

No. 752,822.

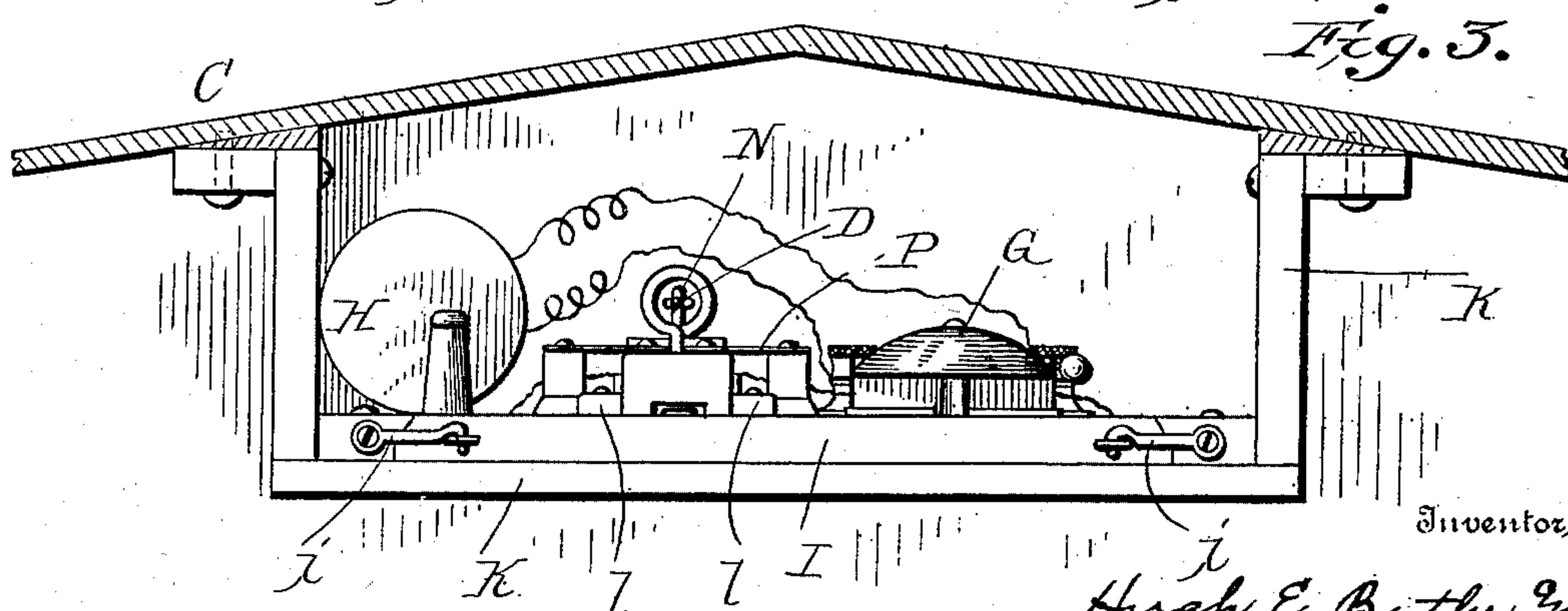
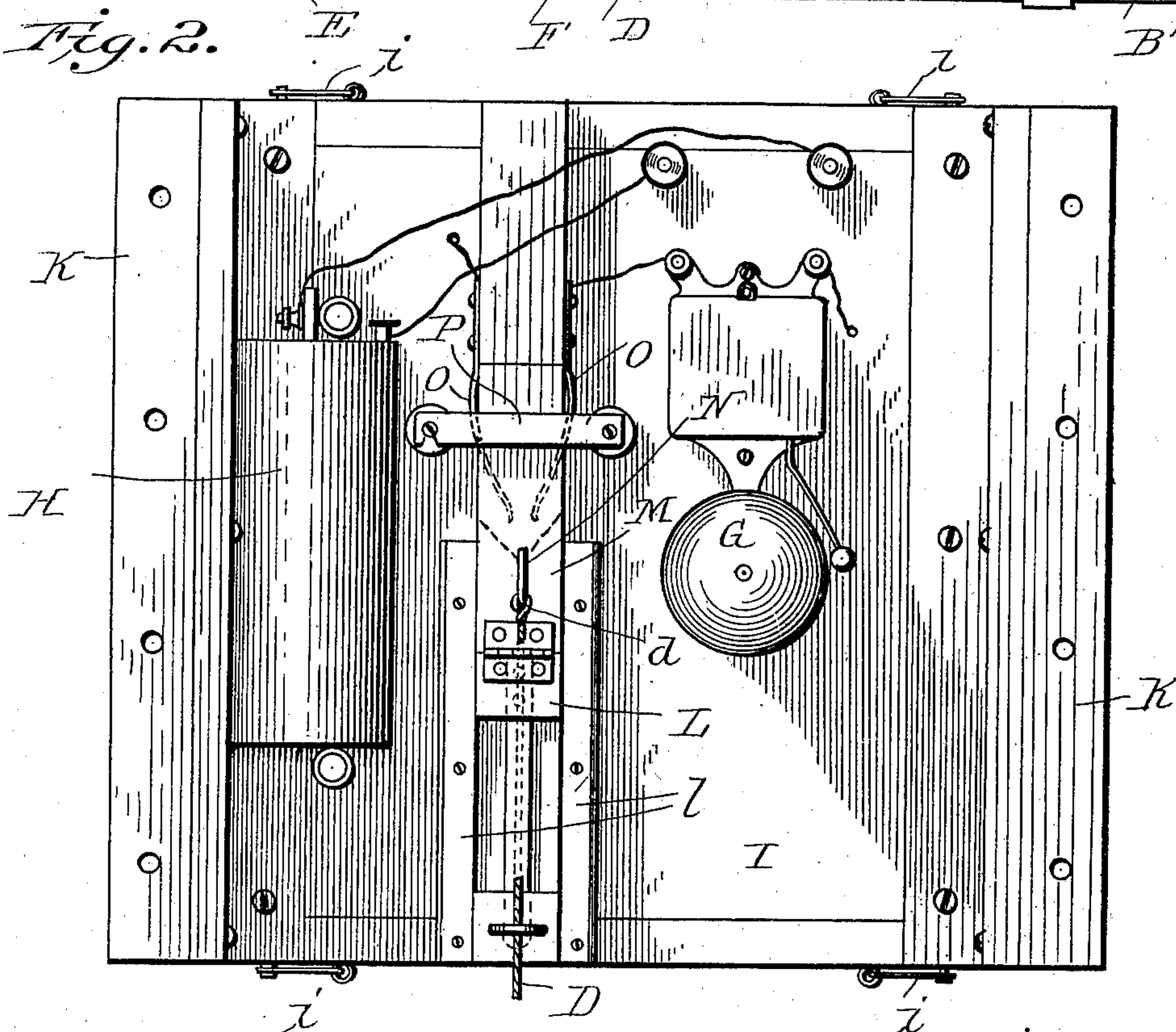
