

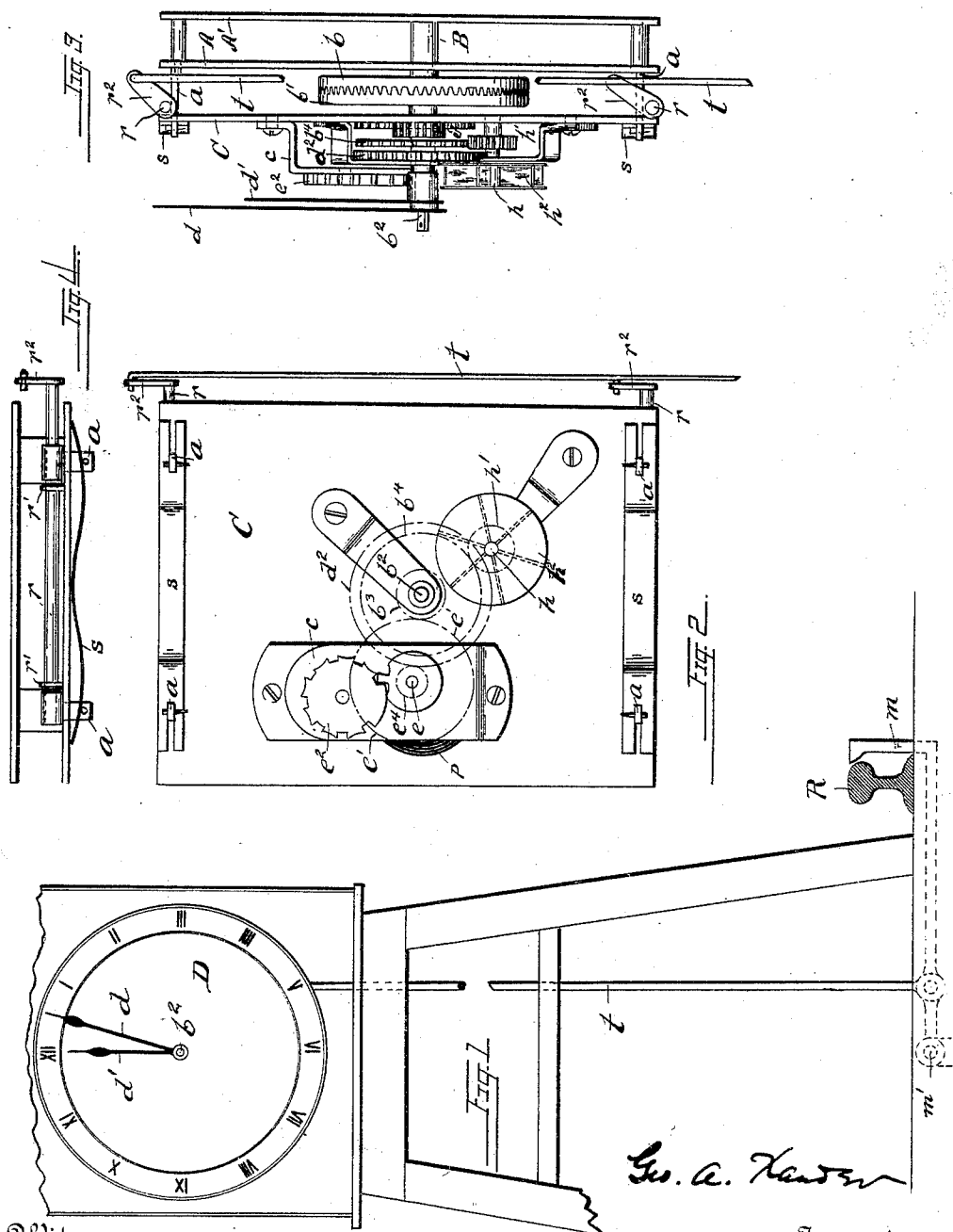
(No Model.)

2 Sheets—Sheet 1.

G. A. XANDER.
RAILWAY TIME SIGNAL.

No. 473,862.

Patented Apr. 26, 1892.



