Nov. 1, 1966 G. M. STEWART 3,282,531

PNEUMATIC DISPATCH SYSTEM

Filed Dec. 7, 1964 4 Sheets-Sheet 1

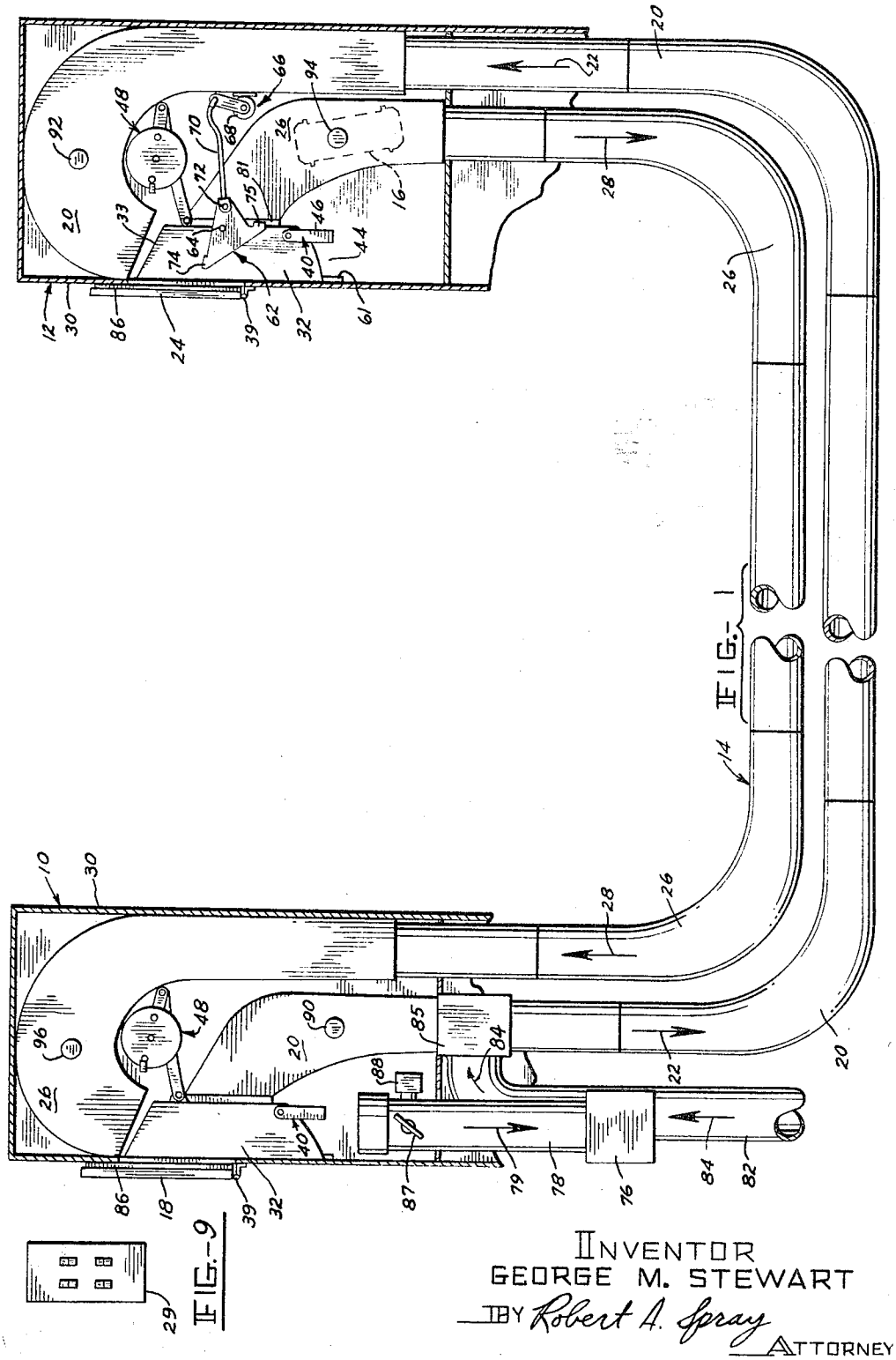


FIG. 1

FIG. 9

INVENTOR
GEORGE M. STEWART
BY Robert A. Spray
ATTORNEY

Nov. 1, 1966 G. M. STEWART 3,282,531

PNEUMATIC DISPATCH SYSTEM

Filed Dec. 7, 1964 4 Sheets-Sheet 2

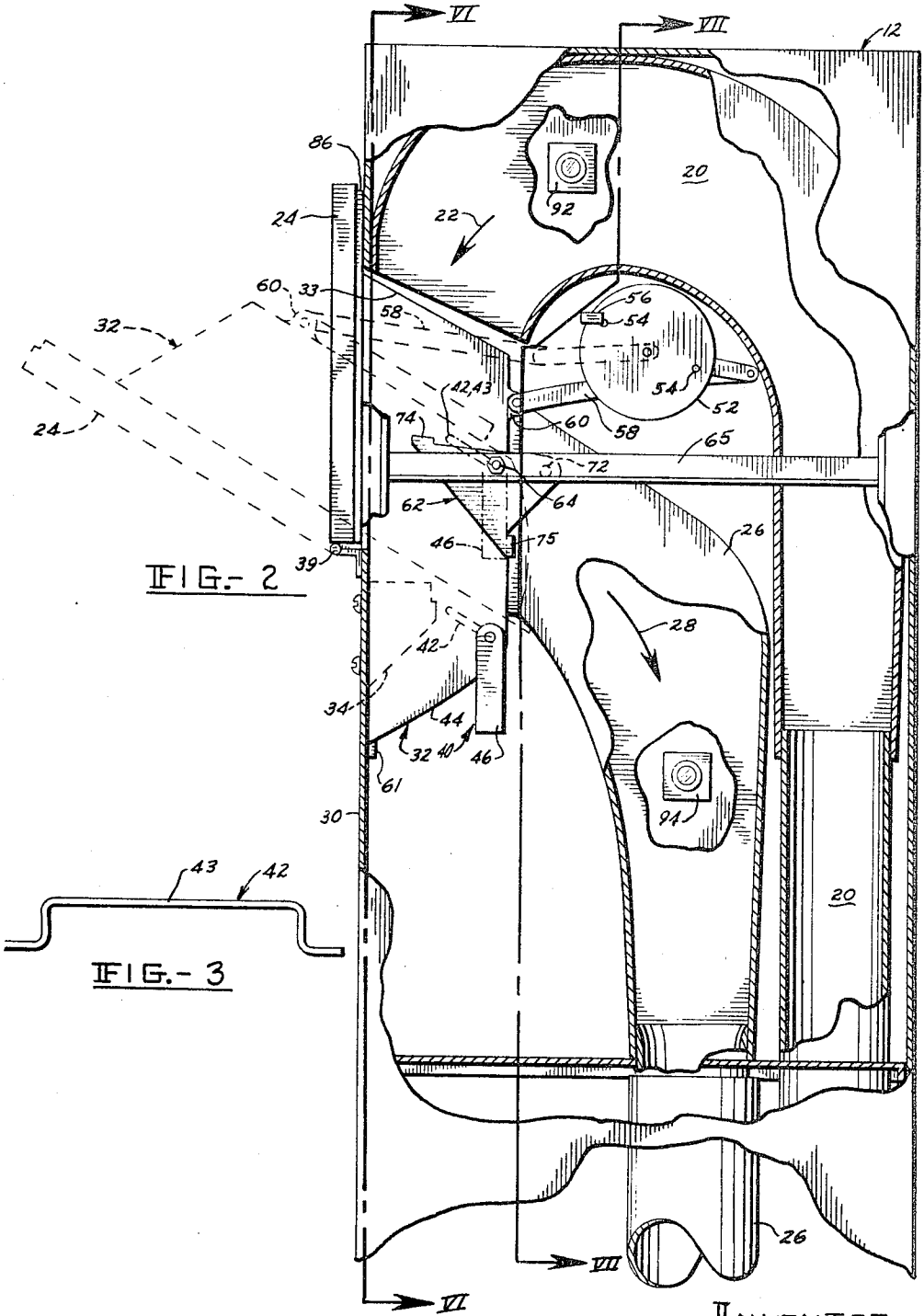


FIG.- 2

FIG.- 3

INVENTOR
GEORGE M. STEWART
BY Robert A. Spray
ATTORNEY

Nov. 1, 1966 G. M. STEWART 3,282,531

PNEUMATIC DISPATCH SYSTEM

Filed Dec. 7, 1964 4 Sheets-Sheet 3

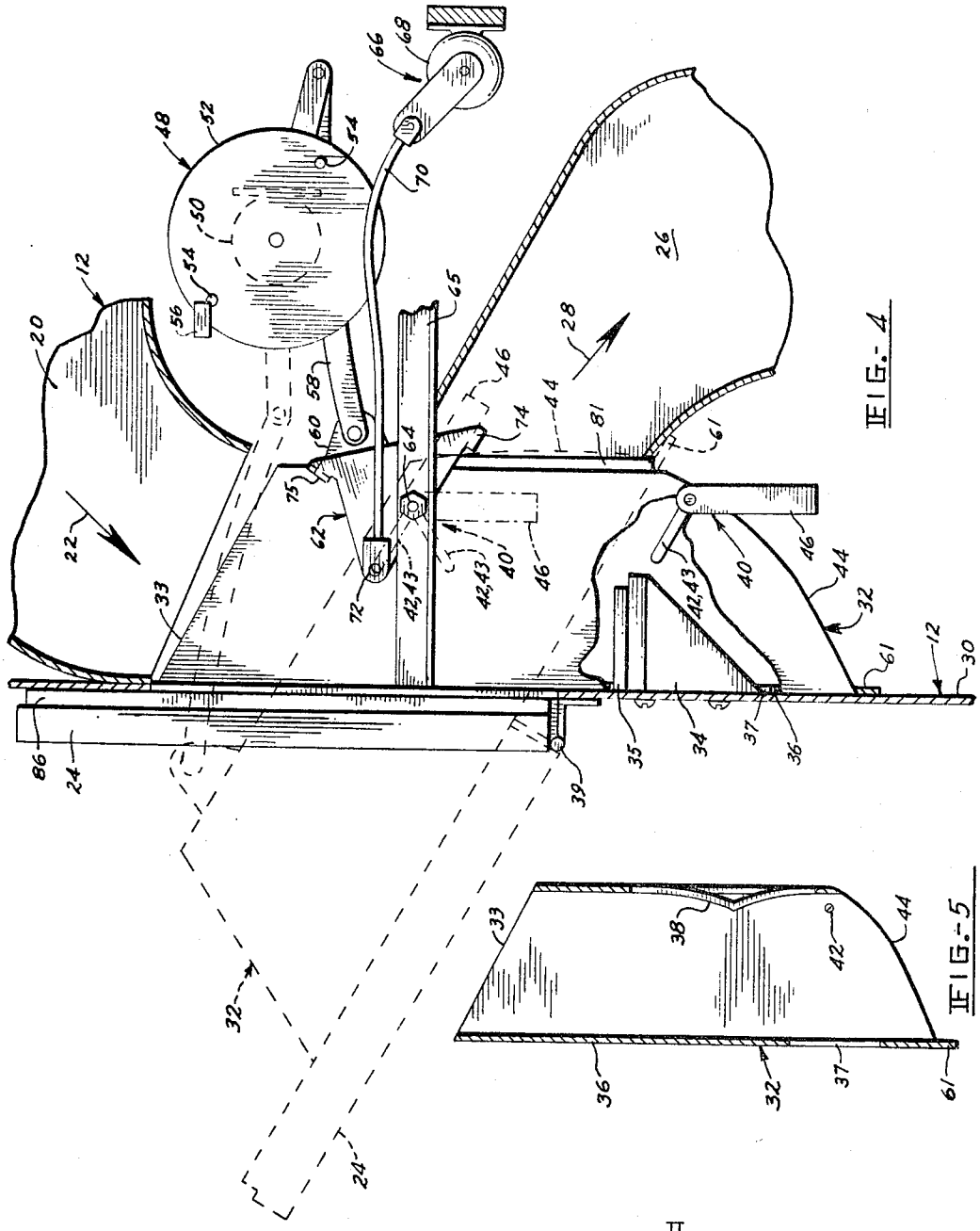


FIG. 4

