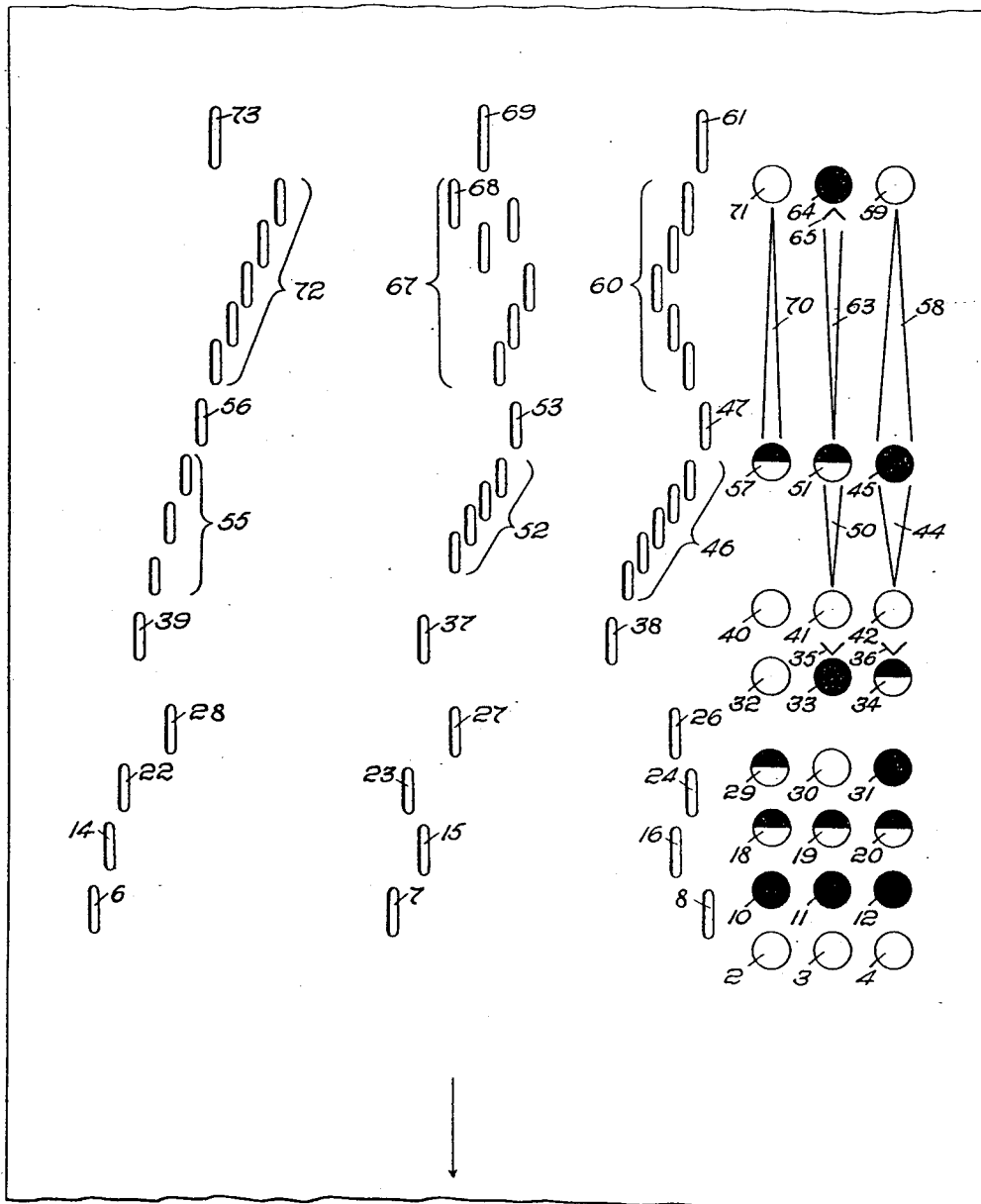


J. H. CHASE.
NOTE SHEET FOR MUSICAL INSTRUMENTS.
APPLICATION FILED DEC. 22, 1910.

1,034,420.

