

(No Model.)

R. P. GARSED.

TIME SIGNAL AND TRAIN INDICATOR.

No. 290,766.

Patented Dec. 25, 1883.

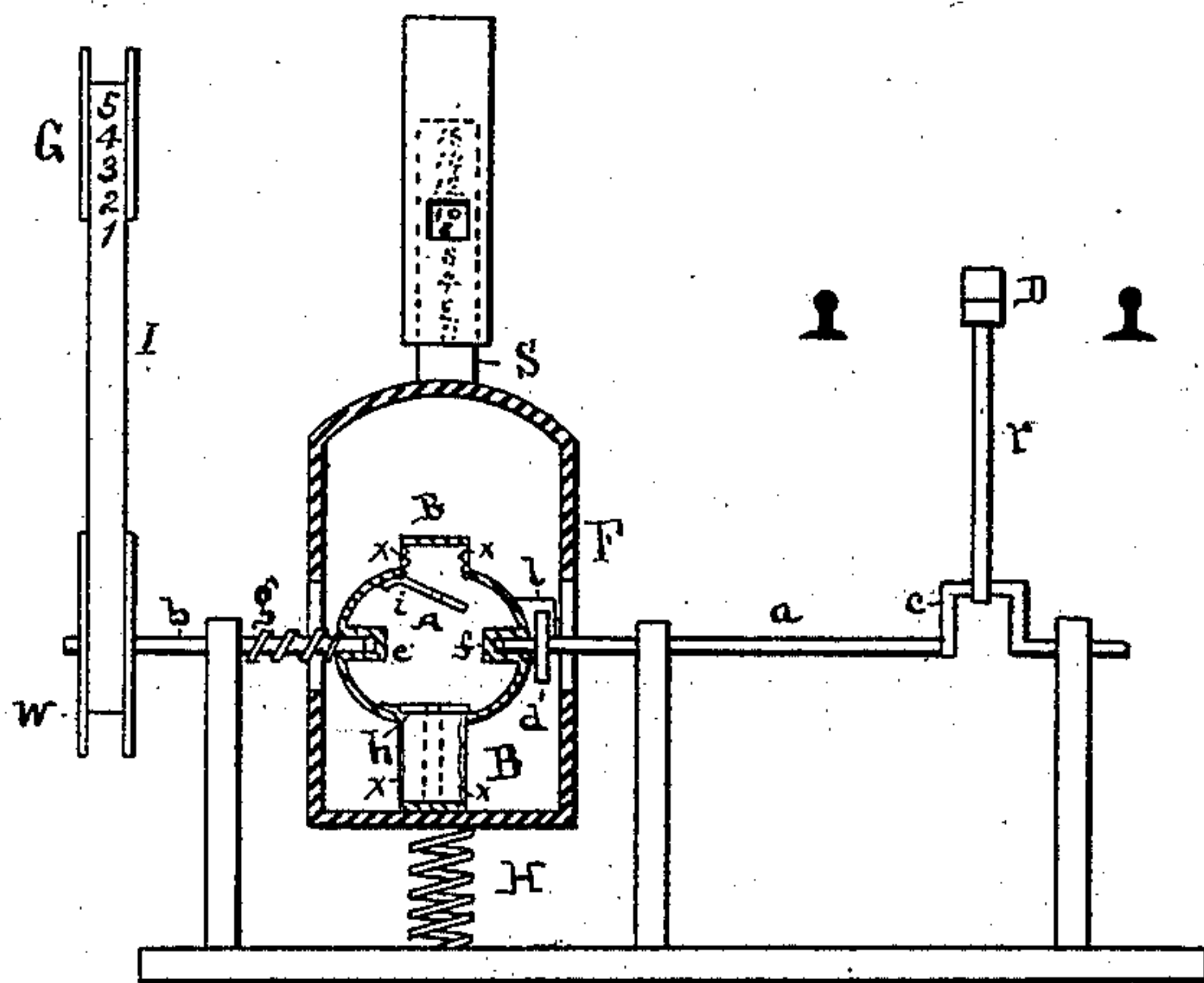


FIG. 1.