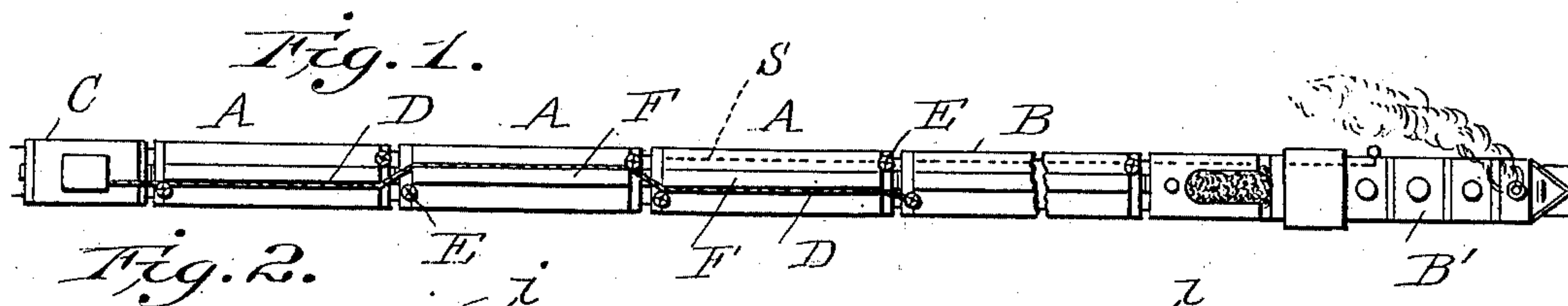
PATENTED FEB. 23, 1904.

