J. W. McCANN.

DUMMY KEYBOARD.

APPLICATION FILED FEB. 23, 1921.

1,385,256.

Patented July 19, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

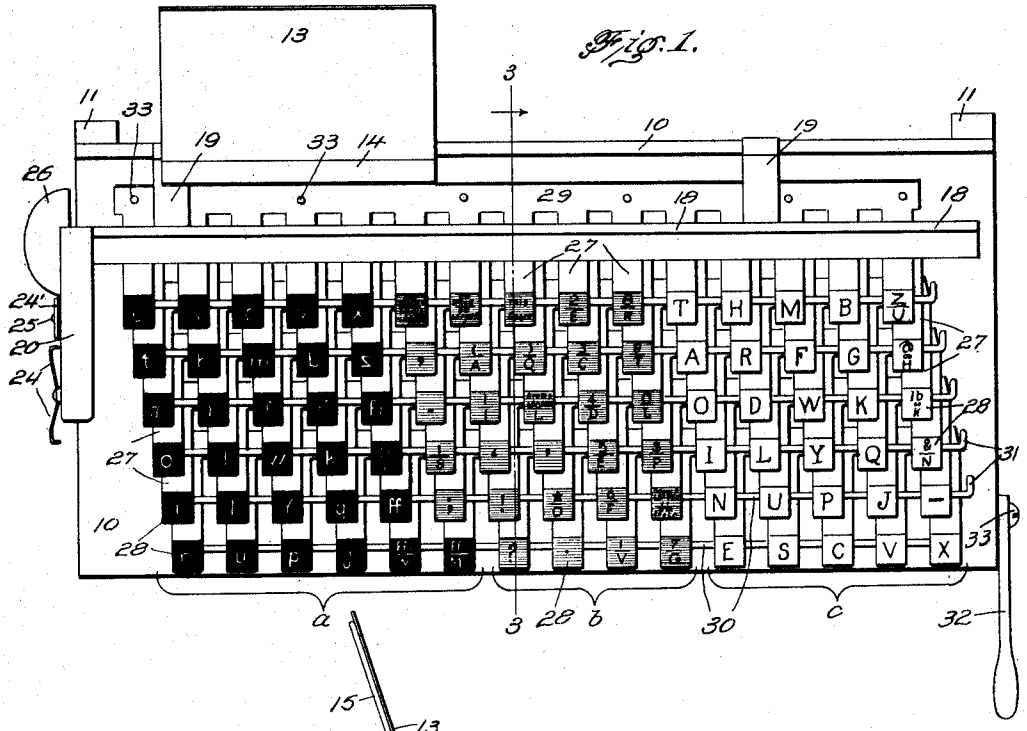
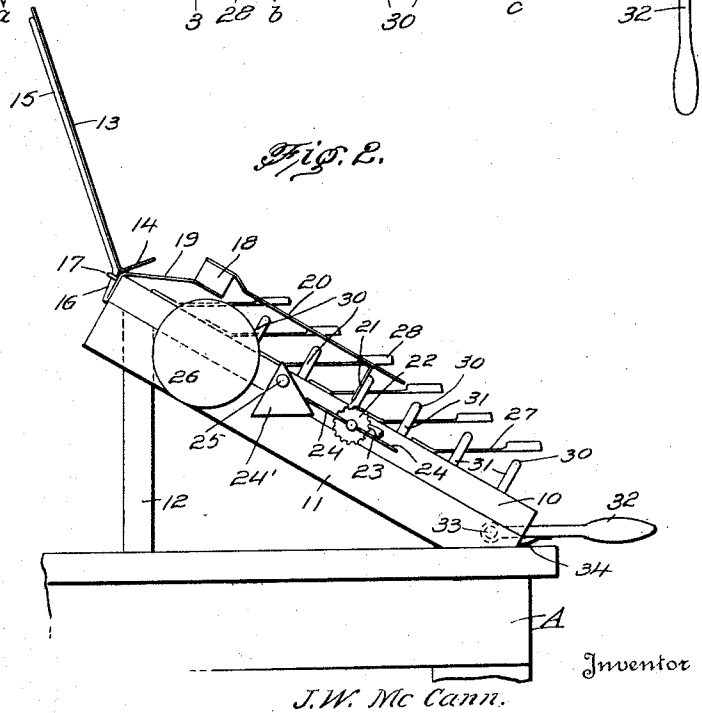


Fig. 2.



