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H. G. WARD

DISPLAY DEVICE
Filed Oct. 15, $1925 \quad 4$ Sheets-Sheet 1


Harris G. Ward $x_{4}$ HR. +6 Silaymold

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DISPLAY DEVICE
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4 Sheets-Sheet 4


# UNTTED GTATESPATENT OFFICE. 

## HARRTS G. WARD, OF VASTON, WASITNGTON.

DHSPLAY DEVICR.
Application filed October 15, 1925. Serial No. 62,539.


#### Abstract

My invention relates to a display device, and more particularly to the class of such devices wherein a series of independent display sheets are maintained in a magazine, 5 to be removed therofrom one at at time and independently exhibited, and then returned to the magazine.

One of the objects of my invention is the provision of a novel method of handling


 10 such display sheets, and the provision of a novel mechanism for carrying out the method, whereby fiexible shects are maintained in inverted position m the magazine and are renoved theretrom one at a time, inverted mow display postuon and mallyre-inverted and rieplaced at the back side of the magazine, thence moving bodily forward through the magazine.
A further object is the provision in a display device of two types of displays, one comprising a series of different displays to be exhibited in succession, and the other comprising a display for an underlying basic idea which is displayed recurringly, to the end of emphasizing its message through constat repetition.

A futher object is the provision of satisdactory, simple operating and control means for the various display mechanisins, and the provision of such operating and control mechonisms as will give sarisfactory and contimued service without the necessity for frequent adiustment or repar.
Other objects reside in the provision of suitable mechanical structures for carrying out the principles of my invention as further described in this specifertion.

My invention comprises the novel mecharism and the novel parts and arrangements, described in the following specincation, and partechaly dofned by the chaims terminating the same.
Tn the accompanying drawings I have hown an cmbodiment of my invention which constitutes its present preferred form.

Tigure is an elevation of the display derice as viewel by the observer, and Figure 2 is a like elevation showing a different as-

Flgure 3 is also an clevation with part of the framerwork removed, and in section showing the display in process of change:

Tigure $\frac{4}{4}$ is a side elevation with part of
as the framework removed, and in section il-

Iustrating the general arrangement of the parts;

Figure 5 is a rear elevation of the drive mechanism;

Figures 6 and 7 are like sectional views 60 transversely of the main coutrol mechanism, illustreting parts in different positions and relations.

Fig. 8 is a detailed sectional view taken on line 8-8 of Fig. 7 .

In one aspect my invention is concerned will the presentation of a message which it is desired to drive home to the observer, and associated therewith is the presentation to the observer of a sories of different messages, views, pictures or the like, relating to the basic or recurrent idea and designed to retain the interest of the observer. It is recognized in the psychology of advertising that a message, to be retained by the observer, must be driven home by constant repettion. It is also true that the observer's attention must be retained and he must be diverted from the sameness of the repetition by changes in the matter presented, or in its form.

My invention is designed to take advantage of these principles of advertising, and to present the basic idea in the form of a display which is only before the observer during periods interveaing between the display calculated to retain his interest, but which is constantly being repeated. This, in the present embodinent, may be done by presenting the recurring idea upon a display sheet which is ordinamily withdram and oat of sight, as for example, upon the sheets 9 and $9^{\prime}$ which will part to permit the observance of the several independent and fexible sheets typified by the sheet 1 . The sheets 9 and $9^{\prime}$ are suitably mounted to be withdrawn, as upon the rod 91 , and are controlled for movement in some suitable manner, as, for example, by means ot the continuous cable 92 passing over the sheave or drum 98 and secured to the sheets 9 and $\vartheta^{\prime}$ at the points 90 and $90^{\prime}$ respectively. By giving the sheave 93 an intermittent movement in opposite directions, the sheets 9 and $9^{\prime}$ are alternately opened and closed. They may be weighted at their lower ends, particularly at their adjoining corners, as indicated at 94 , to insure that they will hang smoothly and will come together. The mechanism, including the shiting display
control means, to be described hereatter, may be enclosed within a suitably ombelLished framewonk indicated in general by the namoral 90 , which may bear a slogan cated in Figmes 1 and 2 . Tigure 1 represonts the sheets 9 and 9 dramn together in closed position to present the recuring wessage, and Figure 2 repiesents the dovice with the shects 9 and 9 withdirawn, or in open position, to present one of the changeable display sheets 1 . Higure 3 represents these in process of change.