H. E. BUTLER & J. L. McCOLLUM.
ALARM SIGNAL FOR RAILWAY TRAINS.

APPLICATION FILED NOV. 12, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses

Thomas Durant
Durant & Church

Inventors

Hugh E. Butler
Joab L. McCollum
By Church & Church
their Attorneys

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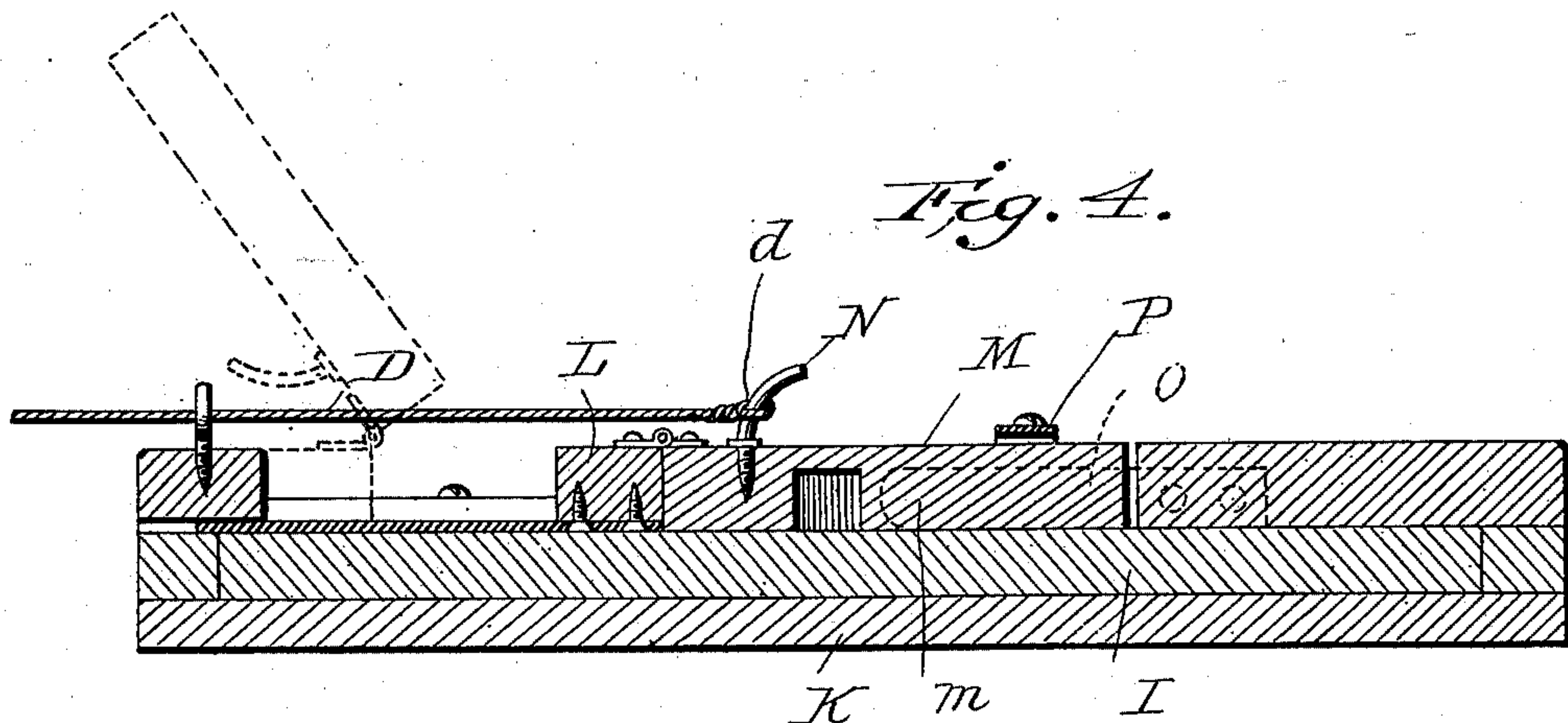


