W. H. BARR.

ALARM AND REGISTERING PUNCHES.

No. 186,523. Patented Jan. 23, 1877.

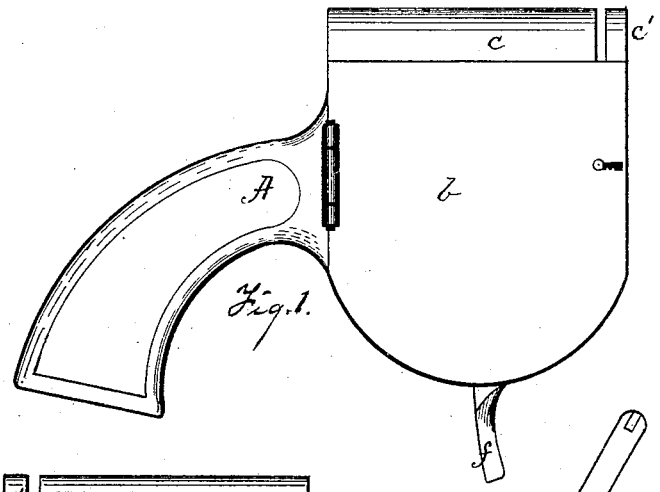

Fig. 1.

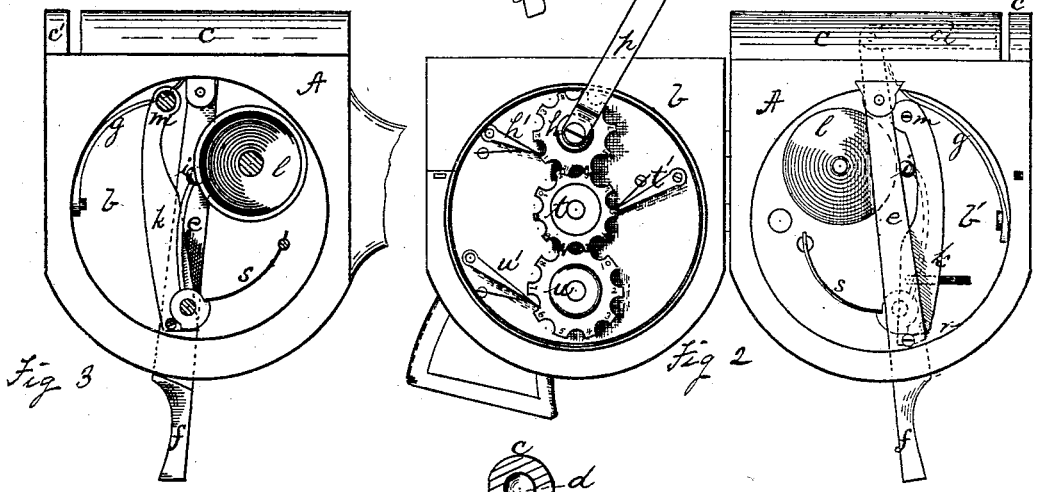

Fig 3 Fig 2

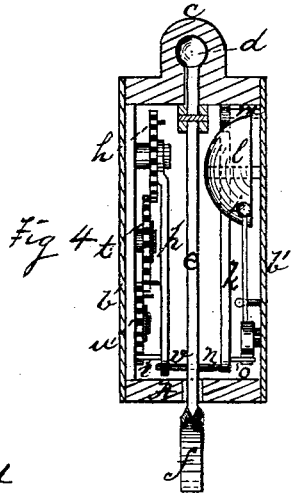

Fig 4

WITNESSES.

James K. Bakewell

James D. Hay

INVENTOR

William H. Barr

by Bakewell & Kerr

Attys.

UNITED STATES PATENT OFFICE.

WILLIAM H. BARR, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND HARRY P. PEARS, OF SAME PLACE.

IMPROVEMENT IN ALARM AND REGISTERING PUNCHES.

Specification forming part of Letters Patent No. **186,523**, dated January 23, 1877; application filed November 24, 1876.

To all whom it may concern:

Be it known that I, WILLIAM H. BARR, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Alarm and Registering Punch; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is an exterior view of my improved punch. Fig. 2 is a view of the same, the cap-plate being turned back to show the registering and alarm mechanism. Fig. 3 is a view of the opposite side of the case, the cap being removed to show the alarm mechanism. Fig. 4 is a transverse section, showing the relation of the alarm and registering mechanism to each other and to the punch and its lever.

Like letters refer to like parts wherever they occur.

My invention relates to the construction of conductors' registering and alarm punches; and consists, first, in forming the punch in shape of a sliding bolt, and operating it by means of the short arm of a pivoted lever, and in operating the alarm and registering mechanism from the lever of the bolt or punch by means of intermediate levers pivoted on the case; and, finally, in details of construction, hereinafter more specifically set forth, whereby a compact, simple, durable, and effective registering and alarm punch is obtained, and one wherein the alarm cannot be sounded without simultaneously actuating the register.

