

545,409, dated August 27, of which he has assigned one-half to Samuel M. Felton, of Cincinnati.

One of the principal objects aimed at in this design is to use ordinary shapes of I beams, channel bars and plates in its construction, which are a common article of merchandise in the open market, and which can therefore be obtained at lower cost than special forms could be.

The side frames 1 of the truck shown consist of I beams with openings or "jaws" cut into their lower sides to receive the boxes 2 2. These openings are then reinforced by angle bars 3 bent into the form of an inverted letter \cap , and which are riveted to the web of the I beam as shown. The lower portion of the jaws are then held together by pedestal braces 4 bolted to the lower flanges of the I beam 1. Fig. 11 is a transverse section through the transoms and fig. 12 is a horizontal section on the line $x x$.

The transoms consist of channel bars 10 10, which are fastened to the side frames by angles 11 11, to which they are riveted. These channel bars are braced on their under side by diagonal braces 12 12, which hold them in position and keep the truck square. The bolsters consist of a pair of I beams, a sectional view of which is shown in fig. 11. The springs are supported by plates 15, which are bent into U shape and are riveted to the channel bars. The design seems to be an excellent one, and as only ordinary standard shapes are used in its

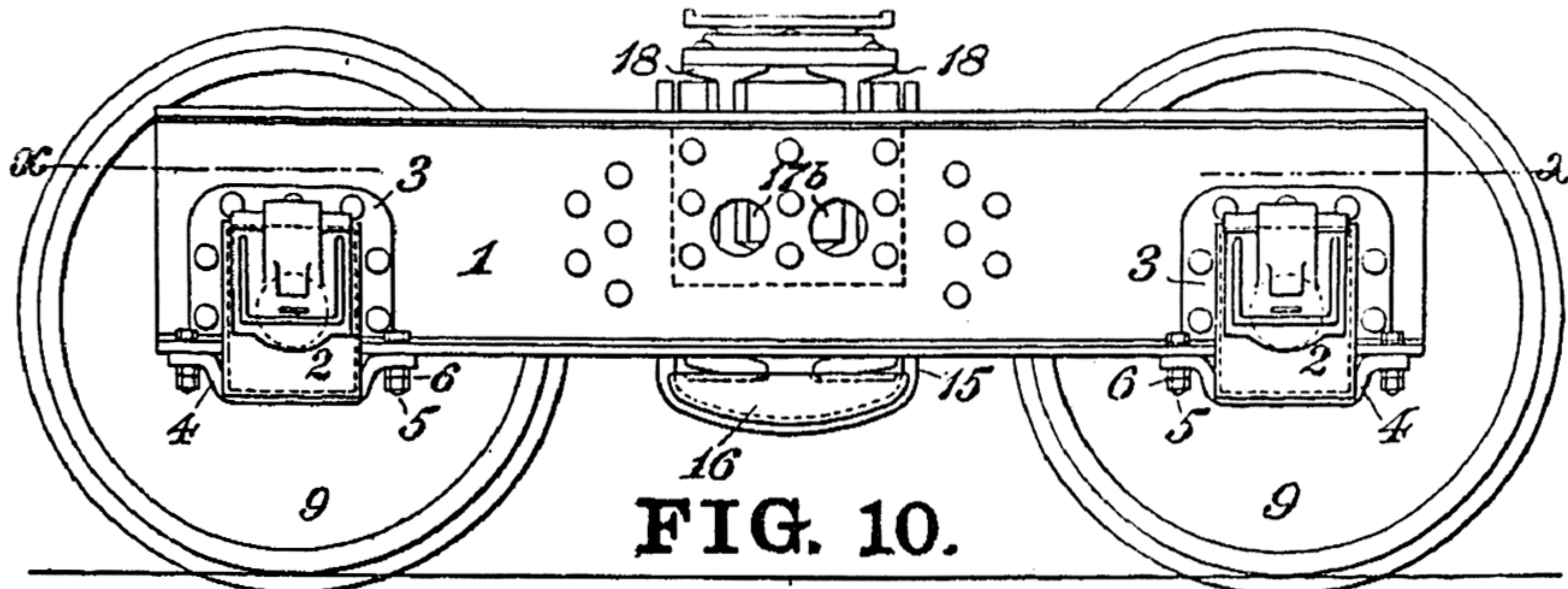


FIG. 10.

