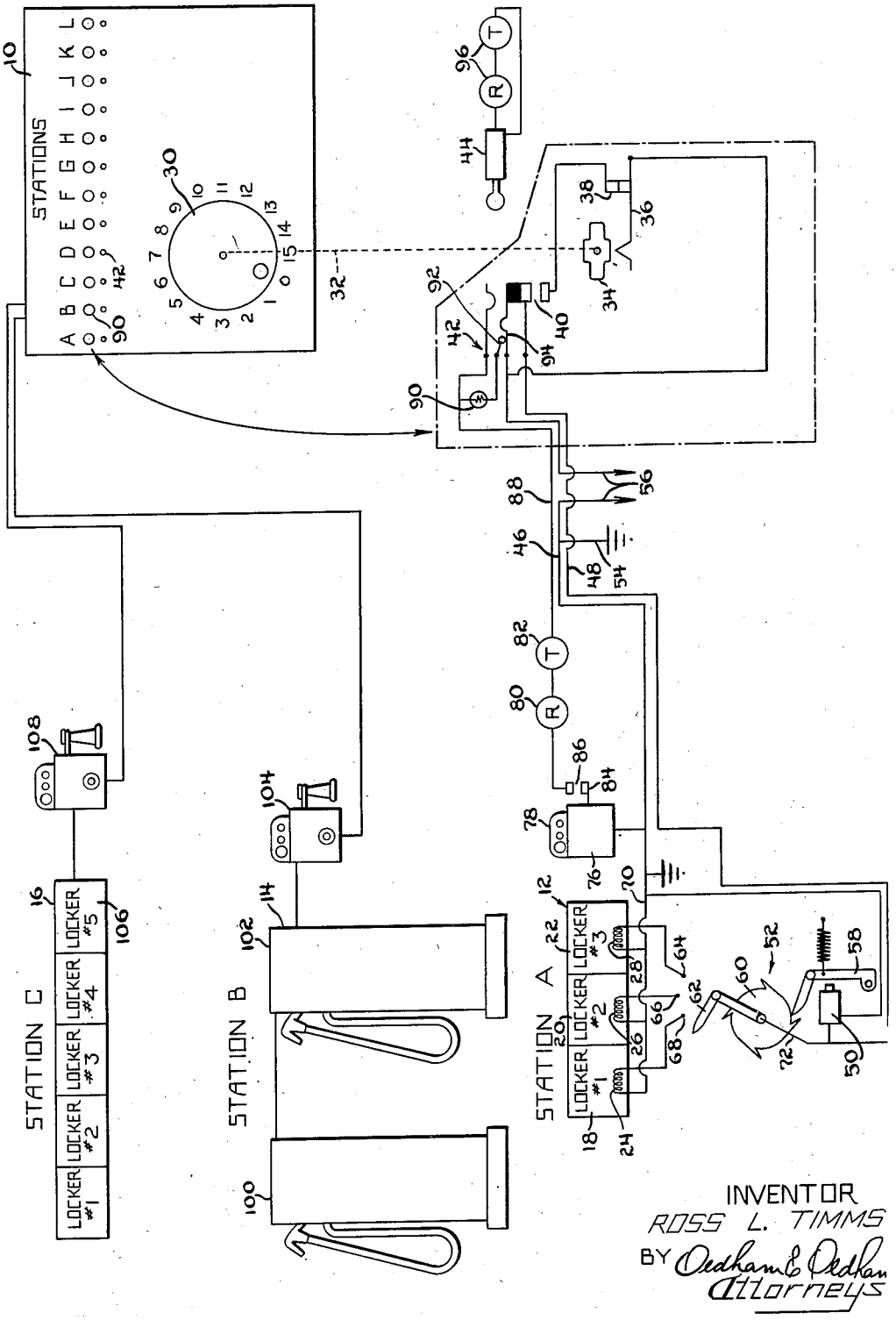
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REMOTELY CONTROLLED SELF-SERVICE APPARATUS

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REMOTELY CONTROLLED SELF-SERVICE APPARATUS

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This invention relates to self-service apparatus, and, more particularly, is concerned with apparatus of this type which is adapted to be controlled and operated from a distance.

