

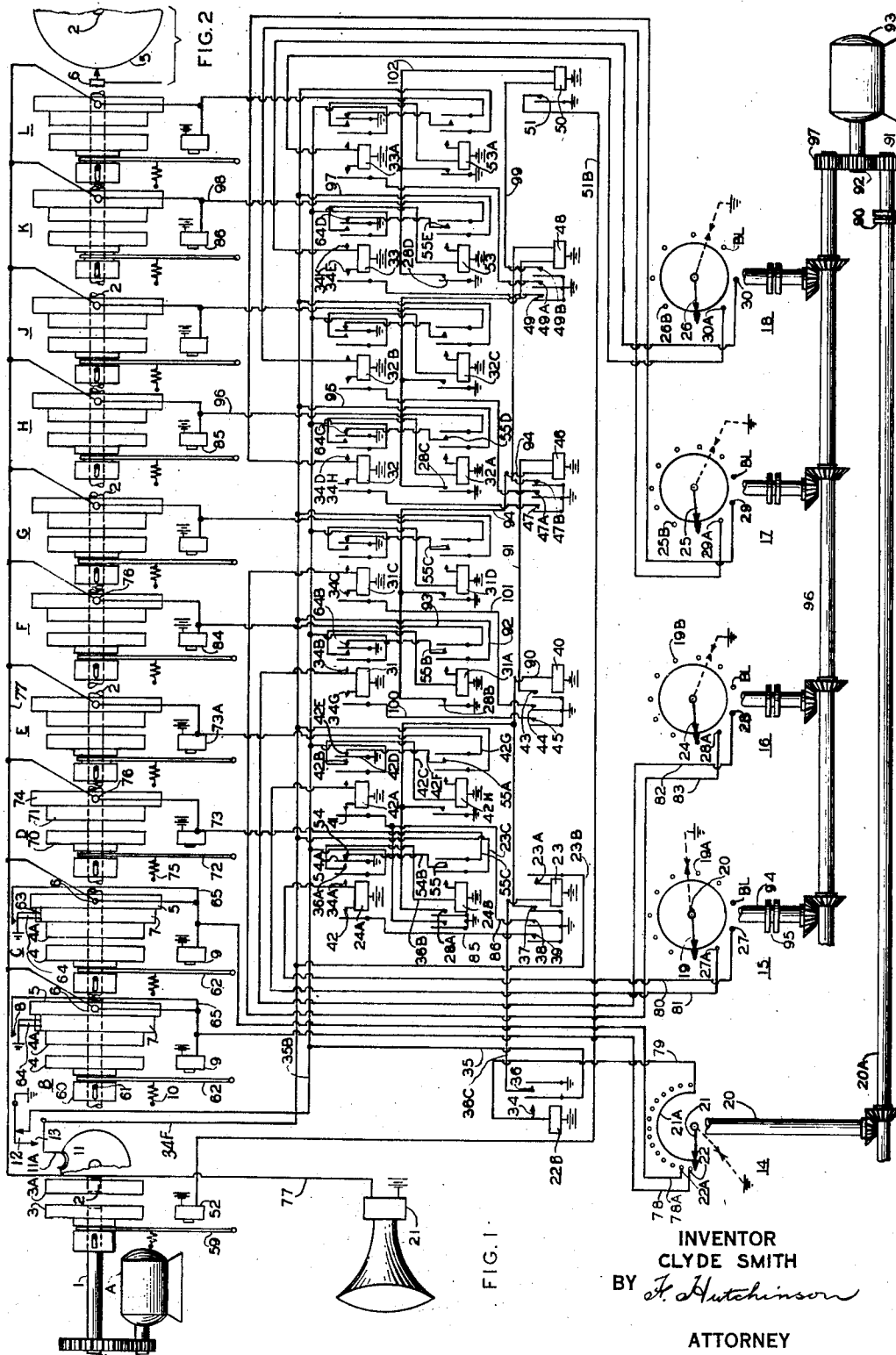
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TALKING STOCK QUOTATION BOARD

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TALKING STOCK QUOTATION BOARD

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20 Claims. (Cl. 274—10)

The present invention relates generally to an automatic audible price announcing system and more particularly to a talking stock quotation board.

5 Broadly my invention includes the provision of a price indicating system associated with an automatic stock quotation board for audibly announcing the name of the stock, the number of shares sold, and the price of the stock.

10 Another object of the invention resides in the provision of a plurality of speaking units arranged to serve many offices through the operation of a single announcing system.