Patented Aug. 6, 1912.



Witnesses:
Horace A. Crossman,
Carl L. Choate.

Inventor:
Joseph H. Chase.
by Smey Booth Janner Warner
Attys

UNITED STATES PATENT OFFICE.

JOSEPH H. CHASE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO AMERICAN PIANO COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

NOTE-SHEET FOR MUSICAL INSTRUMENTS.

1,034,420.

Specification of Letters Patent.

Patented Aug. 6, 1912.

Application filed December 22, 1910. Serial No. 598,704.

To all whom it may concern:

Be it known that I, JOSEPH H. CHASE, a citizen of the United States, and a resident of Boston, Massachusetts, have invented an
5 Improvement in Note-Sheets for Musical Instruments, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention relates to prime controllers, such for instance, as note sheets, for automatic or partly automatic musical instruments; and pertains more particularly to informative data or indicia for instructing the
15 operator respecting the control of the instrument to suit the composition which is being played.

Among other objects, the invention is designed to provide a system of informative
20 notation for note sheets and the like, which shall be readily readable and understandable by the operator and preferably shall be aptly instructive of the proper manner and extent of operation of mechanical devices
25 for controlling the instrument so that the composition to be played may be rendered with the desired effects.

The character of the invention may be explained conveniently by reference to an illustrative embodiment shown in the accompanying drawing which represents a perforated note sheet having thereon various symbols indicating the manner and extent of operation of controlling devices. Such
30 controlling devices as may be used practically in conjunction with the illustrative notation of the drawing, are well exemplified by expression controlling levers of certain well-known types of piano players or player
40 pianos in which variations of expression are produced by moving toward and from the strings of the piano a sectional or flexible hammer rail. One type of such instrument
45 has a flexible hammer rail comprising three principal sections sub-tending respectively bass, middle and treble divisions, said sections being controlled each by one of three expression levers. These levers, when in their normal positions of rest, leave the
50 flexible hammer rail at its point of nearest approach to the strings, thereby prescribing the minimum distance of throw for the hammers for playing pianissimo. When the

levers are depressed to the fullest extent, they move the hammer rail to its maximum
55 distance from the strings, thereby giving the hammers their maximum throw for playing fortissimo. When the levers are depressed to intermediate positions, the hammer rail is moved correspondingly for playing mezzo-
60 forte, etc.

The illustrative perforated note sheet of the drawings may be described conveniently by reference to three hammer-rail-controlling levers of the character explained in the
65 next preceding paragraph.

One of the particular objects accomplished by this invention is the production of a system of notation in which different symbols, representing different effects or different
70 extents or manners of operation of a controlling device, shall be so readily distinguishable in appearance as to avoid any confusion whatever on the part of the operator. As well understood in the art, a note sheet
75 travels at a substantial speed and it is oftentimes difficult for an operator, especially a novice, to recognize and distinguish different indicia as they are suddenly presented to his view by the traveling sheet, and are
80 thereafter promptly removed from view. It is a consideration of great importance, therefore, to have the different symbols conspicuously distinctive and at the same time simple
85 in design. These purposes are well served by the illustrative system of notation shown in the drawing. For example, the symbols 2, 3 and 4 consist merely of circles. These
90 may be printed or stenciled upon the note sheet in any practicable manner, and if stenciled the circles would not have continuous circumferences because of the retaining tabs to support the stencil blank to cover the area of the circle. In effect, however, it is
95 preferred to use merely a plain circle or other geometrical design having its circumference or outline indicated by a substantially continuous line. These symbols 2, 3 and 4 are illustrative levers symbols which
100 may be employed on a note sheet or the like to indicate the extent of operation of expression or other controlling levers of an instrument, as, for instance, hammer-rail-controlling levers such as those above referred to.

