Feb. 19, 1957 P. DIGNAN 2,781,841

TICKET ISSUING MACHINE

Filed Sept. 14, 1955 2 Sheets-Sheet 1

Fig. 1

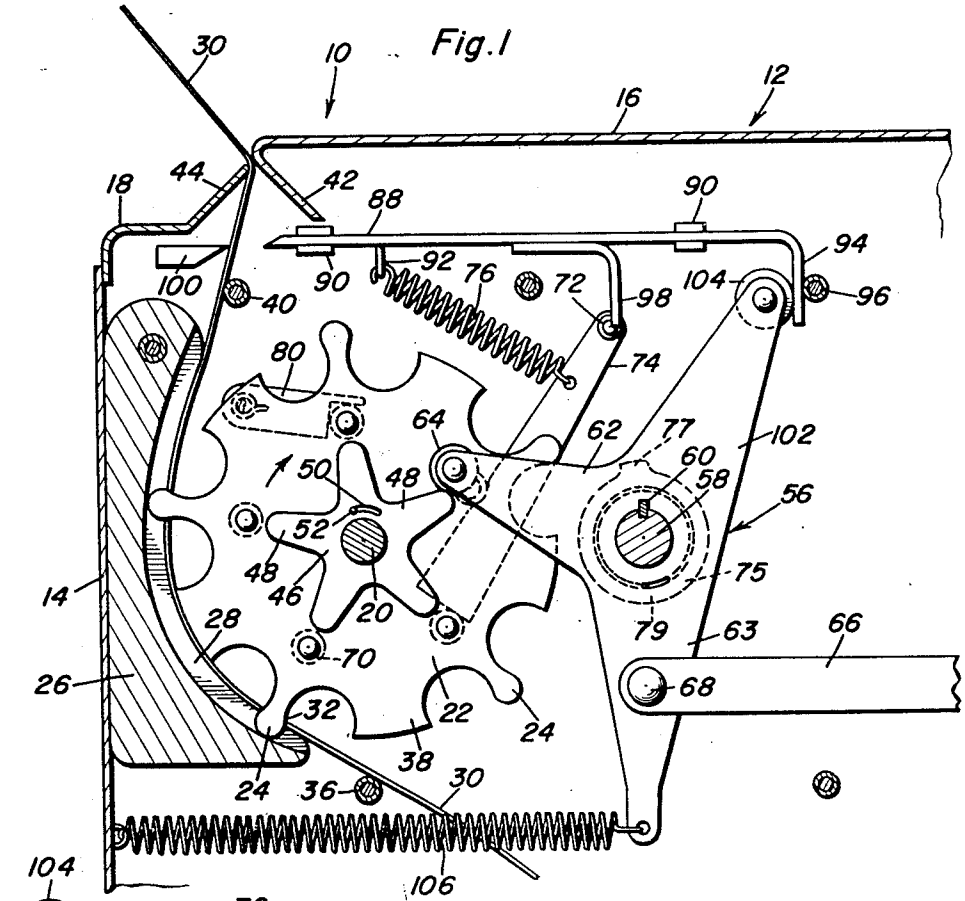
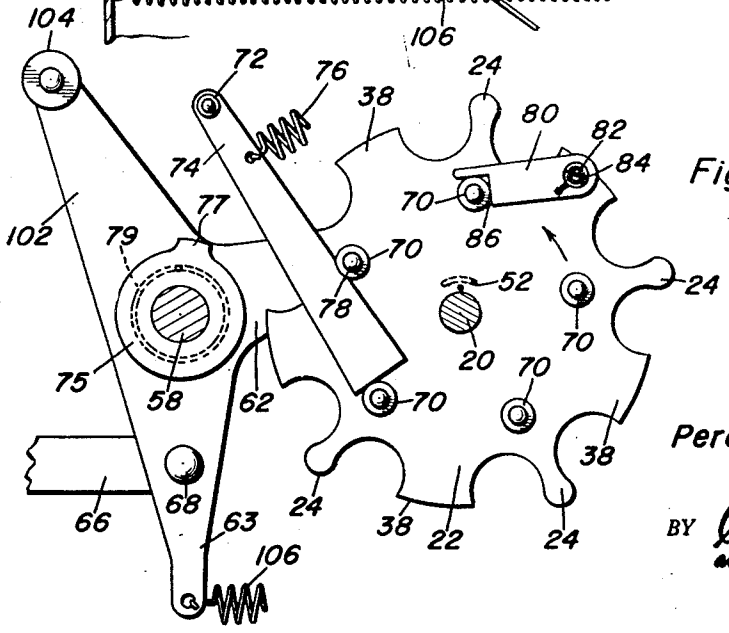


