S. P. LITTLEFIELD.

Station-Indicator.

No. 163,936. Patented June 1, 1875.

Fig. 1.

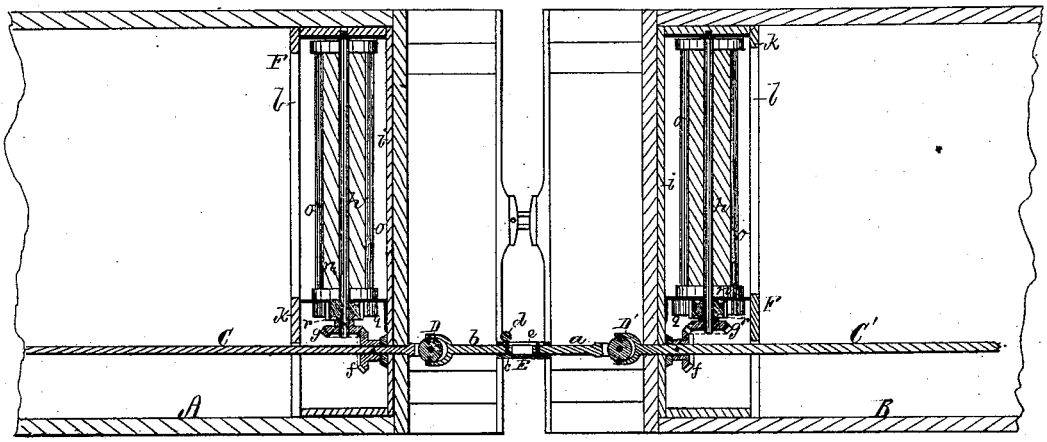


Fig. 2.

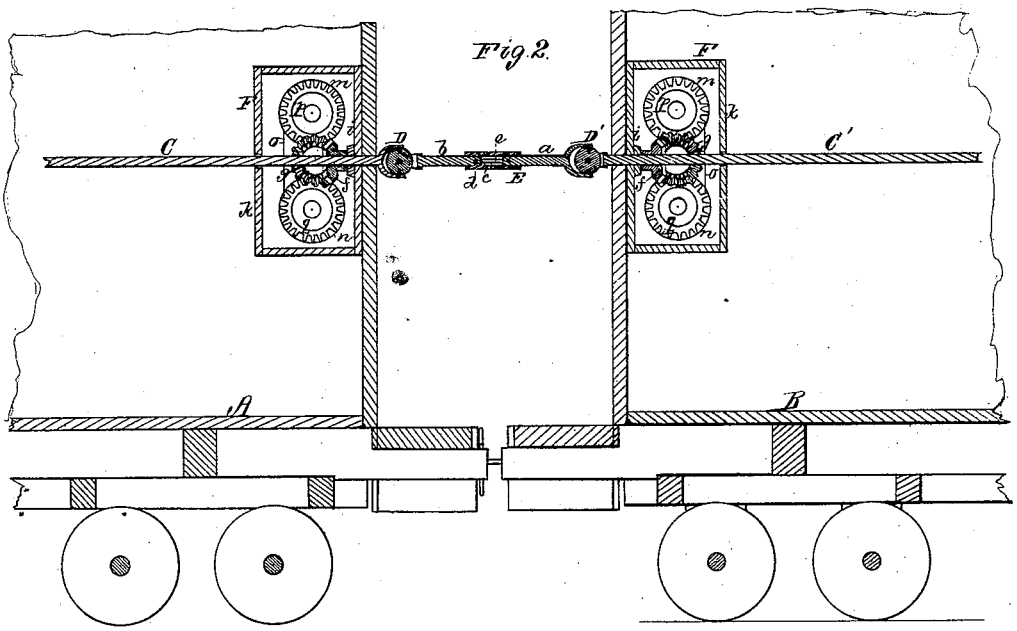


Fig. 3.

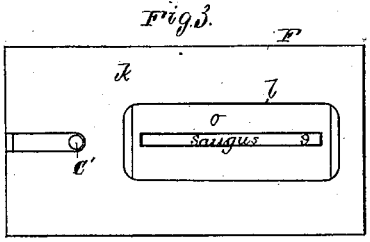
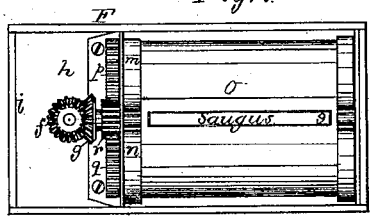


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

SILAS P. LITTLEFIELD, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN STATION-INDICATORS.