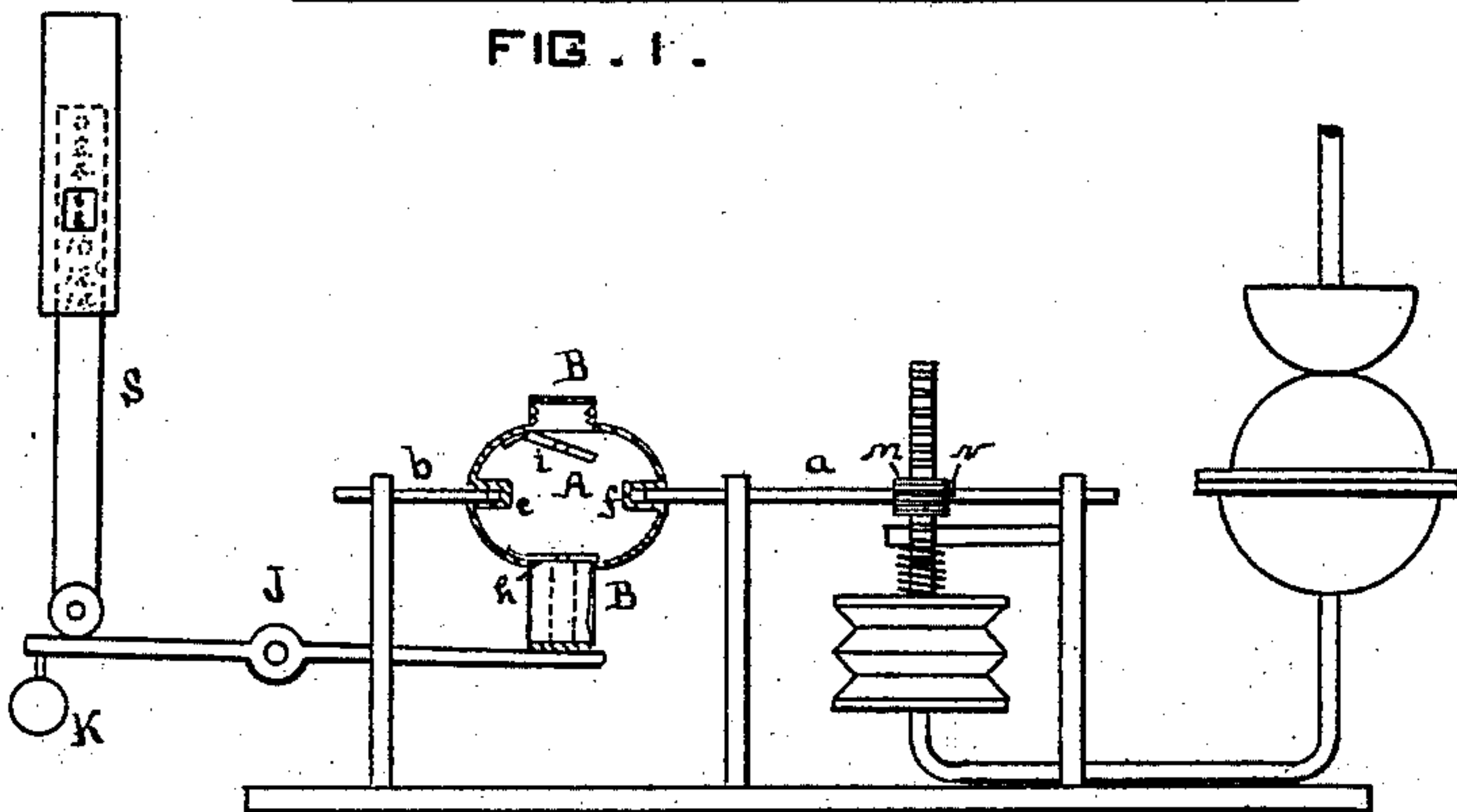


FIG. 2.