Fig. 2



Percival Dignan
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Feb. 19, 1957 P. DIGNAN 2,781,841

TICKET ISSUING MACHINE

Filed Sept. 14, 1955 2 Sheets-Sheet 2

Fig. 3

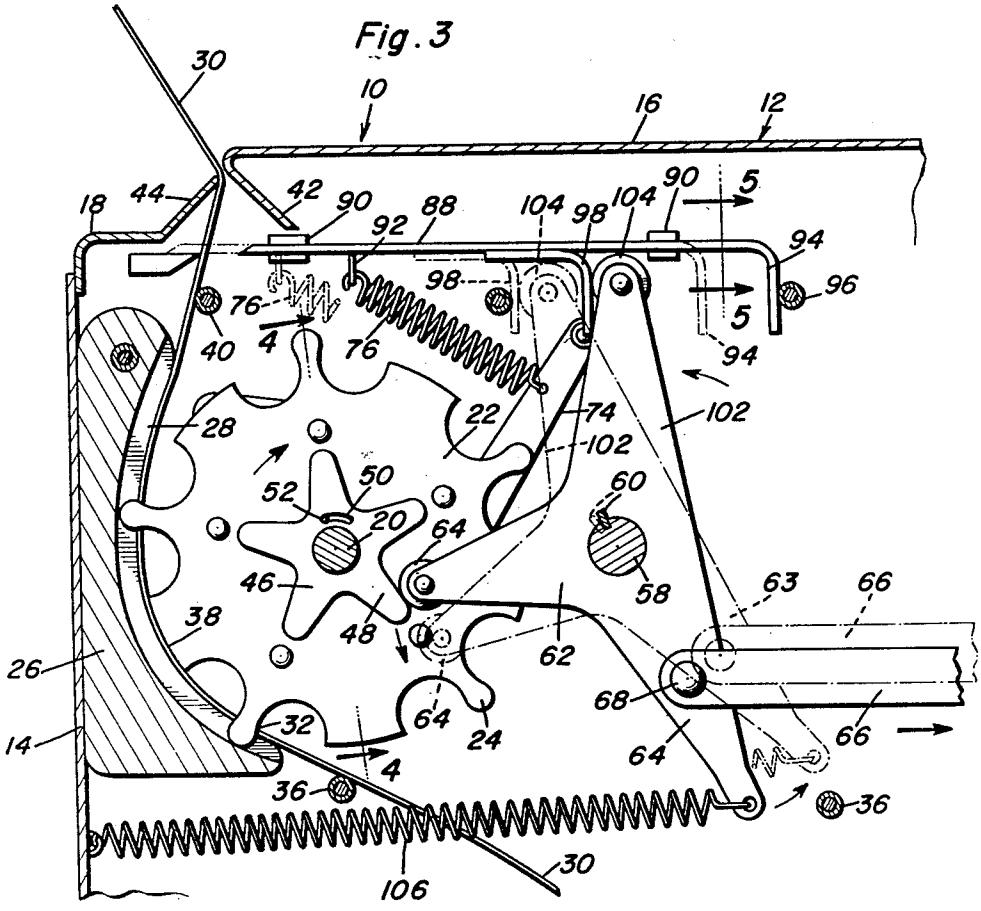


Fig. 4

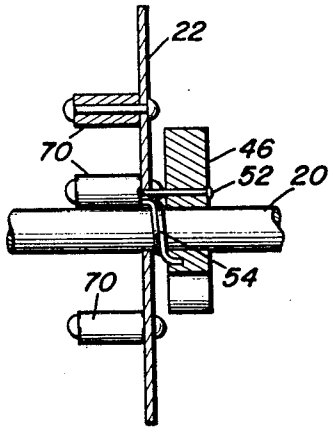
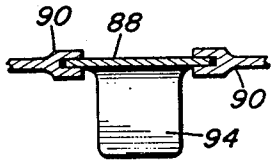


Fig. 5



Percival Dignan
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

United States Patent Office

2,781,841

Patented Feb. 19, 1957

2,781,841

TICKET ISSUING MACHINE

Percival Dignan, Los Angeles, Calif.

