Oct. 31, 1950

C. E. BRIZENDINE

2,528,110

MUSIC TYPEWRITER

Filed Aug. 1, 1947

4 Sheets-Sheet 1

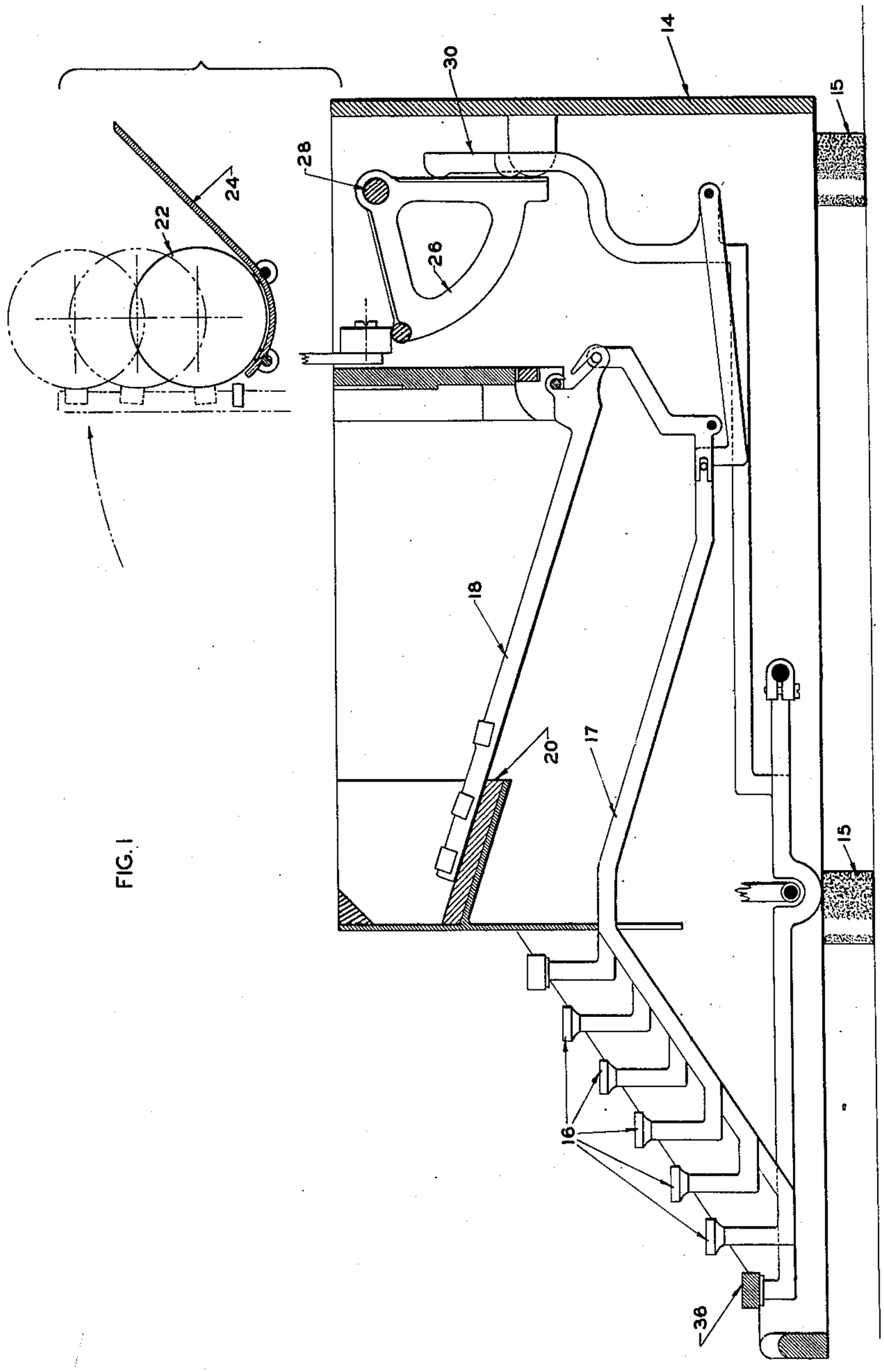

FIG. 1

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MUSIC TYPEWRITER

Filed Aug. 1, 1947 4 Sheets-Sheet 2

