(No Model.)

A. E. WILLIS.

AUTOMATIC REGISTER FOR PHOTOGRAPH PRINTING FRAMES.

No. 553,479. Patented Jan. 21, 1896.

Fig 1.

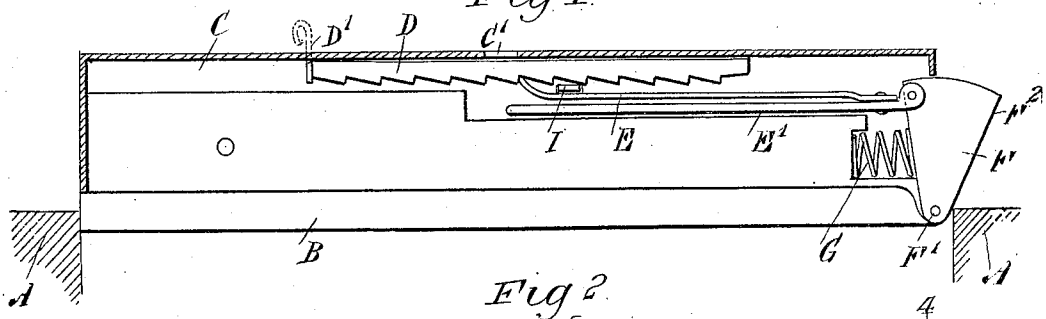

Fig 2.

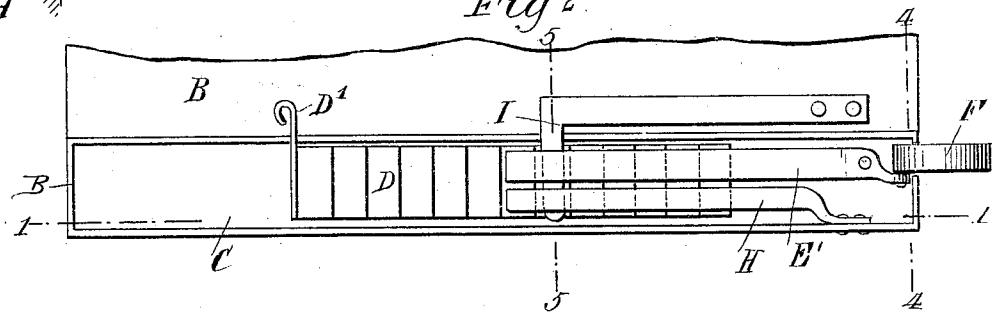

Fig 3.

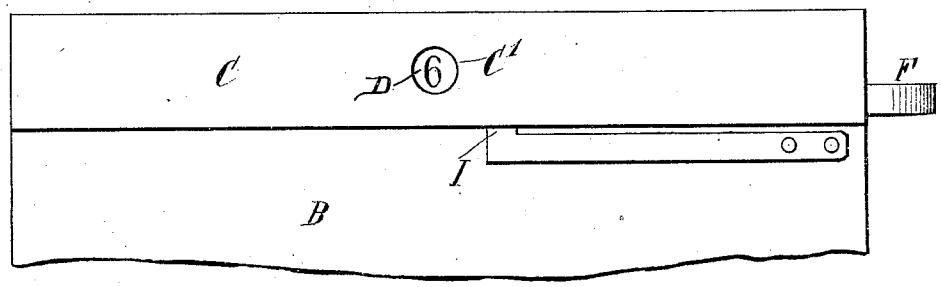

Fig 4.

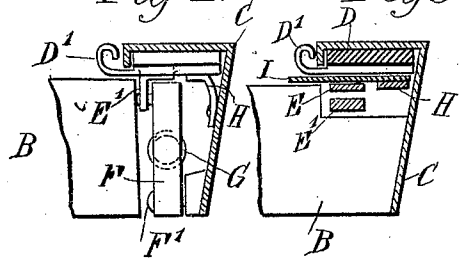

Fig 5.

WITNESSES:

Paul Jakel

Theo. G. Hoster

INVENTOR

A. E. Willis

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALLEN E. WILLIS, OF OXFORD, NORTH CAROLINA.

AUTOMATIC REGISTER FOR PHOTOGRAPH-PRINTING FRAMES.

SPECIFICATION forming part of Letters Patent No. 553,479, dated January 21, 1896.

Application filed July 17, 1895. Serial No. 556,255. (No model.)

To all whom it may concern:

Be it known that I, ALLEN E. WILLIS, of Oxford, in the county of Granville and State of North Carolina, have invented a new and Improved Automatic Register for Photograph-Printing Frames, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved automatic register for photograph-printing frames, which is simple and durable in construction, very effective in operation, arranged to make an automatic tally of the number of prints in the frame, to permit of examining the prints without disturbing the register, and to properly set the register in case of a print being spoiled.

