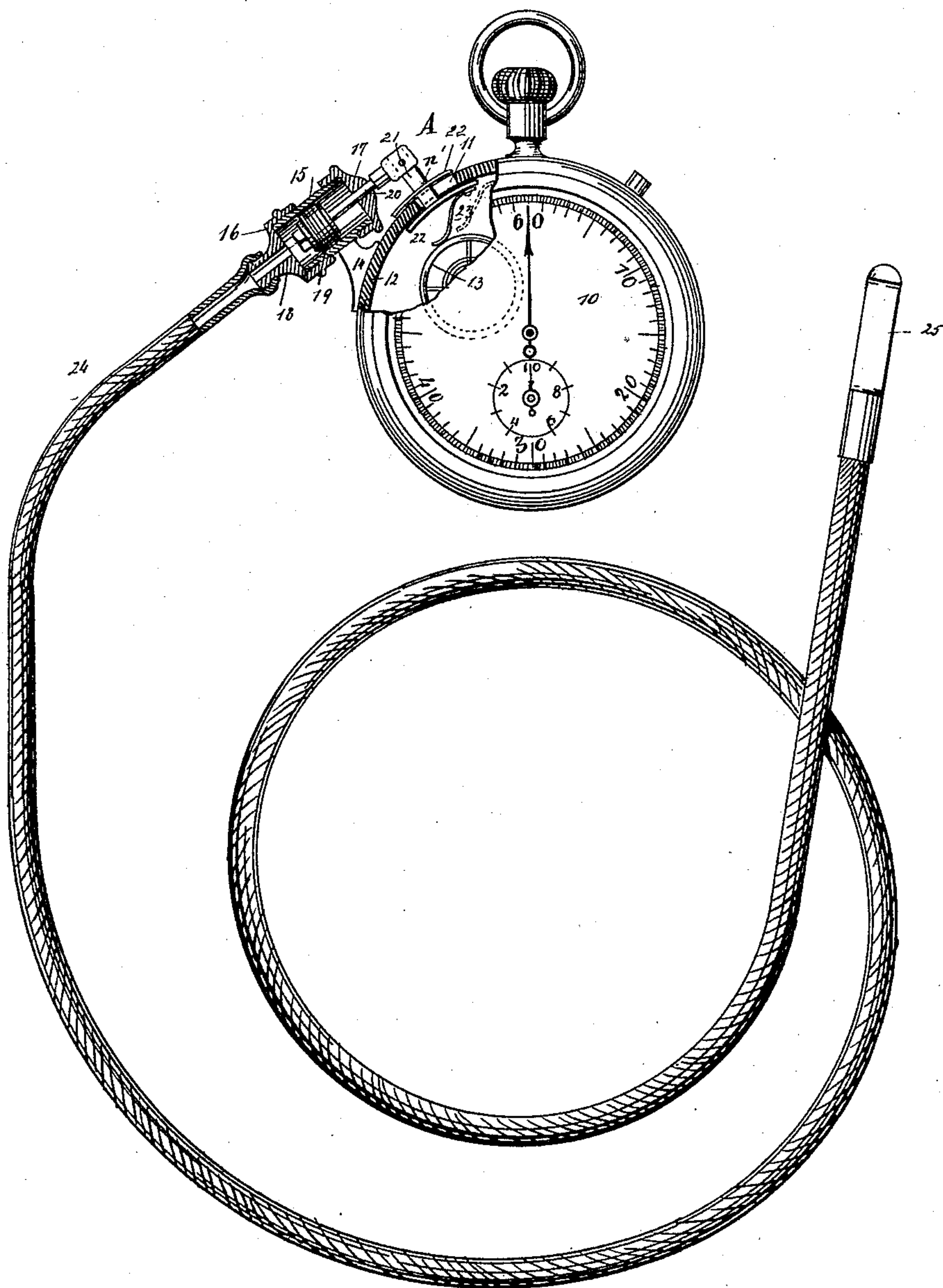


(No Model.)