FIG. 5

INVENTOR
GEORGE M. STEWART
BY Robert A. Spray
ATTORNEY

Nov. 1, 1966 G. M. STEWART 3,282,531

PNEUMATIC DISPATCH SYSTEM

Filed Dec. 7, 1964 4 Sheets-Sheet 4

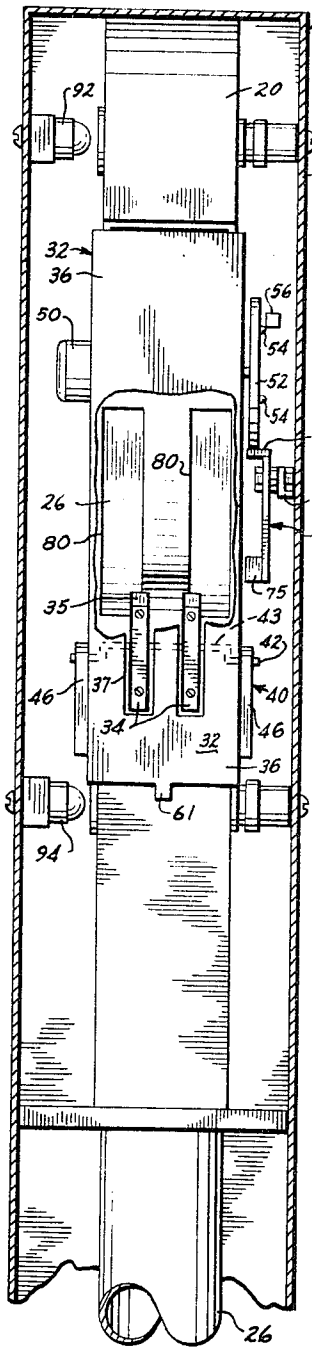


FIG.- 6

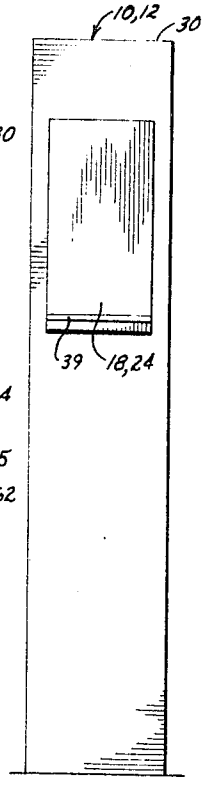


FIG.- 8

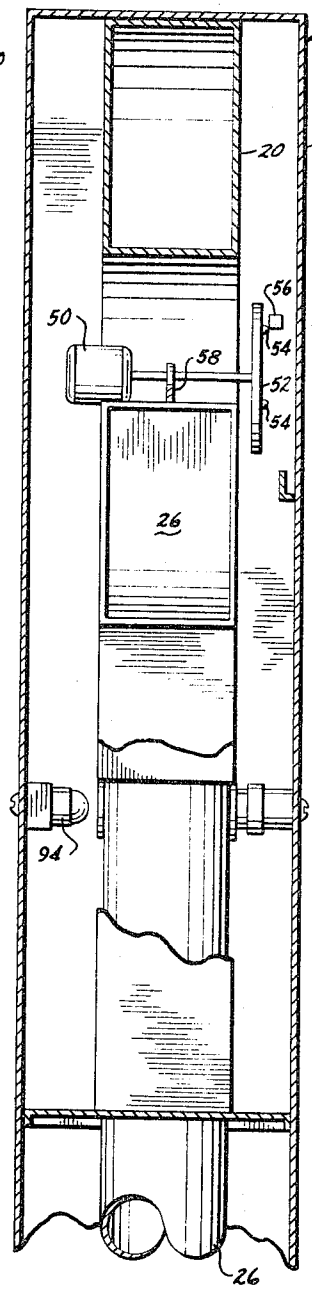


FIG.- 7

INVENTOR
GEORGE M. STEWART
BY Robert A. Spray
ATTORNEY

United States Patent Office

3,282,531

Patented Nov. 1, 1966

3,282,531

PNEUMATIC DISPATCH SYSTEM

George M. Stewart, Indianapolis, Ind., assignor to T.V. Bank Equipment Corporation, Toledo, Ohio, a corporation of Ohio

Filed Dec. 7, 1964, Ser. No. 416,505
10 Claims. (Cl. 243—1)

The present invention relates to dispatch systems for the transmission of a dispatch capsule or cartridge between two stations; more particularly, to illustrate the inventive concepts and their operation, the invention is shown and described with reference to a pneumatic dispatch system or installation at a bank, where money and documents of various kinds are transmitted between a teller station located within the bank building and a customer station located at a drive-up window outside the bank building.

