(No Model.) 2 Sheets—Sheet 1.

# R. S. BELISLE.

## ALARM MECHANISM FOR RAILWAY SWITCHES.

No. 338,915. Patented Mar. 30, 1886.

FIG. 1.

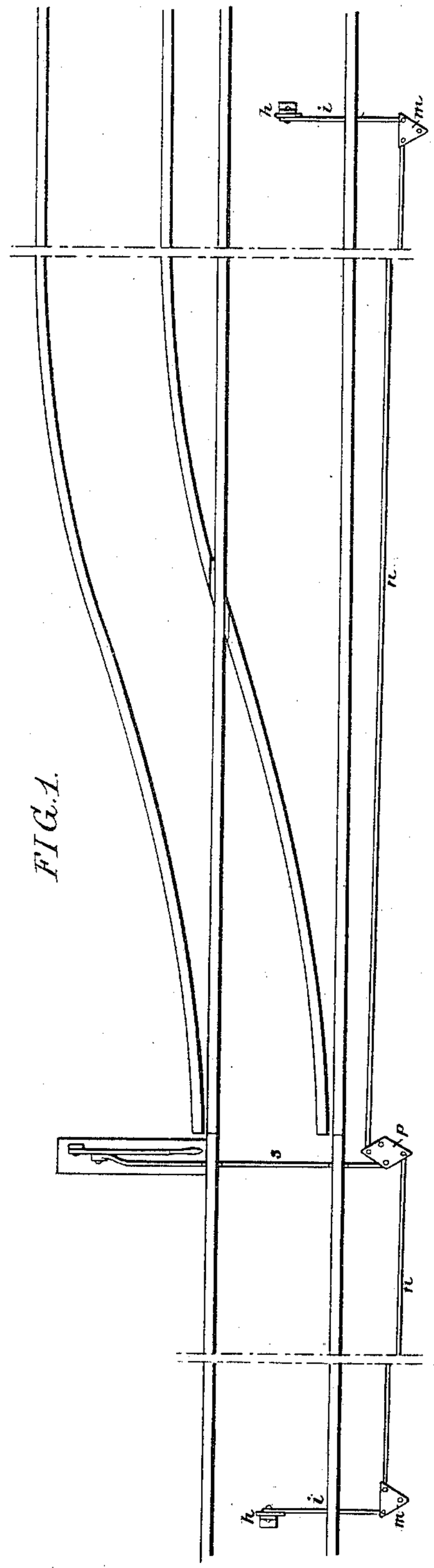
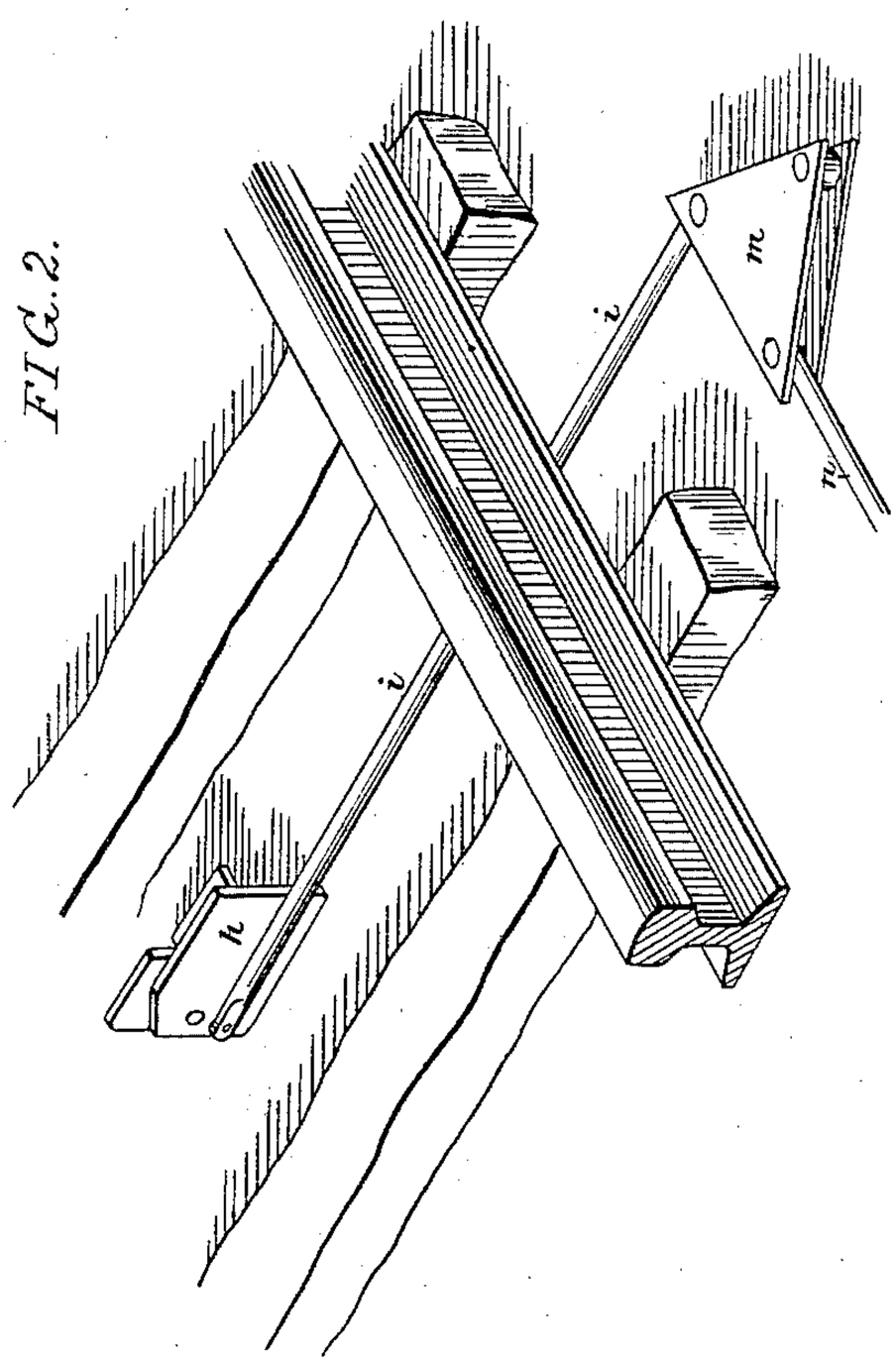