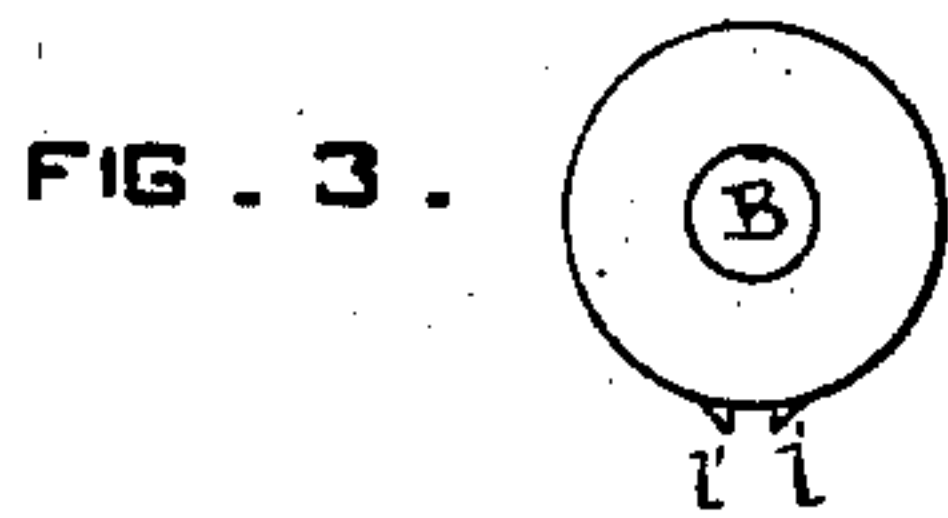


FIG. 3.

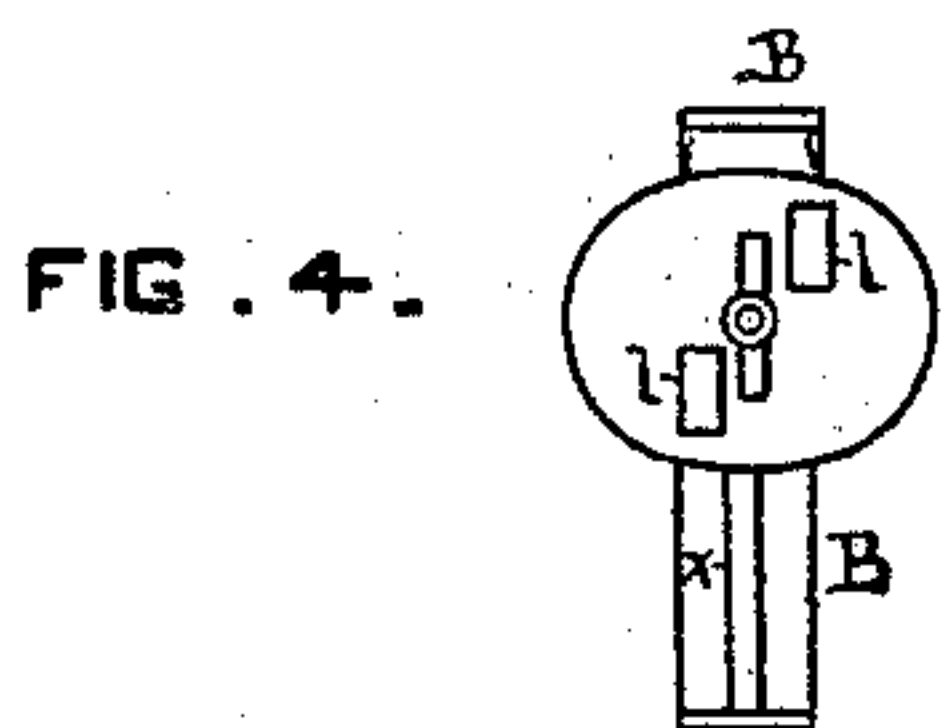


FIG. 4.



FIG. 5.