In the specific illustrative system of notation, the plain circles 2, 3 and 4 indicate that

the levers or other controlling devices are to be left free from manipulation to rest in their normal released positions. For convenience, the blank circles or the like may be called "release symbols."

The symbol 2 represents a hammer-rail-controlling lever or the like for the bass division of the register; the symbol 3, the lever for the middle division; and the symbol 4, the lever for the treble division. Thus, these three illustrative release symbols indicate to the operator that the bass note of perforation 6, the middle division note of perforation 7, and the treble note of perforation 8 are all to be played when the three levers are fully released. Thus, on the assumed flexible hammer-rail instrument, said three notes 6, 7 and 8 would be played pianissimo. The next group of symbols 10, 11, 12 consist of circles having their areas completely colored or shaded so that they shall be readily and completely distinguishable from such symbols as the blank circles 2, 3 and 4. According to the specific system, these full-shaded symbols 10, 11 and 12, indicate to the operator that the bass, middle and treble levers are to be fully depressed to the limits of their movements, thereby in the specific flexible-hammer-rail instrument, (referred to by way of illustration) causing the bass note of perforation 14, the middle note of perforation 15 and treble note of perforation 16, all to be played fortissimo. The next group of symbols 18, 19, 20 consist of circles having their areas half shaded to instruct the operator to depress the levers half-way from released position to full depressed position, thereby, upon the specific assumed instrument, to cause the notes of perforations 22, 23 and 24, to be played mezzo-forte. Thus, the blank circle, or other geometrical figure, the full-shaded figure, and the semi-shaded figure, indicate respectively different extents to which corresponding levers should be operated to produce desired effects. Such symbols may be placed upon the note sheet in any practicable position so that they shall appear to the operator in the travel of the note sheet in sufficient season to enable him to manipulate the levers, in accordance with the instruction conveyed by the symbols, so as to affect those notes to which the intended expression pertains. For instance, the group of symbols 2, 3 and 4, is located on the illustrative sheet slightly in advance of the alinement of the three note perforations 6, 7 and 8, to which the instruction of said symbols pertains. With this arrangement, as the symbols 2, 3 and 4 approach or reach the tracker, the operator will be instructed to leave all three levers in released position. This illustrative relation between the symbols and note perforations is not essential and any relation will suffice which

will expose the symbols to view at an appropriate time as will be well understood by those skilled in the art.

Symbols of the general character described may be located at desired intervals along the sheet at whatever points it is desired that the expression should be changed. For example, after playing the three notes 22, 23 and 24 mezzo-forte (under the instruction conveyed by the symbols 18, 19 and 20) it may be desired to play fortissimo the treble note 26; pianissimo the middle division note 27 and mezzo-forte the bass note 28. The necessary instruction for this purpose is provided by symbols 29, 30 and 31 informing the operator respectively that the bass lever is to be semi-depressed; the middle lever to be left fully released, and the treble lever to be fully depressed.

The foregoing suffices to illustrate three illustrative types of symbols by which three operative positions of a controlling device may be readily denoted in distinctive characters upon the note sheet, to wit; the fully depressed, the semi-depressed, and the released positions. If it be desired to indicate more than these three operative positions of the levers, similar symbols may be employed, as for instance, a shaded quadrant or quarter part of a circle or other figure, to indicate a quarter depression of a lever; and a shaded three-quarter area of a circle or other figure, to indicate a three-quarter depression of a lever. If desired, the symbols may be further distinguished by using different geometrical designs. For practical purposes, however, it is considered sufficient to indicate merely the three principal operative positions above described.

The three types of symbols referred to may be used in any desired combination as will appear to those skilled in the art, and as illustrated by the combination of the three different symbols 29, 30 and 31.