FIG. 2.




Witnesses:
John E. Parker
Hamilton D. Turner.

Inventor:
Robert S. Belisle
by his Attorneys
Howson & Sons

(No Model.) 2 Sheets—Sheet 2.

# R. S. BELISLE.

## ALARM MECHANISM FOR RAILWAY SWITCHES.

No. 338,915. Patented Mar. 30, 1886.

FIG. 3.

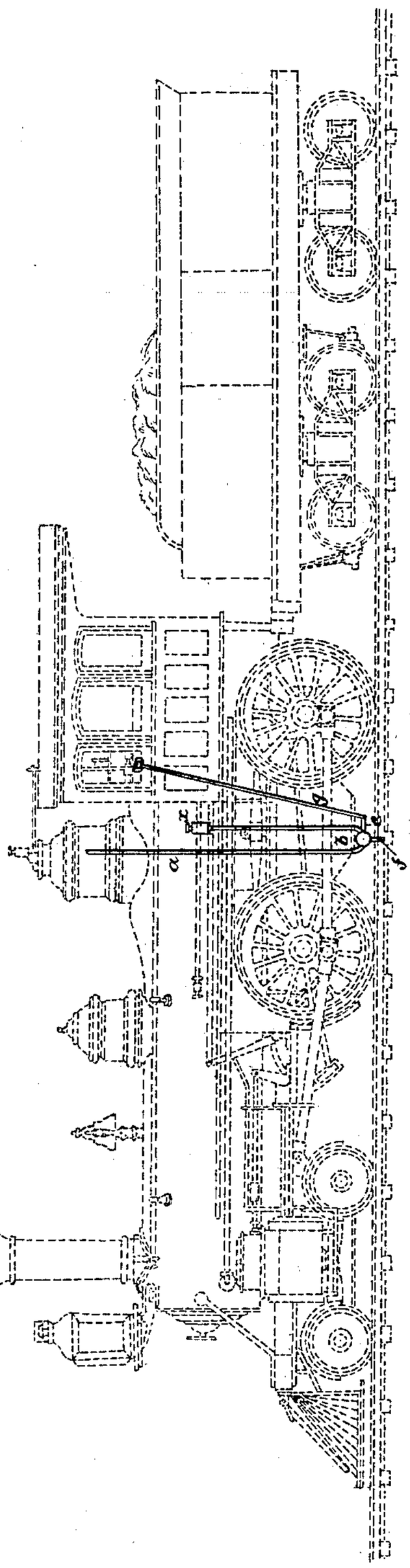
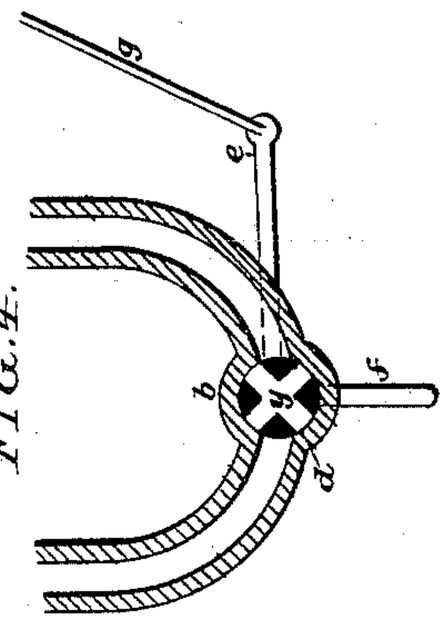


FIG. 4.