Application September 14, 1955, Serial No. 534,198

12 Claims. (Cl. 164—48)

This invention relates in general to new and useful improvements in dispensing devices, and more specifically to an improved ticket issuing machine.

This application is a continuation-in-part of my application, Serial No. 475,987, filed December 17, 1954, now abandoned.

The primary object of this invention is to provide an improved ticket issuing machine which is so constructed whereby upon operation of an actuator thereof, a ticket is first fed out of the machine, and by further movement of the actuator, the ticket is cut off from the strip of tickets, the actuator being returnable prior to the cutting off of the ticket whereby a plurality of tickets may be issued in a single strip before they are cut off from the elongated strip.

Another object of this invention is to provide an improved ticket issuing machine which includes an actuator so mounted whereby it may in sequence operate a ticket feed reel and a cutoff knife, the actuator being so constructed whereby it may be manually, mechanically or electromechanically actuated as desired.

Another object of this invention is to provide an improved ticket issuing machine, the ticket issuing machine being of such a nature whereby it may be selectively incorporated in a portable housing or may be mounted as part of a ticket booth for the issuing of tickets.

A still further object of this invention is to provide an improved ticket issuing machine which includes a ticket drive wheel, there being provided within the machine means connected to the feed wheel which limit the rotation of the ticket feed wheel to that movement required to issue a single ticket and also prevents the reverse rotation of the ticket feed wheel.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a vertical sectional view taken through the housing of the ticket issuing machine conforming to the spirit of this invention and shows the general arrangement of the means for issuing a ticket and cutting such ticket from a strip of tickets;

Figure 2 is a rotated vertical sectional view looking at the opposite side of the mechanism of Figure 1 and shows further the details thereof;

Figure 3 is a sectional view similar to Figure 1 and shows the ticket feed wheel being driven to a position for issuing a ticket, there being illustrated in dotted lines the movement of the knife for cutting off such tickets;

Figure 4 is an enlarged fragmentary vertical sectional view taken substantially upon the plane indicated by the section line 4—4 of Figure 3 and shows the specific connection between a star wheel and the ticket feed wheel and the stop members carried by the ticket feed wheel; and

Figure 5 is a fragmentary vertical sectional view taken substantially upon the plane indicated by the section line 5—5 of Figure 3 and shows the manner in which the knife is mounted for guided movement.

Referring now to the drawings in detail, it will be seen that there is illustrated a ticket issuing machine which is the subject of this invention, the ticket issuing machine being referred to in general by the reference numeral **10**. The ticket issuing machine **10** includes a suitable housing or support which is referred to in general by the reference numeral **12**. Only those portions of the housing **12** which are necessary for the description of the present invention are illustrated. It is to be understood that the housing or support **12** may be varied in detail depending upon whether or not the ticket issuing machine is to be portable and the number of ticket issuing mechanisms mounted therein. The housing or support **12** does include a front wall **14**, a top wall **16**, and an intermediate wall portion **18** extending between the front wall **14** and the top wall **16**.

Suitably supported on the forward portion of the support or housing **12** is a transverse shaft **20**. Mounted on the shaft **20** for rotation is a ticket feed wheel **22**. The ticket feed wheel **22** is formed of flat sheet material, as is best illustrated in Figure 4, and includes a plurality of projecting, circumferentially spaced spokes **24**.

Pivotally carried by the support **12** and engaging the front wall **14** is a ticket retaining member **26**. The ticket retaining member **26** is provided with a groove **28** for receiving projecting portions of the spokes **24**.

Mounted in the lower portion of the support **12** is a roll or folded strip of tickets **30**. The tickets **30** are of the conventional type and are provided with apertures **32** at their intersection. The strip of tickets **30** passes upwardly over a roller **36** suitably carried by the supports **12** and the spokes **24** project through aligned ones of the openings **32**. The spokes **24** then pass up through the recess **28** with the member **26** holding the tickets **30** on the spokes **24**. Disposed intermediate the spokes **24** are ticket support ribs **38** of the feed wheel **22**.

After passing off the spokes **24** of the ticket feed wheel **22**, the tickets move over an upper roller **40** carried by the support **12**. The tickets **30** then pass between a depending guide flange **42** along the forward edge of the top wall **16** and an upstanding guide flange **44** in the wall portion **18**.