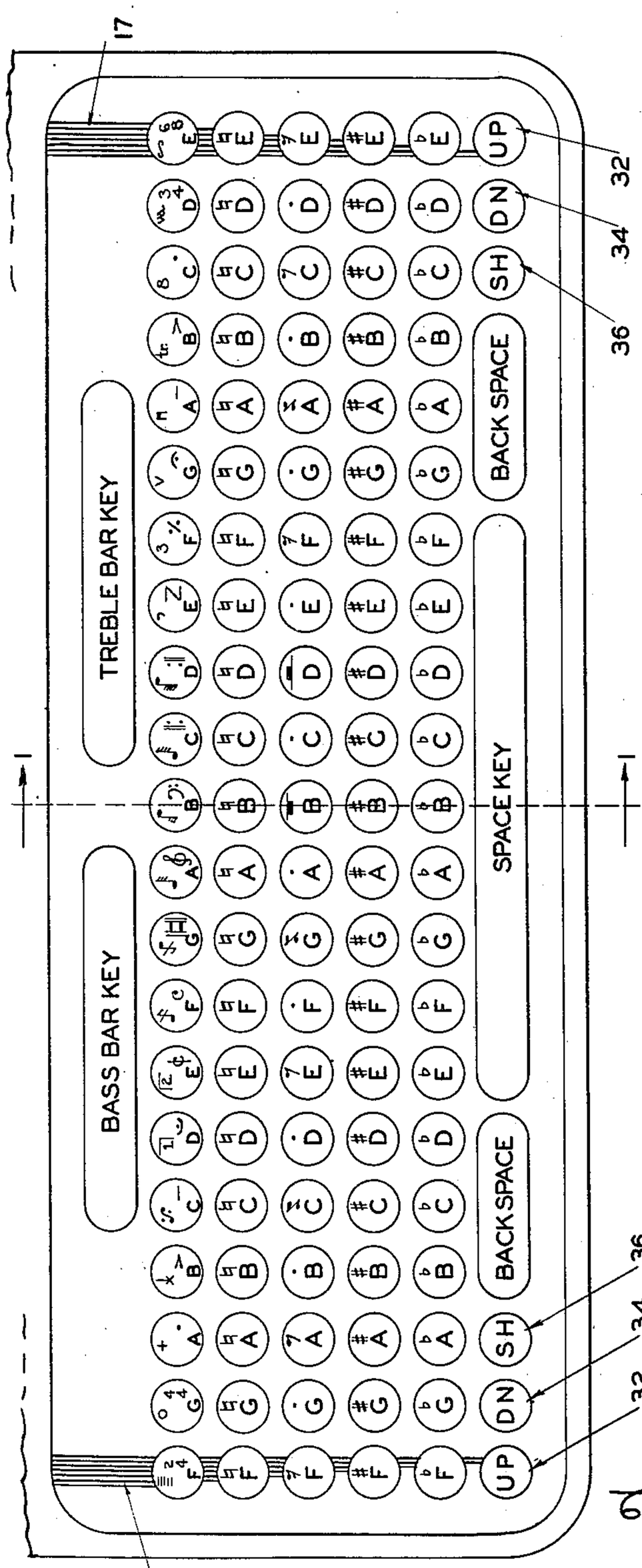


FIG. 2

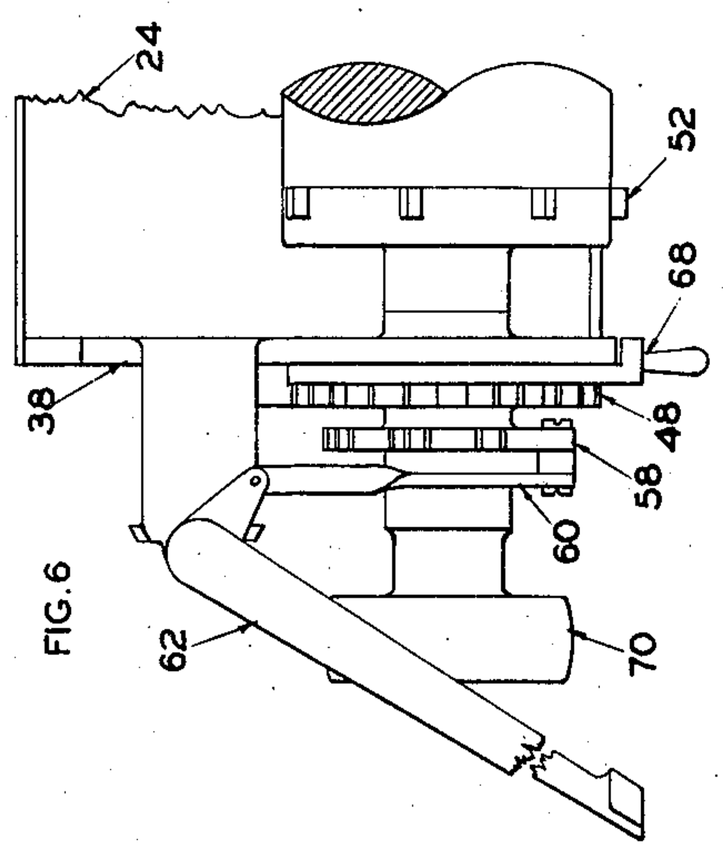
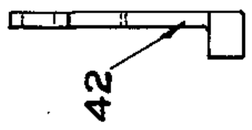


FIG. 6

FIG. 7



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Oct. 31, 1950 C. E. BRIZENDINE 2,528,110