The general objects of the invention are to provide an installation providing operational convenience and efficiency for the dispatch transaction, and to provide that a customer can participate in the transaction with little or no instructions. These and other more particular objects, features, concepts, and advantages will be more fully explained in the following detailed description of an illustrative embodiment of the invention, reference being had to the accompanying somewhat diagrammatic drawings, in which:

FIG. 1 is a side-elevational view of the general arrangement of a dispatch system or installation according to concepts of the invention, the teller station being shown on the left and the customer station being shown on the right, portions being broken away for clarity;

FIG. 2 is a view of the customer station thereof, in enlarged scale;

FIG. 3 is a detail view of an abutment shaft shown in FIG. 2;

FIG. 4 is a further enlarged view of a portion of the customer station;

FIG. 5 is a detail view of a receiver thereof;

FIG. 6 is a cross-sectional view of the customer station, taken generally along section line VI—VI of FIG. 2;

FIG. 7 is another cross-sectional view of the customer station, but taken generally along section line VII—VII of FIG. 2;

FIG. 8 is a front exterior view of an enclosure which provides either the teller station or the customer station; and

FIG. 9 is a view of a control panel for the system at the teller station.

General arrangement

As shown in the drawings, a dispatch system according to concepts of the present invention is particularly adapted for use in a remote or drive-in service facility for a bank; and although other applications of the system will be readily apparent, the invention is described with reference to such a service.

The system shown generally comprises a teller station **10** and a customer station **12**, these being interconnected by conveyor tube means **14** adapted to pneumatically transmit a dispatch cartridge **16** between the two stations **10** and **12** as may be desired in operation.

For a preliminary understanding of the general arrangement and function of the overall system, assume that the system shown in FIG. 1 is an installation at a bank, and that the first customer of the day has driven up to the customer station **12**. Assume further that the night-locks (not shown) have been unlocked, and that although the system is empty, electric and pneumatic power is supplied to the components as hereinafter described.

The teller at teller station **10** observes the presence of the customer by television or other signal means (not shown); and the teller begins the transaction by opening an access door **18** and depositing one of the cartridges **16** into a pneumatic delivery tube **20**, the direction of the travel of the cartridge from the teller station **10** to the customer station **12** being indicated by the reference arrows **22**. (The pneumatic power is described hereinafter.) The cartridge **16** would be empty or containing dispatch documents such as, for example, a deposit slip, according to the nature of the transaction.

At the customer station **12**, a door **24** opens for the customer to obtain the cartridge **16** and subsequently to send the cartridge **16** on its return journey through a return tube **26** to the teller station **10**, the direction of return travel being indicated by the reference arrows **28**. The movement of the cartridge **16** is effected by controlled pneumatic and other means described hereinafter.

A control panel **29** (FIG. 9), at or adjacent the teller station **10**, permits control by the teller of electrical, mechanical, and pneumatic components, all as more fully described hereinafter.

Customer station

At the customer station **12**, within the enclosure **30** thereof, there is mounted a cartridge-receiver **32** of box-like configuration, the receiver being mounted behind and connected to the customer door **24**, so that the position or orientation of the receiver **32** is related to the position of the door **24** to achieve an automatic positioning more fully described hereinafter.

Thus, the receiver is shown fixed to the door **24**, and, as shown in FIG. 1, and in the full-line showing in FIGS. 2 and 4, when the door **24** is in closed position the receiver **32** is vertically positioned, ready to receive a cartridge **16** from the downwardly-leading terminus of the pneumatic delivery tube **20**.

The upper end **33** of receiver **32** is open; and as the cartridge moves down from the terminus of tube **20**, cartridge **16** falls into the receiver **32**, the movement of the cartridge being stopped or blocked by a bracket **34** (see FIG. 4) which is mounted on the enclosure **30** and extends into the interior of the receiver **32**.

The bracket **34** has a cushion or pad **35** on its upwardly-facing surface for cushioning the fall of the cartridge **16**; and the front wall **36** of the receiver **32** is provided with openings **37** to accommodate the bracket **34** and relative movement of the receiver **32** with respect to the bracket **34**. Some snubbing effect, for snubbing the movement of the cartridge **16** in receiver **32**, is achieved by ribs **38** (see FIG. 5) which are integrally struck from the rear wall of receiver **32**, and extend inwardly of the receiver **32**.

When the customer door **24** is opened (as hereinafter described), the door **24** and the receiver **32** being connected and both being pivotally mounted for swinging movement about a hinge **39**, the receiver **32** is also moved. Thus, with the door **24** open, the door **24** and the receiver **32** are positioned in the dash-line position shown in FIGS. 2 and 4, so that the customer can remove the cartridge **16** from the receiver **32**.

This open-door position of receiver **32** (indicated by the dash-lines) is shown as axial with respect to the beginning of the return tube **26**, for a purpose of returning the cartridge to the teller station **10** as is yet to be more fully described. In this position, a cartridge **16** will be not blocked by the abutment **34**.

However, a cartridge **16** can not start its return journey, even though the receiver has moved clear of the abutment bracket **34**, because the lower end of receiver **32** is blocked by an abutment means **40**, now to be described, and for operational purposes hereinafter appearing.