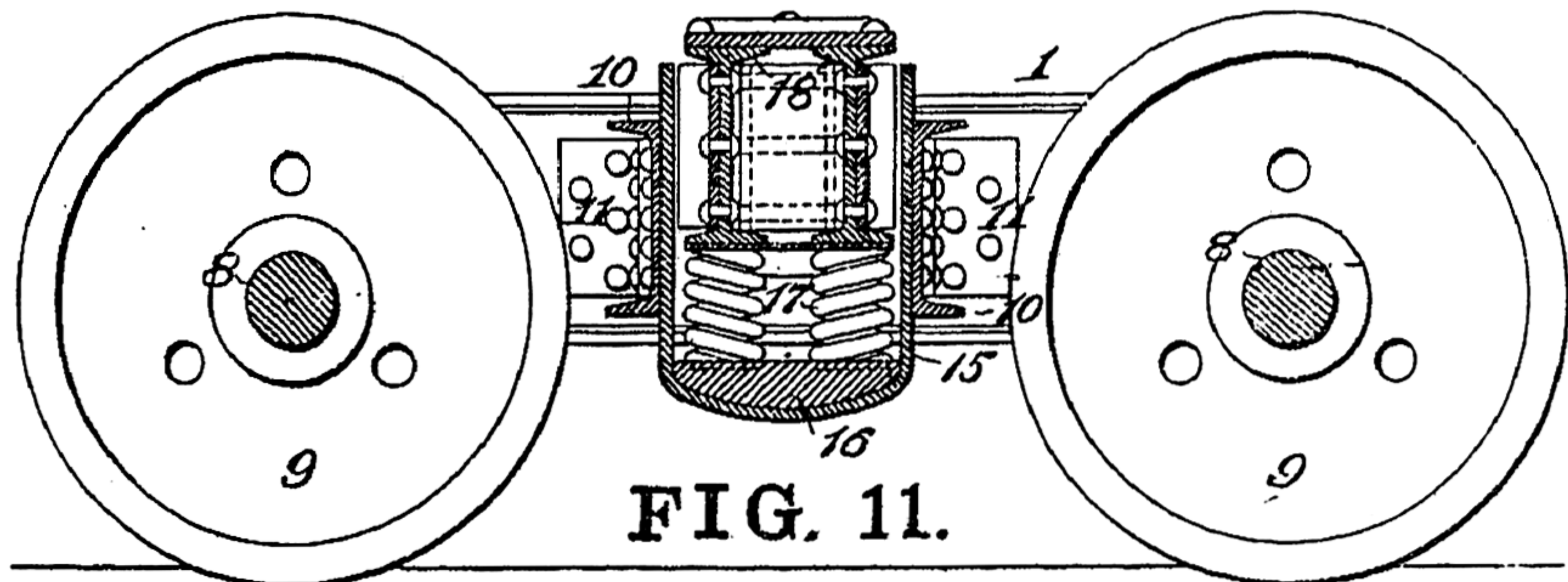


FIG. 11.