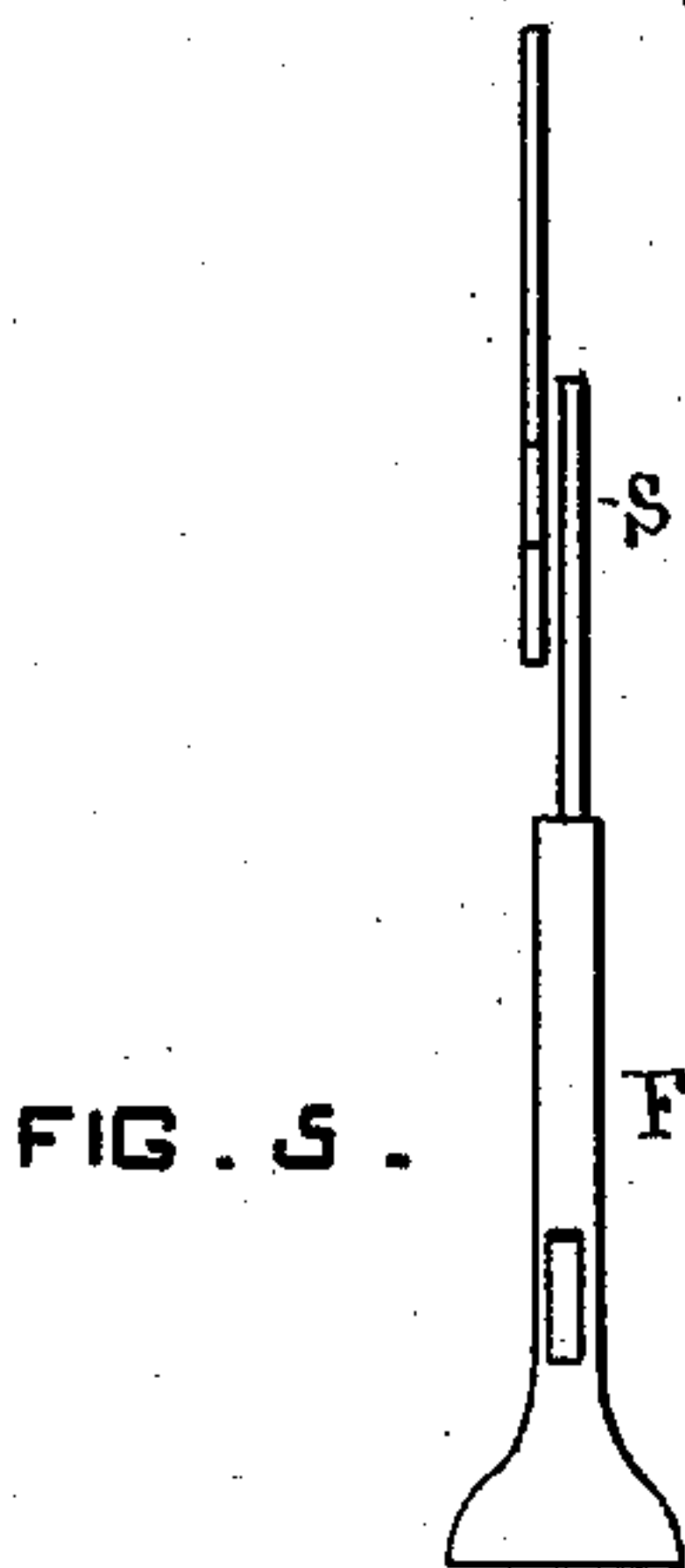


FIG. 6.

