S. F. MINTON.

Speed-Measure.

No. 164,861. Patented June 22, 1875.

Fig 1

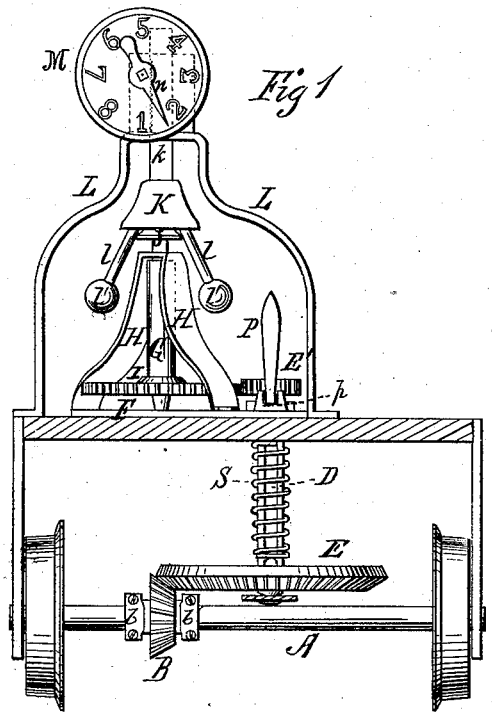


Fig 2

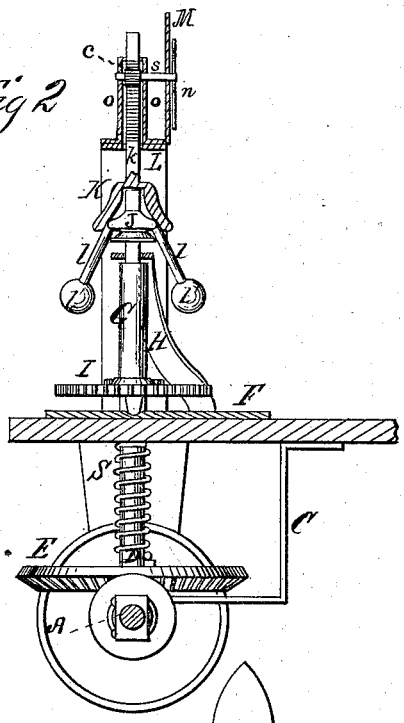


Fig 3

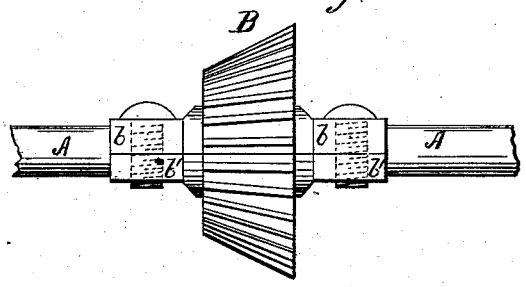
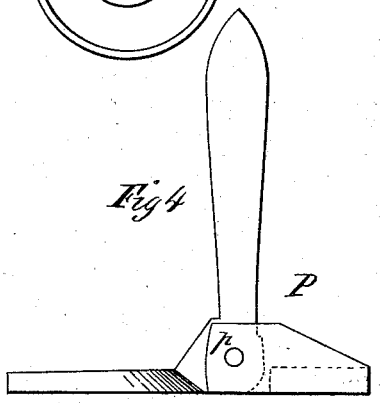


Fig 4



WITNESSES

Robert Everett

Frank J. Dlasi

INVENTOR

Stephen F. Minton

Chipman & Sawin & Co

Attorneys

UNITED STATES PATENT OFFICE.

STEPHEN F. MINTON, OF PRAIRIE PLAIN, ASSIGNOR OF ONE-HALF HIS RIGHT TO HENRY D. STARR, OF TEXANA, TEXAS.

IMPROVEMENT IN SPEED-MEASURES.

Specification forming part of Letters Patent No. **164,861**, dated June 22, 1875; application filed July 18, 1874.

To all whom it may concern:

Be it known that I, STEPHEN F. MINTON, of Prairie Plain, in the county of Grimes and State of Texas, have invented a new and valuable Improvement in Speeder for Locomotives; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a front view of my speeder for locomotives. Fig. 2 is a sectional view of the same, and Figs. 3 and 4 are detail views of the same.

This invention has relation to means for indicating the degree of speed with which an engine or train of cars is passing over a railroad, and for enabling an engineer to regulate the speed of his engine to conform to the "time" enjoined by his table, so that he will run at an even degree of speed, and be required neither to "slow down" to save his schedule nor quicken the pace of his engine to make up lost time.

