F. CULHAM.

RAILROAD-SIGNAL.

No. 172,979. Patented Feb. 1, 1876.

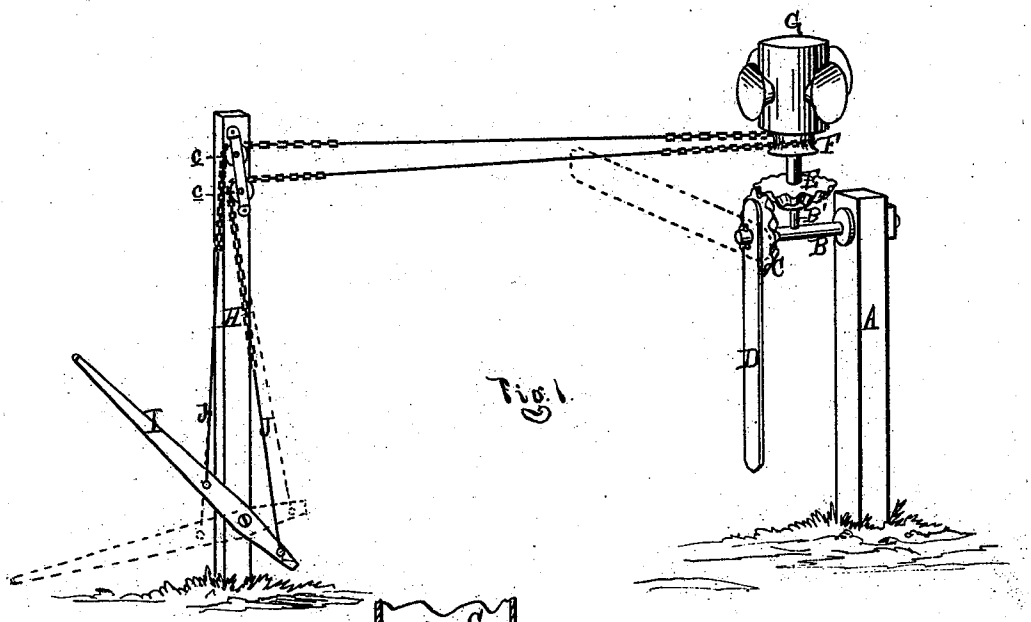

Fig. 1.

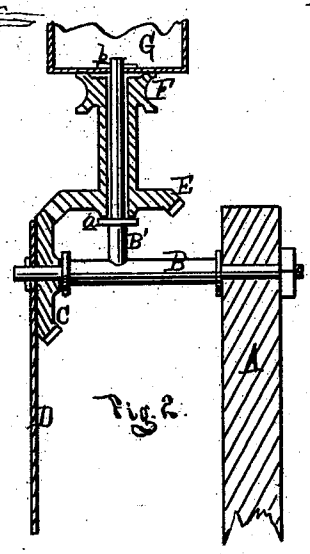

Fig. 2.

ATTEST:
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UNITED STATES PATENT OFFICE

FRANCIS CULHAM, OF WIDDER STATION, CANADA.

IMPROVEMENT IN RAILROAD-SIGNALS.

Specification forming part of Letters Patent No. **172,979**, dated February 1, 1876; application filed December 8, 1873.

To all whom it may concern:

Be it known that I, FRANCIS CULHAM, of Widder Station, in the county of Lambton, in the Province of Ontario and Dominion of Canada, have invented an Improvement in Railway Semaphore-Signals, of which the following is a specification:

The nature of this invention relates to an improvement in that class of semaphore-signals which are erected and used near railway-stations to indicate whether the main line is clear or a train is standing on the main line at the station; and it consists in the peculiar construction and arrangement of the mechanism of the semaphore operated by two wires or cables connected to a single lever at the station, as more fully hereinafter set forth.

Figure 1 is a perspective view. Fig. 2 is a detail elevation, partially in section, of the signal-gear.

In the drawing, A represents a post erected at the side of the railway-track, at any convenient distance from a station. From the top of the post an arm, B, projects horizontally toward the station, having an upright spindle, B′, forged on it. C is a bevel-gear wheel sleeved on the end of the arm B, with a red or other colored board, D, secured to its back, which, when raised horizontally over the track, serves as a day signal for trains to stop, as usual, where semaphores are used. E is a bevel-pinion, having a long hub cast with it to project upward, and which is sleeved on the spindle B′, the pinion being supported by a collar, *a*, on the spindle, and meshing with the gear C. At the top of the pinion-sleeve is a grooved pulley, F, above which is the semaphore-lantern, G, in which the top of the spindle is inserted and held by a pin, *b*, the said lantern being secured to the pulley so as to revolve with it, and show the red or green lights at night, as occasion may require. H is a post erected at the station, with a lever, I, pivoted to the lower part thereof, with a rod, J, connected to its short arm, and a similar one to the long arm at an equal distance from the fulcrum. At the top of the post two pulley, *c c*, are pivoted thereto, over which run two chains, one connected to each rod J, in turn being connected to two long wires, which extend nearly to the semaphore, their ends being connected by a chain which runs around the grooved pulley F. By raising or lowering the lever the semaphore will be turned a quarter-revolution on its axis, and at the same time the signal-board be raised to a horizontal or dropped to a vertical position.

If preferred, the wire, chains, and rods may be replaced with a single wire-rope.

The advantage of this system of operating the semaphore is, that it is easy and positive, the strain of the chains being always on the grooved pulley, no matter how slack they may be, and, besides, the semaphore mechanism costs less to construct than that heretofore used.

What I claim as my invention, and desire to secure by Letters Patent, is—

The signaling apparatus described, consisting of a post, A, situated at the side of the track at a distance from the station, and supporting a board, D, and lantern G, permanently geared together, a post, H, situated at the station, and supporting the lever I, and the chain or wires J, when the several parts are adapted to be operated in the manner described.

FRANCIS CULHAM.

Witnesses:
JAMES DOBIE,
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