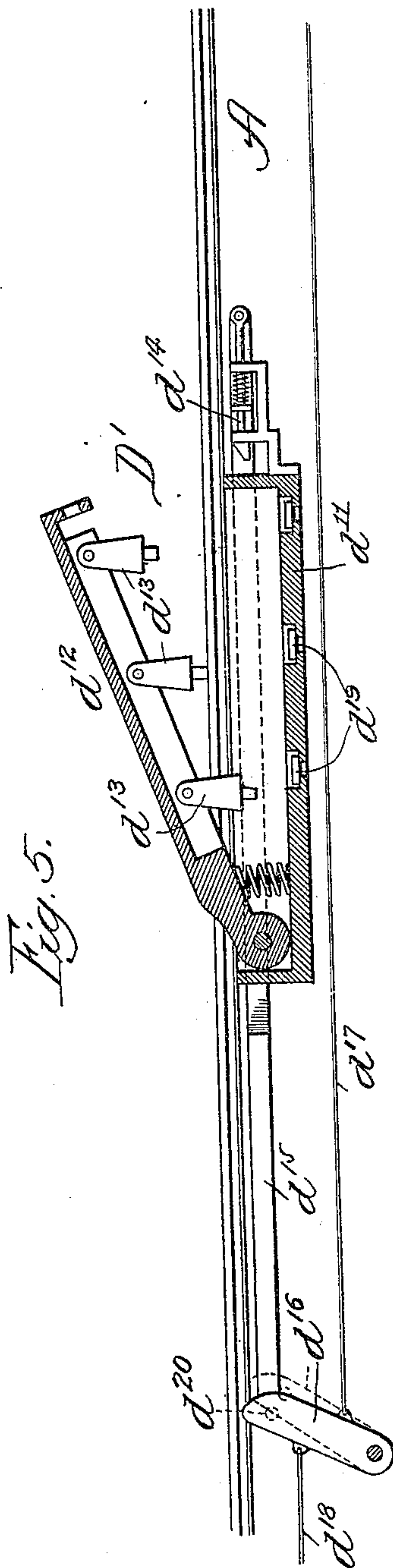
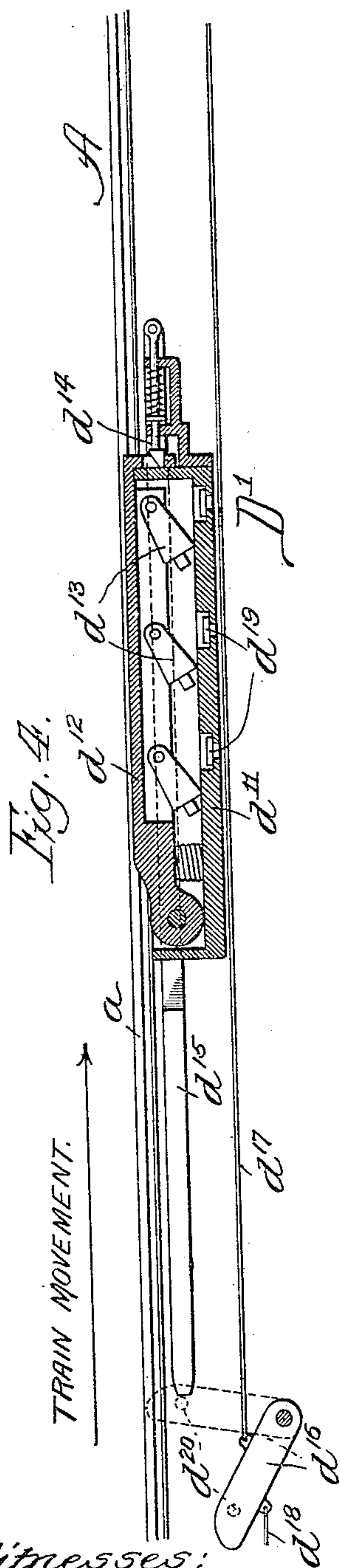
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ROBERT J. ZORGE, OF CHICAGO, ILLINOIS, ASSIGNOR TO ZORGE SAFETY RAILWAY EQUIPMENT COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ALARM-SIGNAL.

No. 824,270.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed September 5, 1905. Serial No. 276,982.

To all whom it may concern:

Be it known that I, ROBERT J. ZORGE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Alarm-Signals, of which the following is a specification.

My invention relates particularly to means for giving warning to an engineer approaching an open switch with his train; and my primary object is to provide a device which will be preparatorily set when the switch is thrown open, which device will operate to detonate a torpedo or torpedoes when a train passes over in approaching the switch.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents diagrammatically a portion of a track equipped with my improved alarm device; Fig. 2, a sectional view of a torpedo-box employed; Fig. 3, a section taken as indicated at line 3 of Fig. 2; Fig. 4, a sectional view of a modification; Fig. 5, a similar view of the same, showing a different position of the parts; and Fig. 6 a plan view of the same.