The inventive features for the accomplishment 15 of these and other object are shown herein in connection with an automatic stock and price announcing system which, briefly stated, includes, in combination, a continuously rotating driving means, a shaft periodically driven by said driv- 20 ing means, a series of stock sound bands or records, and a plurality of groups of price sound bands or records operatively associated with the shaft, control relays common to the several bands of the stock band series, pairs of relays com- 25 mon to each band of the price groups, selective means for initially energizing the common control relays and said pairs of price relays in predetermined orders, a timer for controlling the operation of the common relays holding the price 30 bands inoperative whereby a pair of price relays are held energized, and means responsive to said pairs of price relays, initially energized for actuating and reproducing in succession said bands selected corresponding to the predetermined order 35 of selection.

Other objects and advantages of my invention will be disclosed as the description herein proceeds and it is obvious that modifications may be made in the embodiment set forth without departing from the invention as claimed.

40 In the accompanying drawing showing, by way of example, one of the many possible embodiments of the invention,

Fig. 1 is a schematic layout in elevation of the 45 audible announcing system, and

Fig. 2 is a fragmentary transverse view of a sound band and sound reproducing unit.

Referring to the drawing, A is a continuously operated motor cooperatively associated with a 50 main drive shaft 1 and a secondary drive shaft 2 which is actuated by the main drive shaft through the engagement of the complementary friction clutch members, 3 and 3a. Two stock announcing sound bands or records B and C are 55 shown loosely mounted on drive shaft 2. Each of the stock sound bands B and C comprise a clutch having complementary friction members 4 and 4a. Clutch members 4 embody a sleeve 60 provided with an elongated slot in which guide pin 61 of 60 shaft 2 projects. Each clutch member 4 is slid-

ably mounted on shaft 2 but is continuously rotating with the latter due to pin 61. An armature or yoke 62 associated with clutch coils 9 of stock sound bands B and C straddles sleeve 60 to move clutch member 4 into and out of engagement with 65 the clutch member 4a.

Clutch member 4a carries a cam member 7 to which is mounted a sound reproducing band 5, preferably of the phonograph type cooperating with an electrical pick up unit or sound repro- 70 ducing member 6. Cam 7 is provided with an indent 63 (similar to the indent in cam 11), co-operating with detent 64 (similar to detent 11A associated with cam 11 and described herein- 75 after) at the zero position, opening spring contact 8, and closing the latter when travelling on all other points on the periphery of the cam to hold clutch coil 9 of the stock sound bands ener- 80 gized through conductor 65, assuring a complete revolution of the reproducing band. Normally, when a clutch coil 9 is deenergized, spring 10 holds the clutch member 4 out of engagement with the clutch complement 4a.

Mounted on shaft 2 is a plurality of groups of price sound bands, D, E; F, G; H, J; and 85 K, L. The group comprising the sound band D, E announce the hundred price; group F, G announce tens price; group H, J announce the units price, and group K, L announce the fraction of the price. As illustrated, two stock sound bands 90 and eight price sound bands are disclosed, but in actual practice there would be nine sound bands for the hundreds, nine for the tens, nine for the units, and seven for the fractions, as the latter is usually recorded in eighths. All the 95 price sound bands are common to the several stock announcers, and while only two of the latter have been illustrated, it will be understood that any number of stock sound bands may be provided. Quantity sound bands have not been 100 shown, but these are duplications of the price announcing mechanism, except that the quantity bands would announce stock quantities. Provision may be made for sound bands, for such quantities as may be needed, that is, a 105 group of sound bands for each order of quantity.

Each group of price sound bands comprises clutch members, as 70 and 71, the former being associated with a yoke 72 of a clutch coil, as 73, to move clutch member 70 into engagement with 110 clutch member 71 and rotate the latter, which revolves sound band 74. Clutch coil 73, once energized, remains energized for one revolution of the sound band due to its locking circuit being completed through portions of conductors 77 and 115 65 to contact 8 associated with the stock sound band units B or C. Each of the sound bands of all the price groups includes a spring 75, holding clutch member 70 retracted when the clutch coils, as 73, are deenergized. Associated with 120

each of the price bands is a pick up unit, or electrical reproducing member as 76 in circuit with clutch coils 73 and 73A, and the connection 77 electrically joined with loud speaker 21.

- 5 Suitably mounted on shaft 2 is a cam or timer 11 for unlocking, pair by pair, the control relays, hereinafter more fully disclosed. Cam 11 is provided with an indent adapted to receive detent 11A at the zero position, closing contact 12 and opening contact 13. On leaving the zero position detent 11A makes contact 13 before breaking contact 12.