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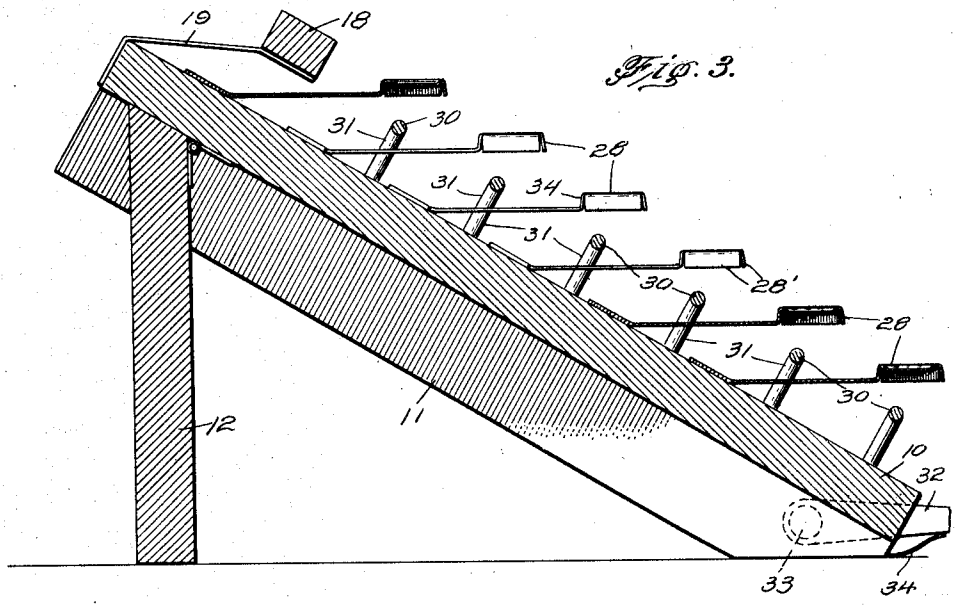
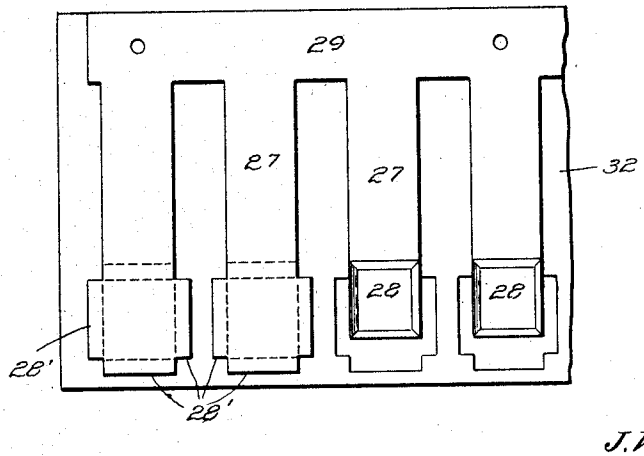


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH W. McCANN, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO JOSEPH H. McCANN AND ONE-HALF TO GEORGE P. KIMMEL, BOTH OF WASHINGTON, DISTRICT OF COLUMBIA.

DUMMY KEYBOARD.

1,385,256. Specification of Letters Patent. Patented July 19, 1921.

Application filed February 23, 1921. Serial No. 447,050.

To all whom it may concern:

Be it known that I, JOSEPH W. McCANN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Dummy Keyboards, of which the following is a specification.

My invention pertains to dummy or practice keyboards, and it contemplates the provision of a simple and durable keyboard calculated to enable a person of average intelligence with a reasonable amount of study and practice to acquire the quick and light touch that is necessary to bring down a matrix in the Mergenthaler linotype-machine at present in general use, to determine the speed he is making, to practise to the same advantage as on the keyboard of a Mergenthaler machine with a view of becoming proficient in the use of all of his fingers and thumbs in rapidly operating a Mergenthaler machine, and to memorize or fix in his mind the relative arrangement of the keys comprised in the keyboard of said machine, so that he can operate the keys speedily and correctly without looking at the keyboard.