In the construction illustrated in Figs. 1 to 3, A represents the main line of a track; B, a side track; C, a switch-point operated by any convenient means, (not shown,) and D my improved device connected with the track and the switch-point thereof and operating to cause a series of explosions in the event that a train passes over while the switch is open. The device D comprises a box d , arranged adjacent to a rail a of the track at a distance from the switch-point and provided at its bottom with a series of sockets d' receiving explosive tablets d^2 ; a pivoted lid or lever d^3 , carrying a series of pivoted plungers or firing-pins d^4 ; a spring-held slide d^5 , movable longitudinally of the member d^3 and joined by links d^6 to the short arms d^7 of the members d^4 ; a wire or cable d^8 serving to depress the member d^3 when the switch-point is closed to the slide, and a wire d^9 serving to actuate the slide d^5 against the force of its spring and throw the members d^4 to the firing position when the switch-point is open. A spring d^{10} tends normally to throw the member d^3 to the elevated position illustrated when the switch-point is thrown to the open position and the restraining force exerted through the wire d^8 is released. The

wires pass over suitable pulleys, as indicated. When the switch-point is closed, the force exerted through the wire d^9 is withdrawn and the spring connected with the slide d^5 moves the slide toward the free end of the member d^3 , thereby folding the members d^4 within the lid d^3 , as indicated by the dotted lines. Therefore when the member d^3 is lowered in the operation of closing the switch-point C the members d^4 will lie inoperatively above the sockets d' . In case a train passes over while the parts are in the position indicated by full lines in Fig. 2 the member d^3 will be engaged by the wheel of the engine, for instance, and will be depressed to the dotted position shown in the lower portion of Fig. 2, the members d^4 entering the sockets one after another and causing a series of explosions.

In the construction shown in Figs. 4 to 6, inclusive, D' represents a modified embodiment of my invention. It comprises a box d^{11} , having a movable lid or member d^{12} equipped with pivoted firing or striking members d^{13} ; a spring-actuated bolt d^{14} , entered in a socket at the free end of the member d^{12} when the latter is depressed; a bolt-retracting link d^{15} , extending from the bolt to the path of a pivoted actuating-lever d^{16} , and wires d^{17} d^{18} , which connect the lever d^{16} with the switch-point. When the switch is closed and the main line "clear," the lever d^{16} occupies the position shown in full lines in Fig. 4, being out of the path of the wheels. When the switch is opened, the lever is thereby thrown to the position shown in dotted lines in Fig. 4, the upper end of the lever being in the path of the wheels. In preparatorily setting the device the members d^{13} are placed in the position shown in Fig. 4 out of range of the torpedoes d^{19} . When a wheel strikes the lever d^{16} , it thereby moves the lever from the dotted position of Fig. 4 to the full position of Fig. 5, actuating the link d^{15} and releasing the member d^{12} . In this movement a pin d^{20} on the lever d^{16} acts upon the sliding link d^{15} , and in the further movement to the position shown in dotted lines in Fig. 5 the pin slips beneath the link, and the latter returns under the force of the bolt-spring. When the member d^{12} rises, the firing-pins drop by gravity, and when the wheel passes over and depresses the member d^{12} the torpedoes will be caused to explode, the bolt operating at the same time to relock the member d^{12} . This

construction possesses the merit that the member d^{12} is not affected by the operation of the switch unless a train passes over while the lever d^{16} is standing, and, moreover, it is unnecessary to exert great force through the operating-wire, since the member d^{12} is not closed through such a medium. In addition to this the member d^{12} never occupies a raised position except for a moment when the engine is passing, and it is not subjected to a succession of movements as the cars pass over it.

In actual construction suitable provision will be made to protect the parts from the elements, and it will be understood that various changes in details of construction may be made. Hence no undue limitation should be understood from the foregoing detailed description.

What I regard as new, and desire to secure by Letters Patent, is—

1. The combination with a switch-point, of a detonating device connected with and controlled by the switch-point and having a member occupying an elevated position adapted to be struck by a passing train when the switch-point is open, said device having firing means, for the purpose set forth.

2. The combination with a switch-point, of a detonating device having a movable member controlled from the switch-point, and a striking member movably connected with said first-named member and automatically moved to the firing position when said first-

named movable member is raised, for the purpose set forth.

3. The combination with a switch-point, of a member serving to receive an explosive body, and a spring-raised pivoted member controlled from the switch-point and equipped with a pivoted firing member.

4. In a device of the character set forth the combination of a chamber equipped with a plurality of sockets, a member pivotally connected therewith and equipped with a plurality of foldable firing members, and controlling means for said pivoted member, for the purpose set forth.

5. The combination with a switch-point, of a lever connected therewith and actuated in two directions thereby, and a detonating device having a striking member preparatorily set by the movement of said lever, for the purpose set forth.

6. The combination with a switch-point, of a lever connected therewith and actuated in two directions thereby, and a detonating device having a pivoted member equipped with a foldable striking member, and a spring-held catch retracted by said lever, when the latter is struck, thereby setting said pivoted member in position to be struck, for the purpose set forth.

ROBERT J. ZORGE.

In presence of—

A. U. THORIEN,
J. H. LANDES.