- The stock selector switch 14 is of the type employed with a quotation board system disclosed 15 in my copending application for an Automatic stock quotation board, Serial No. 398,634 filed October 10, 1929. Switch 14 comprises a plurality of contacts such as 22 and 22A corresponding to the number of stock sound bands, such as 20 B and C, etc. For instance, contact 22 is electrically joined with clutch coil 9 of stock band B, by conductor 78. Contact 22A is electrically connected with clutch coil 9 of stock band C by conductor 78A. In like manner, the remaining 25 contacts of the stock selector switch 14 would be connected with associated stock bands (not shown). The wiper 21 grounds the selected contact and also common 21a, grounding conductor 79, energizing control relay 22B, which in turn 30 energizes its mate relay 23. These relays are common to all the sound bands and respond to one revolution of shaft 2, restraining the price bands until the name of the stock is announced.

- For each price band of the hundreds, tens, 35 units and fractions, there is a pair of control relays, as 24A and 24B, for the hundreds stock band D; 42A and 42H for the hundreds stock band E, etc. In like manner, there would be a pair of control relays for the remaining hundreds stock bands (not shown).

- Pairs of control relays, as 31 and 31A, 31C and 31D, are associated with each band of the tens group. Pairs of relays, as 32 and 32A, 32B and 32C, are associated with each band of the units 45 group, and lastly, pairs of relays, as 33 and 53, 33A and 53A, are associated with each band of the fraction group.

- Common to the several price bands of the hundreds group is the hundreds price selector switch 50 15 embodying a plurality of contacts, as 27 and 27A, the former being in circuit with relay 24A of the nine hundreds band D, through the conductor 80 while the latter is in circuit with relay 42A of the eight hundreds band E through the 55 conductor 81. In like manner, the remaining contacts of switch 15, except the last contact BL, are electrically connected with the remaining corresponding bands of the hundreds group of control relays. The last contact BL is blank.

- 60 Predetermined positions of selection of the price contact closing switch 15 are controlled by code discs, and stop pins 19A, in the manner described in application of Clyde Smith for an automatic quotation board, referred to above.

- 65 Common to the several price bands of the tens group is the tens price selector switch 16 having contacts, as 28 and 28A, connected respectively with control relays, as 31 and 31C. The conductor 82 electrically joins the first contact 28 70 with control relay 31 of the nine tens band F. The next contact 28A electrically joins control relay 31C of the eight tens band G through conductor 83. In like manner, the remaining contacts of switch 16 are electrically connected with 75 corresponding control relays of the tens group

price bands. The last contact BL of switch 16 is blank.

Predetermined positions of selection of switch 16 are controlled by code discs and stop pins as 19B in the same manner as previously explained in connection with the control for the hundreds stock selecting switch 15. 80

Associated with the units price stock bands, as H and J, is the units price selecting switch 17 85 which comprises a plurality of contacts, as 29 and 29A, respectively electrically connected to unit control relays, as 32 and 32B. Stop pins, as 25B are associated with code discs and control predetermined positions of selections of switch 17.

The fraction price selecting switch 18 comprises a plurality of contacts, as 30 and 30A, electrically associated with control relays, as 33 and 33A, respectively, of the several bands, as K and L of the fraction group. Stop pins, as 26B are associated with code discs and control the selection of relays 33 and 33A, etc. 90 95

The price selecting switches 15, 16 and 17 are provided with eleven positions, one for each number ranging from 9 to zero and one position for blank. The fraction selecting switch 18 has 100 eight positions, one for each fraction in eights and one position for blank.

Wiper 21 of the stock selector switch 14 is suitably operated by shaft 20 which is driven by shaft 20A through friction clutch 90 associated with 105 gear 91 actuated by gear 92 of the driving motor 93. Wipers 19, 24, 25 and 26 of the price selecting switches are operated by shafts as 94, driven through friction clutches 95, actuated by main drive shaft 96 carrying gear 97, meshing with 110 driving gear 92. Thus, shafts 20A and 96 rotate in the same direction. The shafts of the stock, quantity and price selector switches, stopped by an associated code disc, predeterminedly controlled as described in my application above referred to, are positioned to correspond to the stock, quantity and price selected. 115

Contact 36 of relay 22B is in circuit with control relay 23 through conductor 36C. Contacts 39, 38 and 37 of the mate control relay 23 if closed 120 are in circuit with contact 42 of relay 24A if the latter is energized, through conductor 85, contact 41 of relay 42A if that relay is energized, through conductor 86 and guard relay 40 through conductor 90, respectively. As shown, two contacts 125 as 39 and 38, of relay 23 are disclosed associated with two control relays of the price hundreds group bands, but in practice, relay 23 is provided with nine contacts corresponding to the number of pairs of control relays in the hundreds group, 130 in addition to a separate contact as 37 for guard relay 40.

