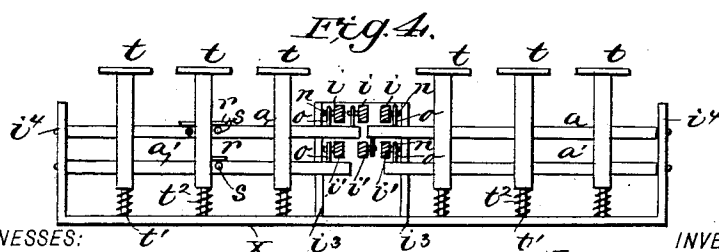
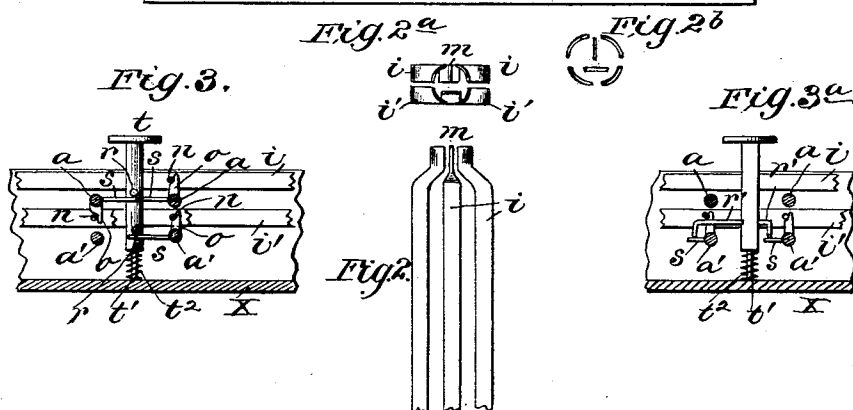
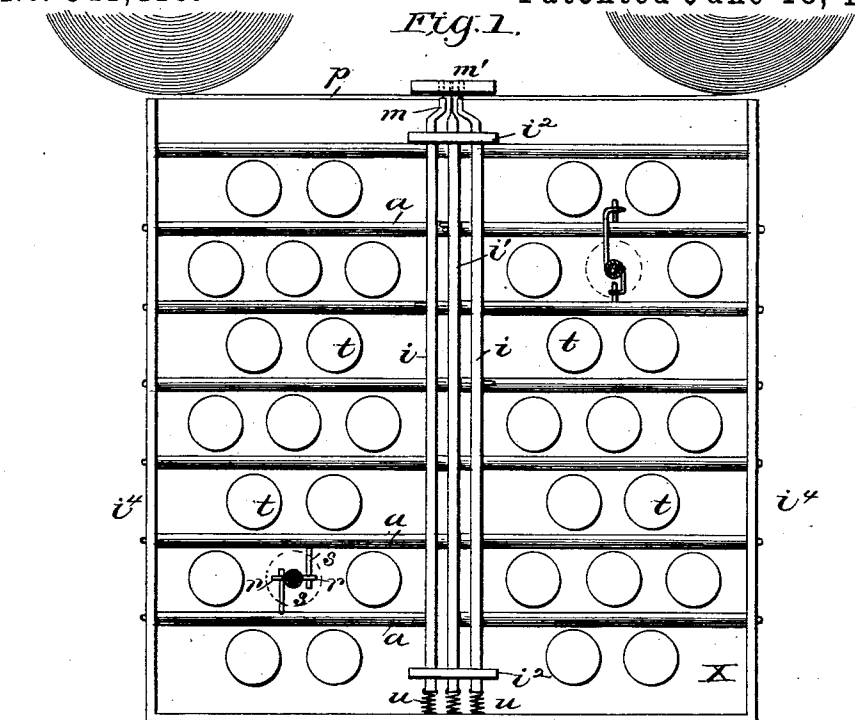


(No Model.)

J. W. & J. K. BAILEY.
STENOGRAPHIC MACHINE.

No. 541,416.

Patented June 18, 1895.



WITNESSES:

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JOSEPH W. BAILEY AND JOSEPH K. BAILEY, OF NEW ORLEANS, LOUISIANA,
ASSIGNORS OF ONE-THIRD TO RICHARD RUIZ BAILEY, OF SAME PLACE.

STENOGRAPHIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 541,416, dated June 18, 1895.

Application filed August 11, 1894. Serial No. 520,084. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH W. BAILEY and JOSEPH K. BAILEY, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Stenographic Machines, of which the following is a specification.

Our invention is in the nature of an improved stenographic machine of that class in which the stenographic characters are formed by puncturing devices which penetrate and form a permanent, distinct and ineffaceable record on a strip of paper. The machine is, however, also adapted for printing as well as puncturing and is intended to be used either way as may be required.