The symbols hitherto described and employed in the various combinations of which they are susceptible, serve to indicate the extent to which the expression levers, respectively, or other controlling devices, are intended to be operated. Some additional information or instruction is desirable to be conveyed to indicate the manner in which the levers should be operated to one extent or another in order, for example, to accent a selected note or notes or to produce crescendo, diminuendo or other effects. Such additional information may be conveyed by altering the appearance of such symbols as have already been described, as by means of supplemental indicia,—the desideratum being to give to a symbol indicating an extent of operation, such an appearance or aspect as will also indicate a manner of operation of a controlling device. To exemplify such informative indicia, the group of symbols 32, 130

33, 34 comprises accent symbols 35 and 36. The symbol 33, being a full shaded figure, indicates the full depression by the corresponding controlling device, and the appearance of this full depression symbol is modified by the accent mark 35 so as to indicate that the full depression is to be made suddenly or rapidly and to be followed by an immediate release such that the middle division note of perforation 37 will be played with a fortissimo accent. Likewise the symbol 34, being a semi-shaded figure, indicates a semi-depression of the controlling device, and the appearance of that symbol is modified by the accent mark 36 so as to instruct the operator to semi-depress the device suddenly or rapidly and thereafter to release it immediately in order to give the treble note of perforation 38 a mezzo-forte accent. Thus, the two specific characters 33 and 35, by their combined distinctive appearance, constitute, in effect, a single indication for a quick full depression and release, namely a fortissimo accent; and the two characters 34 and 36 together constitute, in effect, a distinctive mezzo-forte accent symbol. These two accent symbols are accompanied for illustration by the blank symbol 32 indicating that the lever for the bass division is in full release position to play the note 39 pianissimo. The next group of un-shaded symbols 40, 41, 42, indicate that the three levers are to be left released. The symbol 44 indicates the gradual, though rapid, depression of the treble lever to the full depressed position indicated by the full depression symbol 45 of the next group, whereby the treble run 46 will be played with a rapid crescendo and the note of perforation 47 will be played fortissimo after the treble lever has reached its fully depressed position, as indicated by the symbol 45. The symbol 50 indicates a slow, gradual depression of the middle lever to the semi-depressed position indicated by the symbol 51, whereby the group of notes 52 will be played with a slow crescendo and the note 53 will be played mezzo-forte. In the bass division the notes 55 will be played pianissimo following the instruction of the symbol 40 and the bass note 56 will be played mezzo-forte following the instruction of the symbol 57.

After the fortissimo of the treble note of perforation 47, the treble lever having been fully depressed as indicated by the symbol 45, a symbol 58 indicates a rapid, gradual release of the treble lever ending with the full release indicated by the blank symbol 59, thereby causing the notes of the group 60 of perforations to be played with a rapid diminuendo and the note 61 to be played pianissimo. Following the semi-depression symbol 51 there is a slow gradual depression symbol 63 which, in turn is followed by a

full depression symbol 64. This full-shaded symbol 64 indicating the full depression of the middle lever, may have its appearance or aspect modified so as to indicate an immediate release of the lever following the gradual crescendo depression thereof. A so-called release symbol 65 is shown to exemplify indicia for this purpose, the characters 64 and 65 constituting together, in effect, a release symbol to follow the crescendo mark. By following the instruction of the symbols 63, 64 and 65, the operator will cause the notes of the group 67 of perforations to be played with a gradual crescendo, the note 68 being played at substantially fortissimo, and the note 69 being played pianissimo upon the release of the middle lever.

Following the semi-depression symbol 57, there is a slow gradual release symbol 70 followed, in turn, by a full release symbol 71. By following the instruction of these symbols the operator will cause the notes of the group 72 of perforations to be played with a gradual diminuendo and the note 73 to be played pianissimo.