MUSIC TYPEWRITER

Filed Aug. 1, 1947 4 Sheets-Sheet 3

FIG. 3

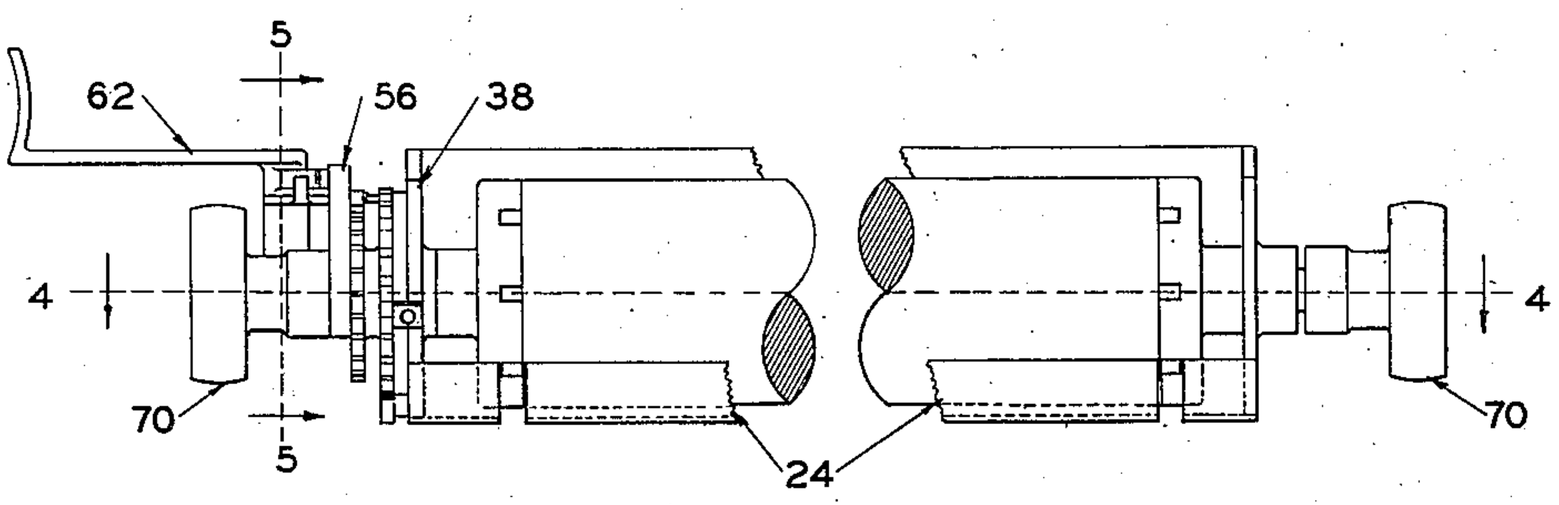


FIG. 4

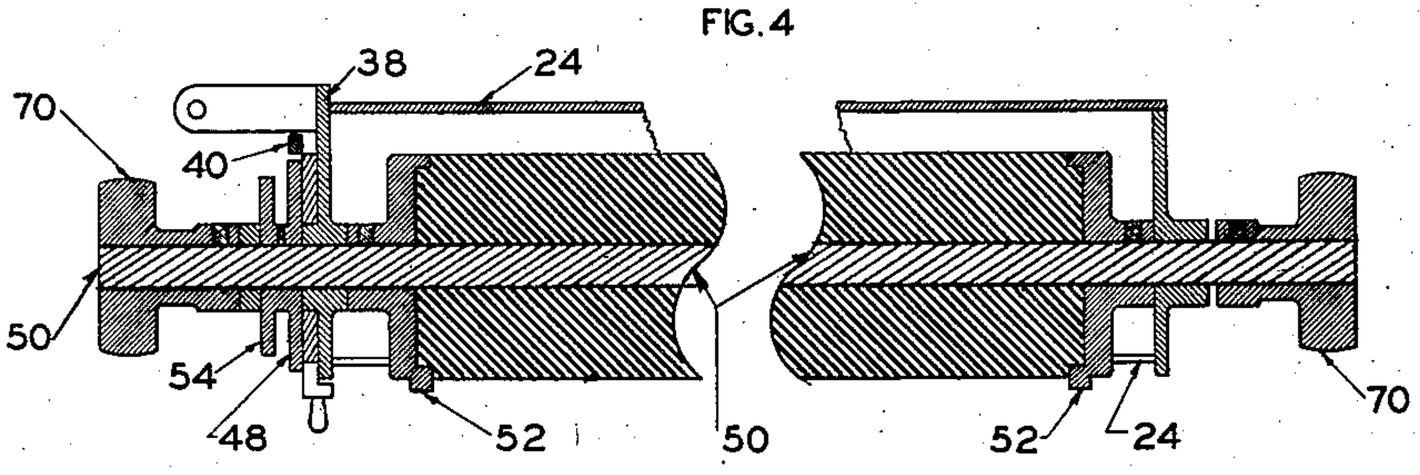
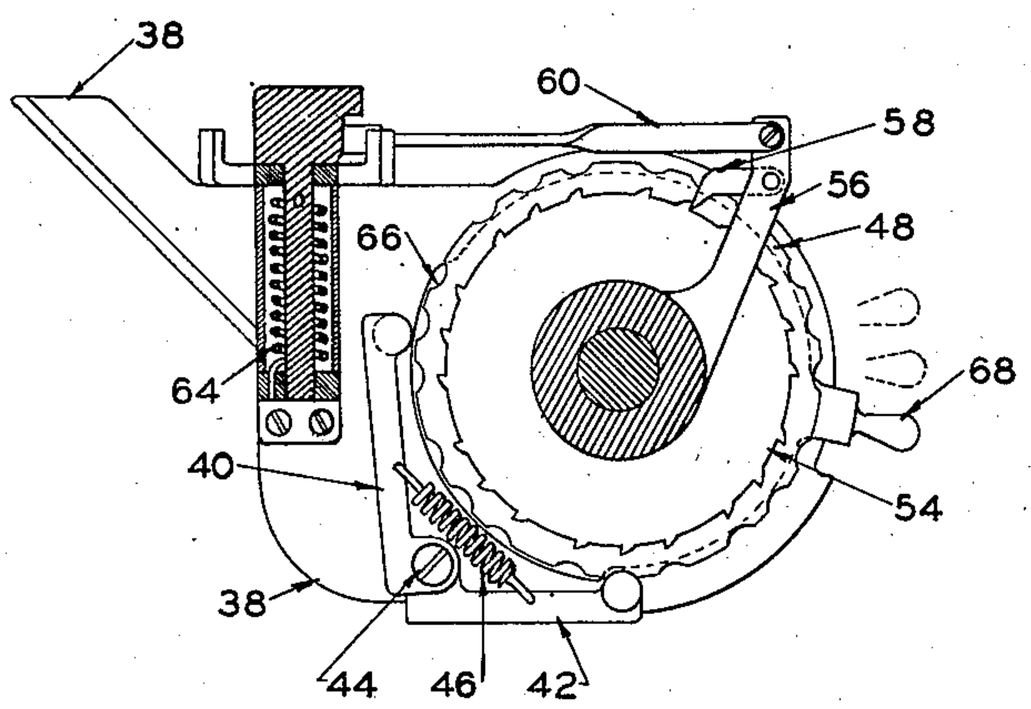