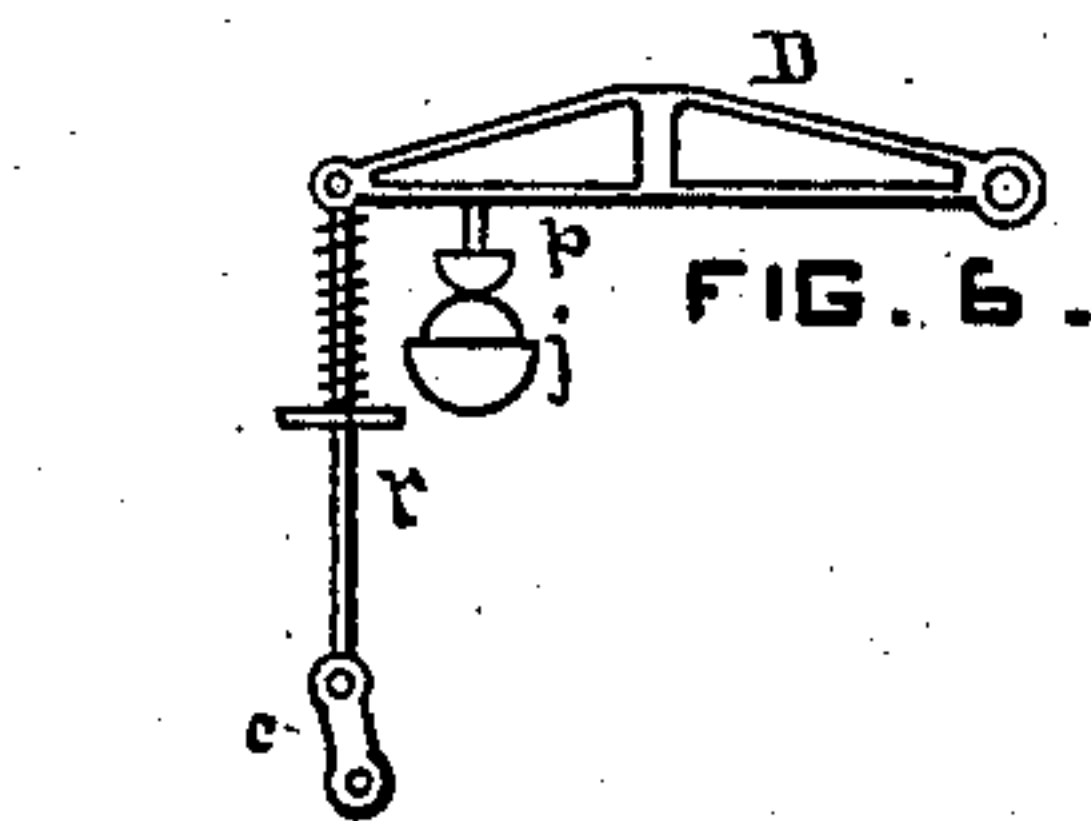


FIG. 7.

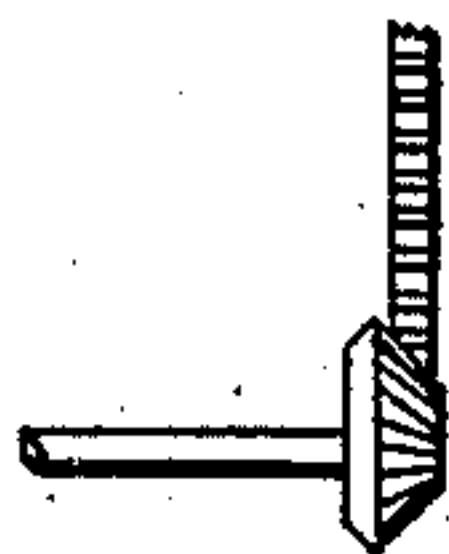


FIG. 8.

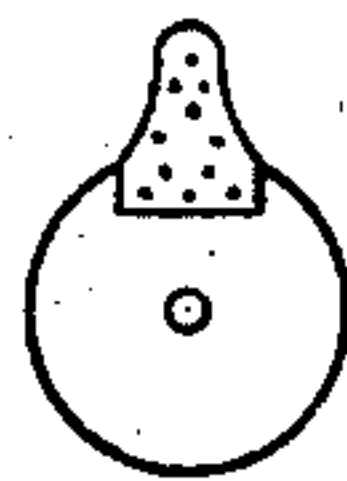


FIG. 9.

WITNESSES:

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TIME-SIGNAL AND TRAIN-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 290,766, dated December 25, 1887.