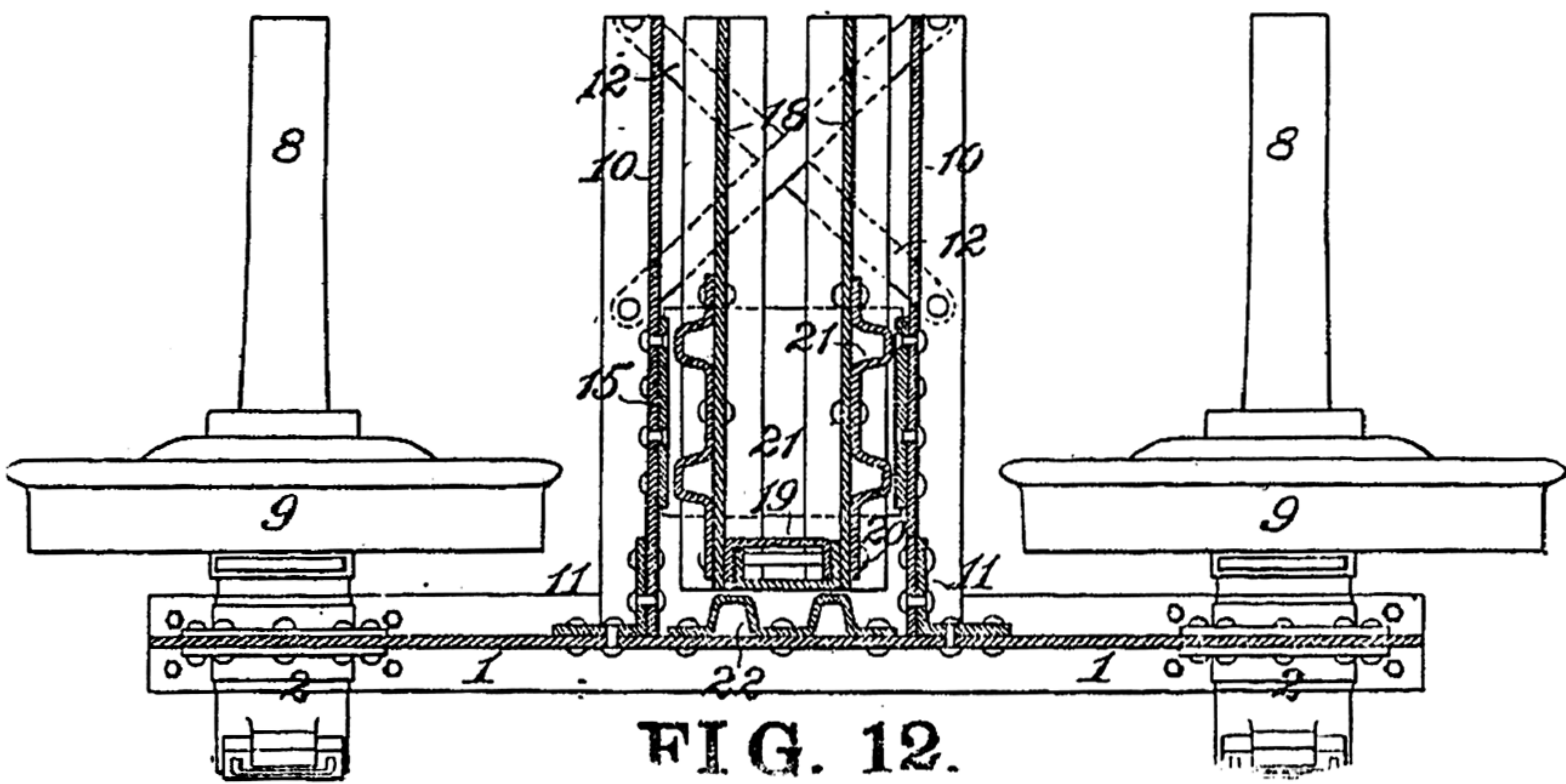


FIG. 12.

THE MANSFIELD CAR TRUCK.

construction, and as little or no special machinery would be required for the manufacture, this truck should have the advantage of cheapness; and if the cost is lessened and the endurance lengthened there it will have the happy collocation of merits which all are striving to obtain.

ILLUMINATED SEMAPHORE SIGNAL.

Mr. Jacob W. Lattig, of West Bethlehem, Pa., has patented a form of illuminated semaphore arm, shown in figs. 13 and 14, which he describes as follows:

"Extending along the longitudinal centre of the semaphore arm is a row of incandescent electric lamps, h . These lamps are secured by their sockets to the semaphore arm, and are placed preferably at intervals apart of a foot throughout the length of the blade.

"The lamp terminals on one side are connected to a wire, 1, common to all. On the other side each lamp terminal has its individual wire leading and connected to a stationary brush pertaining to that lamp terminal alone, there being as many

brushes (numbered 2 to 7, inclusive) as there are lamps. These brushes are arranged as the stationary contacts of a commutator around a rapidly rotating contact or trailer, 8, which meets the brushes successively, preferably making contact with the one in advance just before it quits the one next in rear, to