In such operations as dry cleaning, the cost of the service has always been increased by the necessity for the dry cleaner to call for and deliver the dry cleaning to the person's home or place of business. In an effort to avoid this service cost, there has sprung up around the country various cash and carry dry cleaners where the party wishing to have a piece of clothing cleaned will deliver the clothing itself to the dry cleaning office, and will call for it after the cleaning operation has been performed. This is often quite a nuisance inasmuch as it is usually difficult to find a parking place near the dry cleaning establishment, and sometimes a parking fee may be encountered. Similar difficulties are experienced in other businesses where the public is purchasing services or commodities.

In an effort to overcome the difficulties of sales of products and services, such as those above enumerated, there has been a gradual growth of coin controlled apparatus for dispensing products to the public with such coin controlled machines being conveniently placed for customers and eliminating the necessity to wait for clerks. However, such coin controlled machines, while quite satisfactory for the sale of certain products, do not adapt themselves to the sale of services, nor are they adapted to the sale of products of varying price or quality.

It is the general object of my invention to avoid and overcome the foregoing and other difficulties of and objections to known apparatus and practices by the provision of improved self-service apparatus of remotely controlled character and particularly adapted to the sale of services or products of varying cost or quality.

Another object of my invention is to provide apparatus of the character described wherein an operator is provided at a central control board for controlling the operation of a plurality of remotely positioned stations, such operator being able to sell goods or services of a wide variety of types of price ranges.

Another object of my invention is to provide self-service apparatus having the conveniences of location, promptness, and self-service of coin operated vending machines, but with my apparatus incorporating the human element of contact and control whereby a much wider variety of goods and services can be sold.

The foregoing objects of my invention, and

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other objects which will become apparent as the description proceeds, are achieved by the provision of remotely controlled self-service apparatus comprising a plurality of remotely positioned stations, a central control board, each station having a coin-receiving telephone, a telephone at the control board adapted to be connected to a station telephone when the receiver of the station telephone is lifted, electrically actuated mechanism at each station, a selector switch at each station, means at the control board for positioning the selector switch at the station, and means for supplying electric power to the selected mechanism through the selector switch. Usually the bell ringing circuit of the telephone system is employed to supply the electric power to the selected mechanism.

The mechanisms positioned at the stations may take a variety of forms and perform a variety of services. In one best known embodiment of the invention, the mechanism in certain or all of the stations comprises lockers having electrically actuated locks.

Thus, and merely by way of one example, a customer who has a suit to be dry cleaned can carry the suit to a station positioned in a subway entrance, bus terminal, or wherever else desired. The owner of the suit will pick up the telephone receiver positioned in association with the station and the operator of the central control board seeing the light or other indicating signal on the control board will plug in a telephone at the control board and ask the person at the station what is wanted. The person at the station will state that he has a suit to be cleaned and will ask what locker it should be put in. The operator will look at her chart and see that locker No. 3, for example, is vacant, and will advise the clothing owner to place the clothing in locker No. 3. The operator will turn the selector on her control board so that locker No. 3 can be opened. The clothing owner will then hang up the telephone, open locker No. 3 and place his clothing therein. He will remove a stub from the inside of the locker door which will serve as an identification stub and which will tell him, if the operator has not done so, when his clothing can be picked up again, say, the next day at the same time. The locker door is then shut, aided by a pair of spring hinges, and automatically locks.

When the clothing owner returns the next day for his clothing, which has in the meantime been picked up by the dry cleaning company, cleaned and returned, the clothing owner will pick up the telephone and talk to the control board operator

and identify himself with his clothing stub number. The operator will look on her chart and see the price of the dry cleaning operation performed and will ask the clothing owner to deposit an equivalent amount in the coin-receiving telephone. This the clothing owner will do, it being understood that the operator will hear the deposit of the various coins, all in known manner, a quarter making a "bong," ten cents making a "bing-bing," and five cents making a "'bing." When the proper amount had been paid, the operator will advise the clothing owner that his clothing is in such a locker number and will set her selector switch so as to throw the selector switch at the station so that the locker containing the clothing can be opened by the clothing owner. Once the owner removes his clothing, the spring operated door of the locker will swing shut and the locker is available to perform any other service operation desired.