The changeable displays are pefexably mported on hexble sheets 1 , each of which is provided with a rod 10 and a rod 11 extending tansvasely across the top and bottom edge, respectively, of the sheet. To retain a number of these sheats, a magame bodiment being shown as composed of two paiss of inclined chanolike tacks 20 and 21, respectively. The emts of the jols to are receivable in the tracks 80 , ant the ends
25 of the rods 11 in the hack 2 , whemen they are trea to slide towad the lower end of the tarks. Thus mpported, the sheets are in inverted position with then top edge lowermost.

Figues 6 and 7 ilustate one side only of the display-hunding and control mechanism, is being understool that the opposite sige is merely a duplication thereof. Guides are provided for engagenont with the rods them. 11 to mert mem, and thets to gude them into disphay postion, then to re-invert them and to deliver thom to the receiving point of the magarine, the magazine being represented in general by the numeral 2 . tracks 8 and the roldus 80 associated thereWith. These tracks or gudes inchude the beljay point of the magame and its reaving point. Prefably an inital powion
of 31 ot the tack oxtends rentally along the lowey side ot the magame 2 , commonicatmog whith trath 20 and 21 . This porbon Dit the hiot tuncton of which is to reccive Che botom pin th ot a sheet, is fomed in ammer the it restams this rod it Tron hling. This may convenionty be accomphath by providigg one sido thereof, an 3. Vablable as by the pin and she com necion 80 an! presed, as by amos ot
35 towats the opposite shde of the track o frictomaly hold and restam the rod 11.

Selocor mechanisn is provided adjacent the delivery ends of the magrine tacks 20 and 21 to delver a single sheet from the selceted sheet has been fed forward. Such means may comprise the extemal verical hing (see Figure 4) controlled tor vertical reciprocation by a member 4 comprising in
na effect a lever pivoted at 43 , having one end

44 adapted to be engaged by suitable means to operate the selector, and having its other end 45 positioned to be engaged by the sume means to insure the return of the selector mechanisms to their nomal closed position. Whis hink 42 has lugs or gate members 40 at its lower end, and 41 at its upper end, both peofecting inwardly from the link 42 sufidenty to engage the rods 10 and 11 respecduely, as a sheet emerges arom the magazine 7 2. The and 45 of the lever 4 may be connected to on engaged with the link 42 . As the member 44 is displaced, as shown in Tigwe 7 , the gate portions 40 and 41 of the selector are raised out of engegcment with the ends of the respective rods 10 and 11 . to permit the movement of the single rods 10 and il from the magazine, and upon downWhat movenent of the gate members 40 and 41, these rods ace moved downard sighty s and the ouds of the tracks 20 and 21 we closed.

Pee, means amporided for then engaring the shect and advaneing it, those conpring in the present mechanism a pin 5 , whinh is novable in a closed path which inchades the delvery point of the magazine 2 and its recerving point. As shown herein, the pin $b$, of which two are preferably used, is camiod by a chain 50 which is carried upon spockets 51 co-axial with the rollers 80 and 51, outside of the path of the display sheets. In the main, however, the run of the chain al coincides with the tracks or guides 3 for the display sheet. Thus the top rod 10 of a sheat which has just been removed from the magazine, is positioned in the path or the pin 5 and, as seen in tigure 7 , the pin 5 in the lower right hand corner contmuing its admance in the direction of the arrow, will engage the rod 10. In Figure 6 the pin is shom as engaged beneath the rod 10 in the process of advancing the display sheet 1 to lisplay position. The shect 1 , it will be seen, is passed beneath the roller 30 to reverse it toj for bottom.