In addition to the foregoing enumerated features and purposes of the invention, the same contemplates an extremely simplified and comparatively inexpensive construction and arrangement of the parts of a dummy keyboard not only of the specific character mentioned, but also of the form corresponding to that of the keyboards of the Intertype and Mono-type constructions of linotype machines and of typewriters in general, and one wherein the extremely light and resilient, or springy, action of the key levers now used on Mergenthaler machines, and kindred machines, is substantially duplicated, or otherwise closely imitated, so that an operator should experience no trouble in the proper manipulation of the key levers of an actual machine after having faithfully practised a sufficient period of time on the present device, also, it is further contemplated to facilitate the assembly of the parts of the device by forming each alined set of key elements from a single strip of spring metal, the individual key levers thereof being stamped out, or otherwise cut, so as to have their inner ends integrally connected, whereby the connected portion thereof may be utilized for the fastening of the key levers in proper position on a baseboard, while the free outer end of each key lever is so stamped or cut as to have a surplus of the metal sufficient for the shaping of the same to a configuration corresponding to the keys proper, *i. e.* that portion of the key levers touched by the fingers during their manipulation thereof, of an actual machine.

With the foregoing and other advantages and objects in view, the invention resides in the certain new, novel, and useful construction and arrangement of parts; the same being an improvement over the construction and arrangement embodied in my Letters Patent of the United States, numbered 823,888, and dated June 19, 1906; such as will be hereinafter more fully described, set forth in the appended claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is a top plan view illustrating the dummy keyboard constituting the present and preferred embodiment of the invention,

Fig. 2 is an end elevation of the same as it appears when set up ready for use,

Fig. 3 is a transverse section taken on the line 3—3 of Fig. 1, and,

Fig. 4 is a plan view of the blank showing the manner and method of forming a unit row of keys therefrom.

Referring to the drawings, wherein similar characters of reference designate corresponding parts in the several views thereof, the present form of the invention has been more particularly described in connection with the Mergenthaler type of line-type machine, and the numeral 10 indicates the body of the dummy keyboard, which comprises a length of wood of board form, having its longer sides constituting the front and rear edges of the same, and which is strengthened by means of strips 11, extending transversely across the grain at the opposite ends of the under face thereof. This body or baseboard 10 is designed to be supported by hinged prop 12 in such a position that its upper surface forms an inclined plane, as illustrated in Fig. 2, and, when the same is not in use, the prop 12 is to be folded against

the lower surface thereof, so as to take up but a minimum amount of space in storage or shipment. Rising from the rear edge of the body or baseboard 10 is a copy holder 13, the same preferably comprising a piece of sheet metal, substantially rectangular in form, having a flange 14 at its lower edge for the supporting thereon of sheets of copy, and a metallic frame 15 is secured to the back of the holder 13, and has downwardly extending terminal studs 16 adapted to be removably engaged in suitable eyes, or the like, 17, projecting outwardly from the rear edge of the body or baseboard. By virtue of this construction, the copy holder may obviously be detached and laid flat against the under side of the body or baseboard 10 for convenience in storage or shipment.

Extending longitudinally of the body or baseboard 10 inwardly of the rear edge and horizontally with respect to the upper face thereof is a space bar 18, preferably formed of a suitable length of wooden strip, which is resiliently supported by spaced strips 19, of spring metal, which are secured at one end to the rear edge of the body or baseboard and are bent in a forwardly and upwardly inclined direction and have their free ends secured to the under face of the space bar 18, whereby to hold the same spaced above and parallel to the upper face of the body or baseboard 10, but free for down and up movement with respect to the latter. The left hand end of the space bar 18 is projected for a very slight distance beyond the left hand end of the body or baseboard 10, and has secured thereon a finger piece 20, preferably of spring metal, extending in spaced relation above and parallel to the complemental end of the baseboard and to the outer side of the under face of which is dependingly supported a dog 21 arranged, so that when the finger piece 20 is depressed, to engage a toothed wheel 22. The toothed wheel 22 is designed to be rotated step by step by the depression of the finger piece 20, and is held against retrograde movement by a gravitating pawl 23. When the toothed wheel 22 makes a half revolution, one of a pair of diametrically extending arms 24 carried thereby, acts against the adjacent inclined edge of a substantially triangular shaped striker member 24′, causing the latter to swing on its pivotal support or pin 25, projecting outwardly from the end of the body or baseboard 10 and strike against a signal bell 26, thereby appraising the student operator that he, or she, is approaching the end of a line approximating the length of a standard measure of type.