Fig. 5.

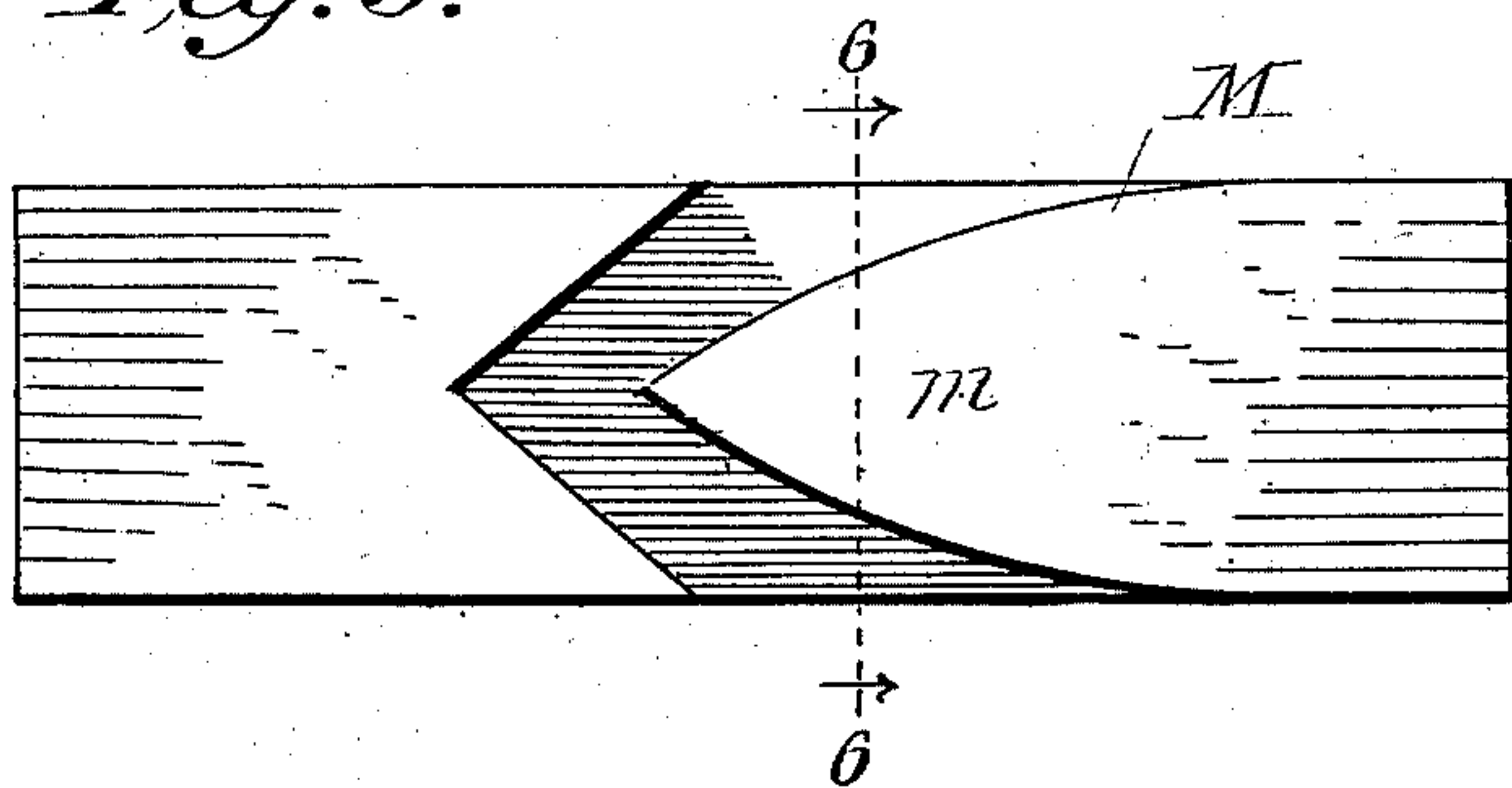


Fig. 6.