FIG. 5



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MUSIC TYPEWRITER

Filed Aug. 1, 1947 4 Sheets-Sheet 4

FIG. 8

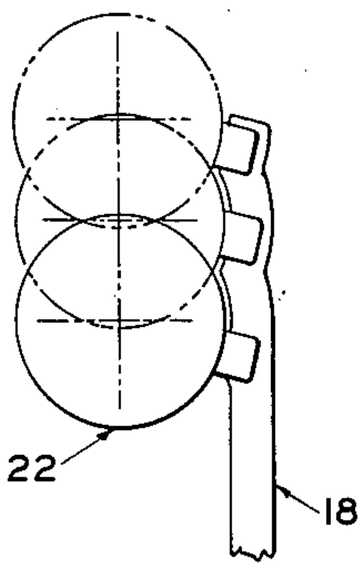


FIG. 9

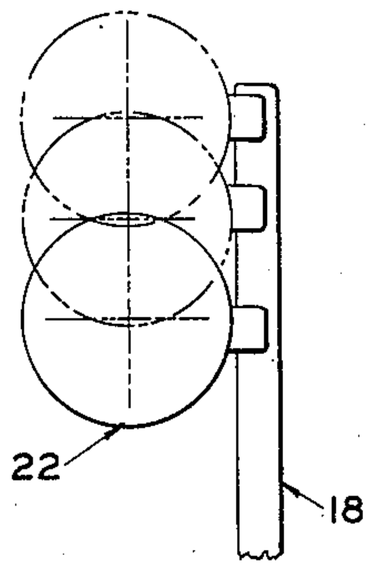


FIG. 10

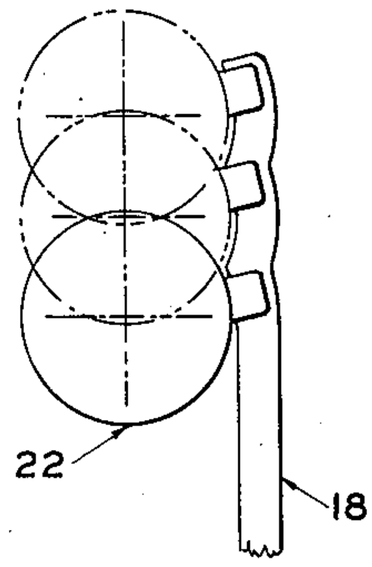


FIG. 11

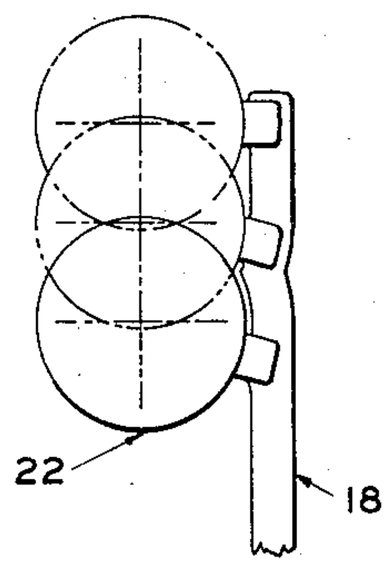


FIG. 12

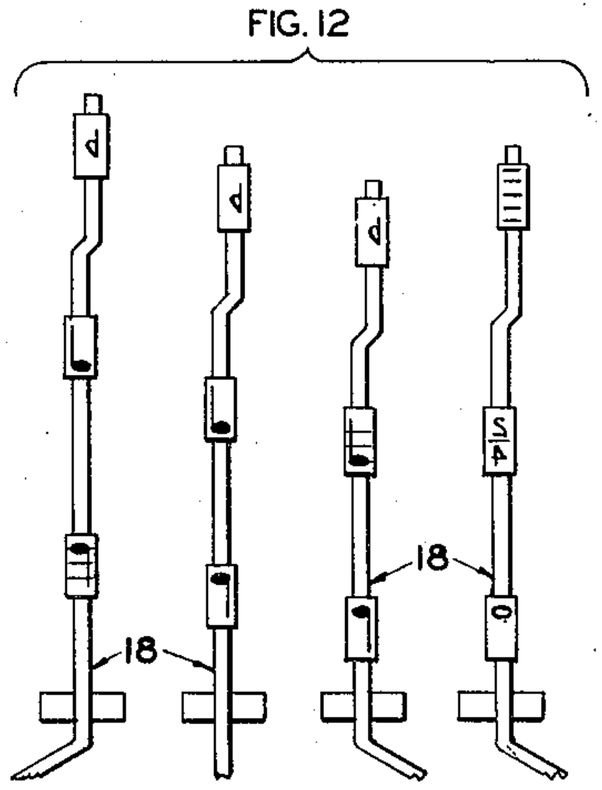
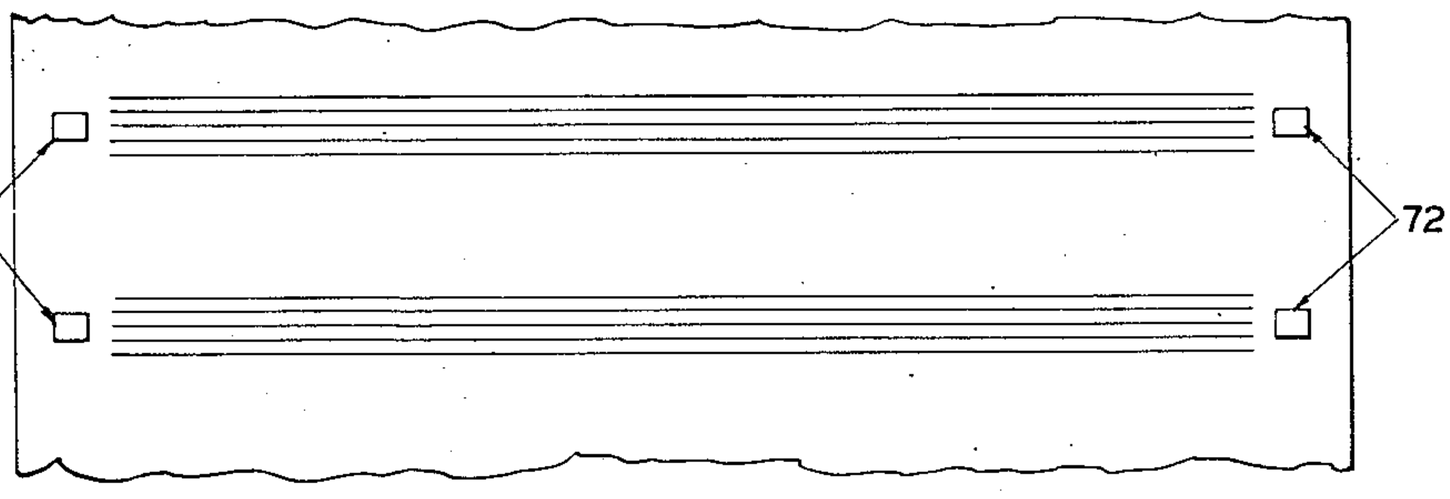


FIG. 13



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Patented Oct. 31, 1950

2,528,110

UNITED STATES PATENT OFFICE

2,528,110

MUSIC TYPEWRITER

Carrol E. Brizendine, Burbank, Calif.

Application August 1, 1947, Serial No. 765,451

16 Claims. (Cl. 197—8)

1

This invention relates to printing or typing machines and more particularly to such a machine employed for impressing musical notes upon a ruled or printed staff.

It is an object of the invention to provide means in a typewriter or the like whereby musical notes may be printed upon any desired line or space of the staff without rotation of the platen or corresponding manipulation.

Another purpose is to provide such a device wherein musically lined paper may be aligned selectively in position for impression of notes thereon corresponding either to bass or treble staff.

Yet another feature is the provision of means adapted automatically to impress such musical characters as incidentals, rests, etc., immediately adjacent their appurtenant notes rather than uniformly spaced apart as would be the requirement for successive notes.

A further purpose is to provide a musically lined sheet adapted to be mounted in aligning engagement upon the platen of my music typewriter so that individual members of a series of music type faces may be impressed on successive lines and spaces of said sheet.