It consists in the special construction and arrangement of the dies and their combination with mechanism for actuating the same which we will now proceed to more fully describe with reference to the drawings, in which—

Figure 1 is a plan view. Fig. 2 is a top side view of the die-bars; Fig. 2^a, an end view of the dies; Fig. 2^b, an enlarged representation of the characters which form the alphabet and are cut by the dies. Fig. 3 is a vertical section taken parallel to the bars. Fig. 3^a is a similar view showing a slight modification, and Fig. 4 is a vertical section taken at right angles to the die-bars.

We employ six puncturing dies *m* arranged on the ends of longitudinally sliding bars *i i'*. Out of these six dies by a system of permutations and combinations all the letters of the alphabet and characters are formed. The bars *i i'* are arranged parallel to each other in a group of two series, the one series *i* above and the other *i'* immediately below them. These bars have inturned or converging ends where they carry the dies, and these dies as shown are made with square cutting edges corresponding in shape, and grouping, to the marks in Fig. 2^b, to cut bits from a strip of paper of a corresponding shape by registering with and passing into a corresponding hole in a female die *m'*, Fig. 1. These six dies and their carrying bars are arranged to be operated separately or together in various combinations, to make different letters or

characters by different connection with the operating keys.

The bars are arranged horizontally to slide in bearings *i²* carried by a base plate *X*, and these bars are provided with laterally projecting pins *n*, Figs. 3 and 4, which are arranged to be struck (to slide the die bars forward) by radially moving pins *o* on rock shafts *a a'*. These rock shafts are arranged in an upper series *a* operating on the upper die bars *i*, and a lower series *a'* operating on the lower die bars *i'*. These rock shafts are arranged outside of the die bars at right angles to the same, and rock in bearings in supports *i³ i⁴* rising from the base plate as in Fig. 4. The inner ends of the rock shafts penetrate the group of die bars and operate upon them through the pins *n* and *o* as heretofore described.

To operate the rock shafts *a a'*, keys *t* are provided with vertical tubular stems that slide telescopically upon vertical pins *t'* rigidly attached to and rising from the base plate. Other forms of depressible stems (which are not tubular) may be used. The keys are normally held up by spiral springs *t²*, but may be forced downwardly to compress these springs whose elasticity immediately compels the keys to rise again when released. Other forms of springs may also be used in the place of the spiral springs. These keys are provided along their stems with one or more laterally projecting pins *r* which are arranged to operate against radial arms *s* of one or more of the rock shafts *a a'* whenever said keys are depressed. These pins *r* may be either straight pins, as in Fig. 3, or they may be bent pins, as at *r*, in Fig. 3^a so as to operate on the far side of a rock shaft in imparting the proper motion thereto.

From the above description it will be seen that the depression of the keys causes the die bars to advance longitudinally and puncture a strip of paper, which is shown at *p*, and this paper strip lies against the female die *m'* to resist the thrust, and is to be provided with means for feeding the paper strip along from a roll. The number of the die bars which are advanced by any one key depends upon the number of marks or characters (shown in

Fig. 2^b) which go to make up the letter which any one key represents—that is to say, but one key is struck to produce each character or word sign.

- 5 For withdrawing the die bars *i i'* after an advance to the paper, a retracting spring *u* Fig. 1 is employed for each die bar.

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

- 10 1. A stenographic machine having a closely grouped set of horizontal and parallel bars with converging ends provided with properly shaped dies for puncturing or printing, a series of horizontal rock shafts arranged at
15 right angles to and connected with the die bars and a series of vertical keys and means substantially as described for connecting the keys to the rock shafts and the rock shafts to the die bars as and for the purpose set forth.
20 2. A stenographic machine having a closely grouped set of horizontal and parallel die bars with converging and properly shaped ends and laterally projecting pins, a series of

horizontal rock shafts arranged at right angles to the die bars and having radial pins 25 acting upon the pins of the die bars and the other radial pins adapted to be acted upon by a series of vertical keys having pins arranged to act upon the pins of the rock shafts substantially as and for the purpose set forth. 30

3. In a stenographic machine, a series of vertically sliding and spring seated key stems bearing finger plates and having laterally projecting arms; combined with a rock shaft having radial pins one or more of which is adapted to be operated upon by the arms of the key stems, and die bars arranged at right angles 35 to the rock shafts and adapted to have the motion of the key stems imparted to the same, substantially as shown and described.

JOSEPH W. BAILEY.
JOSEPH K. BAILEY.

Witnesses:

ALBERT HALL,
JOSEPH MAILLE.