The mechanism described is preferably arranged to notify the student when he has set a line of ordinary newspaper measure averaging seven words or approximately 27 ems, and when it is employed with a number of, say, 100 quads or other articles, it enables the student to determine the speed he is making. In this use, the operator places at his right on a suitable support 100 quads. When the bell rings, he knows that he has set six words, and he then sets an additional word and picks a quad from the pile. This picking of a quad is a substitute for raising a lever of an ordinary Mergenthaler machine, and by observing a timepiece, the student is enabled to readily determine the length of time it takes him to set up 100 lines or about 2700 ems.

Mounted on the upper surface of the body or baseboard 10 is a bank of keys, which are relatively arranged in the same manner as the keys in a keyboard of the Mergenthaler linotype machine, and the same bear corresponding characters and thus it will be apparent that a person practising on a dummy keyboard will become acquainted with the actual keyboard of the machine mentioned, to such an extent that he, or she, can operate said actual keyboard after the usual and desired manner, with the fingers and thumbs of both hands, accurately and speedily manipulating the several keys by touch, and, consequently, without looking at the keyboard. This latter is an important desideration, inasmuch as it is extremely advantageous for a Mergenthaler operator, while operating the keyboard, to watch the working of the machine. The keys are grouped or relatively arranged on the inclined plane of the body or baseboard 10, in the manner shown, and are identical with the exception that each bears a different character. As a further aid to the operator to properly learn and distinguish between capital letters, small letters, and characters, a bank of keys may be divided into sub-groups by using a different color for each group of such sub-groups, and for the purpose and as shown, the left hand sub-group of small letters, designated by bracket *a*, may be colored black with the letters thereon formed of a contrasting color, or white; the intermediate sub-group of characters, designated by bracket *b*, colored a light blue, with the characters thereon formed of a contrasting color or black; and the right hand sub-group of capital letters, designated by bracket *c*, colored a different color, or white, with the capital letters thereon formed of a contrasting color, or black.

The bank of keys is composed of a required number of longitudinally extending rows, each parallel to the other, and with respect to the space bar 18 and the front and rear edges of the body or baseboard 10. The keys of each row are equi-distantly spaced apart and each consists of a strip of thin brass, or other suitable spring sheet metal, formed to provide a body or arm portion 27, a character bearing finger 28 at

the outer end, and an angularly bent portion 29 at the inner end, by means of which the key, as a whole, is fastened into position on the upper face of the body or baseboard 10, in which position the body or arm portion 27 extends outwardly from the latter in a horizontal direction and at an acute angle with respect to the inclined face of the body or baseboard, when the same is properly positioned for operation.

A major length of the body or arm portion 27, of the keys, of the forwardly arranged rows thereof extends in underlying relation with respect to the next rearwardly adjacent row, so that the rows of the finger portions 28 are closely spaced one with respect to the other, and underlying each row of the latter portions 28 and in parallel relation with respect to the plane of the under faces thereof, are longitudinally extending members or key abutments 30, which have their opposite ends 31 angularly bent in a downward direction for secured engagement in the face of the body or baseboard 10. These members or key abutments 30, between the angularly bent end portions 31 thereof, each overlie, in spaced relation thereto, intermediate portions of the body or arm portions 27 of the keys, and extend in a plane parallel thereto, and spaced below the plane of the medial transverse centers of the finger portions 28 of the adjacent rearwardly disposed row of keys, so that the keys of each row are free for a limited downward or depressed movement before striking the said members or key abutments. The members or key abutments 30 are preferably formed of metal rods, circular in cross section, and are designed to have a certain degree of resiliency, which, in conjunction with the resiliency of the keys, assures for the action of the latter closely imitating, or otherwise duplicating, the extreme light action of the actual keys of the Mergenthaler machine.