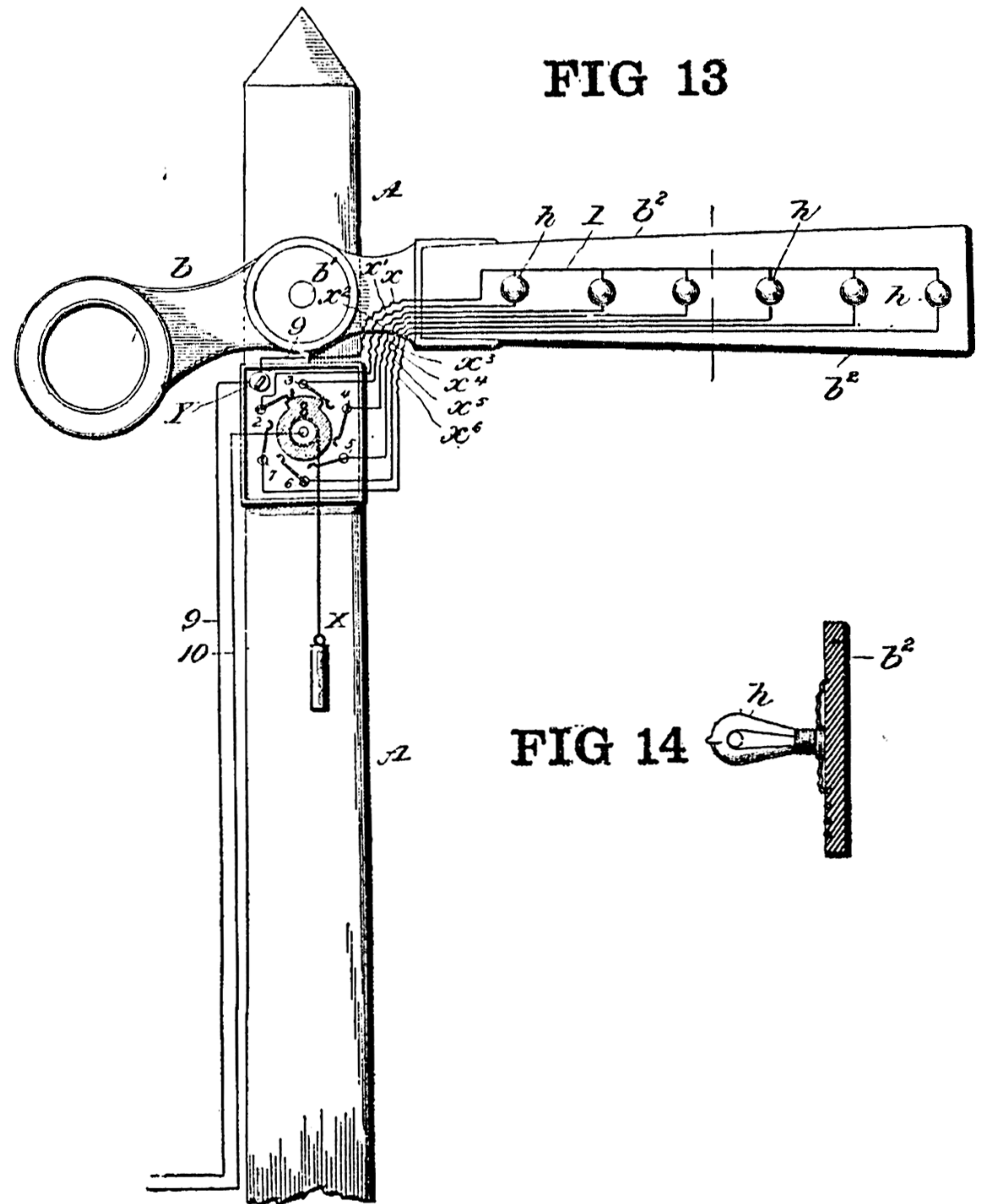


FIG. 13

FIG. 14

THE LATTIG ILLUMINATED SEMAPHORE SIGNAL.

prevent arcing at contacts. The rotating contact is intended to revolve continuously when in action, being driven for this purpose by any suitable motor, electrical or otherwise. Where direct currents are employed, I prefer an electrical motor to run the commutator. Where alternating currents are employed, I prefer a mechanically operated commutator, the mechanical motor in the present instance being clock-work typified by the cord and weight X . The wire 1, by a flexible cable, x , is connected to the wire 9 on the post leading to one pole of the source of electrical supply, the other pole of which is connected to the revolving commutator contact disk 8 by wire 10. There is a similar flexible connection, $x' x^2$, etc., between the individual lamp terminal wires and their respective stationary contact springs or brushes 2, 3, etc. The flexible connections $x x' x^2$, etc., are for the purpose of permitting the free movement of the semaphore arm on its pivot. A switch, Y , is provided to make and break the circuit, as desired. When the circuit is closed at Y and the commutator in action, the lamps will successively be brought into circuit, one during each revolution of the commutator disk. The effect upon the eye of the observer, owing to the rapid rate of the movement of the trailer 8, will be a streak of light running from end to end of the semaphore blade intermittently, no matter what may be the position of the arm, whether inclined or straight. The light may be white, red, green, or any other color desired.

"The arrangement, while producing the impression of a continuously moving streak of light, economizes current materially, as the quantity of current consumed will not exceed materially, if at all, that required to maintain a single constant light. A light may be placed behind the spectacle glass in the casting b , if desired, and this light may be made to take its turn along with the rest by providing suitable commutator connections for it.

"Under my improvements the same line of lights are exposed to the train at all times, and those lights are not continuous, but intermittent. Not only is there economy in this last feature, but also a new effect is produced in railway signalling. The rapid running intermittent streak of light produced by the rapid movement of the trailer contact makes a very much more distinctive signal and will more readily attract the attention of the engineer. The signal becomes in effect an automatic flagman, to stop or start a train by movements similar to those employed by the flagman with his lantern or flag for the same purpose."

The patent is dated September 3, and numbered 545,071.