Application filed September 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, ROBERT P. GARSED, a citizen of the United States, and a resident of Norristown, in the county of Montgomery and State of Pennsylvania, have invented a new and useful Improvement in Time-Signals and Train-Indicators, of which the following is a specification.

The objects of my invention are to furnish a signal to be operated by a passing train which will indicate the time that has elapsed since the last train has passed and also its number.

In the accompanying drawings, forming part of this specification, and in which similar letters of reference indicate like parts throughout the several views, Figure 1 is an end view of my invention; Fig. 2, an end view of a modification of the same; Fig. 3, a top view of the sand-chamber; Fig. 4, a side view of the same; Fig. 5, a side view of the frame and time boards; Fig. 6, a side view of the depressor; Fig. 7, a substitute for the connecting-rod and crank; Fig. 8, a side view of pinion and pawl and ratchet shown in Fig. 2, and Fig. 9 a top view of the valves for the sand-chamber.

The sand-chamber A is supported upon the horizontal shafts *a b*, and is furnished with supplemental chambers B B. The shaft *a* is furnished with a crank, *c*, and is connected with the depressor D by means of a connecting-rod, *r*. This shaft is also furnished with a cross-bar or arm, *d*, whose purpose is to revolve the sand-chamber A by striking against the lug *l*. In Figs. 3 and 4 the peculiar construction of the lugs is shown. They are flat upon their inside edges and beveled upon their outside edges, and the arm *d* will, upon being turned in one direction, engage with the lugs and revolve the sand-chamber, but upon being turned in the other direction it will slip and push the sand-chamber to one side. To allow these movements to take place, the ends of *a* and *b* fit loose in the journals *e* and *f*, and the sand-chamber is returned to its normal position by means of the spring *g*. The sand-chamber may be surrounded by a frame, F, which carries upon it a sign or figure board, S, the figures or numbers upon said board indicating minutes or some other division of time. A side view of this frame and sign

board is shown in Fig. 5. The shaft *b*, whose end at *e* is square or of some other suitable shape, so that it will turn with the sand-chamber, carries upon it a wheel, W, to which is secured one end of a strip of canvas or other suitable material, the other end being wound around another wheel, G. This strip has numbers or figures upon it, indicating the number of trains. Shaft *a* is so arranged as to be rocked back and forth through one hundred and eighty degrees, the forward motion being given when the depressor is struck and the backward motion when the depressor is raised by a spring or its equivalent. On the forward motion the sand-chamber is revolved through one hundred and eighty degrees and gives a half-turn to shaft *b* and operates the band I. On the backward motion the arm *d* does not engage with lugs *l*, as has been before described.

A modification of the invention is shown in Fig. 2, and the frame F and spring H are done away with, and in place of them I use a lever, J, against one end of which the sand-chamber may rest, and against the other the board S. To return this lever to its proper position after having been depressed by the sand-chamber B, a weight, K, is attached to its end. In this figure the shaft *a* is represented as being actuated pneumatically, a depressor, air pump, bellows, and rack and pinion being used, the operation of all of which is well known.

The operation of my device is as follows: A passing train strikes against the depressor D, revolving the shaft *a* and arm *d*, and throws the sand-chamber through an angle of one hundred and eighty degrees, consequently reversing the position of the supplemental chambers B B. The weight of sand being now removed from the framing, the spring H will force the frame up to its full height, and the figure 0 will show through the hole in the sign-obscuring board. When the sand-chamber is thrown over and the lower supplemental chamber takes the place of the upper one, the clack-valve *h* will open and allow the sand in this supplemental chamber to drop into the principal chamber A. In the meantime the clack-valve *i* will have closed, preventing the falling of sand to the lower chamber, except gradually through a small hole in its center. The

sand in the chamber A will now run slowly and uniformly into the lower supplemental chamber, and as the end of this chamber rests upon the bottom of the frame F or end of the lever J its increasing weight will compress the spring H and cause the frame F and sign-board S to slowly descend, and the numbers upon the sign-board will pass in their order opposite the hole in the sign-obscuring board. If the lever is used, instead of frame F and spring H, the arrangement of the figures on the board will be reversed. The amount of sand that will run from the main chamber into the supplemental chamber in a given time can readily be determined by experiment. The supplemental chambers are collapsible, and may be made of any suitable material—such as canvas, leather, &c.