In order to effect rotation of the ticket feed wheel **22**, there is also rotatably journaled on the shaft **20** a star wheel **46**. The star wheel **46** includes a plurality of fingers **48** which are radially aligned with the spokes **24**. The star wheel **46** is provided with an arcuate slot **50** in which there is seated a drive pin **52**. The drive connection between the star wheel **46** and the ticket feed wheel **22** utilizing the pin **52** and the slot **50** permits the star wheel **46** to drive the ticket feed **22** when rotated in a clockwise direction, as viewed in Figure 1, and at the same time, permits limited counter-clockwise movement of the star wheel **46** without like movement of the ticket feed wheel **22** for reasons to be set forth in more detail hereinafter. Extending between the star wheel **46** and the ticket feed wheel **22** and carried by the shaft **20** is a spring **54** which returns the star wheel **46** to its normal driving position of Figure 1.

In order that the ticket feed wheel **22** may be driven through the use of the star wheel **46**, there is provided an actuator which is referred to in general by the reference numeral **56**. The actuator **56** is keyed to a shaft **58** by means of the key **60**. The shaft **58** is pivotally journaled with respect to the support **12**.

Extending forwardly and upwardly from the shaft **58** is a first arm **62** of the actuator **56**. The arm **62** carries a roller **64** which is selectively engaged with the fingers **48** of the star wheel **46**.

In order to cause the pivoting of the actuator **56**, there is connected to a second leg **63** a link **66**, the link **66** being connected to the leg **63** by means of pivot pin **68**. The link **66** is connected to any desired type of operator and when moved to the right, will cause pivoting of the actuator **56** in a counter-clockwise direction. This will result in the movement of the arm **62** and its roller **64** downwardly to drive the star wheel **46** in a clockwise direction.

Referring now to Figures 1 and 3 in particular, it will be seen that the length and configuration of the fingers **48** is such that when the arm **62** is pivoted from the solid line position of Figure 1 to the solid line position of Figure 3, the ticket feed wheel **22** is rotated a sufficient amount to feed exactly one ticket **30**. At this time, the roller **64** rolls out of engagement with the particular finger **48** of the star wheel **46** and no further clockwise rotation of the star wheel **46** and the ticket feed wheel **22** is accomplished.

In order to prevent overriding of the ticket feed wheel **22** due to the momentum thereof, there is secured to the face of the ticket feed wheel **22** opposite from the star wheel **46** a plurality of circumferentially spaced stop members **70**. The stop members **70** are preferably in the form of rollers carried by pins. Pivotally mounted on a pivot pin **72** carried by the support **12** is a stop link **74**. The stop link **74** is urged into engagement with the stop members **70** by means of a coil spring **76**. An edge of the stop link **74** is provided with a suitable socket **78** in which the stop members **70** are seated.

In addition, a wheel **75** having a peripheral stop **77** is mounted on shaft **58**. A spring **79** similar to spring **54** is connected to wheel **75** by having one end disposed in a slot in wheel **75** and is secured at its other end to actuator **56**. Accordingly, as the actuator **56** is oscillated in the direction which ultimately causes ticket feeding rotation of wheel **22**, spring **79** drives wheel **75** to such position that its stop **77** enters the path of travel of one of the spokes **24** of wheel **22**. That spoke contacts stop **77** and thereby prevents overtravel of ticket feed wheel **22**. This feature is particularly useful during high speed operation of the machine. When actuator **56** is oscillated in the opposite direction, as by return spring **106**, the wheel **75** is returned, thereby separating stop **77** from the ticket feed wheel (Figure 1) and brings it in realignment for further operation with actuator **56**.

In order to prevent reverse rotation of the ticket feed wheel **22**, there is also carried by the support **12** a retaining link **80**. The retaining link **80** is mounted on a pivot pin **82** and is spring urged into engagement with the stop members **70** by a spring **84**. It is to be noted that the retaining member **80** has a notched free end **86** in which the stop members **70** may seat.

In order that a ticket fed by the ticket feed wheel **22** may be cut off for dispension to a purchaser, there is provided a cutoff knife **88**. The cutoff knife **88** is elongated and has the opposite side edges thereof seated in suitable guides **90**, as is best illustrated in Figure 5, carried by the support **12**. The cutoff knife is urged to the right to a retracted position by the spring **76** which extends between the stop **74** and a depending tab **92** on the cutoff knife **88**.

