(No Model.) 2 Sheets—Sheet 1.

F. N. SCOFIELD.

SPEED INDICATOR FOR VEHICLES.

No. 441,334. Patented Nov. 25, 1890.

Fig. 1.

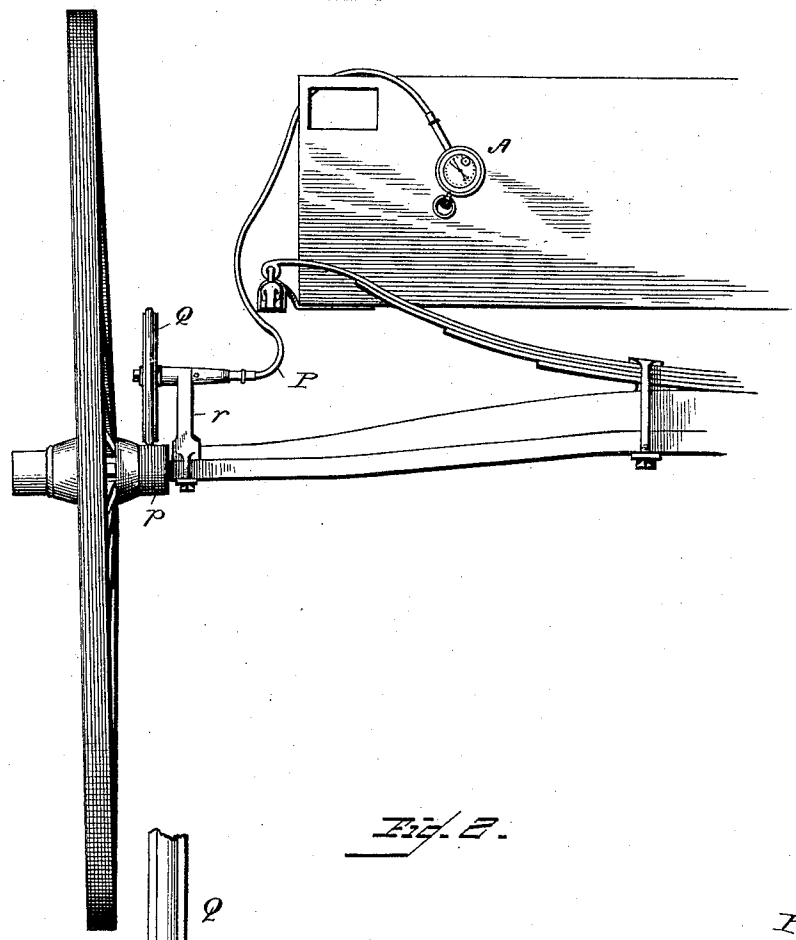
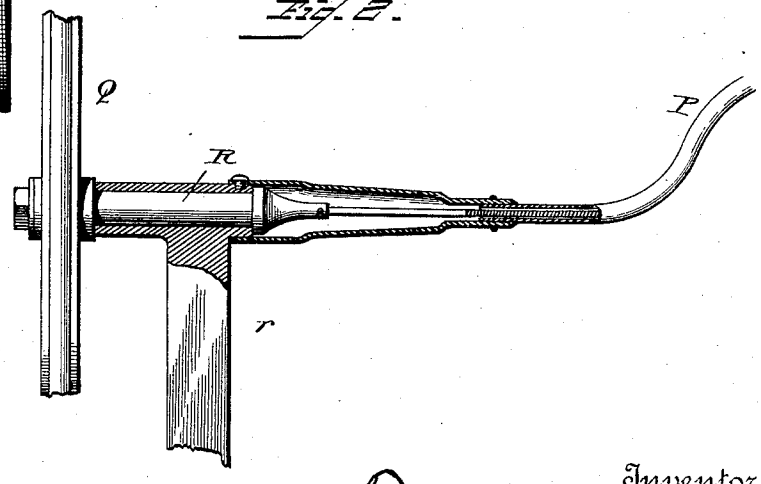


Fig. 2.



Witnesses
Wm. H. Kinsman
C. C. Hart

Inventor
Fred N. Scofield
By his Attorney
Franklin H. Hough

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

F. N. SCOFIELD.

SPEED INDICATOR FOR VEHICLES.

No. 441,334. Patented Nov. 25, 1890.

Fig. 3.

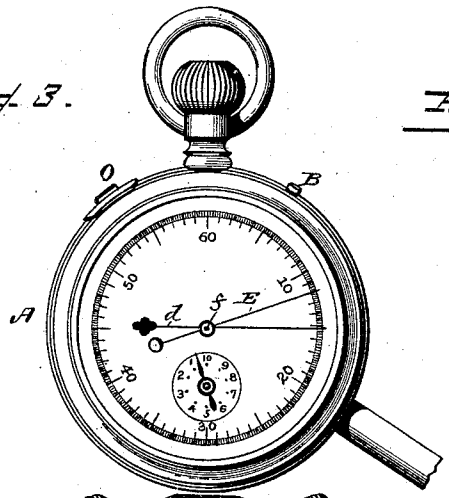


Fig. 5.