The abutment means 40 is shown as comprising a shaft 42 (see FIGS. 3 and 4) which is movably carried by the receiver 32 and extends across and slightly above the open lower end 44 of receiver 32, being pivotally supported by the receiver 32 at a location at the rear thereof. The central portion of the shaft 42 is provided with a blocking portion 43 which is non-axial with respect to the shaft-ends supported by the receiver; and the blocking portion 43 is shown as formed by a suitable bend of shaft 42, so that in a certain orientation of shaft 42, the blocking portion 43 of the shaft 42 extends generally centrally of the end of receiver 32 to block downward movement of the cartridge.

The orientation of shaft 42 is in part governed by a suitable weight 46, which is connected to shaft 42 exteriorly of receiver 32. The magnitude of weight 46 is enough that the shaft 42 has an upward (or blocking) inclination while the receiver 32 is in its door-closed position, but the magnitude of weight 46 is small enough that the weight of the cartridge 16 overcomes the influence of the weight 46, so that the abutment means 40 retains its same (blocking) orientation relative to the receiver 32 as the receiver 32 moves upwardly into its door-open position. This cartridge-blocking position of abutment means 40 being shown in dash-lines in FIGS. 2 and 4.

Thus the blocking of movement of a cartridge 16 in receiver 32 (the blocking being by bracket 34 when in door-closed position) is achieved by the abutment means 40 as the receiver 32 is moved into door-open position; for, as the receiver 32 is swung into door-open position, the blocking portion 43 of shaft 42 is operative to retain the cartridge 16 in the receiver 32.

For opening the customer door 24, motorized means 48 are shown, desirably electrically energized and actuated by the teller at a suitable control of the panel 29, and by automatic means hereinafter described; the motorized means 48 being shown as including a motor 50 carrying a control disc 52 having abutments 54 to engage a suitable limit switch 56, and a driving linkage 58, the end of which is pivotally connected to a bracket 60 on the rear of the receiver 32.

A specific location of receiver 32 in its door-open position is assured by an ear 61 carried at the lower end of wall 44 of receiver 32, the ear 61 being adapted to abuttingly engage a portion of return tube 26 when the receiver 32 is in proper door-open position in which the receiver is alined with the tube 26.

The abutment means 40 is shown as controlled by a control member shown as a generally triangular pawl 62, more fully described below, and pivoted as at 64 to suitable framing 65 of the enclosure 30, the pawl 62 itself shown as controlled by a motorized means 66 including a motor 68 and a suitable linkage 70 connected to the pawl 64 as at 72, the motor 68 being electrically driven and actuated by the teller at control panel 29.

(The pawl 62 appears superimposed in FIGS. 2 and 4 with the door-open position of the abutment means 40. However, this should not be confusing to the reader; for as described herein, and as shown in FIG. 6, all portions of the pawl 62 except its ears 74 and 75 lie outside the abutment means 40, and the pawl 62 is pivotally connected to the framing 65 although the abutment means 40 is carried by the receiver 32.)

The pawl 62 has a pair of ears 74 and 75 adapted to engage the abutment weight 46 as follows: The pawl ear 74 (see FIG. 4) is adapted to engage upwardly against the weight 46 to retain the abutment shaft 42 in its tray-closing position (shown in dash-lines in FIG. 4) against the bias of weight 46, even though there is no cartridge 16 in the receiver 32. This provides a retention of abutment shaft 42 in receiver-blocking position, desirable, for example, in the situation in which the customer has removed the cartridge 16 from the receiver 32, but, he may wish to again pick up the cartridge after he has once replaced it back into the receiver 32; if the abutment shaft 42 did not stay in blocking position, the cartridge would immediately begin its return journey as soon as the customer places the cartridge in the receiver, and in order for the customer to be able to pick up the cartridge more than a single time he would have to wait until the cartridge had made its complete journey to the teller station and had been re-dispatched back to the customer station. Pawl ear 74 thus is operative to block a cartridge 16 from moving away from the customer station until the teller desires, the motor means 66 providing a remote control effect controlling the pawl.

The other pawl ear 75 is adapted to engage leftwardly against the weight 46 (see FIG. 2) to swing the weight 46 and the abutment shaft 42 clock-wise (to the dot-dash line position shown in FIGS. 2 and 4), to a position in which the abutment shaft 42 has been moved to an upper or out-of-the-way position in which it does not block the movement of a cartridge in receiver 32. This unblocking of the lower end 44 of receiver 32 permits the cartridge 16 to pass from the receiver 32 to the return tube 26; and the unblocking effect of pawl ear 75 operates against the bias of the weight of a cartridge, or, for example, if the teller desires to cause an erroneously-dispatched cartridge to immediately return to the teller without the cartridge ever stopping at the customer station 12.

Accordingly, the blocking and unblocking of receiver 32, by the abutment means 40 is achieved by the control pawl 62 at the will of the teller, as the teller actuates suitable controls at panel 29 to energize the pawl motor means 66, in turn regulating the action of pawl 62 and the abutment means 40.

Teller station

The teller station 10 may be, and desirably is, in many respects substantially like the customer station 12 already described. The similarity will be obvious from FIG. 1, and for brevity, the description will not be here repeated, except to mention the general components of the teller station indicated by reference numerals in FIG. 1, those portions being enclosure 30, receiver 32, abutment means 40, and door-actuation motor means 48.

No actuating pawl 62 is shown as provided at the teller station 10, for it is believed that the teller can conveniently control the dispatch cartridge 16 by manual means or otherwise than with the control arrangement shown for achieving the remote control at the customer station 12.

Other differences between the teller station 10 and the customer station 12 are desirably only those just specified and those otherwise specifically designated.