The cutoff knife **88** is provided at its rear or right hand end, as viewed in Figure 1, with a depending flange **94**. The flange **94** is engageable with a stop **96** carried by the support **12** to prevent movement of the cutoff knife **88** to the right. The cutoff knife **88** also includes an intermediate depending bracket **98**.

In order that the cutoff knife **88** may efficiently cut off a ticket **30** from the strip of tickets, there is carried by the support **12** a fixed knife blade **100**. The fixed knife blade **100** is disposed forwardly of the cutoff knife **88** on the side of the ticket strip **30** opposite from the cutoff knife **88** and disposed slightly therebelow. The cutoff knife **88** slides over the fixed blade **100** and cooperates therewith to cut off a ticket.

In order that the cutting off of a ticket **30** may be automatic, the actuator **56** also includes a second arm **102**. The arm **102** is provided at the outer end thereof with a roller **104**. The roller **104** is disposed between the flange **94** and the bracket **98** and in the inoperative position of the actuator **56** is in engagement with the flange **94**. The actuator **56** is urged to this position by a spring **106** which extends between the front wall **14** and the lower end of the arm **64**.

In the operation of the present invention, the actuator **56** is pivoted about the axis of the shaft **58** either by the link **66** or by means of a crank (not shown) connected directly to the shaft **58**. At this time, the initial pivoting of the actuator **56** will result in the driving of the star wheel **46** and the ticket feed wheel **22** in the manner previously described to advance the strip of tickets **30** sufficiently to feed one ticket. If the actuator **56** is not further pivoted, or is permitted to return to its position of Figure 1 from the solid line position of Figure 3, the roller **64** will strike the next finger **48** of the star wheel **46** and cause a counter-clockwise pivoting of the star wheel **46** for a limited distance. The ticket feed wheel **22** will not move due to the positions of the retaining link **80**. As soon as the roller **64** has moved back over the finger **48** in question, the spring **54** will then return the star wheel **46** to its drive position of Figure 1.

The pivoting of the actuator **56** in the manner described above may be continued the desired number of times to feed the desired number of tickets, the number being limited only by the number of tickets **30** in the ticket strip.

After the desired number of tickets has been fed, the tickets may then be cut off from the remainder of the ticket strip. This is accomplished by pivoting the actuator **56** beyond its solid line position of Figure 3 to the dotted line position of that figure. During the movement of the actuator **56** from the solid line position of Figure 1 to the solid line position of Figure 3, the roller **104** is merely moving between the flange **94** and the bracket **98**. However, when it is moved past the solid line position of Figure 3, it then engages the bracket **98** and moves the cutoff knife **88** to the left. Inasmuch as the further pivoting of the actuator **56** does not result in further movement of the ticket feed wheel **22**, the intersection between adjacent tickets **30** will be aligned with the blade **100** and the cutoff knife **88**. Therefore, this further movement of the actuator **56** will result in the cutting off of the ticket or tickets **30**.

From the foregoing description of the present invention, it will be readily apparent that there has been devised a ticket feeding and cutoff mechanism which is so designed whereby any desired number of tickets may be fed in a single strip, and those tickets may be cut off when desired, the arrangement of parts being such that the tickets are cut off directly at their ends.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A ticket issuing machine comprising a support, a ticket feed wheel having a plurality of ticket engageable spokes, said ticket feed wheel being carried by said support for rotation, an actuator pivotally carried by said support, and a ticket cutoff knife carried by said support, said actuator including a first arm having an overriding one-way driving connection with said ticket feed wheel, and a second arm having a lost motion driving connection with said knife whereby initial pivoting of said actuator will result in the feeding of a ticket and further pivoting will result in the cutting off of the ticket, stop means

connected to said ticket feed wheel for limiting the rotation of said ticket feed wheel upon pivoting of said actuator whereby the ticket is correctly aligned with said knife.