T. J. WRANGHAM.  
STOP WATCH.

No. 441,608.

Patented Nov. 25, 1890.



WITNESSES:

*Chas. Nida*  
*E. Sedgewick*

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ATTORNEYS



# UNITED STATES PATENT OFFICE.

THOMAS J. WRANGHAM, OF RUTLAND, VERMONT.

## STOP-WATCH.

SPECIFICATION forming part of Letters Patent No. 441,608, dated November 25, 1890.

Application filed May 21, 1890. Serial No. 352,600. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS J. WRANGHAM, of Rutland, in the county of Rutland and State of Vermont, have invented a new and Improved Attachment for Stop-Watches, of which the following is a full, clear, and exact description.

My invention relates to an attachment for stop-watches, and has for its object to provide a means whereby the movement of the watch may be controlled by air-pressure; and the invention consists in the novel construction and combination of the several parts, as will be hereinafter fully described, and pointed out in the claims.

Reference is to be had to the accompanying drawing, forming a part of this specification, which represents the attachment as applied to a watch, a portion of the attachment and a portion of the watch being in section.

The watch 10 may be of any approved construction. An opening 11 is, however, produced in the ring or body 12 of the case near the balance-wheel 13, and near said opening a post or saddle 14 is attached to the said ring or body, which saddle at its upper end is integral with or attached to a cylinder 15, provided with caps 16 and 17 at its ends, the outer extremity of the cap 16 being shaped to the contour of a nipple 18. Within the cylinder 15 a piston 19 is held to slide, which piston is preferably mainly constructed of rubber or an equivalent packing material. The piston-rod 20 extends outward through and slides in the cap 17 of the cylinder, and is attached to the outer end of a shoe A, which shoe consists ordinarily of a stud or pin 21, extending downward through the opening 11 of the case, being provided with concentric shields 22, one located practically outside of the ring 12 of the case and the other inside of said ring. The shields 22 are of sufficient length and width to cover the opening 11 at all times.

To the under face of the inner shield 22 a downwardly-curved brake-shoe 23 is secured, the lower end of which brake-shoe is capable of contacting and adapted to contact with the balance-wheel 13. A flexible tube 24 is secured to the nipple end 18 of the cap 16, which tube 24 is ordinarily provided with a

mouth-piece 25, but a bulb may be substituted for the mouth-piece if in practice it is found desirable.

When the mouth-piece is used as illustrated, the operation is as follows: To start the watch, the operator blows in the mouth-piece, whereupon the impact of the air-pressure upon the outer face of the piston forces the said piston in the direction of the stem of the watch and carries the shoe 23 in the same direction and out of engagement with the balance-wheel. When it is desired to stop the watch, a suction is created by drawing upon the mouth-piece 25, whereupon the piston travels in the direction of the nipple end of the cylinder and the brake-shoe is drawn down and engages with the balance-wheel, effectually preventing its further rotation.

It is evident that with the construction above described a stop-watch need not be removed from the pocket of the wearer in timing a horse or the movements of athletes, for instance.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a stop-watch having a slotted case and a brake-shoe located within the case for operation in connection with the balance-wheel of the works, of a cylinder, a piston held to slide in said cylinder, a stud or pin riding in the slot of the case and connecting the piston-rod with the brake-shoe, said pin carrying a shield that effects a closure of the slot in the case, and an air-tube arranged in connection with said cylinder, substantially as described.

2. The combination, with a stop-watch having a slotted case, of a brake-shoe held to slide within the case and adapted for contact with the balance-wheel of the works, an air-cylinder arranged on the exterior of the case, a sliding piston in said cylinder, and a stud or pin extending through the slot of the case and connecting the piston-rod thereof with the brake-shoe, substantially as described.

THOMAS J. WRANGHAM.

Witnesses:

JOEL C. BAKER,  
E. M. BUCK.