For a better understanding of the invention, reference should be had to the accompanying drawing, wherein:

The figure illustrates in diagrammatic wiring diagram form one typical embodiment of apparatus incorporating the principles of the invention.

In the drawing, the numeral 10 indicates generally a central control board, while the numerals 12, 14 and 16 indicate a plurality of remotely positioned stations of self-service apparatus. It should be particularly understood here that one central control board can control up to ten or more remotely positioned stations, dependent, of course, upon the character of the operations performed at the stations, and the number of individual mechanisms, lockers, or the like, at each station.

Each station, as noted, includes a plurality of mechanisms. The exact number of the mechanisms depends upon the type of service to be performed, and the location and the public acceptance and use of the mechanisms. In one best known form of the invetnion, the mechanisms take the form of lockers, and at station 12, also marked station A, lockers 18, 20, and 22 have been illustrated, although it is to be particularly understood that up to fifty or more lockers may be positioned at one station, only three lockers being shown for purposes of simplification. The lockers 18, 20, and 22 may take any desired form, or size, dependent upon the particular commodity or service being sold, but are usually provided with doors which have spring hinges, or other means for normally holding the doors shut. In addition, each locker has an electrically actuated spring lock, which locks have been illustrated diagrammatically in the drawing, and which are indicated by the numerals 24, 26 and 28 respectively.

The locks 24, 26 and 28 are adapted to be selectively actuated, and while this can be accomplished in a plurality of ways, one workable arrangement is illustrated in the drawings as including a dial 30 mounted on the central control board 10 and adapted to be moved by the operator to any selected mechanism or locker number, for example, between one and fifteen shown on the control board. The dial 30 is connected by a shaft 32 with a rotary cam 34, the arrangement including gearing (not shown) whereby when the dial 30 is moved to mechanism or locker 3, the cam 34 will move the spring arm 36 to break and make contact 38 three times. This make and break mechanism operated by a dial is well known in the automatic telephone art, and will not be described in great detail here, except to note that the mechanism of the dial 30 is of the type so that the contact 38 will be broken and connected three times during the movement of the dial to mechanism or locker 3 rather than during the time that the dial is returned from mechanism or locker 3 to zero.

The switch 38 is in a circuit including a pair of contacts 40 associated with a jack 42, the jack 42 being adapted to receive a plug 44, and when the plug 44 is inserted in the jack, the contacts 40 are closed, but not otherwise. The closing of the contacts 40 connects the contacts 38 in a circuit including leads 46 and 48 which run to a magnetic solenoid 50 associated with a remotely actuated selector switch indicated as a whole by the numeral 52, and positioned in association with station A. The leads 46 and 48 normally form the bell ringing circuit of the telephone system, and the lead 46 is grounded, as at 54, and a source of electric power is connected to leads 56. The remotely actuated selector switch 52 is per se known in the automatic telephone art, and will not be described in greater detail. Suffice it to say here that in the operation of the apparatus, as the contacts 38 are broken and made three times, the solenoid 50 will be released and energized three times to move ratchet arm 58 three times, which working on ratchet 60 will cause the switch arm 62 to move into electrical engagement with contact 64. Breaking and making contact 38 two times will cause the switch arm 62 to move into engagement with contact 66, and breaking and making contacts 38 one time will cause the switch arm 62 to move into engagement with contact 68.

The contacts 68, 66 and 64 are connected, respectively, to magnetic locks 24, 26 and 28. The other side of the magnetic locks are connected by leads 70 with ground wire 46. Lead 48 is connected by lead 72 with switch arm 62 so that electric power is supplied by the lock selected by the dial 30 at the operator control board 10. It will be noted that the electric power for operating the magnetic locks is applied by the bell ringing circuit of the telephone system, but it is equally evident that a separate power supply for operating the locks could be tapped at the station, with the electric switch 52 connecting the power supply to the selected locks.