It will be noted in Figure 7 that a member b is piroted at 60 adjacent the point where the rod 10 is picked up by the pin on and is permitted a limited movement between the sids; of the guide 3 . This acts as a backing to bevent the adrancing pin 5 fon pushing the rot 10 upward and passing therebeneath. It insures that the rod 10 will be camped dimedy torwart in admance of the pin 5 . It 1 wa then be thown downward by the following pin 11 to pemit passane thereot ins the guide 3. It will be seen also in Figure T that the pin 5 engages the membor tito operate the selector mechanism and that the end tho the lever 4 is positioned in the path of the pin so that if the solector members hare not resumed their nomal closed posiBon, they will be returned to such position by the pin 5 as it engages the end 45 and prior 75
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 85
to engagement of the pin with the rod 10. This insures closing of the magazine prior to advance of the delivered display sheet.
The chain 50 and pin 5 are advanced in $T$, to carey a sheet delivered from the magazine into display position at the front of the magaxine. Here it is held in position, the corer sheets 9 and $9^{\prime}$ being then opened and
10 finally closed, following which the pin 5 resunes its advance and moves the display sheet from display position, reversing it top for bottom and bringing it to the receiving point of the magazine 2 . In the meantime the second pin 5 has released and then picked up a second display sheet and has adranced it to the display position, whereupon the sheets 9 and $9^{\prime}$ are opened. Figure 6 shows a sheet leing advanced into the disfrom. Figure $\tau$ shows a sheet immediately after beginning jts movement away from the display position, and shows a pin 5 in the first step of releasing a new sheet to be trol mechanism is provided for operating the chan and for operating the shets 9 and 9 in the mamer described, and this mechanitm will be described hereinafter.
moving them bodily forward through the maquzine, it is necessary that means be provided which will permit the top rod 10 to pass the upper track 21, but which will insure whe bottom rod 11 is intercepted. I have, therefore, provided switch mechanism positioned adjacent the path of the pin 5 and at the receiving point of the track 21 . This comprises a lever $T$ pivoted at 70 and
40 having one arm 71 movable across the path of the rods and from such path. The other am 72 is connected by links. and levers 73 , 74 and 75 to a control lever 76 , pivated at 77 . A striker member 78 caried by the switch

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43
$$ pin 5 when the switch and point 7 are moved out of the path of the rods and yice versa. I have also provided a diverter 79 fixedly positioned across the path of the rods and at) at the receiving end of the track 20 .

As the display sheet moves from the display position, as shown in Pigure 7 , the swith 7 penains in the position shown in that figure. As the rod 10 passee the switch pon 1, to continues dovnward in the gude 3 but the striker 78 is engaged by the pin 5 , which projects sufficiently to engage it, and the swith is thrown into the position shown in Figure 6 . In this position of the switch
00 point the following rod 11 is intercepted, this interception occurring at about the time that the rod 10 reaches the diverter 79. The result is that these two rods are moved out of the guide 3 and into their respective
with the back run of the chain. The same pin continuing, strikes the member 44, releases a new sheet and continues picking up the shoet. In passing it engages the member 70 , which is connected to the switch 7 , and resets the switch in the position shown in Tigure 7.
A single motor M may be employed to operate all of the movenents, this being connected through suitable reduction gearing and enclosed within the casing 80 to brive a master gear 8. This gear 8 is provided with pins 81 and 81 'spaced angularly and placed at different radial distances. A whee! 82 , having opposite wadial slots 83 and 88', is connected to the drum or sheare 93 and is positioned so that its slot 83 will be engaged by the pin 81, or so that its slot 83' will be engaged by the pin 81. Thus, by alternate engegernent of the pins 81 and $81^{\prime}$ with the respective slots 83 and $83^{\prime}$, the sheave 93 is mored alternately in a counterdockwise direction and then clockwise to move the sheets 9 and $9^{\prime}$ into open or closed position.
A wheel 84 is likewise postioned adjacent the master gear 8 and is provided with opposite radial slots 85 which are positioned to be engaged by either one, but not both of the pins 81 and 81 , preferably the latter. This may be accomplished by varying slightly the madial distances of the sheare 98 and when 84, or by varging the lengths of the pins and the spacing of the sheave 93 and wheel 84 from the gear 8 . This wheel 84 is so disposed that engagement of the pin 81 with either slot 85 will rotate the wheel 84 through a hall revolution, successive engagements of the same pin 81 rotating the wheel in the same direction. The pin 81 does not engage a slot 85 , if the pin $81^{\prime}$ engages therein, or vice versa. This whee 84 is comected as by the beveled gears 89 and the chain 86 passing over sprockets 87 and $8 T^{\prime}$ to the shat 88, which carries the drive gear $51^{\prime}$ for the chain 50 . By these or equivalent means the chain is intermittently advanced in between periods when the shects 9 and $9^{\prime}$ are in closed position.
It will be understood that the details of 14 my invention can be widely varied, and I do not wish to be understood through my description of a preferred embodiment, as liniting myself thereto in any way, except as defined by the chams teminating this specification.
Essentially, my invention comprises in one aspect the employnent of the recturing display sheets which present a basic message during intervals that the interost-retaining cheets are being shifted. In another aspect the essence oi my invention lies in the handling of the independent display sheets in the manner described, moving them bodily forward in inverted position through a mag-
azine, picking them up and inverting them while moving them to display position, again inverting them and finally delivering them inverted to the rear side of the maga5 zine.