Witnesses:
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# UNITED STATES PATENT OFFICE.

ROBERT S. BELISLE, OF PHILADELPHIA, PA., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF PART TO THOMAS OTT, CHARLES D. FREEMAN, HENRY A. DUHRING, AND PAUL SCULL, ALL OF SAME PLACE.

## ALARM MECHANISM FOR RAILWAY-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 338,915, dated March 30, 1886.

Application filed January 18, 1886. Serial No. 188,938. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT S. BELISLE, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Alarm Mechanism for Railway-Switches, of which the following is a specification.

My invention consists of improvements in devices whereby an alarm-whistle is sounded upon a locomotive approaching an open or misplaced switch in time to permit the stopping of the engine and train before reaching said switch.

My improvements consist of certain details in the construction of the alarm and alarm-operating mechanism, as fully set forth hereinafter.

In the accompanying drawings, Figure 1 is a plan view of sufficient of a railway-switch to illustrate the construction and application of the alarm-operating mechanism; Fig. 2, a perspective view, on a larger scale, of part of said alarm-operating mechanism; Fig. 3, a view showing the alarm mechanism applied to a locomotive, and Fig. 4 an enlarged sectional view of part of said alarm mechanism.

Extending from the steam-dome or other portion of the steam-space of the locomotive is a pipe, *a*, which is carried down to a point beneath the locomotive and close to the road-bed, where it is provided with an abrupt bend, and is then continued upward to a point above the foot-board of the locomotive, where it is furnished with an alarm-whistle, *x*, of the usual or any desired construction.

In the bend of the pipe is a valve-casing, *b*, the valve *d* of which has two passages, *y*, as shown in Fig. 4, these passages being such that when the valve is in the position shown in said figure the flow of steam through the same is cut off; but by moving the valve slightly in either direction—say to the extent of about one-eighth of a turn—communication is opened through said valve, and steam is permitted to flow to and sound the whistle. The valve has two projecting arms, *e* and *f*, the arm *e* being provided with a rod, *g*, having an operating handle or lever in the cab of the engine, so that the valve is under the direct control of the engineer, and can be operated by him at any time, in order to sound the whistle and assure himself that it is in proper working condition. The other arm, *f*, of the valve projects downward and is in line with pivoted toes *h*, hung to suitable bearings on the road-bed and located at a proper distance on opposite sides of the switch, each toe being connected by a rod, *i*, to a bell-crank lever, *m*, and these levers being connected by rods *n* to two of the arms of a diamond-shaped or three-armed lever, *p*, the third arm of which is connected to the switch-operating rod *s*. When the switch-rails are set in line with the main track, and said main track is consequently clear, the pivoted toes *h* occupy the depressed position shown in Fig. 2, and are out of the path of the arm *f* of the valve *d* on a locomotive traversing the track; but when the switch-rails are moved so as to be in line with the siding, and the continuity of the main track is thereby interrupted, the toes are, owing to the connections described, elevated so as to project into the path of the arm *f* of the valve, whereby when a locomotive approaches the switch in either direction the valve will be operated and the alarm sounded, so as to notify the engineer of the condition of the switch, the construction of the valve being such that the alarm is sounded, whether the locomotive is running head-on toward the switch or is backing toward the same.

The availability of my invention will be readily recognized when the fewness and simplicity of the parts composing the same and the readiness with which they can be applied to existing engines and switches are considered.

I claim as my invention—

1. The combination of a locomotive-engine, a pipe communicating with the steam-space of the boiler and having a whistle, and an alarm-valve provided with ports or passages, substantially as set forth, whereby the flow of steam to the whistle is permitted by movement of the valve in either direction from a central or cut-off position, said valve having an operating arm or finger to be actuated directly by contact with a toe on the track, all substantially as specified.

2. The combination of the switch and its

operating mechanism, the pivoted toes *h*, located at a distance from the switch on each side of the same, the bell-crank levers *m*, the three-armed lever *p*, one arm of which is connected to the switch-operating mechanism, and rods *n* and *i*, whereby the other arms of said lever *p* are connected to the levers *m*, and said levers are connected to the toes *h*, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT S. BELISLE.

Witnesses:
JOHN E. PARKER,
HARRY SMITH.