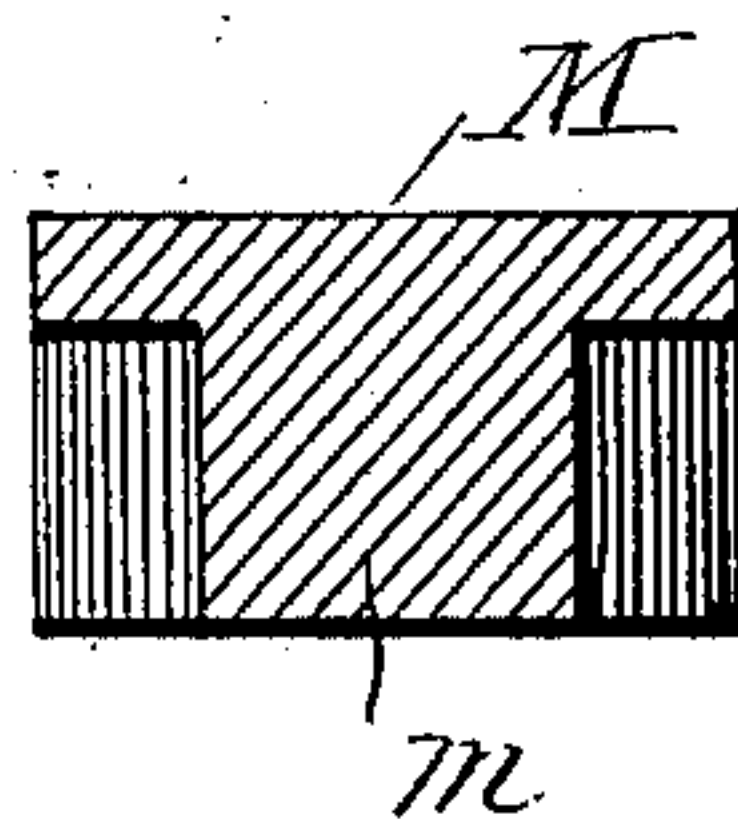
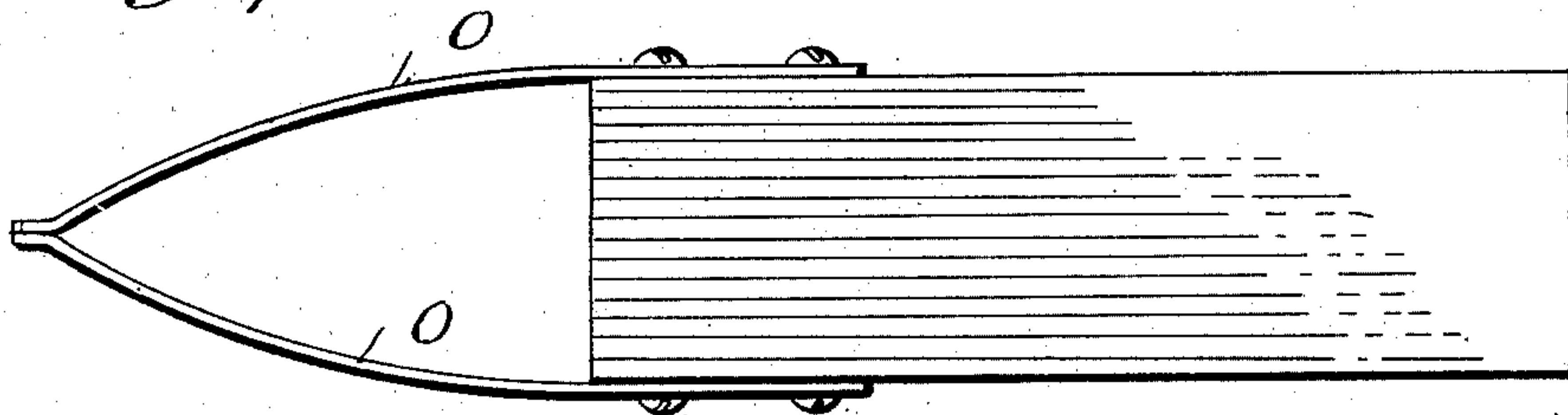