Pneumatic system

Observing FIG. 1, and as has already been mentioned, the pneumatic tube system 14 which interconnects the teller station 10 and the customer station 12 is basically a two-tube system embodying a delivery line 20 which transmits a cartridge 16 from the teller station 10 to the customer station 12 (the path of movement being indicated by reference arrows 22), and a return line 26 for returning a cartridge 16 from the customer station 12 to the teller station 10 (the path of movement being indicated by reference arrows 28).

For achieving the desired pneumatic flow, there is provided a power blower 76. This blower 76 draws in air through a conduit 78 leading from the interior of teller station 10 (the path of air movement being indicated by reference arrow 79), the reduced pressure in conduit 78 thus reducing the pressure in teller station 10. This reduction of pressure, when teller-receiver 32 is in door-closed position, draws air through the open-ended teller-receiver 32 from return tube 26.

In turn, the reduction of pressure in tube 26 pulls air through slots 80 (see FIG. 6) in the rear wall of receiver 32 at the customer station 12, the slots 80 providing that air may pass through the customer-receiver 32 even

though it is in its door-closed (vertical) position. Flanges 81 are carried by the back wall of receiver 32 to effectively seal against tube 26, for minimizing air leakage into the tube 26 except through the slots 80.

Again noting FIG. 1, air pressure having been thus reduced in receiver 32 at the customer station 12, pressure is reduced in the customer-station terminus of the tube 20; and this reduction of pressure in the terminus of tube 20 reduces the pressure throughout tube 20, pulling air from an air intake line 82, adjacent teller station 10, which admits air (the path being indicated by reference arrow 84) to the tube 20 at an intake 85 located near the beginning of tube 20. The output of blower 76 may be connected to intake line 82, if desired, giving a closed circuit.

Gaskets 86 are provided for each of the teller door 18 and the customer door 24 to maintain airtightness; and the fact that each of the enclosures 30 are airtight eliminates any necessity for close tolerances between moving parts such as the receivers and the delivery and return tubes.

In the tube 78, there is provided a damper valve 87, shown as controlled by an electric control 88, for closing the line 78 when either or both of the doors 18 or 24 are in open position. Closing of line 78 closes also the entire pneumatic system, for, as described above, all pneumatic paths depend upon air being pulled through line 78. Automatic means for opening the damper valve 87 are described hereinafter.

Sensing and actuation means

Various sensing means are provided for sensing a cartridge 16 and for actuation purposes, as are now to be described.

An electric eye 90 is shown provided near the beginning of delivery tube 20, the eye 90 adapted to sense the passing of a cartridge 16 into the tube 20 at the teller station 10. This electric eye 90 actuates teller-door motor means 48 to automatically close the teller door 18, and opens the damper valve 87 by its control element 88 to activate the pneumatic system for moving the cartridge 16 along the path 22 of tube 20. Prior to this sensing and actuation by the electric eye 90, the movement of the cartridge is by gravity; and the eye 90 is located operatively close to the air intake 85 to permit the desired operation.

Another electric eye 92, which senses the arrival of the cartridge 16 at the customer station 12, is provided at the customer station 12, near the terminus of the tube 20. This electric eye 92, after a slight delay sufficient to accommodate the travel of the cartridge into the customer-receiver 32, energizes motor means 48 at the customer station 12 to open the customer door 24.

A third electric eye 94 is provided at the beginning of return tube 26 in the customer station 12, and is adapted to activate motor means 48 at the customer station 12 to close customer door 24 after a cartridge 16 has dropped by gravity the initial portion of its return to the teller station 10 along the return tube 26; this eye 94 also energizes damper control 88 to actuate damper 87 to activate the pneumatic system.

A fourth electric eye 96 is similarly provided, near the terminus of return tube 26 in the teller station 10; and, similarly to the operation of electric eye 92, electric eye 96 energizes the motor means 48 at the teller station 10 to open the teller door 18 after a slight delay to accommodate movement of the cartridge into the teller-receiver 32.

Conclusion

From the foregoing, it will be seen that the present invention provides a new and useful dispatch system, having several advantages of construction, operation, convenience, overall control by the teller, ease of use by the customer with little or no operating instructions, and automaticness.

Accordingly, from the foregoing description of the invention according to the illustrated embodiments, considered with the accompanying drawings, it is seen that the invention provides a novel and useful device having desirable advantages and characteristics, and accomplishing its intended objects, including those hereinbefore pointed out and others which are inherent in the invention.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the invention; accordingly it is to be understood that the invention is not limited to the embodiments thereof illustrated and described, or to the specific form or arrangement herein described and shown.

What is claimed is:

1. Service apparatus for the dispatching of a material cartridge between a first station and a second station, comprising:

a pair of pneumatic tube lines operatively interconnecting the said stations, one of said lines adapted to convey a cartridge from the first station to the second station, and the other of said lines adapted to convey a cartridge from the second station to the first station;

a receiver at each station, each receiver being adapted to receive a cartridge dispatched through the associated one of said lines;

each of said lines terminating in a downwardly-directed stretch to provide that the cartridge will enter the receiver downwardly, the receivers being operatively open at the top to receive the cartridge through the top when the receiver is in receiving position;

an access door at each station;

the said receivers being movably supported for movement between a receiving position for receiving a cartridge from one line leading from the other station, and a dispatching position in which the bottom of the receiver is operatively aligned with the other line for dispatching a cartridge to the other station;

each receiver being operatively connected to the access door of the respective station to provide that when the door is closed the receiver is in receiving position and when the door is open the receiver is in dispatching position;

motor means at each station for moving the associated door and receiver combinations between the positions designated above;

first abutment means at each station for blocking movement of a cartridge moving into the respective receiver from the other station, the said abutment means being operative to block a cartridge when the receiver is in receiving position but not blocking a cartridge when the receiver is in dispatching position;