The contacts 45, 44 and 43 of guard relay 40 are associated with contact 34G of relay 31 of the tens band F, through conductor 100; with 135 contact 34C of the G tens band through conductor 101, and with, contact 43 with guard relay 46 through conductor 91 respectively. In practice, a contact would be provided on guard relay 40 corresponding to the number of pairs of control 140 relays in the tens group, together with the provision of a separate contact as 43 for guard relay 46.

Contacts, as 47, 47A and 47B of guard relay 46, are associated with control relays 32 and 32B of 145 the H and J units bands and with guard relay 48 respectively. Contacts 49, 49A and 49B of guard relay 48 are associated with control relays 33, 33A of the fraction group of bands, as K and L, one contact 49B, however, of guard relay 48 be- 150

ing connected with guard relay 50 by conductor 99, and when guard relay 50 is energized, contact 51 grounds, energizing clutch magnet 52 through conductor 51B attracting armature or yoke 59, bringing the frictional clutch members 3 and 3a into engagement, causing driven shaft 2 to be rotated.

When relay 24A is energized, contact 36A grounds, energizing relay 24B through conductor 36B. Contact 55 is closed when relay 24B is energized, preparing a circuit from contact 54, which is grounded by tongue 54A when relay 24A is released, to energize clutch coil 73, causing armature 72 to shift clutch member 70 to engage clutch complement 71 of D hundreds band 74. Upon the release of relay 24A the prepared circuit comprises grounded tongue 54A, contact 54, conductor 54B, contact 55, conductor 55C, clutch coil 73 to battery.

Likewise, if relay 42A is energized, contact 42B closes, grounding conductor 42C, energizing relay 42H, preparing upon the release of relay 42A a circuit comprising grounded tongue 42D, contact 42E, conductor 42F, closed contact 55A, conductor 42G, clutch coil 73A to battery and ground, preparatory to the operation of the record of sound band E.

In like manner, after the energization of relays 31 of the tens group, 32 of the units group, and relay 33 of the fraction group, and their subsequent de-energization, contacts 64B, 64C and 64D ground, thereby preparing a circuit through contacts 55B of energized relay 31A, 55D of energized relay 32A, and contact 55E of energized relay 53, to actuate the clutch magnet 84 of tens band F clutch magnet 85 of the units band H, and clutch magnet 86 of the fraction band, which cause their respective armatures to attract, whereby the clutch complements associated with each clutch magnet engage and revolve their associated price bands. The record of each sound band is electrically picked up by the sound reproducing members as 76 for transmission by conductor 77 to the loud speaker 21. Provision may be made for a plurality of speakers to be connected in circuit with conductor 77. In this way a speaker may be provided for each customer, in various parts of a building, or at various points remote from the controlling relays and associated switches, the latter comprising a single announcing system for controlling the operation of many speakers.

The operation of the system may be best understood by considering an hypothetical example. Assuming the stock selected is International Telephone and Telegraph Company, and the current market price is 999 $\frac{7}{8}$. The selection of the stock and price is made in the manner as disclosed in the patent application above referred to. Thus, wipers 21, 19, 24, 25 and 26 are positioned by their corresponding shafts to predetermined positions, so that wiper 21 grounds a contact, corresponding to the stock selected, that is, International Telephone and Telegraph Company. Assume this position to be when wiper 21 grounds contact 22. Wiper 19 of switch 15 also has been positioned to ground the nine contact 27 of the hundreds. Wiper 24 has moved to the position to ground the nine contact 28 of the tens of price switch 16. Wipers 25 and 26 have also been positioned to ground nine units and seven eights fraction contacts 29 and 30, respectively, of the units and fraction price switches 17 and 18. For clearness of description the higher order of numbers in the price are used in this hypothetical example.

Grounding of contact 22 by wiper 21 momen-

tarily energizes stock clutch magnet 9 of stock band B through conductor 78. This energization is momentary since, as shown in the co-pending application above mentioned the wiper as 21 of the stock selector switch is grounded only momentarily. Wiper 21 also grounds common 21A energizing common stock relay 22B. Likewise wiper 19 grounds the nine hundreds contact 27 momentarily energizing relay 24A through conductor 80. The nine tens contact 28 is grounded momentarily energizing the relay 31 associated with nine tens band F. The nine units contact 29 is momentarily grounded by wiper 25 energizing relay 32 associated with nine units band H, and lastly seven eights fraction contact 30 being grounded momentarily energizes relay 33 associated with seven eights fraction band K. All of the energized relays, as 22B, 24A, 31, 32 and 33 lock up through contacts, as 34, 34A, 34B, 34D and 34E, being thus in circuit with common holding wire 35B and contact 12 associated with the timing cam 11.