Fig. 7.



WITNESSES

Thomas Durant
Durant & Church

INVENTORS

Hugh E. Butler and
Joab L. McCollum
By Church & Church
Attorneys

UNITED STATES PATENT OFFICE.

HUGH E. BUTLER AND JOAB L. McCOLLUM, OF ATLANTA, GEORGIA.

ALARM-SIGNAL FOR RAILWAY-TRAINS.

SPECIFICATION forming part of Letters Patent No. 752,822, dated February 23, 1904.

Application filed November 12, 1903. Serial No. 180,884. (No model.)

To all whom it may concern:

Be it known that we, HUGH E. BUTLER and JOAB L. McCOLLUM, of Atlanta, county of Fulton, State of Georgia, have invented certain new and useful Improvements in Alarm-Signals for Railway-Trains; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention has for its object to provide a means whereby the conductor or caboose man of the freight-train will be notified by an audible signal in case of the parting of a railway-train, the invention being particularly applicable to that portion of a train of freight-cars not equipped with air-brake and signaling appliances in common use. Freight-trains as ordinarily made up at this day are composed usually of a number of cars located in succession next to the engine and equipped with air-brake and signaling appliances which will give notice to the engineer if the train parts or breaks between any of the cars so equipped, and the engineer by blowing his whistle notifies the conductor in the caboose of the mishap; but inasmuch as a large proportion of the freight-cars now in use are not equipped with air-brakes and signaling appliances and practically every train will comprise one or more of such cars they are located at the rear end of the train in order that the engineer may have control of as large a proportion of the train as possible. The caboose in which the trainmen, and particularly the conductor and one assistant, are stationed is located at the rear end of the train, their duty being to exercise a general supervision and keep watch over all of the train within their range of vision. It frequently happens, however, that the train parts or breaks in rear of the cars equipped with the air-brake and signaling appliances, in which instance the engineer's alarm is not sounded, and if it occurs on a sharp curve around headlands, or at night, or in stormy weather neither the engineer or trainmen located in the caboose will be made aware of the fact, the result being that many accidents and losses of life and property occur

by the coming together again of the two sections of the train. The present invention is designed to overcome this difficulty by providing appliances located in the caboose and the operating connections for which may be extended forward over all of the non-air cars or, if desired, over the entire train, although this will not ordinarily be found necessary or desirable.

One of the objects of the invention in addition to the foregoing is to provide mechanical appliances which will be certain in their operation, simple and cheap to construct and install, and which will not be destroyed nor injured by use and operation.