While it is not essential, I prefer that pins 53 be provided in pairs, attached to and movable with the chain 00 . These pins 5 5 are spaced somowhat from each other and
10 are spaced from the corresponding pins 5 in such a manner that these will receive botween them the following rod 11 of the display sheet which is being advanced by the corresponding pin 5. The chief function of the most adranced one of these pins is to prevent the rod 11 from dropping through the back rua of the guide 3 after the sheet has been re-inverted, wnd to retain his rod in position to be engaged by the switch point
$\therefore 0$ 71. The rearmost pin 55 serves to push the rod 11 into the magazine if it tends to hang upon the switch point th. These pins 55 are shorter than the pins 5 , that is, they do not extend oubward far onough to engage
27 any ot the mothanims as 71, 79, 44, 45, 76 and 6 , some of which are engaged by the pins 5 . The pins 5 constitate the feed means and constitute also the timing means by which the operation of the various mech-

What I claim as my invention is:

1. A clisplay apparatus comprising a magazine adapted to hold a plurality of independent, flexible sheets in inverted posian, shee forken, feet means movabse in an endless path abont said magazine, said feed means being engageable with the reversed top edge ot a sheet to remove it from the magazine, and cooperating with said Guides to reverse it and to advance it into display position, to again reverse it, and finally to retur it to the magazine in inverted position.
2. A display apparatus comprising a magazine adapted to hold a plurality of independent, fiexible sheets in inverted position, sheet gudes, feed means movable in a closed path about said masexine, suid feed menns being engageable with the reversed top elge of a sheet to remove it hon the magazine, and cooperating with satd guides to reverse it and to advance it monto daplay position, to aman mevese it and hanly to retmo it to the moneme in mopted position, and selector means ane wh the teed means tor disposing a heet in position for engasement whin sad feed mons, and mons for disengaging the shoet from the feed menns to permit its yeturn to the masame.
3. In a display appamas, in combination vith a fexible display sheet having dansreve yods at top and bottom, a magazine tor receiving said sheet in inverted position comprising pairs of tracks for receiving the top
and botton rods thereof, respectively, feed 65 means movable in a closed path including: the reception point and the delivery point of said magazine, and engageable with the top rod of said sheet to remove the sheet from the magazine, to re-invert it and move it into display position, and inally to invert the shee and return it, inverted, to the magazine.
4. In a display apparatus, in combination wish a foxible display sheet having transrese rods at top and botom, a magazine tor receiving sat sheet in mverted position comprising pairs of tracks for receiving the top and bottom rods thereor, respectively, feed means movable in a closed path including the reception point and the delivery foint of sad magazine, and engageable with the top rod of said sheet to remove the sheet from the magazine, to re-inrert it and move it into display position, and finally to invert the sheet and retum it, inverted, to the masaxine, sate feed meuns also including restraining means poritioned to restrain the botom rod of the sheet.
5. In a display appatatus, in combination with a flexible display sheet having transverse rods at top and bottom, a magazine for: receiving said sheet in inverted position comprising pairs of tracks for receiving the top and bottom rods thereof, respectively, feed means movabe in a closed path including the reception points of both pairs of tracks, and the delivery point of the lower pair of wacks, and engageable with the lowermost or top rod of said sheet at the delivery point of the lower pair of tracks to remove the sheet from the magazine, sheet guides, said zimiles and the foed mons cooperating to re-invert the cheet, to move it into display position, to invert it again, and to deliver the top and botom rods thereof again to the reception points of the lower and upper pairs of tracks, respectively.
6. In a dishay appaatus, in combination with a ferible display shet having teans- 110 rese rods at top and bottom, respedively, a magazine for receiving said hent in inverted position comprising pairs of track; for receiving the top and botom rods thereof respectively, feed means momable in a dosed path includias the delivery point of the magazine and its recepton point, inchatBity the reception ende of both upper ant lower wacks, atd feed mons being ensageable with the lowemmet on top of the thet to remove the hoee from the magaane, hove it into dispay position, and retume in imerted position with its top and botron bots presemed to the reception points of the lower and upper tracks, respectively, and a sminh member adjacent the recepton poine of the upper pair of tracks and normally positioned to permit passage of a rod,