2. A ticket issuing machine comprising a support, a ticket feed wheel having a plurality of ticket engageable spokes, said ticket feed wheel being carried by said support for rotation, an actuator pivotally carried by said support, and a ticket cutoff knife carried by said support, said actuator including a first arm having an overriding one-way driving connection with said ticket feed wheel, and a second arm having a lost motion driving connection with said knife whereby initial pivoting of said actuator will result in the feeding of a ticket and further pivoting will result in the cutting off of the ticket, stop means connected to said ticket feed wheel for limiting the rotation of said ticket feed wheel upon pivoting of said actuator whereby the ticket is correctly aligned with said knife, said stop means including a plurality of circumferentially spaced stop members projecting from said ticket feed wheel, a stop link pivotally carried by said support and being spring urged into engagement with said stop members, said stop link having a socket receiving one of said stop members.

3. A ticket issuing machine comprising a support, a ticket feed wheel having a plurality of ticket engageable spokes, said ticket feed wheel being carried by said support for rotation, an actuator pivotally carried by said support, and a ticket cutoff knife carried by said support, said actuator including a first arm having an overriding one-way driving connection with said ticket feed wheel, and a second arm having a lost motion driving connection with said knife whereby initial pivoting of said actuator will result in the feeding of a ticket and further pivoting will result in the cutting off of the ticket, wheel positioning means carried by said support and connected to said ticket feed wheel to prevent back rotation thereof.

4. A ticket issuing machine comprising a support, a ticket feed wheel having a plurality of ticket engageable spokes, said ticket feed wheel being carried by said support for rotation, an actuator pivotally carried by said support, and a ticket cutoff knife carried by said support, said actuator including a first arm having an overriding one-way driving connection with said ticket feed wheel, and a second arm having a lost motion driving connection with said knife whereby initial pivoting of said actuator will result in the feeding of a ticket and further pivoting will result in the cutting off of the ticket, stop means connected to said ticket feed wheel for limiting the rotation of said ticket feed wheel upon pivoting of said actuator whereby the ticket is correctly aligned with said knife, said stop means including a plurality of circumferentially spaced stop members projecting from said ticket feed wheel, a stop link pivotally carried by said support and being spring urged into engagement with said stop members, said stop link having a socket receiving one of said stop members, wheel positioning means carried by said support and connected to said ticket feed wheel to prevent back rotation thereof, said wheel positioning means including a retaining link pivotally carried by said support and selectively engaging said stop members.

5. A ticket issuing machine comprising a support, a ticket feed wheel having a plurality of ticket engageable spokes, said ticket feed wheel being carried by said support for rotation, an actuator pivotally carried by said support, and a ticket cutoff knife carried by said support, said actuator including a first arm having an overriding one-way driving connection with said ticket feed wheel, and a second arm having a lost motion driving connection with said knife whereby initial pivoting of said actuator will result in the feeding of a ticket and further pivoting will result in the cutting off of the ticket, said overriding one-way driving connection including a star wheel mounted adjacent said ticket feed wheel, drive means connecting said star wheel and said ticket feed wheel, said star wheel including a plurality of fingers, said fingers being of a length so as to permit said first arm to ride out of engagement therewith upon the driving of said ticket feed wheel a desired amount.

6. A ticket issuing machine comprising a support, a ticket feed wheel having a plurality of ticket engageable spokes, said ticket feed wheel being carried by said support for rotation, an actuator pivotally carried by said support, and a ticket cutoff knife carried by said support, said actuator including a first arm having an overriding one-way driving connection with said ticket feed wheel, and a second arm having a lost motion driving connection with said knife whereby initial pivoting of said actuator will result in the feeding of a ticket and further pivoting will result in the cutting off of the ticket, said overriding one-way driving connection including a star wheel mounted adjacent said ticket feed wheel, drive means connecting said star wheel and said ticket feed wheel, said star wheel including a plurality of fingers, said fingers being of a length so as to permit said first arm to ride out of engagement therewith upon the driving of said ticket feed wheel a desired amount, said drive means including a slot in said star wheel, a drive pin carried by said star wheel engaged in said slot whereby said first arm in returning to its normal position may slightly reversely rotate said star wheel without moving said drive wheel.