The invention consists principally of a toothed bar mounted to slide in guideways on the print-holding back, a pawl engaging the said toothed bar, and a spring-pressed cam-arm connected with the said pawl, and adapted to be engaged by the said frame.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which the same characters of reference indicate the same or corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement as applied on the line 1 1 of Fig. 2. Fig. 2 is an inverted plan view of the improvement. Fig. 3 is a plan view of the same. Fig. 4 is a cross-section of the same on the line 4 4 of Fig. 2, and Fig. 5 is a similar view of the same on the line 5 5 of Fig. 2.

The printing-frame A, of usual construction, is adapted to receive the back B, preferably made in two halves, the lower half of which is provided with a casing C containing the registering device. The top of the casing C is provided with an opening C′, through which appears a numeral indicating the number of prints already made, the said numerals being arranged in consecutive order on the top of a toothed bar D, fitted to slide on the under side of the casing C, as is plainly indicated in the drawings. The toothed bar D is provided at one end with a handle D′ for conveniently moving the said toothed bar back to zero, or to shift it when a print is spoiled, as hereinafter more fully described.

The toothed bar D is engaged by a spring-pawl E held on a bolt E′, fitted to slide in a cut-out portion of the back B, and pivotally connected with a cam-arm F, fulcrumed at F′ at one end of the casing C. A spring G, set in the recess of the back B, presses the said cam-arm F to hold the latter normally in an outermost position, as shown in Fig. 1, so that the inclined side F^2 of the said arm F moves in contact with the corner of the frame A at the time the back B is inserted in the said frame. In doing so the cam-arm F is pressed inward by the side of the frame A, and consequently a sliding motion is given to the pawl E, so that the latter pushes the toothed bar D forward to bring the next numeral to view in the opening C′.

When the back B is lifted out of the frame A, the arm F is again pushed outward to its normal position by the action of a spring G, and in doing so the said arm F pulls the pawl E outward, the free end of the pawl gliding over the next tooth of the toothed bar D.

In order to prevent a back movement of the toothed bar D at the time the said bar E glides over the teeth, I provide a fixed pawl H, secured to the casing and arranged alongside the pawl E, as plainly illustrated in Fig. 2. In order to move the two pawls E and H out of engagement with the teeth of the bar D whenever it is desired to shift the latter back to zero or to shift the bar back one numeral—say when a print is spoiled—I provide a spring-arm I, extending over both of the pawls E and H and under a tooth, as indicated in the drawings. The spring-arm H is attached to the top of the back B, as indicated in the drawings. Now it will be seen that by the arrangement described the toothed bar D is shifted to the next numeral above at the time the back is inserted in the frame A, and as the registering-casing C with the register is attached to the lower half of the back it permits the operator to at any time examine the print held in the frame by opening the upper half of the back in the usual manner without disturbing the registering device.

When a print is spoiled the operator shifts the toothed bar D back a distance of two

teeth to bring the previous numeral into view at the opening C'. The operator then presses the arm I, as previously explained, to move the two pawls out of engagement with the bar D, so as to permit the operator to shift the latter back by taking hold of the handle D'.

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

1. In a register for photographic printing frames, the frame and the back fitted thereto combined with the indicating slide, the pawl for operating the same and the cam for operating said pawl, such cam being supported on the back, and projecting beyond the edge of the same and having its projecting portion formed with a cam edge extending in the direction of the cross section of the back and arranged to engage the frame as the back is slipped therein, substantially as set forth.

2. The combination with the frame and the back having a recess, of the indicating slide fitted in said recess, the bolt fitting in the recess and having the attached pawl engaged with the slide, the spring actuated cam connected with the bolt and playing into and out of the recess in the back, such cam being extended beyond the edge of the back and having its extended or projecting edge made cam shaped in a direction at right angles to the plane of the back, whereby as the back is inserted in the frame the cam will be automatically operated, substantially as set forth.

3. An apparatus substantially as described comprising the printing frame, the back fitted thereto, the longitudinally movable slide having consecutive numerals and a rack bar, the operating pawl engaging said rack bar, the detent pawl extending side by side with the operating pawl and the cam connected with the said operating pawl, said cam being arranged at the edge of the back, projecting normally beyond said back, arranged longitudinally in a direction at right angles to the plane of the back and having its extended edge inclined and arranged to engage the edge of the printing frame when the back is inserted therein and the spring arm fixed at one end and movable at its other end and having such movable end provided with an arm extended above both the detent and operating pawls whereby it may be operated to set the latter clear of the rack bar, substantially as set forth.

ALLEN E. WILLIS.

Witnesses:
J. D. BRINKLEY,
J. M. SIKES.