Witnesses

David Levan

Inventor

By *h* Attorney

John Newton

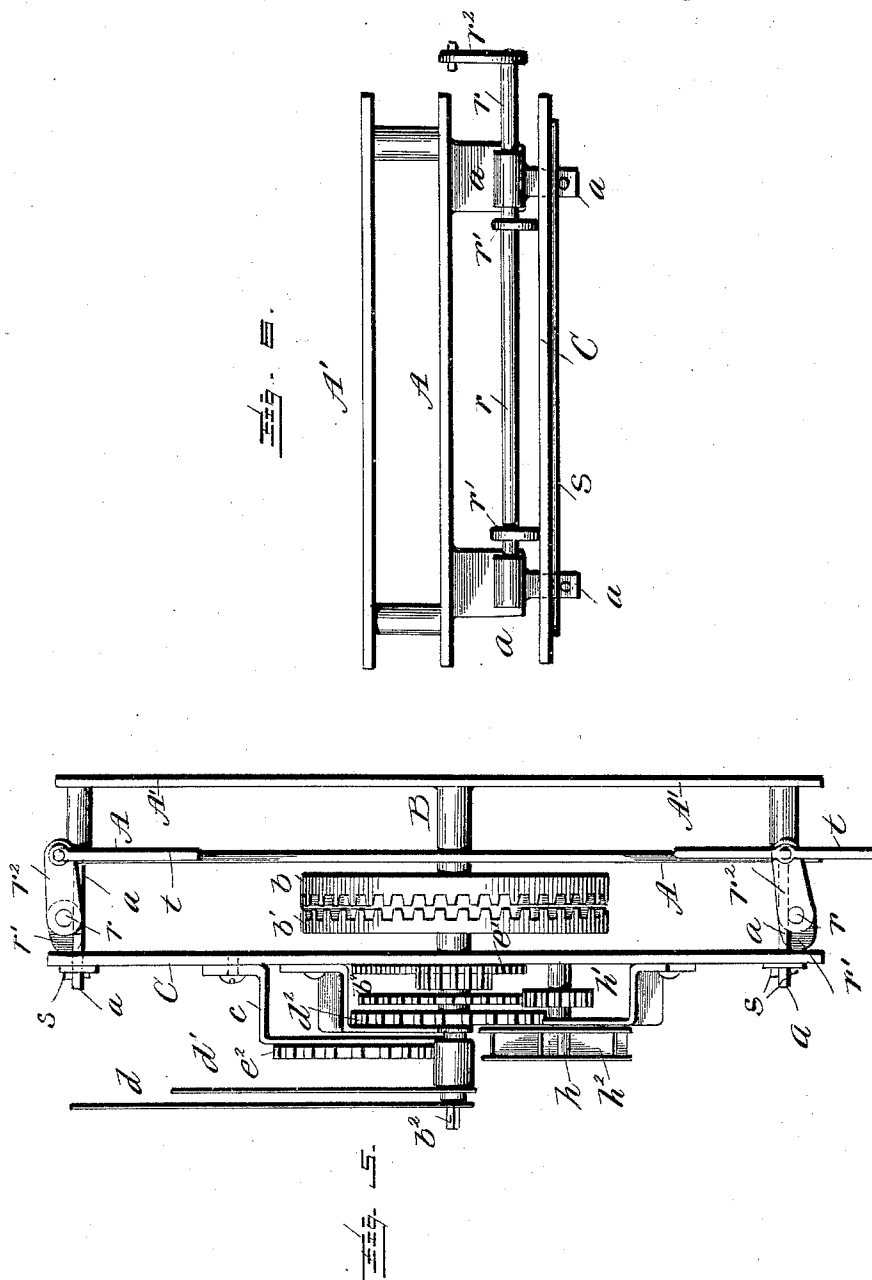
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Witnesses

L. C. Hills.
John B. Edwards.

Inventor :

Geo. A. Kander
By Chas J. Stockman
Associate Attorney

UNITED STATES PATENT OFFICE.

GEORGE A. XANDER, OF HAMBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
TO ALEXANDER MURDOCH, OF SAME PLACE.

RAILWAY TIME-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 473,862, dated April 26, 1892.

Application filed November 12, 1891. Serial No. 411,679. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. XANDER, a citizen of the United States, residing at Hamburg, in the county of Berks, State of Pennsylvania, have invented certain Improvements in Railway Time-Signals, of which the following is a specification.

This invention relates to mechanism designed for indicating automatically intervals of time elapsing between recurring events, and more particularly between the arrivals at a certain point of railway-trains following each other, so as to insure a minimum interval of time between the same.

The invention is fully described in connection with the accompanying drawings, and is specifically pointed out in the subjoined claims.

Figure 1 is a diagram indicating a manner of adapting my apparatus to be operated automatically by the passage of a railway-train. Figs. 2 and 3 are respectively a face and side view of the clock mechanism, the dial and case being removed. Fig. 4 is an end view of the same. Figs. 5 and 6 are respectively enlarged views similar to Figs. 3 and 4, but show the position of the parts during the passage of a train.