Specification forming part of Letters Patent No. **163,936**, dated June 1, 1875; application filed December 31, 1874.

To all whom it may concern:

Be it known that I, SILAS P. LITTLEFIELD, of Lynn, of the county of Essex and State of Massachusetts, have made a new and useful invention, having reference to Station-Indicators for Railway-Carriages; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a longitudinal and horizontal section, and Fig. 2 a longitudinal and vertical section, of parts of two railway-carriages provided with station-indicators and my invention for operating them, the purpose of the said invention being to enable a conductor or attendant of a train to operate synchronously all the station-indicators of the several cars or carriages of such train, each car or carriage being provided with a station-indicator at each or either end of it. Fig. 3 is a front elevation of a station-indicator with its cap on, and Fig. 4 a similar view of it with its cap off.

With my invention the cars can have all their usual movements while running upon a railway.

While a train may be approaching any station a conductor, in order to simultaneously cause the name of that station to be indicated by all the indicators of the train, has only to revolve the line of shafting going through the train until he may see the name appear at the opening slit of one of the indicators. Each indicator will then expose the name of the station. This line of shafting is so constructed or composed not only of a main shaft to each carriage, but of an extensile and contractile shaft, arranged between each two next adjacent carriages of the train, and connected to their main shafts by universal joints. Each main shaft has one or more station-indicators applied to it, and it is to revolve the driving-gear of the train of gears of each of said indicators. The extensile shaft and the universal joints between each two cars of the train, and connecting the shafts going through such cars and the driving-gears of their station-indicators, not only serve to so connect the main shafts that one, on being revolved, will turn the other, but enable the cars to approach or recede from each other, and to move up or down or laterally while the train may be in motion.

In the drawings, A and B are two railway-carriages, or the contiguous end portions of such, coupled in the usual manner as cars are when in a train.

There is extended lengthwise through each car a shaft, C or C′, supported in bearings, so as to be capable of revolving transversely. The said shaft is to project outwardly beyond the ends of the car a short distance. The two shafts C C′ of the two cars A B are, by universal joints D D′, to be connected with an extensile and contractile shaft, E, composed of two rods, *a b*, and a slotted sleeve, *c*. The sleeve *c* projects from and is fixed to the rod *a*, and receives within it the rod *b*, which slides freely lengthwise in the sleeve, and is connected therewith by a pin, *d*, which goes through the slot *e* in the side of the sleeve, and thence into a hole made transversely in the rod *b*.

On each shaft C C′ is fixed a bevel-gear, *f*, to each of the station-indicators of the car. This gear *f* engages with another such gear, *g*, fixed on the main shaft *h* of the next adjacent station-indicator F, arranged, as shown, at the upper part of the end of the car. Generally speaking, there is to be to each car two of such indicators, one being at each end of it.

Each station-indicator is to consist in part of a box or case, *i*, provided with a cap, *k*, having a slot or opening, *l*, made through it, as shown. Within the box are two cylinders or rollers, *m n*, carrying a band, *o*, fixed to them at its ends, the said band having the names of the stations marked or printed upon it at suitable distances apart. The band, after being attached at one end to and wound around one roller, is to be fastened at its other end to the other roller. The shafts of the rollers have spur-gears *p q* on their ends, to engage with a spur-pinion, *r*, fixed on the main shaft *h* of the indicator.

On taking hold of and revolving either shaft, C or C′, the several station-indicators of the cars will be simultaneously actuated, so as to cause their bands to be moved like distances, in order to bring to the cap-openings of the indicators the name of any station toward which the train may be in movement.

I do not claim the invention of a station-indicator, as described, nor do I claim an extensile and contractile shaft, nor the invention of a universal joint; but having combined with two railway-carriages and their station-indicators a mechanism which, while extending from one carriage to the other, and from the station-indicator of one to that or those of the other of the said carriages, will not only admit of or cause, when revolved, all the indicators to be operated simultaneously, but, without being disarranged or disconnected thereby, will allow of all the necessary movements of such cars while they may be running upon their railway.

I claim as my invention as follows, viz:

The combination of the shafts C C′, the extensile and contractile shaft E, and their connecting universal joints D D′ with the two railway-carriages A B and their station-indicators F, all being arranged and applied substantially in manner and to operate as and for the purpose as hereinbefore specified.

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Witnesses:
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