When stock control relay 22B is locked up, contact 36 grounds, energizing the mate control relay 23, closing contact 23A, placing conductor 23B in circuit with wire 34F associated with contact 13 of the timing cam 11. The price control relay 24A is also held energized through contact 39 of relay 23 and the mate control relay 24B is energized placing conductor 23C in circuit with wire 34F and contact 13, so that relay 24B remains energized after relay 24A is released, when contact 12 is opened and 13 is closed.

Control relay 23, having been energized, grounds contacts 37, 38 and 39. Contact 37 energizes guard relay 40 through conductor 90. Contact 38 grounds the eight hundreds contact 41, through conductor 86 holding relay 42A energized in the event that it had been previously energized from the eight hundreds contact 27A of switch 15. But relay 24A is the nine hundreds relay and has been energized through grounding of contact 37 and accordingly relay 24A is held energized through grounding of contact 42. That is, relay 24A and contact 42 are controlled from two sources namely by contact 12 controlled by cam 11 and control relay 23, grounding contact 39 and by grounding of contact 34A which is in circuit with 35B and contact 12. If relay 22B and 23 are not energized, then relay 24A is held up only through conductor 35B and contact 12.

This arrangement permits the unlocking of the control relays in the order of announcing. For instance, a stock may be quoted at 112 $\frac{1}{2}$. Another stock following may be quoted at 12. Thus the hundreds and fractions may be omitted without an idle period for the hundreds and fraction.

Upon energizing, guard relay 40 closes contacts 43, 44 and 45. Contact 43 grounding, energizes through conductor 91, guard relay 46, which grounds contact 47B, energizing guard relay 48, which in turn through grounding of contact 49B, energizes control relay 50, grounding contact 51 in circuit with wire 51B, energizing clutch magnet 52. Thus clutch members 3 and 3a are brought into frictional engagement and shaft 2 takes motion, causing cam 11 to open contact 12 and close 13. Contact 12, being open, releases relay 22B through the common holding wire 35B. Contact 13, closing, retains relay 23 energized, during the first revolution of shaft 2.

The clutch magnet 9 associated with the stock band B, is momentarily energized through grounding of contact 22 of switch 14, consequently bringing friction clutch members 4 and 4a into

engagement. Thus the reproducing band 5 of announcer B is put in motion. However, cam 7 is also moving, therefore detent 64 has been moved out of indent 63 of the cam, that is, out of the starting or zero position. Detent 63 rides on the periphery of the cam grounding contact 8, energizing clutch magnet 9 of stock announcer B, through conductor 65, consequently keeping clutch complements 4 and 4a engaged for one complete revolution, correspondingly revolving stock band 5, whereby its sound record is picked up by reproducer 6 and transmitted to the loud speaker 21. The name of the stock is now announced. In this instance, International Telephone and Telegraph Company would be heard.

On completion of the first revolution of shaft 2, contact 13 opens, releasing relay 23. However, clutch coil 52 remains energized until the last relay, as 53A, of the fraction group of the train of relays has been released.

On the second revolution of shaft 2, contact 12 is again opened and since ground has been removed at 42 by the release of relay 23, relay 24A is released, but relay 24B remains energized through grounding of conductor 23C in circuit with contact 13. Relay 24A releasing, grounds contact 54 and through contact 55, which is now closed, and conductor 55C, clutch magnet 73 is energized and clutch complements 70 and 71 are engaged for one revolution. Thus, the nine hundreds price band 74, of announcer D, is put in motion and the price record is picked up and transmitted to the loud speaker 21 which announces audibly "nine hundred."

During this operation, relay 24B remains energized, contact 28A grounds, keeping guard relay 40 energized through conductor 90, grounding its contact 45 and contact 34G of relay 31, thus holding relay 31 energized, and mate relay 31A is consequently energized.

On the next revolution of shaft 2, contact 12 again opens, releasing relay 31, but relay 31A remains energized through conductor 92 in circuit with contact 13, but upon release of relay 31 contact 64B is grounded preparing a circuit through closed contact 55B, conductor 93 to energize clutch magnet 84, to actuate the closed nine tens band record F, after relay 31 is released, that is, as before stated, when contact 12 opens, and contact 13 closes. Thus, the nine tens price band F rotates and the speaker audibly announces "ninety". If any of the relays as 23, 24B or 43 is energized, guard relay 40 will continue energized.