The novelty consists in a spring applied upon the shaft of the horizontal pulley-wheel immediately acted upon by the bevel-wheel upon the shaft, whereby the said shaft will be allowed endwise play to disengage its lower cog-wheel from the said bevel-wheel, thus causing the governor-shaft to cease from being actuated, and yet will at all times prevent a casual disengagement of the said wheels the one from the other, and will cause a certain and speedy re-engagement thereof when their connection has been purposely broken.

In the annexed drawings, A designates the iron axle of an ordinary railway-car or locomotive, upon which is removably secured a suitable cogged bevel-wheel, B. This wheel is constructed in two sections, and each is provided with lugs *b b'*, by means of which they are secured around the axle and there clamped. Upon the bottom of the car is secured a suitable hanger, C, the lower end of which affords a bearing for a shaft, D, having upon its lower end a horizontal cog-wheel, E, by means of which the motion given to the shaft is imparted to the actuating machinery of the dial. The shaft D passes upward through the bottom of the car or locomotive, and is provided at its other end above the platform of the said railway-carriage with a cog-wheel, E'. F designates a metallic plate or table, which is rigidly secured upon the floor of a car, and affords a lower bearing for a shaft, G, the upper end of which is journaled upon a suitable standard, H. Upon the lower end of this shaft another cog-wheel, I, is rigidly keyed, engaging with cog-wheel E' of the main actuating-spindle D. J designates a collar, which is keyed upon a portion of the shaft G extending upward beyond the standard H, into which are pivoted, so that they shall vibrate vertically, two levers, *l*, having upon their free ends balls *l'*, being the "governors" in common use in stationary engines.

It is evident that when the shaft G is caused to rotate rapidly upon its axis the governors will assume a position approximating more or less to the horizontal, according to the degree of rapidity of the rotation imparted to the governor-bearing shaft.

K designates a bell-shaped metallic cap, which is seated upon the upper ends of the levers *l*, over the collar J, and which is provided with a tubular rectangular shank, *k*, having teeth cut into it, for a purpose hereinafter to be explained. Both the cap and its shank have a vertical endwise movement, the shank being guided in a slotted upper part of the dial-bearing standards *l*, which are preferably rigidly secured to the floor of the car independently of all the parts of the mechanism. Upon these standards a second set of standards, *o*, is rigidly secured, affording bearings for a horizontal shaft, *s*, of a dial-needle, *n*. Upon this shaft, between its bearings, a cog-wheel, *c*, is rigidly keyed, its teeth engaging with the toothed shank *k*. M designates a dial, having a clock-face, and numbered at intervals in any suitable manner, to indicate the speed per hour made by a train. If the shaft G be now rapidly rotated the levers *l* will be forced, by centrifugal motion given to the balls *l'* upon the ends thereof, to raise the cap K, thereby causing its toothed shank to actuate the needle-shaft, and the needle to indicate a certain number upon the dial, thereby showing the speed obtained by the train.

P designates a lever having its weight end forked, and at a right angle to its power-arm, to which is hinged, at the angle of its two arms, a fulcrum, *p*, having a perfectly flat under surface and a grooved and beveled upper surface. This lever is adapted, by having its weight end bifurcated, to be inserted under the pulley-wheel E′, the shaft of which is received between its forks. When the power-arm of lever P is forcibly thrust down, its weight end, being raised up at the same time, raises the shaft D and its pulley-wheels E′ E, disengaging the latter from the bevel-wheel B, and causing the "tell-tale" mechanism to cease from being operated; and the fulcrum *p* of the said lever being hinged thereto permits the power-arm thereof to be received into the groove upon its upper surface, its lower flat surface serving as a base to prevent a casual overthrow of the lever. In order that I may be enabled to cause a rapid re-engagement of the wheels E and B, and also to prevent them from beeoming casually disengaged, I have made use of a spring, S, preferably helical, upon the shaft D, and between the bottom of the car and the wheel E. This spring will be compressed when the shaft D and its cog-wheels E′ E are raised, to effect a disengagement of the latter from the bevel-wheel B by the lever P, and its reaction will effect a certain and speedy connection thereof when it is released from the action of the lever. It will also prevent a casual disengagement of the said wheels, which would be continually occurring from the jolting and jarring of a car in rapid flight over an uneven track, were some similar check not provided.

I am well aware that sectional bevel-wheels are old, and hence I do not claim this device broadly.

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

1. The combination of the spring S with the vertically-playing shaft D, having cog-wheels E E′, substantially as specified.

2. The angular lever P, having a fulcrum, *p*, hinged to the angle of the weight and power-arms thereof, in combination with the cog-wheels E E′ of the actuating-spindle D, and the spring S, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

STEPHEN F. MINTON.

Witnesses:
S. S. COHEN,
W. T. GRANT.