The present invention contemplates that each row of keys be constructed as a unit, and for this purpose, the same are struck from a blank 32 of sheet metal, preferably of sheet brass or other suitable metal having a sufficient or required degree of resiliency. In this method of forming the keys in unit rows, the blank of sheet metal is stamped or cut out to provide equal spaces between the body or arm portions 27 of the individual keys, and the angularly bent portions 29 are in the form of a strip connecting the inner ends of all of the keys, and this strip portion 29 is to be provided with a series of equi-distantly spaced openings for the insertion therethrough of suitable fastenings 33, by means of which the same are secured to the body or baseboard 10. In stamping or cutting out the body or arm portions 27, the free ends of the same are formed substantially rectangular in form, so as to provide offset side and end portions 28′. These end portions 28′ are now shaped to provide the raised finger contacting portions 28, and this is done by bending the outer end of the body or arm portion 27 angularly to form a shoulder 34 at their point of connection with the finger contacting portions 28, and then bending the offset side and end portions 28′ of the latter downwardly at right angles with respect to the upper faces of the same.

The bent portions 28′ constitute depending flanges corresponding in depth to that of the wall of the shoulders 34, so that the finger portions 28 present a neat appearance, one a substantial duplicate of the other. The finger portions 28 are now substantially square in plan, and may, if desired, have their flat faces slightly and inwardly depressed whereby to facilitate the proper engagement of the operator's fingers therewith. The finger portions 28 may now be suitably painted or enameled, as before stated, and have the letters and characters applied thereto.

It will be readily apparent from the foregoing that the keys connected to the inclined plane of the body or baseboard 10 in the manner described, will, when depressed against the key abutments 30, give to the touch of the operator, and when relieved of pressure will spring of themselves back to the normal position illustrated, also that the touch necessary to depress the free ends of the keys is similar to that required to manipulate the keys of the Mergenthaler keyboard, and thereby bring down a single matrix. From this latter it follows that the student using the novel dummy keyboard described herein is enabled to acquire not only speed, but also the proper touch so requisite to the successful operation of the Mergenthaler linotype machine.

In addition to, or as a substitute for, the use of 100 quads in a pile or stack at one side of the operator for simulating the manual actuation of a lever controlling the operation of the machine after each line of type has been set, the invention contemplates the placing of a lever 32 at a convenient point on the base-board 10, as by pivoting the same at 33 to one edge of the latter so that it projects in a forward direction from the front edge of the same in substantial parallel relation to the surface of the keyboard support or table A. The lever 32 is resiliently supported on a spring member 34 in any suitable manner, or by having the latter formed of an angularly bent strip of spring metal with one end connecting the under side of the lever 32 and its other or free end resting on the surface of the support or table A as shown in Fig. 2. When the signal bell 26 rings to indicate

the setting of words required for a line of newspaper measure, the operator will then touch the lever 32 and depress the same to simulate the similar movement required on actual linotype machines for the setting in motion of the elevator, the type casting, and the type distributing mechanisms thereof.

It will be gathered from the foregoing that the novel device is simple and well adapted to withstand the usage to which such devices are ordinarily subjected, also that the device will enable a student operator to attain a degree of finish and speed in practice work which would require a much longer period to reach were the practice confined solely to the daily work on a machine when accuracy forbids an attempt at speed and the necessity of sending up so many lines per minute makes it inexpedient to experiment on method.

In addition to the practical advantages which I have hereinbefore ascribed to my novel dummy keyboard, it will be noted that the same is very light in weight and is therefore adapted to be carried from place to place with facility.

Having thus fully described my invention, what is claimed, is:—

1. A dummy keyboard comprising a body having an upper surface arranged to form an inclined plane, rows of keys resiliently pivoted directly to the inclined plane of said body, and a unitary member constituting a resilient means associated with each row of said keys for limiting their pivotal movement and to facilitate the action thereof.

2. A dummy keyboard comprising a body having an upper surface arranged to form an inclined plane, longitudinally extending rows of inherently resilient keys mounted for up and down movement directly on the inclined plane of said body, and a unitary member constituting an inherently resilient means associated with each row of said keys for limiting the movement thereof and to facilitate the action of the same.