Associated with station 12 (station A) is a telephone 76 of the coin-receiving type, the coins being adapted to be dropped into appropriate openings 78 of known type positioned at the top of the telephone. The telephone 76 includes an ear phone or receiver 80, and a mouthpiece or transmitter 82, and the usual hook 84 upon which the telephone receiver is adapted to be hung. The hook 84 includes contacts 86 which are open when the receiver is hung on the hook, but which are adapted to close when the receiver is lifted. A lead 88 runs from the telephone to the jack 42 at the control board 10. A pilot lamp 90 or other indicating means is associated with the jack 42, the jack including a contact 92 engaging with the jack arm 94 connected to the ground lead 46, but with the contact 92 opening when the plug 44 is plugged into the jack 42.

Thus, when the telephone receiver at the telephone 76 is lifted, the contacts 86 will close to light the signal lamp 90 on the control board indicating that the telephone at station A has been lifted. Once the plug 44 is plugged in, the jack arm 94 will move away from the con-

tact 92 so as to shut off the flow of electric current to the lamp 90. Plugging the plug 44 into the jack 42 will connect a telephone instrument 96 into the telephone circuit so that the control board operator can talk to the person lifting the receiver of telephone 76. As heretofore noted, the person at station A can then advise the operator what is wanted, and the operator can instruct the person what to do, all as set forth above in the description of the operation of the apparatus. Plugging the plug 44 into the jack 42 will also close contacts 40 to connect the make and break mechanism actuated by the control dial 30 into the bell ringer leads 46—48 whereby the selected switch 52 at station A is positioned upon movement of the dial 30. As illustrated in the drawing, the lamp 90 and jack 42 are mounted on the control panel 10 under an indication of station A.

Any desired number of additional stations are provided in the system, each station to control panel circuit being similar to that heretofore described in conjunction with station A. At station 14 (station B) for example, mechanisms are provided which take the form of a high test gasoline pump 100, and a low test gasoline 102, with a telephone 104 being mounted on the side of one of the pumps, and with the operator at the control board being able to plug into station B to deliver to a customer any desired quantity of gasoline.

In a similar manner, the drawings illustrate at station 16 (station C) a plurality of lockers 106 having an associated telephone 108 which is connected back to station C of the control board. The lockers at station C may be of a different size or shape and may perform a different function than those at station A, dependent upon the type of service or commodities to be sold at station C.

The question might be raised in conjunction with the description of the apparatus as to how switch arm 62 can be moved past contacts 68 and 66 in order to contact contacts 64 without energizing the magnetic locks 24 and 26 for a short interval of time during the movement of the switch arm to the desired contact. The automatic selector switch 52 usually includes mechanism which prevents the actuation of contacts 68 and 66 during passage of the switch arm thereover, or the magnetic locks 24, 26 and 28 can include dashpot or other time delay means so that electric current must be applied to the locks for several seconds before the lock will be actuated.

From the foregoing, it will be recognized that the various objects of my invention have been achieved by the provision of a relatively simple, readily operated apparatus for remotely selling services or commodities. Apparatus of this type adapts itself to a wide variety of uses and installations. Accordingly, it is to be particularly understood that my invention is not to be limited to the particular embodiment thereof illustrated or described, and that the scope of my invention is defined in the appended claims.

I claim:

1. In combination in apparatus for vending merchandise or services, a plurality of remotely-positioned stations, each station including a coin-receiving telephone, a remotely-actuated magnet-ratchet type selector switch, and a plurality of solenoid operated mechanisms adapted to be selectively connected to the selector switch upon the rotary movement thereof, a centrally located control panel, means at the central control panel for indicating the remotely positioned station at which the telephone receiver is lifted, plug and jack means for connecting a telephone earphone and mouthpiece at the central control panel to the telephone whose receiver has been lifted at any one remotely positioned station, make and break switch means controlled by the operator at the control panel for supplying a selected number of impulses to the magnet-ratchet of the selector switch without disturbing the telephone connection between the central control panel and the telephone whose receiver has been lifted and to connect the switch to the desired solenoid mechanism at the remotely positioned station whose telephone receiver has been lifted, and means connecting the bell-ringing circuit of the telephone system to the selector switch to actuate the selected solenoid mechanism at the remotely positioned station whose telephone has been lifted.