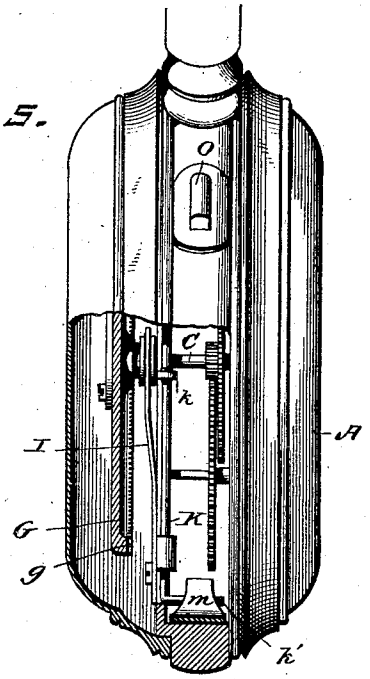


Fig. 4.

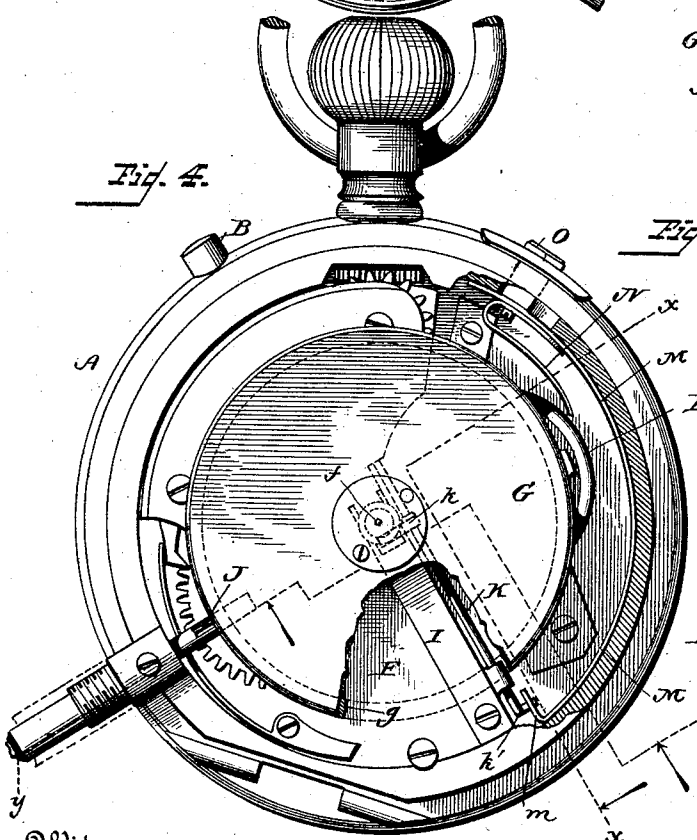
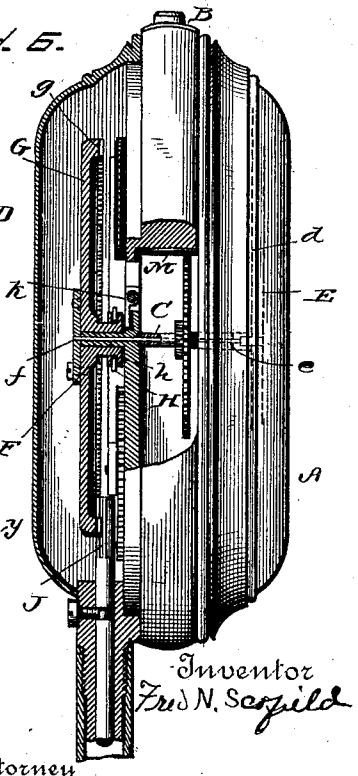


Fig. 6.



Witnesses
W. Geo. Linden
C. C. Hart

Inventor
Fred N. Scofield

By his Attorney
Franklin D. Hough

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRED NEWTON SCOFIELD, OF PHŒNIX, ARIZONA TERRITORY.

SPEED-INDICATOR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 441,334, dated November 25, 1890.

Application filed June 24, 1890. Serial No. 356,565. (No model.)

To all whom it may concern:

Be it known that I, FRED NEWTON SCOFIELD, a citizen of the United States, residing at Phœnix, in the county of Maricopa and Territory of Arizona, have invented certain new and useful Improvements in Speed-Indicators for Vehicles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to what I will designate as a "speed-indicator" or "horse-timer."

The purpose of the invention is to ascertain the speed of a horse at any desired moment, and is specially useful for jockeys when training the horses to govern the speed of the same and render it uniform.

A further purpose of the invention is to combine with a horse-timer of usual and well-known construction an indicator which shall receive its motion from a moving part of the vehicle—such as the axle or wheel—through the intervention of suitable connections and gearing.