During the time relay 31A is energized contact 28B is grounded, consequently guard relay 46 is energized through conductor 94, grounding contact 47, thereby holding relay 32 energized through contact 34H. Of course, if relay 32 is energized, mate relay 32A is also locked up.

On the next revolution contact 12 opens, releasing relay 32, but relay 32A remains energized through conductor 95, conductor 34F and contact 13, which is closed, but in releasing, relay 32 prepares a circuit whereby clutch magnet 85 is energized. This circuit is completed when contact 64C grounds, and contact 55D being closed, clutch magnet 85 is energized through conductor 96. Thus, the clutch complements associated with the nine units price band H engaged, causing the latter to rotate, and the speaker is caused to audibly announce "nine". If any of the relays 23, 24B, 43, 31A or 31D is energized, guard relay 46 will continue energized.

During the time relay 32A is energized, contact 28C is grounded, holding guard relay 48 energized which grounds contact 49, holding the seven eighths relay 33 of the fraction group energized through grounded contact 34E.

On the next revolution of shaft 2, contact 12 opens, releasing relay 33, but relay 53 is held energized through conductor 97 in circuit with contact 13, now closed, by detent 11A, but upon release of relay 33, contact 64D grounds, thereby preparing a circuit through closed contact 55E, conductor 98, to energize clutch magnet 86 whereby seven eighths price band K takes motion and "seven eighths" is announced by speaker 21.

When guard relay 48 is energized, contact 49B is grounded, energizing relay 50 through conductor 99, and the relay 50 remains energized through conductor 102 when relay 53 is locked up, through grounding of contact 28D.

If any one of the control relays is energized, relay 50 will be energized due to the chain action of guard relays 40, 46 and 48 any one of which being energized will energize all the higher numbered guard relays. Relay 50, in energizing, grounds contact 51 energizing clutch magnet 52, whereby the clutches 3 and 3a are engaged to effect the starting or stopping of shaft 2. Upon the completion of the announcement, relay 50 is deenergized, deenergizing clutch coil 52, consequently stopping the rotation of driven shaft 2.

For each announcement of the stock, hundreds, tens, units or fractions, shaft 2 makes one revolution. In announcing International Telephone and Telegraph Company at the current quotation of 999 $\frac{3}{4}$, shaft has turned over five revolutions, one in announcing the name of the stock, one for announcing the price in hundreds, one for announcing the price in tens, one for the units, and one for the announcement of the fractions.

If shares sold or quantity bands are to be used in connection with the system, they would be in all respects a repetition of the price bands, but having quantity record bands interposed between the stock and price bands.

The system described may be used with, or independent of, an automatic stock quotation board. In this connection, attention is called to the novel method of controlling the operation of the sound bands, hereinafter disclosed.

It is well known that tickers print stock designations followed by a series of sales as NP. 9. 110 $\frac{1}{2}$. 10. $\frac{3}{4}$. $\frac{1}{4}$. $\frac{3}{8}$. The shares sold being 9; the full price is 110 $\frac{1}{2}$, followed by a quotation giving the shares sold 10 and the fraction of the price, $\frac{3}{8}$. Two other sales follow, giving only the fractions of the price $\frac{1}{4}$, $\frac{3}{8}$ the number of shares sold are omitted. This system is also arranged for omissions with no dead time for the omissions, as is very often the case when the characters vary in number and read from left to right. For example, in an automatic or semi-automatic telephone system, the systems are classified as 100, 1,000 and 10,000 line systems. In the first case, two numbers must always be used, in the second, three, and in the third, four.

With the system disclosed, the prices are often in three integers and a fraction, the equivalent of a 1,000 line telephone system, yet only the fraction may be announced, taking place without dead time for the integers preceding the announcement.

Considering a series of sales as NP. 9. 110 $\frac{1}{2}$. 10. $\frac{3}{8}$. $\frac{1}{4}$. $\frac{3}{8}$, a stock band NP as B or C would be moved to announce NP. The number of shares sold is announced as 9. The price bands are

moved to audibly announce the price $110\frac{1}{2}$. The remaining bands are announced as $10\frac{3}{8}$, $10\frac{1}{4}$, $10\frac{1}{8}$ indicating that 100 shares of the same stock sold at $110\frac{3}{8}$, $110\frac{1}{4}$, $110\frac{1}{8}$ respectively. Thus, only the quantity and fraction price bands are employed. It follows, therefore, that after the initial complete announcement, the quantity and fraction control relays only are utilized, the hundreds, tens and units relays are inoperative, consequently not effecting the hundreds, tens and unit price bands.