2. Vending apparatus for articles or services comprising in combination, a centrally located control panel, a plurality of remotely-positioned stations, each remote station including a coin-receiving telephone, an electrically actuated selector switch, and a plurality of electrically operated mechanisms adapted to be selectively connected to the selector switch by the rotation of the switch, means at the central control panel for indicating the remote station at which the telephone receiver is lifted, means for connecting a telephone earphone and mouthpiece at the control panel to the telephone whose receiver has been lifted at any selected remote station, electrical signal generating means controlled by the operator at the control panel for positioning the selector switch at the remote station whose telephone receiver has been lifted, and means connecting a power supply to the selector switch to acutate the selected mechanism at the remote station whose telephone has been lifted.

3. Vending apparatus comprising in combination, a plurality of remotely-positioned stations, each station including a coin-receiving and identifying means, a telephone means, an impulse-actuated selector switch, and a plurality of mechanisms adapted to be selectively connected to the selector switch upon the rotation of the switch, a central control panel, means at the central control panel for indicating the station at which the telephone means is energized, means for connecting a telephone earphone and mouthpiece at the control panel to the telephone means which has been energized at any remote station, and impulse generating means controlled by the operator at the control panel and operable through the circuit normally used to ring the bell of the telephone means for connecting the selector switch with one of the mechanisms at the station whose telephone means has been energized.

4. In combination in vending apparatus, a plurality of remotely-positioned stations, each station including a telephone having a talking circuit and a bell ringing circuit, an impulse-actuated selector switch at the station, a plurality of lockers at the station, each having a spring closed door and an electrically actuated lock adapted to be selectively connected to the selector switch by the rotation of the selector switch, a central control panel, signal means at the central control panel for indicating the station at which the telephone receiver is lifted, means for connecting a telephone earphone and

mouthpiece at the control panel to the telephone whose receiver has been lifted to establish the talking circuit, impulse-generating means controlled by the operator at the control panel for stepping the selector switch at the station whose telephone receiver has been lifted to connect the switch with the selected lock, and electric leads connecting the bell-ringing circuit of the telephone system to the selector switch to energize the selected lock to open the selected locker at the station whose telephone has been lifted.

5. Vending apparatus including a plurality of remotely-positioned stations, each station including a coin-receiving and identifying means and associated telephone having a talking circuit, an impulse-actuated selector switch, a plurality of lockers each having a spring closed door and an electrically actuated lock adapted to be selectively connected to the selector switch upon the rotation of the switch, a central control panel, means at the central control panel for indicating the station at which the telephone receiver is lifted, means for connecting a telephone earphone and mouthpiece at the control panel to the telephone whose receiver has been lifted to establish the talking circuit, impulse-generating means controlled by the operator at the control panel and operative after the establishment of the talking circuit for positioning the selector switch at the station whose telephone receiver has been lifted, and a power supply at each station and connected to the selector switch to open the selected locker at the station after the operation of the impulse generating means.

6. The combination in vending apparatus of a remotely-positioned station, the station including a coin-receiving and identifying means and an associated telephone, an electric impulse actuated selector switch at the station, a plurality of lockers at the station, each having a spring closed door and an electrically actuated lock adapted to be selectively connected to the selector switch upon rotation of the switch, a central control panel, lamp signal means at the central control panel for indicating the operation of the telephone at the station, plug and jack means for connecting a telephone earphone and mouthpiece at the control panel to the telephone at the station, electric impulse generating means controlled by the operator at the control panel for activating and positioning the selector switch to connect it with the selected lock at the station after telephone communication has been established with the station, and electric means other than the impulse generating means and connected to the selector switch for operating the selected lock to open the associated locker.