A and A' represent the front and rear plates, between which a clock-movement of substantially the usual construction may be secured. The central arbor B, however, where it projects beyond the front plate A, instead of carrying directly the index-hands, is provided with a clutch-wheel *b*. An extension *b*² of this arbor is mounted in a supplemental frame or plate C and is provided with a corresponding clutch-wheel *b*¹, whereby when said wheels *b* and *b*¹ are in engagement the extension *b*² becomes practically a part of the arbor B. The plate C is movably attached to the plate A by means of standards or brackets *a* or in any suitable manner, and is normally pressed toward it by springs *s*, which thus tend to keep the clutch-wheels *b* and *b*¹ in engagement.

Mounted upon the arbor-extension *b*² are the index-hands *d* and *d*¹, which traverse the dial D and indicate, respectively, the hours and minutes, as usual. The pinion *b*³, secured to the extension-arbor *b*², meshes with a wheel

*e*¹ on an arbor *e*, which carries the male wheel of a well-known stop-movement, the engaging wheel *e*² being mounted on a bracket-bearing *c*, secured to the plate C. A spring *p* tends to rotate the arbor *e* in a direction opposite to that imparted to it by the central arbor through pinion *b*³ and wheel *e*¹. The hour-hand *d*¹ is moved through the medium of the pinion *e*⁴ or arbor *e*, which meshes with the hour-hand wheel *d*². A wheel *b*⁴ upon the arbor-extension *b*¹ meshes with a wheel *h*¹ upon a fan-arbor *h*, upon the end of which is secured a fan *h*².

The mechanism illustrated for moving the plate C outward, so as to throw the extension-arbor *b*² out of gear with the main arbor B, consists of two transverse rods *r*, to which are secured cams *r*¹, adapted to bear against the plate and cranks *r*², which are secured to a connecting-rod *t*, which is operated by means of a lever *m*, pivoted at one end to a fixed point *m*¹, and having its opposite end supported in close proximity to the inner edge of the rail R, so that the wheel-flanges of a passing train will depress the same.

The operation will be readily understood. Normally the clutch-wheels *b* *b*¹ are held in engagement by the springs *s*, and the clock will then run in the ordinary way. Upon the lever being depressed by a passing train, however, the extension *b*² is thrown out of engagement with the main portion of the central arbor B, and immediately the spring *p*, being now free to act, turns the arbor *e* and the index-hands back until stalled by the stop motion, the stopping-point being so arranged as to bring both hands back to the starting or zero point. During this backward movement, however, the fan *h*² is brought into play and serves to retard the same and prevent the shock with which the stoppage would otherwise occur. Upon the passage of the train the parts are returned to their normal position, and the position of the index-hands upon the dial at the arrival of another train indicates the exact interval which has elapsed since the passage of the preceding one.

It is evident that my invention may be readily adapted to other than railway uses, and that various modifications may be devised without departing from the spirit of the same.

I do not therefore limit myself to the exact construction illustrated and described; but

What I claim is—

1. In a time-signal for railways, &c., a central arbor, a movable frame carrying an extension thereof, the adjacent ends of said extension and central arbor having a clutch, means for holding said movable frame normally in its innermost position and the members of the clutch in engagement with each other, shafts carrying cams adapted to engage said movable frame and force the same outward, and means for operating said shafts, in combination with a dial, index-hands carried by said extension of the central arbor, means for turning said hands to a predetermined point on the dial when the extension and arbor are out of gear, and means for returning said hands to their original position upon the re-engagement of the members of the clutch.

2. In a time-signal for railways, &c., a central arbor, a movable frame carrying an extension thereof, the adjacent ends of said arbor and extension each carrying a member of a clutch, means for holding said movable frame normally in its innermost position, shafts carrying cams adapted to engage said movable frame and force the same outward, cranks on the ends of said shafts, a pivoted horizontal lever having an end adjacent to a rail of the track and adapted to be engaged by the wheels of a passing train, and a rod connecting said cranks with said lever, in

combination with a dial, hands carried by said extension of the central arbor and adapted to traverse said dial, means for turning said hands to a predetermined point on the dial when the members of the clutch are out of engagement with each other, and means for returning said hands to their original position upon the re-engagement of the members of the clutch.

3. In a time-signal for railways, a central arbor, a movable frame carrying an extension thereof, the adjacent ends of said arbor and extension each carrying a member of a clutch, means for holding said movable frame normally in its innermost position, and means for forcing said movable frame to its outermost position, in combination with a dial, hands carried by the outer end of the arbor-extension and adapted to traverse said dial, a pinion b^3 , secured to said arbor-extension, a gear-wheel intermeshing with said pinion, a spring coiled around the arbor of said gear-wheel, the intermeshing pinion e^4 , and gear-wheel d^2 , a retarding mechanism geared with said arbor-extension, and a stop mechanism geared with said hands, said parts being arranged and operating substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

GEO. A. XANDER.

Witnesses:

ALVIN J. SHARTLE,
JOHN RUTH.