Additional features include the provision of complete series of notes of different time values, individually having their stems directed up or down as may be required, which series comprise individual notes for impression on successive lines and spaces thruout the musical staff.

Other objects and advantages of the invention will be apparent from the following description and claims, the novelty consisting of the features of construction, combination of parts, the unique relations of the members and the relative proportioning, disposition, and operation thereof, all as more completely outlined herein and particularly pointed out in the appended claims.

In the drawings, which form part of the present specification:

Figure 1 is a side elevational view, partly in section, of a music typewriter embodying the principles of my invention, taken on the line 1—1 of Figure 2;

Figure 2 is a top plan view of the keyboard of my typewriter;

Figure 3 is a front elevational view of the typewriter platen and associated parts;

Figure 4 is a medial longitudinal sectional view taken thru the platen along the line 4—4 of Figure 3;

Figure 5 is an enlarged transverse sectional

2

view taken thru the carriage as seen along the line 5—5 of Figure 3;

Figure 6 is a top plan view of one end of the carriage;

Figure 7 is a top plan view of a detent arm;

Figures 8, 9, 10 and 11 are diagrammatic views of successive type arms of a row, shown contacting the platen when the latter is in each of its three possible positions;

Figure 12 is an elevational view of the faces of the four type arms of the preceding figures; and

Figure 13 is an elevational view of paper inscribed with a musical staff and bearing aligned sprocket holes along opposite sides for use with my typewriter.