second abutment means at each station and adapted to block movement of a cartridge when the associated receiver is in dispatching position;

said second abutment means each comprising a blocking member carried by said receiver and movable between a blocking position in which it operatively blocks movement of a cartridge, and a non-blocking position in which it does not block such movement;

means biasing the said blocking member to non-blocking position;

a control member operatively connected to the blocking member of the second station;

a control pawl at the said second station;

the pawl having a first means operatively engageable with said control member to position said blocking member in blocking position when said receiver is in dispatching position;

the pawl having a second means operatively engageable with said control member to position said blocking member in non-blocking position when said receiver is in dispatching position;

motor means at the second station for moving the control pawl to bring selectively each of the said means into operative engagement as described above;

means at the first station for controlling the door-and-receiver motor means at both the first and second stations;

means at the first station for controlling the motor means, at the second station, which controls the control pawl;

sensing devices adjacent the beginning of each of the said lines and adapted to energize the associated door-and-receiver motor means to close the associated door and to position the associated receiver into receiving position upon the passing of a cartridge past the respective said sensing device; and

sensing devices adjacent the end of each of the said lines and adapted to energize the associated door-and-receiver motor means to open the associated door and to position the associated receiver into dispatching position upon the passing of a cartridge past the respective said sensing device.

2. Service apparatus for the dispatching of a material cartridge between a first station and a second station, comprising:

a pair of pneumatic tube lines operatively interconnecting the said stations, one of said lines adapted to convey a cartridge from the first station to the second station, and the other of said lines adapted to convey a cartridge from the second station to the first station;

a receiver at each station, each receiver being adapted to receive a cartridge dispatched through the associated one of said lines;

the said receivers being movably supported for movement between a receiving position for receiving a cartridge from one line leading from the other station, and a dispatching position in which the receiver is operatively aligned with the other line for dispatching a cartridge to the other station;

first abutment means at each station for blocking movement of a cartridge moving into the respective receiver from the other station, the said abutment means being operative to block a cartridge when the receiver is in receiving position but not blocking a cartridge when the receiver is in dispatching position;

second abutment means at each station and adapted to block movement of a cartridge when the associated receiver is in dispatching position;

said second abutment means each comprising a blocking member carried by said receiver and movable between a blocking position in which it operatively blocks movement of a cartridge, and a non-blocking position in which it does not block such movement;

means biasing the said blocking member to non-blocking position;

a control member operatively connected to the blocking member of the second station;

a control pawl at the said second station;

the pawl having a first means operatively engageable with said control member to position said blocking member in blocking position when said receiver is in dispatching position;

the pawl having a second means operatively engageable with said control member to position said blocking member in non-blocking position when said receiver is in dispatching position;

motor means at the second station for moving the control pawl to bring selectively each of the said means into operative engagement as described above; and

means at the first station for controlling the motor means, at the second station, which controls the control pawl.

3. Service apparatus for the dispatching of a material

cartridge between a first station and a second station, comprising:

a pair of pneumatic tube lines operatively interconnecting the said stations, one of said lines adapted to convey a cartridge from the first station to the second station, and the other of said line adapted to convey a cartridge from the second station to the first station;

a receiver at each station, each receiver being adapted to receive a cartridge dispatched through the associated one of said lines;

the said receivers being movably supported for movement between a receiving position for receiving a cartridge from one line leading from the other station, and a dispatching position in which the receiver is operatively aligned with the other line for dispatching a cartridge to the other station; and

abutment means at each station for blocking movement of a cartridge moving into the respective receiver from the other station, the said abutment means being operative to block a cartridge when the receiver is in receiving position but not blocking a cartridge when the receiver is in dispatching position.

4. Service apparatus for the dispatching of a material cartridge between a first station and a second station, comprising:

a pneumatic tube line operatively interconnecting the said stations, to convey a cartridge from the first station to the second station;

a receiver at the second station, and adapted to receive a cartridge dispatched through the said line;

a return line leading from the second station;

the said receiver being movably supported for movement between a receiving position for receiving a cartridge from the said tube line, and a dispatching position in which the receiver is operatively aligned with the other line for dispatching a cartridge;

first abutment means at the second station for blocking movement of a cartridge moving into the receiver from the first station, the said abutment means being operative to block a cartridge when the receiver is in receiving position but not blocking a cartridge when the receiver is in dispatching position;

second abutment means at the second station and adapted to block movement of a cartridge when the receiver is in dispatching position;

said second abutment means comprising a blocking member carried by said receiver and movable between a blocking position in which it operatively blocks movement of a cartridge, and a non-blocking position in which it does not block such movement;

means biasing the said blocking member to non-blocking position;

a control member operatively connected to the blocking member of the second station;

a control pawl at the said second station;

the pawl having a first means operatively engageable with said control member to position said blocking member in blocking position when said receiver is in dispatching position;

the pawl having a second means operatively engageable with said control member to position said blocking member in non-blocking position when said receiver is in dispatching position; and

moving means at the second station for moving the control pawl to bring selectively each of the said means into operative engagement as described above.