I claim:

1. In an audible announcing system, the combination comprising a rotating shaft, groups of sound records freely mounted on said shaft, variably operable switches for selecting any sound record from any one of said groups, means for clutching the selected records with said shaft one at a time and in a predetermined order, and means effective when any record is clutched to said shaft for audibly reproducing said record.

2. In an audible announcing system, the combination of a plurality of consecutively arranged groups of sound records, variably operable switches for automatically selecting any record from any of said groups, means effective upon said selection for actuating the selected sound record in any group in the order of the arrangement of said group, and means for audibly reproducing the selected sound records in accordance with the order of their actuation.

3. In an audible announcing system, the combination of a plurality of consecutively arranged groups of sound records, a common shaft whereon each of said sound records is freely mounted, variably operable switches for selecting any sound record in any of said groups, means effective upon said selection for clutching to said common shaft the selected sound record in any group in the order of the arrangement of said group, means for audibly reproducing the selected sound records in the order in which they are clutched to said shaft, means for driving said common shaft upon the selection of the first sound record and for stopping said shaft after the last of the selected sound records has been reproduced.

4. In an audible announcing system, the combination comprising a shaft, driving means therefor, groups of sound records freely mounted on said shaft, means for selecting a record in each group, means effective upon said selection for operatively associating said shaft with said driving means, additional means effective upon the rotation of said shaft for clutching the selected sound records with said shaft one at a time and in a predetermined order, and means effective when any sound record is clutched to said shaft for audibly reproducing said record.

5. In an automatic announcing system, comprising, in combination, driving means, a shaft periodically actuated by said driving means, groups of voice records mounted on said shaft, control relays common to one of said groups, means for selecting a record to be reproduced; means for reproducing a record of said group having said common control relays holding the remaining groups inoperative, and means upon the release of said common control relays for successively reproducing the remaining records, corresponding to a predetermined order of selection.

6. In an automatic stock and price announcing system, comprising, in combination, driving means, a shaft periodically actuated by said driving means, stock and price groups of sound

records operatively associated with said shaft, control relays common to said stock group, a pair of relays common to each sound record of the price groups, means for selecting stock and price records to be reproduced, and means for audibly reproducing the name of the stock selected, holding said price records inoperative, and means for reproducing the price records selected corresponding to a predetermined order of selection.

7. In an automatic stock and price announcing system, comprising, in combination, driving means, a shaft periodically actuated by said driving means, stock and price groups of sound records operatively associated with said shaft, control relays common to said stock group, a pair of relays common to each price record, selective means for energizing said control relays restraining the operation of said price records, means responsive to said control relays for actuating a stock record selected, and means responsive to said selective means for energizing a pair of relays of the price records selected and means responsive to said pairs of relays for actuating said price records selected in succession.

8. In an automatic stock and price announcing system, comprising, in combination, driving means, a shaft periodically actuated by said driving means, stock and price records operatively associated with said shaft, control relays common to the several records of the stock group, a pair of relays common to each record of the price groups, selective means for initially energizing said control relays and pairs of relays in predetermined orders, a timer carried by said shaft for controlling the operation of said common relays holding the price records inoperative, whereby a pair of price relays are held energized, and means responsive to said pairs of price relays, initially energized, for actuating in succession said records, selected corresponding to the predetermined order of selection.

9. In an automatic stock and price announcing system, comprising, in combination, driving means, a shaft associated with said driving means, stock and price record groups mounted on said shaft, a pair of control relays common to said stock group, a pair of relays associated with each record of the price groups, means for energizing said control relays and selected pairs of price relays in predetermined orders, a plurality of guard relays associated with said stock and price relays, means responsive to said guard relays for periodically operating said shaft for initially actuating said stock record and price records selected successively in predetermined orders, and means for audibly reproducing the records of said stock and price records corresponding to the order of selection.

10. In an automatic stock and price announcing system, comprising, in combination, driving means, a shaft associated with said driving means, a group of stock records, groups of price records, means for selecting one of said stock records and severally selecting an order of said price records, a pair of control relays common to said stock records, a pair of relays common to each price record, a plurality of guard relays co-operatively associated with said pairs of relays, a timer common to all of said relays for periodically holding selected pairs of relays energized and for releasing one relay of a selected pair of relays whereby a pair of relays of a price record selected are kept energized, and means controlled by said timer for successively operating the se-

lected stock record and the selected price records corresponding to the order of selection.