The results obtained by my typewriter construction will first be described for greater clarity by reference to the arrangement and purpose of the keyboard and associated levers (Figures 1 and 2) and the actuating mechanism will then be more specifically referred to.

The illustrated construction of the keyboard is particularly intended for use with a platen or roller arranged to locate a perforated sheet or roll of musical paper (Figure 13) alternately in two positions corresponding to the locations of treble and bass clefs so that upon the operator selecting one position or the other the keys will all record on the respective staff for which he has set the paper. In addition, series of keys or type faces are progressively and uniformly spaced upward from one end of the series to the other so that they will register on successive lines and spaces of the aligned staff. In other words, the two locations are two musical notes apart corresponding to the difference of two positions between the same notes on the two staffs. Thus, for example, if upper "C" were struck when the platen were set for treble staff, the type would record in the third space of the staff, while if the same note was struck when the platen was keyed for the bass staff, the type would record on the second space of the staff, and the adjacent notes on either side of the "C" would record in analogous positions. It will be noted, in addition, that the sequence of keys on the typewriter is identical with that on a piano.

Clef symbols, treble and bass, are provided for typing on the staff to indicate which staff is being used, and corresponding bar lines are also provided, spaced to span the staff in its alternate positions.

In addition to shifts of the platen and its aligned paper to obtain the two clef positions, the

platen can be manually rotated for the insertion of incidentals at any desired location but otherwise need not be adjusted at all for the width of a page no matter what lines or spaces are typed on. This result is accomplished by providing a series of keys for each line and space of the staff. The assembly consists of five horizontal series of 21 keys each, individually vertically aligned to strike its corresponding line or space on the staff, and the approximately three octaves or 21 notes thus covering practically the entire usable range of notes, so that no rotation of the platen is necessary in typing. Successive horizontal rows carry different time values for the same name note, the several series being graduated respectively into whole notes, half notes, quarter notes, eighth notes, and sixteenth notes. The type face is of course curved to correspond to the curvature of the platen at the point at which it is designed to strike.

Since all but the whole notes are written with stems, and the direction of these stems varies with the position of the note on the staff, each series of notes less than whole notes is provided in a dual series, one set of notes having their stems directed down and the other set with their stems directed up. In addition, since it is often necessary to write any of these notes preceded by a sharp, flat or natural symbol, series of these three symbols are also provided thru the extent of the three octaves, and more particularly, are carried on laterally offset type so as to be disposed immediately adjacent the note to which they pertain rather than separated therefrom by a complete space corresponding to that between consecutive notes. These series of chromatic symbols are also located on the same keys or type arms as the oppositely stemmed notes so that each key or type bar has three positions or type faces and accordingly three shift levers are provided for the key board. The other 63 positions not yet accounted for are occupied by a series of rest symbols and other incidentals, including the treble and bass clef symbols. Further, since it is often necessary to write several notes on the same vertical line, the typewriter may be operated either with or without the customary spacing mechanism to separate linearly the successive characters.

It will be noted also that on the third row of keys the upper symbols are either rests or dots and that the latter are provided throughout the whole range of notes, that is, on every other key, so as to fall in the appropriate spaces of the staff between successive lines, while intermediate the dots are located different value rests most of which are repeated for each octave of successive positions of elevation on the staff, the whole rests however, occurring only twice in treble and bass positions respectively, since they are always uniformly centered on the staff.

In the drawings only the variations from conventional typewriter construction necessary to illustrate the peculiar features of my music typewriter are illustrated. As seen particularly in Figure 1, there is provided the conventional, generally rectangular, supporting frame **14** mounted on shock absorbing feet **15**. The several keys **16** are connected by a suitably shaped lever **17** to the type arm **18** which normally rests on an inclined bed **20** and upon depression of its key is adapted to swing up and impress the platen or roller **22** which is rotatably suspended a short distance above the paper guide **24**. The bass and

treble bar keys operate by similar lever connections.

The roller assembly, comprising the platen and paper guide, may be located at several vertical positions (indicated in the broken lines) by a transverse rocker arm **26** pivotally mounted on the cross rod **28** and swung to successive elevating positions by a detent arm **30** operated by the shift keys **32**, **34**, and **36**. As previously noted, the DN shift key **34** indicates the lowermost of the three type faces wherein the note stem extends downward. The UP shift key **32** pertains to the intermediate of the three type faces wherein the note stem is directed upward. The SH shift key **36** positions the uppermost of the three type faces which carry flats, sharps, naturals, rests, and incidentals.

On the left end housing plate **38** of the roller assembly there are mounted a pair of divergent arms **40** and **42** extending substantially at right angles to each other, having their adjacent ends journalled on a common pivot pin **44**, and having their adjacent inner edges connected by a tension spring **46**.