and timed with said feed means to move into position to intercept the bottom rod following passage of the top rod.
7. A display device as in claim 6, the 5 switch member being engageable by the feed member after the top rod is clear of the switch, to be moved thereby into position to intercept the bottom rod.
8. In combination with a display apparaof the top rod adjacent the reception point of the lower pair of tracks, and engageable with the top rod to disengage it from the foed means and to direct it into the maga15 zine.
9. A display device as in claim 6, the switch member being engageable by the feed member atter the top rod is clear of the switch, to be moved thereby into position 20 to intercept the bottom rod, and a diverte: fixed in the path of the top rod adjacent the reception point of the lower pain of tracks, and engageable with the top rod substantialily simultaneously with the engagement 25 of the bottom rod with said switch member, whereby the rods are simultaneously disengaged from the feed means and receivel by their respective magazine tracks.
10. In combination with a display device as in claim 6, a switch-return device tomed with the feed means and operatively connected with said switch member to return the same to normal position following its interception of the bottom rod. ben a menber after the ton rod is clear of the switch, to be moved thereby into position to intercept the bottom rod, is diverter posi0 tioned adjacent the reception point of the lower pair of tracks and engageable with the top rod to disengage it from the feed means, and a switch-return means positioned in the path of the feed means and operable a thereby atter ethon of the sheet to the hagazine to reset the switch member in normat position.
11. In a displey apparatus for a phome of independent, Hexible sheets, a guide for mots conprisig a track a maning single sheets in position for endwise movenent, the initial portion of said track including means engaging the uppermost portion of a sheet to restrain it from falling, a magazine interposed between the ends of said track and comprising means permitting bodily lateral movement of the sheets, and shect feed means engageable with the lowermost portion of a sheet positioned in the ini- and trom display position, said sheet guide including means for inverting a sheet following its cngagement by the feed means and before positioning the sheet in display po-
sition, and for reinverting it prior to its de- 05 livery therefrom to the magazine.
12. In a display apparatus, in combination with a plurality of independent, flexible sheets, eacli having trunsversely extending top and bottom rods, a guide ior said sheets comprising a track for said rods, for maintaining single sheets in position for endwise movement, a magazine interposed between the ends of said track, and including upper and lower pairs of tracks for receiving the bottom and top rods, respectively, of the sheets, said track including an initial section including the delivery ends of both magazine tracks, and arranged to restrain the uppernost of bottom rod trom talling, and 80 sheet feed means movable in a closed path including the lowermost portion of the initial section, and the remander of the sheetguiding thack, and cagageable with the lowermost or top rod of a sheet positioned in 55 said initial section of tack, thereby to advance the sheet.
13. In combination with a display device as in claim 18, a selector operable to deliver a single sheet from the magazine to the initial section of the track, in position for engagement by the feed means.
14. In combination with a display device as in clam 13, a selector controlling the delivery of single sheets from the magazine to the initial section of the track, in position for engagement of its top rod by the feed means, and rieans engageable by said teed means in its advance to operate sad selecer.
15. In combination with a display device as in claim 13, a selector controlling the delivery of single sheets from the magazine to the initial section of the track, in position for engagenent of its top rod by the feed means, means engageable by said feed means in its advance to operate said selector, and means engageable by the feed means after gperation of said selector and prior to engagement of the sheet's top rod, to insire retum of sad selector to normal position.
16. In combination with a display device as in clain 18, switch mechanism postioned in tho path of said feed means adjacent the receiving point of said magazine for disengaging the sheet from the feed means, and switch-control means engageable by said leed means as it adrances.
17. In combination with a display device as in cham 13 , a selector controlling the deTivery of single sheets from the magazine to the intial section of the track, in position for engagement of its top rod by the feed means, means engageable by said feed means in its advance to operate suid selector, means engageable by the feed mens after operation of said selector and prior to engagement of the sheet's top rod, to insure return of said selector to normal position, switch mecha-
nism positioned in the path of said feed means adjacent the receiving point of said magazine for disengaging the sheet from the feed means, and switch-control means en-
gageable by said feed means as it advances.
18. A display device including an endless chain and gudes therefor, a magatime included within the run of said chain, and comprising inclined tracks for receiving a