The improvement consists, essentially, of a concomitant hand or pointer concentric with the ordinary hand of the movement of a horse-timer; second, in mechanism for synchronously stopping the movement of the timer and throwing the speed-indicating hand or pointer out of gear, and, third, in provisions for mounting the speed-indicating hand or pointer within the case of the movement concentric with the time-indicating hand.

The improvement essentially consists in the novel features and the peculiar construction and combination of the parts, which will be hereinafter more fully described, and which are shown in the annexed drawings, in which—

Figure 1 is a view of one side of a sulky or gig, showing the application of my invention. Fig. 2 is a detail view showing the manner of connecting the flexible shaft with the shaft which receives its motion from the wheel. Fig. 3 is a front view of a horse-timer embodying my invention. Fig. 4 is a rear view, the rear cap being removed and parts being broken away, of a horse-timer provided with my invention. Fig. 5 is an edge view, parts being broken away, on line $x\,x$ of Fig. 4. Fig. 6 is an edge view, parts being broken away, on the line $y\,y$ of Fig. 4.

The case A is of usual construction and incloses a horse-timing movement of any well-known construction, of which B is the button, which is connected with the stop; C, the arbor or staff, to which the hand d is attached, and D the balance-wheel.

The speed-indicating hand E is attached to the shaft e, which passes through and is journaled in the arbor or staff C and in a boss F, projecting from the rear plate F. The plate or disk G, mounted on the boss F, is connected with the shaft e, and is adapted to turn and have a sliding movement on the said boss, and is provided with a hub h, which is enlarged at its outer end and grooved to receive the forked end of the spring I, which is fastened at its opposite end to the plate F. The plate or disk G has crown-teeth g, which are adapted to mesh with the pinion-shaft J, which is journaled in the edge of the case A. The shaft K, journaled to the plate F, is provided at its inner end with the arm k, which is adapted to press against the hub h when the said shaft K is rotated and disengage the teeth g thereof from the pinion-shaft J, and at its outer end with the arm K′. The curved bar M, secured to the thumb-slide O, has arm m at its free end, which is designed to engage with the arm K′ and effect a rotation of the said shaft to disconnect the pointer or hand E from the power-driving mechanism, as hereinafter will more fully appear. The brake N is connected to the slide O.

The operation of the invention is as follows: The shaft J is rotated by any suitable means preferably from the hub p of the wheel of the vehicle by the flexible shaft P and the wheel Q at the outer end of the shaft P. This wheel Q is in frictional contact with the hub p. This construction is not essential, as the wheel Q may be geared with the hub p in any suitable manner, either by endless band or toothed gear-wheels. The dial can be graduated to meet the requirements, and the mechanism for operating the speed-hand E must be so proportioned that the distance traveled in a

given time will be accurately indicated by the speed-hand. Suppose the dial is graduated so that the hand *d* will make one revolution in two minutes and forty seconds, this being the time a horse should travel a given distance—say one mile. The mechanism for operating the speed-indicating hand or pointer E should be so proportioned that the hand E and the hand *d* should travel together, provided the horse travels at a uniform speed and at such a rate as to complete the mile in the allotted time, two minutes and forty seconds. Should the horse travel at a rate faster than 2.40, the hand E will travel faster than the hand *d*, and should he go slower the hand E will not move as fast as the hand *d*. Hence by reference to the timer at any time the jockey may know at what rate the horse is traveling. To stop the timer, the slide O is operated and applies the brakes to the balance-wheel D and disengages the disk or plate G from the shaft J.

The standard *r* on the axle of the vehicle is provided at its upper end with a bearing, in which is journaled the shaft R, to the inner end of which the shaft P is secured, and on the outer end of which the wheel Q is secured.

Having thus described my invention, what I claim as new is—

1. In a horse-timer, the combination, with the friction-wheel, its shaft, and the flexible shaft, of the time-indicating hand and the concomitant speed-indicating hand, substantially as described.

2. In a horse-timer, the combination, with the friction-wheel and its shaft and the time-indicating hand, of the concomitant speed-indicating hand, the flexible shaft connected with the shaft of the friction-wheel, and means for effecting a stopping of the two hands at one and the same instant, substantially as described.

3. In a horse-timer, the combination, with the shaft *e*, the plate or disk G, and the shaft J, of the shaft K, having the arm *k* to engage with the hub of the disk and disengage plate G and shaft J, substantially as described.

4. The combination, with the shaft *e*, having hand E and hub *h*, the plate G, and the shaft J, of the spring I, having forked end bearing on said hub, and the shaft K, having the arm *k*, substantially as set forth.

5. The combination, with the balance-wheel and the shaft K, of the spring-brake N and the curved rod M, adapted to operate together to stop the balance-wheel and turn the shaft K, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRED NEWTON SCOFIELD.

Witnesses:

ARTHUR ELLITHORP,

J. L. DWELLE.