I will now proceed to describe my invention, so that others may make and use the same.

In the drawing, A represents the case, closed by cap-plates *b b'*, which afford attachment for the alarm and registering mechanism. Of these cap-plates, the one, *b*, which supports the registering mechanism may be hinged at one side, so as to turn back to disclose the register for reading the same, and provided with a lock opposite the hinge for securing the cap when closed. The other cap-plate, *b'*, which supports the alarm, may be similarly secured, or permanently attached to case A, as preferred. Sliding in a boxing, *c*, formed with or on case A, is a bolt, *d*, having a longitudinal recess or slot for the reception of the short arm of its actuating-lever, and preferably slightly beveled at its forward end, so that it may act in conjunction with staple *c'*, to cut or punch a piece from a ticket or similar article placed across the path of the bolt. The bevel on the bolt gives it a shear action, which greatly reduces the force required to actuate the punch. *e* indicates a lever for actuating the punch, said lever pivoted to the case A, and engaging with the slot in the bolt by one of its arms, the opposite arm projecting through the case and forming a trigger, *f*. In order to retract the bolt and throw back the lever when released by the finger of the operator, a spring, *g*, is secured within the case, so that its free end shall bear upon the bolt-arm of lever *e*. *l* represents a gong or bell secured within the case, and provided with the usual hammer *i*, the latter pivoted to the case or its cap-plate, and provided with its accompanying spring *s*. In order to actuate the hammer *i* a lever, *k*, is provided, pivoted, as at *m*, to the case, and slotted at its opposite end, to engage with a pin, *n*, on the free arm of the lever *e*. Upon this lever *k* is a pin or pawl, *o*, which engages with a ratchet-notch on the heel of the hammer-shaft, and retracts the hammer each time the punch is operated. As soon as pawl *o* escapes from the notch in the heel of the hammer-shaft the hammer is actuated by spring *s*, and sounds an alarm. Journaled on the cap-plate *b* is a series of registering-wheels, *u t h*, (units, tens, &c.,) each provided with its spring-pawl *u' t' h'*. The unit-wheel is provided with a pin, which engages with the ten-wheel, and moves it one space each revolution of the unit-wheel, and the ten-wheel has a similar pin or projection, which engages with the hundred-wheel, and moves it one space for each revolution of the ten-wheel. The teeth of the respective wheels are numbered, so that when the cap-plate is unlocked and turned back the registered number may be readily read off in the usual manner.

In order to actuate the registering devices, a lever, *p*, is provided, pivoted either to the cap-plate or on the journal of register-wheel *h*, as shown, and is slotted or notched at its

free end, to engage with a pin, *v*, on the free arm of lever *e*, said lever *p* having a spring-pawl, *r*, which, at each movement of the lever, engages with a tooth of the unit-wheel *u*, moving the wheel one space.

As before specified, the unit-wheel operates the ten-wheel, and so on, in the usual manner of registering devices.

The operation of these devices is as follows: The ticket or like article to be punched is inserted in the slot between the boxing *c* and staples *c'*, and the trigger *f* is drawn to actuate the punch or bolt *d*. The motion thus given to lever *e* is transmitted through the two pivoted levers *k* and *p*, causing them, respectively, to retract hammer *i* and actuate unit-wheel *u* of the registering device; and as the two levers *k* and *p* are actuated simultaneously from the same point on lever *e*, and move through the same distance, the hammer will not be freed and the alarm will not be sounded until the unit-wheel has been moved one space to register the fare.

By proportioning the several levers correctly the punching action of bolt *d* is likewise made to take place simultaneously with the alarm and registering.

Among the advantages of my improved punch are its simplicity, compactness, and non-liability to get out of order.

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

1. In combination with case A, the horizontal sliding bolt *d*, moving in case *c*, the pivoted lever *e*, for actuating the bolt, alarm, and registering mechanism, the whole adapted to be operated by the trigger *f*, substantially as described.

2. The combination of the sliding bolt-punch, the pivoted lever for actuating the bolt, the alarm, and the interposed lever, pivoted on the case, for actuating the alarm from the bolt-lever, substantially as specified.

3. The combination of the sliding bolt-punch, the pivoted lever for actuating the bolt, the registering mechanism, and the interposed lever, pivoted on the case, for actuating the registering-wheels from the bolt-lever, substantially as specified.

4. The combination of the bolt-punch, the pivoted lever for actuating the bolt, the alarm and registering devices, and the interposed levers, pivoted on the case, for operating the alarm and registering devices simultaneously from the bolt-lever, substantially as specified.

In testimony whereof I, the said WILLIAM H. BARR, have hereunto set my hand.

WM. H. BARR.

Witnesses:

FRANK W. SMITH,

R. C. WRENSHALL.