Referring to the accompanying drawings, Figure 1 is a top plan view, on a reduced scale, intended to represent a freight-train equipped with the appliances constituting the present invention. Fig. 2 is a plan view of the alarm mechanism, usually located near the roof or in other convenient position in the caboose. Fig. 3 is an end elevation of the devices illustrated in Fig. 2. Fig. 4 is a section through the circuit-controlling and cord-releasing mechanism, the parts being shown in their normal positions in full lines and in dotted lines in the position they assume should the train break apart. Figs. 5 and 6 are details of the pivoted member of the slide constituting part of the circuit-controlling mechanism, Fig. 5 being a bottom plan, and Fig. 6 a cross-section of the same. Fig. 7 is a detail plan of the contact-springs of the circuit-controller.

Like letters of reference in the several figures indicate the same parts.

In Fig. 1 of the accompanying drawings A indicates three non-air cars; B, a car equipped with air-brake and signaling appliances; B', the engine, and C the caboose located at the rear end of a freight-train. A cord D—such, for instance, as an ordinary bell-cord—is extended from the caboose forward over the non-air cars and its front end is secured or tied to any desired part of the rear air-car or a car at the forward end of the train. This cord D may be attached to one of the brake-standards of the forward car and simply laid along over the roofs of the rear cars of the train, where it will be retained by the brake-

standards E, or, if desired, it may be passed first on one side and then on the other side of the running-boards F of adjacent cars in order that it may be prevented from dropping off to the side of the train in rounding curves, although it will be understood that the cord is not under tension, but it is simply laid loosely along the cars and tension is only imparted to it should the cars separate a great distance, as would be the case should the train part between the cars over which the cord is passed. At its rear end this cord is extended into the caboose and is connected with an automatic circuit-breaker and cord-releasing device, which will release the rear end of the cord after an alarm-circuit is established and permit the cord to draw out with the forward portion of the train without breaking or otherwise destroying any part of the apparatus, it being the intention that the cord itself shall be gathered up and the connections again established when the train has been restored to its normal condition.

In the preferred form of apparatus the entire alarm mechanism, including an electric vibrating bell G, battery H, and circuit making and breaking appliances to be presently described, are mounted on a slide or base I, removably and reversibly supported in a casing, frame, or bracket K, secured in fixed position against the roof of the caboose or in any other desired or convenient location which will not interfere with the operation of the devices from either direction. The slide or base I may be held in its adjusted position by suitable securing devices—such, for instance, as the hooks *i*—but it is adapted to be readily released and its position reversed in order that the operating-cord may extend from the caboose in either direction, depending upon the direction in which the caboose is being run or its attachment to the train.

The circuit-controlling devices embody a slide L, movably mounted on the base I, preferably in guides *l*, and having at its forward end a hinged or pivoted member M, which may be swung upwardly, as indicated by the dotted lines in Fig. 4. The rear end of the cord D is provided with the eye *d*, adapted to take over a hook N in the pivoted or hinged member M of the slide and to be released therefrom when said member M turns up to the position indicated in dotted lines in said Fig. 4. The forward end of the part M of the slide is provided with a projection *m*, pointed at one end and adapted to fit between contact-springs O and to normally keep the same separated, as indicated in Fig. 2; but upon a longitudinal movement of the slide the projection *m* passes out from between the contact-springs O, permitting said springs to come together and establish a circuit including the bell G and battery H, thereby causing said bell to be rung, and the ringing will continue until the contact-springs are again sep-

arated by drawing the slide back and inserting the projection *m* between the springs, this being readily accomplished owing to the pointed shape of the projection.

To insure the sliding of the slide L before the portion M thereof is allowed to swing upwardly and release the cord, a bar P is pivotally mounted in position to swing over the portion M of the slide and hold the same against any swinging movement until it has practically passed beyond the contact-springs. This construction insures a sudden release of the contact-springs after they have been widely separated, and consequently there is little liability or danger of a failure to establish the circuit when they come together. Furthermore, the rubbing action of the projection *m* will clean the contact-surfaces of the springs from any accumulation of dirt or dust and insure bright contact-surfaces when the springs are released. This is important, inasmuch as the device is intended for use under conditions favoring the accumulation of dust and dirt, which might under some circumstances clog or prevent the successful operation of the parts when an emergency occurs.