In the drawings the chambers are represented as having strips of rubber *xx*, one end of which is fastened to their bottoms and the other to the sand-chamber A. The purpose of these pieces of rubber is to keep the chambers collapsed when empty.

It will be understood that, instead of sand, I may use a liquid to produce the above result. When the sand-chamber is revolved, the shaft *b* also makes a half-turn, and consequently the piece of material I will be unwound from G and wound to a corresponding extent around W. This strip of material is so numbered that every time the sand-chamber turns one more number will appear upon it. In the drawings, for instance, the number 5 at the top of I indicates that five trains have passed. If, now, another train should pass, the sand-chamber would be turned over, the shaft *b* and wheel W revolved, and the number 6 would appear at the top of I.

In order to prevent as much as possible the sudden shock of the train striking the depressor, I have the upper faces of the depressor made of comparatively thin and yielding plates of iron or steel, and I have also a plunger, *p*, fastened to the depressor, and an air-cushion, *j*, so placed that the plunger will impinge against it.

Fig. 7 represents a substitute for the connecting-rod and crank for revolving the sand-chamber, and consists of a rack which is attached to the depressor, and which forms the depressor-rod, and a bevel-wheel on the shaft, which supports and revolves the sand-chamber, and into which the teeth of the rack gear.

Fig. 8 is a side view of the pinion-wheel and pawl and ratchet, M and N, Fig. 2, and is similar in construction and operation to similar wheels in clock mechanism, and will need no further description.

It will be understood that the number-signal through the same system of depressor-rod, shaft, &c., may be operated independently of the time-signal by putting on said shaft *a* and wheel W, a ratchet-wheel and pawl similar to that shown in Fig. 8, in order that the band I and wheel W (which wheel would

be loose on shaft *a*) may be disengaged from shaft *a* upon the reverse movement of said shaft when depressor returns to its normal position.

Having thus described my invention, I claim—

1. As a device for operating a signaling mechanism, and in combination with a suitable sign, the sand-chamber A, furnished with supplemental collapsible sand-chambers B, adapted to be revolved upon the passage of a train, substantially as shown, and for the purposes set forth.

2. As a device for operating a signaling mechanism, and in connection with the frame F and spring H, the sand-chamber A, furnished with supplemental collapsible sand-chambers B, and valves *h i*, to regulate the flow of the sand, the whole operating substantially as and for the purposes set forth.

3. In a device for indicating the number of a passing train, and in combination with the tracks of a railroad, and a hinged and inclined faced depressor adapted to be operated by a passing train, the connecting-rod *r*, crank *c*, shaft *a*, winding train-indicator I, and wheels W and G, adapted to revolve and guide said indicator in its motions, substantially as set forth.

4. In a device for indicating the time that has elapsed since a train has passed a given point of a railroad, the frame F, operated, respectively, by the supplemental sand-chambers B, and spring H, and having attached to its upper end a suitably-inscribed time-board, S, substantially as and for the purposes described.

5. The herein-described device for confining the rotation of the chamber A to one direction, and in combination with said chamber, consisting of the lateral working-spring *g*, situated upon one of the supporting-shafts of the chamber, and lugs *l*, situated upon the chamber, said lugs having one face abrupt and the other inclined, and arm *d* or its equivalent, situated on the other supporting-shaft, arranged and operating substantially as shown and described.

6. In combination with a suitably-inscribed sign, the chamber A, with valves *h i*, said valves having a hole in them, and adapted to open fully in one direction, and distribute sand or other material slowly when closed, in combination with means for revolving said chamber A, substantially as shown, and for the purposes set forth.

7. In combination, the time-indicator S, frame F, with spring or its equivalent, shaft *a*, revoluble chamber A, suitable for distributing sand or other material, shaft *b*, and winding number-indicator I, the whole operating as and for the purposes set forth.

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