7. A ticket issuing machine comprising a support, a ticket feed wheel having a plurality of ticket engageable spokes, said ticket feed wheel being carried by said support for rotation, an actuator pivotally carried by said support, and a ticket cutoff knife carried by said support, said actuator including a first arm having an overriding one-way driving connection with said ticket feed wheel, and a second arm having a lost motion driving connection with said knife whereby initial pivoting of said actuator will result in the feeding of a ticket and further pivoting will result in the cutting off of the ticket, said overriding one-way driving connection including a star wheel mounted adjacent said ticket feed wheel, drive means connecting said star wheel and said ticket feed wheel, said star wheel including a plurality of fingers, said fingers being of a length so as to permit said first arm to ride out of engagement therewith upon the driving of said ticket feed wheel a desired amount, said drive means including a slot in said star wheel, a drive pin carried by said star wheel engaged in said slot whereby said first arm in returning to its normal position may slightly reversely rotate said star wheel without moving said drive wheel, wheel positioning means carried by said support and connected to said ticket feed wheel to prevent back rotation thereof.

8. A ticket issuing machine comprising a support, a ticket feed wheel having a plurality of ticket engageable spokes, said ticket feed wheel being carried by said support for rotation, an actuator pivotally carried by said support, and a ticket cutoff knife carried by said support, said actuator including a first arm having an overriding one-way driving connection with said ticket feed wheel, and a second arm having a lost motion driving connection with said knife whereby initial pivoting of said actuator will result in the feeding of a ticket and further pivoting will result in the cutting off of the ticket, said overriding one-way driving connection including a star wheel mounted adjacent said ticket feed wheel, drive means connecting said star wheel and said ticket feed wheel, said star wheel including a plurality of fingers, said fingers being of a length so as to permit said first arm to ride out of engagement therewith upon the driving of said ticket feed wheel a desired amount, stop means connected to said ticket feed wheel for limiting the rotation of said ticket feed wheel upon pivoting of said actuator whereby the ticket is correctly aligned with said knife.

9. A ticket issuing machine comprising a support, a ticket feed wheel having a plurality of ticket engageable spokes, said ticket feed wheel being carried by said sup-

port for rotation, an actuator pivotally carried by said support, and a ticket cutoff knife carried by said support, said actuator including a first arm having an overriding one-way driving connection with said ticket feed wheel, and a second arm having a lost motion driving connection with said knife whereby initial pivoting of said actuator will result in the feeding of a ticket and further pivoting will result in the cutting off of the ticket, said overriding one-way driving connection including a star wheel mounted adjacent said ticket feed wheel, drive means connecting said star wheel and said ticket feed wheel, said star wheel including a plurality of fingers, said fingers being of a length so as to permit said first arm to ride out of engagement therewith upon the driving of said ticket feed wheel a desired amount, said drive means including a slot in said star wheel, a drive pin carried by said star wheel engaged in said slot whereby said first arm in returning to its normal position may slightly reversely rotate said star wheel without moving said drive wheel, spring means between said star wheel and said ticket feed wheel returning said star wheel to a ticket feed wheel driving position.

10. In a ticket issuing machine which includes a support, a ticket feed wheel having a plurality of ticket engaging spokes and mounted for rotation on said support; an actuator pivoted to said support and including an arm, overriding means responsive to pivotal movement in one direction of said actuator and drivingly connected with said ticket feed wheel for actuating said feed wheel, and a stop movable simultaneously with said actuator into the path of travel of and contacted by one of said spokes to prevent overtravel of said ticket feed wheel.

11. A ticket issuing machine comprising a support, a ticket feed wheel having a plurality of ticket engageable spokes, said ticket feed wheel being carried by said support for rotation an actuator pivotally carried by said support, and a ticket cutoff knife carried by said support, said actuator including a first arm having an overriding one-way driving connection with said ticket feed wheel, and a second arm having a lost motion driving connection with said knife whereby initial pivoting of said actuator will result in the feeding of a ticket and further pivoting will result in the cutting off of the ticket, a pair of guide flanges in advance of said ticket cutoff knife, and said flanges being spaced to provide a narrow ticket passage therebetween through which the cut tickets are adapted to pass.

12. The machine of claim 2 wherein said stop means also includes a stop movable with said actuator in one direction to a position in the path of travel of one of said spokes of the ticket feed wheel and withdrawable therefrom with the actuator when said actuator is moved in the opposite direction.

References Cited in the file of this patent

UNITED STATES PATENTS

1,192,895	Hills	Aug. 1, 1916
2,202,377	Helsel	May 28, 1940
2,290,871	Freedman	July 28, 1942
2,417,596	Helsel	Mar. 18, 1947
2,689,525	Anker	Sept. 21, 1954