5. Service apparatus for the dispatching of a material cartridge between a first station and a second station, comprising:

a pneumatic tube line operatievly interconnecting the said stations, to convey a cartridge from the first station to the second station;

a receiver at the second station, and adapted to receive a cartridge dispatched through the said line;

the said line terminating in a downwardly-directed stretch to provide that the cartridge will enter the receiver downwardly, the receiver being operatively open at the top to receive the cartridge through the top when the receiver is in receiving position;

a return line leading from the second station;

the said receiver being movably supported for movement between a receiving position for receiving a cartridge from the said tube line, and a dispatching position in which the receiver is operatively aligned with the other line for dispatching a cartridge;

first abutment means at the second station for blocking movement of a cartridge moving into the receiver from the first station, the said abutment means being operative to block a cartridge when the receiver is in receiving position but not blocking a cartridge when the receiver is in dispatching position;

second abutment means at the second station and adapted to block movement of a cartridge when the receiver is in dispatching position;

said second abutment means comprising a blocking member carried by said receiver and movable between a blocking position in which it operatively blocks movement of a cartridge, and a non-blocking position in which it does not block such movement;

means biasing the said blocking member to non-blocking position;

a control member operatively connected to the blocking member of the second station;

a control means at the said second station for controlling the control member;

the control means having a first means operative to position said blocking member in blocking position when said receiver is in dispatching position;

the control means having a second means operative to position said blocking member in non-blocking position when said receiver is in dispatching position; and

moving means at the second station for moving the control means to bring selectively each of the said means into operation as described above.

6. Service apparatus for the dispatching of a material cartridge between a first station and a second station, comprising:

a pair of lines operatively interconnecting the said stations, one of said lines adpated to convey a cartridge from the first station to the second station, and the other of said lines adapted to convey a cartridge from the second station to the first station;

a receiver at each station, each receiver being adapted to receive a cartridge dispatched through the associated one of said lines;

the said receivers being movably supported for movement between a receiving position for receiving a cartridge from one line leading from the other station, and a dispatching position in which the receiver is operatively aligned with the other line for dispatching a cartridge to the other station;

motor means at the second station for moving the receiver thereof between the positions designated above;

abutment means at the second station for blocking movement of a cartridge, the said abutment means being operative to block a cartridge when the receiver is in receiving position and selectively to block and not block a cartridge when the receiver is in dispatching position;

motor means at the second station for operating the abutment means;

means at the first station for controlling the receiver motor means at second station; and

means at the first station for controlling the motor means, at the second station, which controls the abutment means.

7. Service apparatus for the dispatching of a material cartridge between a first station and a second station, comprising:

a line operatively interconnecting the said stations, to convey a cartridge from the second station to the first station;

a receiver at the second station;

the said receiver having a dispatching position in which the receiver is operatively aligned with the line for dispatching a cartridge to the first station;

abutment means at the second station for blocking movement of a cartridge, the said abutment means being operative selectively to block and to not block a cartridge when the receiver is in dispatching position;

motor means at the second station for operating the abutment means; and

means at the first station for controlling the motor means, at the second station, which controls the abutment means.

8. Service apparatus for the dispatching of a material cartridge between a first station and a second station, comprising:

a pair of lines operatively interconnecting the said stations, one of said lines adapted to convey a cartridge from the first station to the second station, and the other of said lines adapted to convey a cartridge from the second station to the first station;

a receiver at each station, each receiver being adapted to receive a cartridge dispatched through the associated one of said lines;

the said receivers being movably supported for movement between a receiving position for receiving a cartridge from one line leading from the other station, and a dispatching position in which the receiver is operatively aligned with the other line for dispatching a cartridge to the other station;

motor means at each station for moving the associated receiver between the positions designated above;

sensing devices adjacent the beginning of each of the said lines and adapted to energize the associated receiver motor means to position the associated receiver into receiving position upon the passing of a cartridge past the respective said sensing device; and

sensing devices adjacent the end of each of the said lines and adapted to energize the associated receiver motor means to position the associated receiver into dispatching position upon the passing of a cartridge past the respective said sensing device.

9. Service apparatus for the dispatching of a material cartridge between a first station and a second station, comprising:

a pair of lines operatively interconnecting the said stations, one of said lines adapted to convey a cartridge from the first station to the second station, and the other of said lines adapted to convey a cartridge from the second station to the first station;

a receiver at the second station, and adapted to receive a cartridge dispatched through the associated one of said lines;

the said receiver being movably supported for movement between a receiving position for receiving a cartridge from the line leading from the first station, and a dispatching position in which the receiver is operatively aligned with the other line for dispatching a cartridge to the first station;

motor means at the second station for moving the receiver thereof between the positions designated above;

a sensing device adjacent the beginning of the said line leading from the first station to the second station and adapted to energize the receiver motor means to position the said receiver into receiving position upon the passing of a cartridge past the said sensing device; and

a sensing device adjacent the end of said line and adapted to energize the receiver motor means to position the associated receiver into dispatching position upon the passing of a cartridge past the said sensing device.

10. In a dispatch system station, including a first associated transmission line leading to said station for receiving a cartridge, and a second associated transmission line leading from said station for dispatching a cartridge, the combination of a receptacle means for a dispatch cartridge, said receptacle means comprising:

support means supporting said receptacle means for movement between a receiving position for receiving said cartridge from said first associated line leading to the said station, and a dispatching position in which the receptacle means is operatively aligned with said second associated line leading from the said station for dispatching a cartridge from said station;

means for moving the said receptacle means between the positions designated above;

abutment means operative to block a cartridge from moving out of the receptacle means when the receptacle means is in receiving position, and operative selectively to block and not block a cartridge when the receptacle means is in dispatching position; and

means for operating the abutment means.

References Cited by the Examiner

UNITED STATES PATENTS

735,861	8/1903	Davis	243—19 X
847,233	3/1907	Burton	243—19
1,713,672	5/1929	Meyers	243—16
1,769,676	7/1930	Cowley	243—19
1,784,967	12/1930	McGuinness	243—16
1,951,820	3/1934	Emerson	243—19

FOREIGN PATENTS

2,354	1906	Great Britain.

SAMUEL F. COLEMAN, *Primary Examiner.*