The two detent arms **40** and **42** are disposed to embrace jointly between them a peripherally notched, radially extending, indexing plate **48** fixedly mounted on the platen axle **50** so as to be rotatable concurrently with the platen. Circumferential series of three notches each are spaced about the outer periphery of the plate with the terminal lugs or detents of the respective embracing arms **40** or **42** being disposed alternately to seat in the notches but with the lengths of the two arms **40** and **42** so related that both detents cannot seat in the plate at the same time. The space between successive notches of a series is equal to an octave on the staff of music manuscript paper designed for use therewith, while the seating of either detent arm **40** or **42** is arranged to locate the musically lined paper in typing position corresponding respectively to bass or treble clef. The normal position for either clef corresponds to the center of the three indexing notches, so that, if desired, the platen can be turned up or down one notch on either detent arm to increase the effective typing range by moving the staff respectively up or down an octave. Such elevation of the typing center on the staff may be desirable, for example, in writing scores for violin, flute or piccolo, which instruments sometimes play above the normal range of the present keyboard. Accordingly it will be seen that the transversely aligned sprockets **52** disposed adjacent opposite edges of the platen are thus keyed to the spacing of the notches on the indexing plate **48**.

Also fixedly mounted on the rotating platen axle is a ratchet plate **54** having an outwardly projecting series of teeth corresponding in spacing to the notches of the index plate **48**. Rotatably journalled on the axle **50** adjacent the ratchet plate, is a generally upright arm **56** bearing a pawl **58** disposed in driving engagement with the ratchet plate. A horizontal bar **60** is secured to the upper extremity of the upright arm **56**. The connecting bar **60** is pivotally attached on its inner end to a forwardly projecting carriage lever **62** which lever is additionally secured to one end of an upright helical spring **64**. Accordingly, manual movement of the lever **62** serves to draw inward the connecting bar **60** so as to cause the pawl **58**, by contact with the ratchet plate **54**, to move the platen to a corresponding position on the successive staff of the paper. Upon release of the operating lever, it

returned to its original position by the spring 64 and the pawl accordingly slides back a corresponding number of teeth.

A radially extending locating plate 66 is disposed adjacent the two detent arms and mounted on the axle so as to be rotatable independently thereof. For a circumferential distance equal to the space between the pair of detents, the locating plate has an outer circumference corresponding to that of the indexing plate 48, while beyond this elevated section, on either side thereof, its perimeter corresponds to the depth or bottom of the notches in the indexing plate. The locating plate is manually operated by a radially projecting handle 68 attached thereto, being shown in three successive positions in Figure 5. When the plate is located in the lower handle position there indicated, it thus allows the lower detent arm 42 to seat in the adjacent indexing notch which thus locates the musical staff in position for treble clef. When the plate 66 is moved to the other extreme indicated by the handle 68 in broken lines, the treble detent will be disengaged and the opposite detent arm 40 may then seat (upon a slight rotation of the platen corresponding to three notes on the scale) in a corresponding notch of a series so as thus to position the staff for bass clef. However when the locating handle 68 is moved to the intermediate position shown, the plate 66 is then disposed to disengage both detent arms (40 and 42) so that the platen may be freely rotated by its end knob 70 as, for example, when it is desired to insert grace notes and other incidentals.

The perforations 72 in the musically lined paper also serve to hold the paper securely on the platen sprockets 52, so that even when the detent arms 40 and 42 are disengaged and the platen rotated by hand, the paper does not wrinkle or get out of alignment.

While I have shown and described in some detail a presently preferred embodiment of my music typewriter, it is to be understood that various modifications may be made in the construction and operation thereof within the spirit and scope of the subsequently claimed invention which is to be construed broadly and limited only by the prior art.

I claim:

1. In a typewriter and the like, the improvement comprising: a rotatable platen having means adapted to align thereon, paper marked with a musical staff; a series of correspondingly aligned musical type adapted to impress on successive lines and spaces of said staff without rotation thereof; and other series of flats, sharps and naturals respectively, laterally offset from the prior series so as to impress said paper immediately preceding the appurtenant musical notes.

2. In a typewriter and the like, the improvement comprising: a rotatable platen having means adapted to align thereon, paper marked with a musical staff; a series of correspondingly aligned musical type adapted to impress on successive lines and spaces of said staff without rotation thereof; and locating mechanism adapted alternately to locate said engaged paper at typing positions two staff degrees apart so that said type will strike the lined paper in positions corresponding to treble and bass clef respectively.

3. In a tpewriter and the like, the improvement comprising: a rotatable platen having means adapted to align thereon, paper marked with a musical staff; and a plurality of series of correspondingly aligned musical type, each series being adapted to impress on successive lines and spaces of said staff without rotation thereof, the several series bearing notes of different time values, series of less than whole notes being dual and bearing notes with stems up and with stems down respectively.

4. In a typewriter and the like, the improvement comprising: a rotatable platen having means adapted to align thereon, paper marked with a musical staff; a plurality of series of correspondingly aligned musical type, each series being adapted to impress on successive lines and spaces of said staff without rotation thereof, the several series bearing notes of different time values, series of less than whole notes being dual and bearing notes both with stems up and with stems down respectively; and locating mechanism adapted alternately to locate said engaged paper at typing positions two staff degrees apart so that said type will strike the lined paper in positions corresponding to treble and bass clef respectively.