In operation the device is placed in its bracket in position for the reception of the operating-cord. The end of the cord is caught over the hook and the body of the cord carried forward through a suitable guide or eye (indicated at R) through the front of the caboose and along over the top of the cars, as before explained. Should a break or separation of the cars occur, the cord will draw the slide forward, permitting the contact-springs to come together and the pivoted or hinged end M of the slide to turn up and release the end of the cord. The sounding of the alarm warns the conductor and trainmen of what has occurred, and they will immediately apply the brakes on the caboose and adjacent cars, so as to bring that section of the train to a standstill, and at the same time will take proper precautionary measures to prevent their portion of the train from being run into by a train approaching from the rear.

The device affords a ready means for notifying the conductor and trainmen with certainty that the train has parted, and that entirely independent of the usual means employed for the purpose, and hence provides an additional safeguard against collision due to the breaking of part of the cars of a train.

When used in connection with the ordinary air-signaling system indicated by the dotted lines S, Fig. 1, it is an independent additional safeguard, and, furthermore, insures the giving of an alarm to the conductor should the train part, even though the engineer is unaware of the fact.

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

1. In a railway-train signaling apparatus, 130

the combination with a circuit-controlling mechanism, an alarm included in said circuit and an operating-cord extending from said circuit-controlling apparatus forward over a series of cars of the train and secured at its forward end to one of the cars, of a detachable connection between said cord and circuit-controlling apparatus whereby upon the parting of the train the alarm-circuit is established and the rear end of the cord released; substantially as described.

2. In an alarm mechanism for indicating the parting of the cars of a railway-train, the combination with a series of cars, an operating-cord connected with one of said cars and extending rearwardly over the rear cars of the train, an alarm-circuit and circuit-controlling apparatus for said alarm-circuit with which the rear end of the cord is detachably connected; substantially as described.

3. In an alarm apparatus for indicating the parting of cars of a railway-train, the combination with an operating-cord extending forwardly over the several cars and connected with one of said cars at its forward end, of an alarm-circuit in the caboose at the rear end of the train, contacts for establishing said circuit and a slide interposed between said contacts and connected with the cord whereby upon the parting of the cars the slide will be drawn forward, the contacts released and the alarm-circuit established; substantially as described.

4. In a railway-train signaling apparatus the combination with an operating-cord extending forwardly over the several cars of the train and connected with one of said cars at its forward end, of an alarm mechanism located in the caboose at the rear of the train, a control therefor, to which the rear end of said cord is detachably secured, whereby upon the

parting of the train said control will be released, the alarm mechanism operated and the cord detached; substantially as described.

5. In an alarm apparatus for indicating the parting of the cars of railway-trains, the combination with an alarm-circuit including a battery, alarm-bell and spring-contacts for establishing the circuit, of a slide having a projection interposed between said contacts, an operating-cord and a pivoted member on the slide with which said cord engages; substantially as described.

6. In an alarm apparatus for indicating the parting of the cars of a railway-train, the combination with the alarm-circuit including a bell, battery and contacts for establishing the circuit, of a slide having a projection interposed between said contacts, a hook on said slide, an operating-cord having an eye engaging said hook and means whereby upon the movement of the slide the contacts and cord will both be released; substantially as described.

7. In an apparatus of the character specified the combination with the alarm-circuit and spring-contacts for establishing said circuit, of the slide having the hinged member provided on its under side with a projection for separating the contacts and on its upper side with a hook, an operating-cord engaging said hook and a guide for holding the hinged member against pivotal movement until moved longitudinally a predetermined distance; substantially as described.

HUGH E. BUTLER.
JOAB L. McCOLLUM.

Witnesses:

H. D. McDANIEL,
J. L. HOLBROOK.