The foregoing description of illustrative symbols and a practical arrangement thereof will suffice to indicate the general character of the invention, such symbols being well adapted for use to instruct the operator in the manipulation of one or more mechanical or other devices for regulating or controlling the rendition of a composition. The specific symbols have been explained in connection with an assumed exemplary type of instrument having three controlling levers; but it is to be understood, of course, that the specific system of notation described is not limited to use in connection with such an instrument, but may be applied to a variety of instruments as will appear to those skilled in the art.

The specific embodiment of the invention described, comprises symbols pertaining to the regulation of volume or intensity characteristics, but the invention is applicable to symbols for other purposes. When symbols contemplated by this invention are used to indicate intensity regulations, they may be accompanied by tempo indications of any practicable type, if desired.

It is to be understood that the invention is not limited to the specific system of notation described above; on the contrary said system may be widely modified within the scope of the subjoined claims. It is not indispensable that all the features of the invention be used conjointly since they may be used to advantage in different combinations and sub-combinations.

Claims:

1. A note sheet for musical instruments having thereon a plurality of separate groups of informative symbols providing

instructions for the control of an instrument, the groups being substantially alined lengthwise the sheet and confined within a narrow area extending along the sheet, whereby the groups are presented in succession at substantially the same point in the operator's field of vision; each said group comprising a plurality of symbols disposed transversely of the sheet in an alinement parallel to the alinement of symbols in each of the other groups, whereby all the groups have the same symmetrical arrangement of alined symbols, permitting the groups to be positioned closely adjacent each other on the sheet where desired; the symbols of said groups comprising geometrical figures having partially and wholly shaded and unshaded areas, respectively, the different shadings being substantially different in area, whereby the symbols are conspicuously differentiated in individual appearance and are readily recognizable and distinguishable by the operator; each said symbol by its conspicuous individual shading or lack of shading indicating, in and of itself and independently of its position on the sheet or in relation to other symbols, a certain predetermined extent of operation of a controlling device by which a desired effect may be produced; each said group comprising symbols as aforesaid so indicating such extents of operation of a plurality of controlling devices, respectively.

2. A note sheet for musical instruments having thereon a plurality of separate and independent informative symbols comprising geometrical figures having, respectively, substantially and conspicuously different areas thereof shaded to contribute readily-recognizable distinctive appearances to the respective types of symbols; each said symbol, by its distinctive shaded or non-shaded appearance and independently of its position on the sheet or any relation to other symbols, indicating in and of itself a certain predetermined, exact, extent of operation of a controlling device; and additional indicia indicating the manner of operation of said controlling device to the extent indicated by a symbol aforesaid.

3. A note sheet for musical instruments

having thereon a plurality of separate and independent informative symbols comprising substantially circular figures; certain of said circular figures having their areas substantially entirely shaded to indicate in and of themselves, individually, and independently of their absolute or relative positions on the sheet, and independently of any other symbols, a certain, exact, predetermined extent of operation of a controlling device; other said circular figures being substantially unshaded and thereby conspicuously different in appearance from the entirely-shaded figures and readily distinguishable therefrom, said substantially unshaded circular figures indicating in and of themselves, individually, and independently of absolute or relative position on the sheet and independently of any other symbols, a second certain exact predetermined extent of operation of the said controlling device; still others of said circular figures having their areas partly shaded and conspicuously different in appearance from the aforesaid entirely-shaded figures and unshaded figures and readily distinguishable from both thereof, said partly shaded figures indicating in and of themselves, individually, and independently of their absolute or relative position on the sheet and independently of any other symbol, a certain, exact, predetermined extent of operation of a controlling device intermediate the two extents of operation indicated, respectively, as aforesaid by said entirely-shaded and unshaded figures; said several symbols being disposed lengthwise the sheet and located, respectively, at points where it is desired to change the control by means of the controlling device aforesaid, and the symbols collectively indicating exactly the extents to which such device is to be operated at such points of change throughout the operation of the note sheet.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSEPH H. CHASE.

Witnesses:

LAURENCE A. JANNEY,
ROBERT H. KAMMLER.