3. A dummy keyboard comprising a body having an upper surface arranged to form an inclined plane, longitudinally extending rows of keys mounted for pivotal movement directly on the inclined plane of said body, a resilient member extending under each row of said keys for limiting the movement thereof and to facilitate the action of the same, and means for supporting said member in position.

4. A dummy keyboard comprising a body having an upper surface arranged to form an inclined plane, longitudinally extending rows of keys mounted for pivotal movement directly on the inclined plane of said body, an inherently resilient member extending under each row of said keys for limiting the movement thereof and to facilitate the action of the same, and means for supporting said member in position.

5. A dummy keyboard comprising a body having an upper surface arranged to form an inclined plane, longitudinally extending rows of keys of sheet metal mounted directly on the inclined plane of said body, a unitary member constituting a resilient means extending under each row of said keys for limiting the movement thereof and to facilitate the action of the same, and means for supporting said rods in position.

6. A dummy keyboard comprising a body having an upper surface arranged to form an inclined plane, longitudinally extending rows of keys of sheet metal mounted directly on the inclined plane of said body, an inherently resilient rod extending under each row of said keys for limiting the movement thereof and to facilitate the action of the same, and means for supporting said rods in position.

7. A dummy keyboard comprising a body having an upper surface arranged to form an inclined plane, longitudinally extending rows of keys of sheet metal mounted directly on the inclined plane of said body, and an inherently resilient rod extending under each row of keys for limiting the movement thereof and to facilitate the action of the same, said rods having their opposite ends bent to provide angularly disposed portions adapted for engagement in the face of the inclined plane of said body whereby the same are supported in position.

8. The combination with a dummy keyboard including an inclined body and an indicating space bar extending longitudinally of the body on the rear side thereof, of rows of resilient keys of sheet metal supported for movement on the outer inclined face of said body, and inherently resilient abutment members underlying each row of said keys for limiting the movement and to facilitate the action of the same.

9. The method of making a unit row of key levers which consists in the stamping or cutting out intermediate portions from one side edge of a blank of resilient metal to form a plurality of spaced parallel lever arms connected at one end to the blank and having their free ends of a greater width than the intermediate portions thereof, bending the opposite side and end edges of the free end portions to provide flanges depending therefrom, bending the intermediate portions of said lever arms on transverse lines on the line of their connection with the flanges and portions and on lines inward from the latter whereby to provide a vertically disposed connecting wall between the intermediate portions of the lever arms and the free end portions thereof, and bending the inner connected portions of the lever

arms at an angle to the latter to provide a support therefor.

10. As an article of manufacture, a key lever construction comprising a blank made from resilient sheet material constructed and arranged to provide alternate spaces and parallel lever arms at one edge of the blank, the lever arms being bent at an angle to the blank whereby the latter constitutes a support therefor.

11. As an article of manufacture, a key lever construction comprising a blank made from resilient sheet material constructed and arranged to provide alternate spaces and parallel lever arms at one edge of the blank, the outer free ends of the lever arms being offset above the plane of the intermediate portions thereof to provide finger engaging portions thereon, the lever arms being bent at an angle to the blank whereby the latter constitutes a support therefor.

12. The combination with a dummy keyboard including an inclined body and an indicating space bar carried by said body, of rows of keys supported for movement on the outer inclined face of said body, a unitary member constituting a resilient means associated with each row of said keys for limiting the movement thereof and to facilitate the action of the same, and a lever pivotally supported on said body for simulating the actuation of a mechanism control lever of an actual machine.

13. As an article of manufacture, a key lever construction comprising a blank substantially rectangular in form made from resilient sheet metal and constructed and arranged to provide alternate spaces and parallel lever arms at one edge of the blank, the outer free ends of the lever arms being offset above the plane of the intermediate portions thereof to provide finger engaging portions and formed to provide depending side and end flanges corresponding in depth to that of the wall connecting the same to the intermediate portions of the lever arms, the lever arms being bent at an angle to the blank whereby the latter constitutes a support therefor.

In testimony whereof, I affix my signature hereto.

JOSEPH W. McCANN.