7. A remotely controlled self-service apparatus comprising a plurality of remotely positioned stations, a central control board, each station having a telephone with an associated bell-ringing circuit, a telephone at the control board, electric leads connecting the control board telephone to a station telephone when the receiver of the station telephone is lifted, a plurality of electrically actuated mechanisms at each station, said mechanisms in at least certain of the stations comprising lockers having electrically actuated locks, an impulse-actuated selector switch at each station, impulse-generating means at the control board for positioning the selector switch at the station after telephone communication has been established between the board and station, and electric leads from the bell-ringing circuit for supplying electric power to the selected mechanism through the selector switch to actuate the selected mechanism.

8. A remotely controlled self-service apparatus comprising a plurality of remotely positioned stations adapted to be located in different parts of a town, a central control board adapted to service all stations, each station having a coin-receiving telephone, a telephone at the control board adapted to be connected to a station telephone when the receiver of the station telephone is lifted by a customer seeking self service, a plurality of electrically actuated mechanisms at each station, each mechanism performing a service function for a customer, a selector switch at each station, means at the control board for positioning the selector switch at the station to connect it to one of the mechanisms, and means for supplying electric power to the selected mechanism through the selector switch and from the bell-ringing circuit of the telephone system to perform the customer selected service after the customer has deposited the price of the servic in the coin-receiving telephone.

9. A remotely controlled self-service apparatus comprising a plurality of remotely positioned stations, a central control board, each station having a coin-receiving telephone, a telephone at the control board adapted to be connected to any station telephone when the receiver of the station telephone is lifted, a plurality of lockers having electrically actuated locks at each station, an electrically operated selector switch at each station, signal generating means at the control board and operable after the completion of the telephone circuit for positioning the selector switch at the station to connect it to the lock of a selected locker, and means for supplying electric power to the selected locker lock through the selector switch.

10. Apparatus for remotely vending services and articles including in combination a plurality of remotely positioned stations, each remote station including a plurality of lockers, an electric lock on each locker and normally locking it, a selector switch at each remote station, a central control station, an indicating panel and a dialing switch at the central station, a separate three-wire telephone line connecting each remote station with the indicating panel at the central station, a telephone at each remote station connected to the telephone line, a coin receiving and indicating mechanism associated with each telephone at the remote station, the indicating panel at the central station showing when the telephone receiver is lifted at any remote station, a telephone at the central station and adapted to be plugged into the panel to allow conversation with the telephone at any remote station, switch means at the central station and operable after completion of the telephone circuit for automatically connecting the dialing switch into the telephone circuit to the remote station with which telephone communication is established, electric leads connecting the selector switch into the telephone circuit at the remote station so that after the establishment of telephone communication between the central and remote station the operation of the dialing switch at the central station positions the selector switch to open the electric lock of the particular locker number dialed by the dial switch at the central station.

11. Apparatus for remotely vending services and articles including in combination a plurality of remotely positioned stations, each remote sta-

tion including a plurality of lockers, an electric lock on each locker and normally locking it, a selector switch means at each remote station, a central control station, an indicating panel and a dialing switch at the central station, a separate telephone line connecting each remote station with the indicating panel at the central station, a telephone means at each remote station connected to the telephone line, a coin receiving and indicating mechanism associated with each telephone means at the remote station, the indicating panel at the central station showing when the telephone means is operated at any remote station, a telephone means at the central station and adapted to be plugged into the panel to allow conversation with the telephone means at any remote station, switch means at the central station and operable after completion of the telephone circuit for automatically connecting the dialing switch into the telephone circuit to the remote station with which telephone communication is stablished, electric leads connecting the selector switch into the bell ringing portion of the telephone circuit at the remote station so that after the establisment of telephone communication between the central and remote station the operation of the dialing switch at the central station positions the selector switch to open the electric lock of the particular locker number dialed by the dial switch at the central station.

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