5. In a typewriter and the like, the improvement comprising: a rotatable platen having means adapted to align thereon, paper marked with a musical staff; a plurality of series of correspondingly aligned musical type, each series being adapted to impress on successive lines and spaces of said staff without rotation thereof, the several series bearing notes of different time values, series of less than whole notes being dual and bearing notes both with stems up and with stems down respectively; and other series of flats, sharps and naturals respectively, laterally offset from the prior series so as to impress the paper immediately preceding the appurtenant musical notes.

6. In a typewriter and the like, the improvement comprising: a rotatable platen having means adapted to align thereon, paper marked with a musical staff; a plurality of series of correspondingly aligned musical type, each series being adapted to impress on successive lines and spaces of said staff without rotation thereof, the several series bearing notes of different time values, series of less than whole notes being dual and bearing notes both with stems up and with stems down, respectively; other individual series of flats, sharps and naturals respectively, laterally offset from the prior series so as to impress the paper immediately preceding the appurtenant musical notes; and locating mechanism adapted alternately to locate said engaged paper at typing positions two staff degrees apart so that said type will strike the lined paper in positions corresponding to treble and base clef respectively.

7. In a music typewriter and the like having a rotatable platen and type faces carrying musical notations, the improvement comprising: engaging means disposed adjacent said platen and adapted to align a musically lined sheet thereon; locating means disposed adjacent said platen and adapted to position said aligned sheet selectively for treble and base clef; and other correlated locating means adapted selectively to position said aligned sheet an octave above and below its position set by the first locating means.

8. A music typewriter including: at least one substantially horizontal series of type faces bearing musical notation, said type faces being progressively and uniformly vertically spaced from one end of the series to the other so as to be alignable with successive lines and spaces of a

musical scale; a rotatable platen having engaging sprockets adapted to align a musically lined sheet thereon; lever means adapted to impress said type faces individually on said lined sheet; and locating means adapted to position said aligned sheet selectively for treble and base clef.

9. A music typewriter including: at least one substantially horizontal series of type faces bearing musical notation, said type faces being progressively and uniformly vertically spaced from one end of the series to the other so as to be alignable with successive lines and spaces of a musical scale; a rotatable platen having engaging sprockets adapted to align a musically lined sheet thereon; lever means adapted to impress said type faces individually on said lined sheet; and locating means adapted to position said aligned sheet selectively for treble and base clef, said locating means comprising a peripherally notched, annular plate, concentrically rotatable with said platen, and a pair of embracing arms adapted alternately to engage one of said notches, said notches being aligned with the engaging sprockets and lined sheet of said platen and said embracing arms being spaced so as to align said sheet for treble and base clef respectively upon engagement of the notched plate by one arm or the other.

10. In a typewriter and the like having means for disposing a recording material in alignment for impression with type faces, the improvement comprising: a plurality of series of musical type, each series being adapted to impress on said material in positions corresponding to successive lines and spaces of a musical staff without moving said material transverse to the direction of said staff, the several series bearing notes of different time values, series of less than whole notes being dual and bearing notes with stems up and with stems down respectively.

11. In a typewriter and the like having means for disposing a recording material in alignment for impression with type faces, the improvement comprising: a plurality of series of musical type, each series being adapted to impress on said material in positions corresponding to successive lines and spaces of a musical staff without moving said material transverse to the direction of said staff, the several series bearing notes of different time values, series of less than whole notes being dual and bearing notes with stems up and with stems down respectively; and other series of flats, sharps and naturals respectively, laterally offset from the prior series so as to impress said material immediately preceding the appurtenant musical notes.

12. In a typewriter and the like having means for disposing a recording material in alignment

for impression with type faces, the improvement comprising: a series of musical type adapted to impress on said material in positions corresponding to successive lines and spaces of a musical staff; and other series of flats, sharps and naturals respectively, laterally offset from the prior series so as to impress said material immediately preceding the appurtenant musical notes.

13. The typewriter of claim 1 wherein the series of musical type is connected to operating keys which are arranged in an unbroken sequence corresponding to the sequence of keys on a piano keyboard.

14. The typewriter of claim 2 wherein the series of musical type is connected to operating keys which are arranged in an unbroken sequence corresponding to the sequence of keys on a piano keyboard.

15. The typewriter of claim 3 wherein each series of musical type is connected to operating keys which are arranged in an unbroken sequence corresponding to the sequence of keys on a piano keyboard.

16. In a typewriter and the like having means for disposing a recording material in alignment for impression with type faces, the improvement comprising: a plurality of series of musical type, each series being adapted to impress on said material in positions corresponding to successive lines and spaces of a musical staff without moving said material transverse to the direction of said staff, the several series bearing notes of different time values, series of less than whole notes being dual and bearing notes with stems up and with stems down respectively, members of each series of type being connected to operating keys which are arranged in an unbroken sequence corresponding to the sequence of keys on a piano keyboard.

CARROL E. BRIZENDINE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,075,496	Robinson	Oct. 14, 1913
1,391,788	Orr	Sept. 27, 1921
1,439,708	Orr	Dec. 26, 1922
2,117,363	Rundstatler	May 17, 1938
2,305,231	Avery et al.	Dec. 15, 1942
2,317,170	Bastow et al.	Apr. 20, 1943

FOREIGN PATENTS

Number	Country	Date
252,004	Italy	of 1927
636,946	Germany	of 1936