11. In an automatic stock and price announcing system, in combination, driving means, rotary driven means associated with said driving means, a plurality of sound records mounted on said driven means, a plurality of relays associated with said sound records, means for automatically selecting a predetermined order of said sound records, a timer mounted on said rotary means for controlling the operation of said relays in predetermined order of selection of said records, and means for reproducing said records in accordance with the order of their selection.

12. In an automatic stock and price announcing system, in combination, driving means, rotary driven means, a series of stock designation records and groups of price designation records mounted on said driven means, a pair of control relays common to the several stock records of said series, a pair of relays common to each price record, a stock selector switch associated with said series, a price selector switch associated with each group of price records, means responsive to said switches for selecting a stock record of said series and a predetermined order of said price records whereby said control relays, and the pairs of relays corresponding to the price record selected are energized, a plurality of guard relays responsive to said control relays, and any order of pairs of price relays, a timer mounted on said driven means for periodically controlling in succession the release of one relay in the pairs of relays energized and for holding the other relay of said energized pair, energized, a clutch coil associated with each price record, means upon the release of said one relay whereby said clutch coil is energized for operating a price record in the order of selection, and means for releasing said clutch coil upon the completion of a revolution of said driven means, and means responsive to said guard relays for disabling said driven means.

13. In an audible announcing system, the combination of a plurality of groups of sound records, actuating means common thereto, variably operable switches for selecting any sound record from any of said groups, means for selectively operating said switches, means for co-operatively associating the selected records one at a time and in a predetermined order with said common actuating means, means for reproducing the selected records in the order of their actuation, and means for disassociating said common actuating means from each of the selected records after said record has been reproduced.

14. In an audible announcing system, the combination of a plurality of groups of sound records, actuating means common thereto, variably operable switches for selecting any sound record from any of said groups, means for selectively operating said switches, means for co-operatively associating the selected records one at a time and in a predetermined order with said common actuating means, means for reproducing the selected records in the order of their actuation, means effectual upon the reproduction of each of the selected records for disconnecting said records from said common actuating means, and means for disabling said common actuating means when the last of the selected sound records has been reproduced.

15. In an automatic stock and price announcing system, the combination of driving means, a shaft periodically actuated thereby, groups of stock

sound records and a plurality of groups of price sound records associated with said shaft, variably operable switches for automatically selecting any record in said stock record group and any record in any of said price record groups, means for causing the selected records to be successively rotated by said shaft, and means responsive to the rotation of said shaft for reproducing the selected records in the order of their selection.

16. In an automatic announcing system, the combination of driving means, a shaft periodically actuated thereby, a plurality of sound records freely mounted on said shaft, means for selectively locking said records to said shaft one at a time and in a predetermined order, and means effective upon each revolution of said shaft for reproducing the record locked thereto.

17. In an automatic announcing system, comprising in combination, driving means, a shaft periodically actuated thereby, a plurality of sound records loosely mounted on said shaft, means for selectively locking said records to said shaft one at a time and in a predetermined order, means effective upon each revolution of said shaft for reproducing the record locked thereto, and means for unlocking any record from said shaft after the reproduction of said record.

18. In an automatic announcing system, comprising in combination, driving means, a shaft having a plurality of sound records loosely mounted thereon, means for operatively associating said driving means with said shaft for the time required by said shaft to travel through a predetermined number of revolutions, means for selectively locking said records to said shaft one at a time and in a predetermined order, and means effective upon each revolution of said shaft for reproducing the record locked thereto.

19. In an automatic announcing system, comprising in combination, driving means, a shaft having a plurality of sound records loosely mounted thereon, means for operatively associating said driving means with said shaft for the time required by said shaft to travel through a predetermined number of revolutions, means for selectively locking said records to said shaft one at a time and in a predetermined order, means effective upon each revolution of said shaft for reproducing the record locked thereto, and means for unlocking any record from said shaft after its reproduction.

20. In a system for automatically announcing stock quotations, a continuously operated driving means, a shaft periodically actuated thereby, a group of stock sound records and a plurality of groups of price sound records freely mounted on said shaft, each of said price groups corresponding to one of the several orders of price digits to be announced, a plurality of selector switches, each common to one of said groups, means for setting said switches in accordance with the stock and the several orders of price digits to be announced, means responsive to the operation of the switch common to said stock record group for locking a predetermined stock sound record to said shaft, means responsive to the operation of a price selector switch common to any group of price sound records for predetermining the price record in said group to be locked to said shaft, means responsive to each revolution of said shaft, except the first, for locking one of the predetermined price records to said shaft, and means effective during each revolution of said shaft for reproducing the sound record locked thereto.

CLYDE SMITH. 150