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 most edge of a flexible display sheet, means for selecting a single rod at a time from said tracks, gude means for said sheets, and means carried by said chain for operating,15 sad selector and for engaging the lowemost edge of the selected sheet to advance sach sheet along said guide means into display position, said guide means and said chaincarried mons then cooperating to deliver: said magazine with its previously uppermost edge again at the upper end of the inclined tracks.
20. A display device including an endless in the run of said chain comprising upper and lower pairs of inclined tracks for receiving opposite ends of two rods secured in the bottom and top edges, respectivoly, of
apane sheet, means or separating the uppermost and lowermost rods of a given sheet simultancously from the magazine, and for positioning the lowermost rod in the path of said chain, a pin carried by

- morctir anu engageane with sare most rod and a cuide in ceneral following the rum of the chain, said pin and said guide cooperating to advance the sheet into display position, and then into position to be rezine tracks.

21. In combination with a display device as in claim 20, a switcli mechanism positoned in the path of said chain and adja-解 recerving end of the mpper magazme track, means engageable by suid pin for moving said switch, after passage of the pinengaged rod of the sheet, from its nomal position into position to intarcept the folows rod, and other means engageable by said pin thereafter and after diversion of the following rod by said switch to throw said switch into its normal position.
22. In combination with a display device of chim 20 , means posibioned in the path of the pin, and engageable thereby as it approaches the delivery ond of the magazine, to operate said selector, and thereattor further engageable by the pin, prior to its engagement with the rod, to insure retam of said selector to its normal position.
23. A display device as in claim 20 , the chain having a pair of pins spaced from each other and from the first pin to receive the bottom or following rod of the advanc-
ing sheet, and to maintain the bottom edge of the sheet aligned with the run of the chain.
24. A display device as in claim 20 , the chain having a pair of pins spaced from each other and from the first pin to receive the bottom or following rod of the advancing sheet, and to maintain the bottom edge of the sheet aligned with the run of the chain, solector and switch mechanisms for directing the sheet and its rods into and from engagement with the first pin, control means therefor including members positioned in the path of said pins, the pair of pins projecting less than the first pin and passing beneath said control means.
25. A method ot handling display sheets delivered from and received by a magazine, which comprises bodily moving a sheet forwardy from the magwine, then moving it downward endwise, reversing it and moving it upward into display position, again reversing it through endwise movement, and finally moving it bodily forward into and through the magazine with the top edge lowermost.
26. In a display mechanism, in combination, an intermittently recurring display sheet, a plurality of independent display sheets, and means for controlling movement 95 of each of said series of sheets in turn into display position, and therefrom, and for moving said recurring display sheet into display position during movement of sheets in the series, said control means comprising a 10 master gear, two pins carried thereby, a slotted wheel engageable by each of said pins in succession to advance it intermittently in opposite directions, operative connections between said wheel and the recurring display sheet, a second slotted wheel engageable by one of said pins to advance it intemattently in the samo direction, and operative comections between said second wheel and the teed means for said semes of display 110 sheets.
27. In a display apparatus for a phoality of independent, flexible sheets, a magazine including means for supporting and permitting bodily lateral movement of the sheets, means for guiding said sheets from sad magazine to and past a display position, and back to the magazine, said guide means including an initial portion adapted to suspend a single sheet by its upper edge, and sheet-selecting means engageable with the depending portion of a sheet which is held in the initial portion of the guide means to pull it downward therefrom to intitiate its advance.
28. A display device including an endless chain and guides therefor, a magazine within the run of swid chain comprising upper and lower pairs of inclined tracks for receiving opposite ends of two rods secured
$\qquad$
in the bottom and top edges, respectivoly, position, and then into position to be reof a flexible sheet, means for separating the ceived by the receiving ends of the magauppermost and lowermost rods of a given sheet simultaneously from the magazine,
5 and for positioning the lowermost rod in the path of said chain, a pin carried by said chain and engageable with said lowermost rod, and a guide in general following the run of the chain, said pin and said guide co10 operating to advance the sheet into display zine tracks, and a second pin carried by the chain and spaced from the first pin to position it in advance of the following rod of 15 the sheet, to prevent collapse of the sheet. when inverted.

Signed at Seattle, King County, Washington, this 28 th day of September, 1920.

HARRIS G. WARD.

