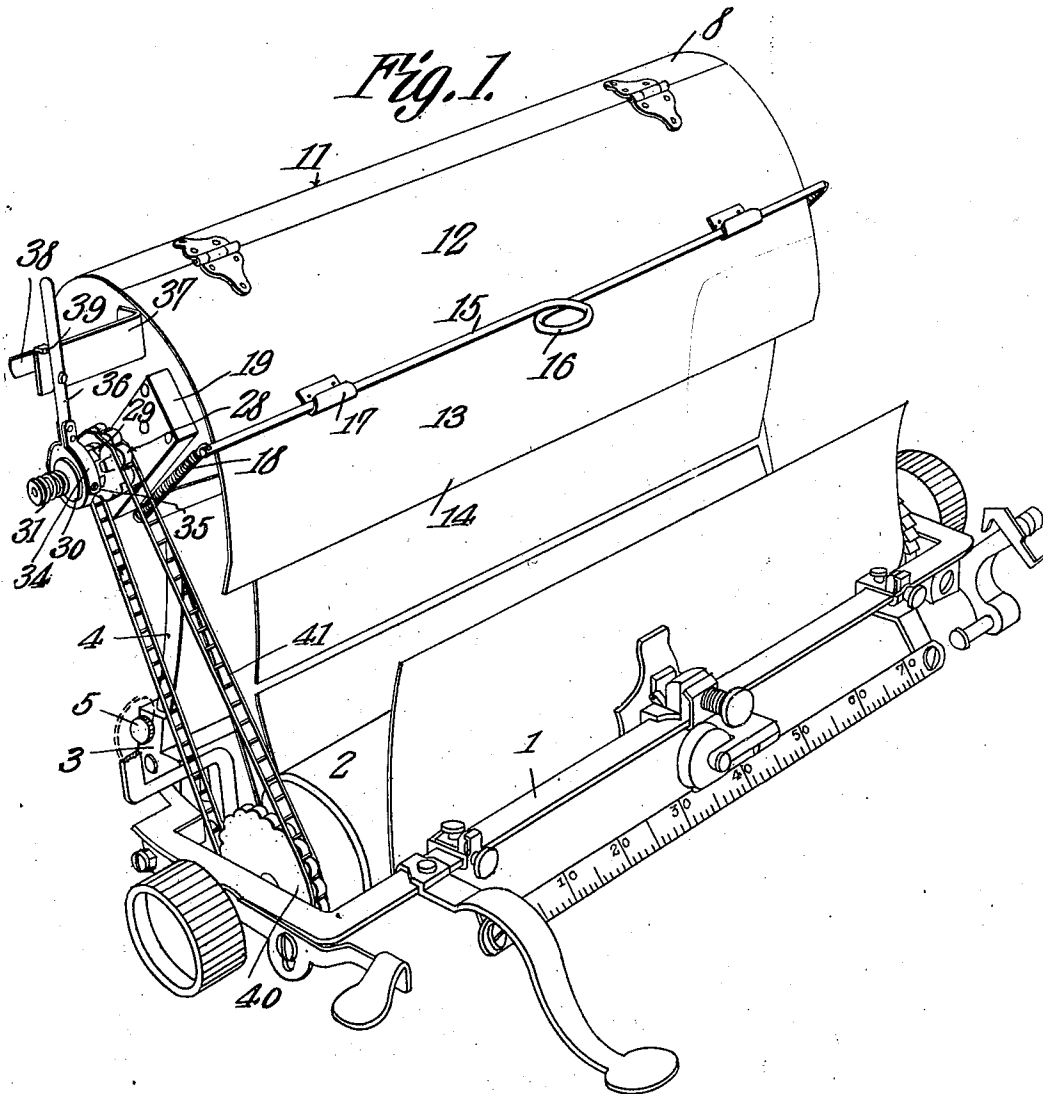


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 PAPER FEED ATTACHMENT FOR TYPE WRITERS.
 APPLICATION FILED JAN. 19, 1909.

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Patented Jan. 18, 1910.
 2 SHEETS—SHEET 1.



Witnesses

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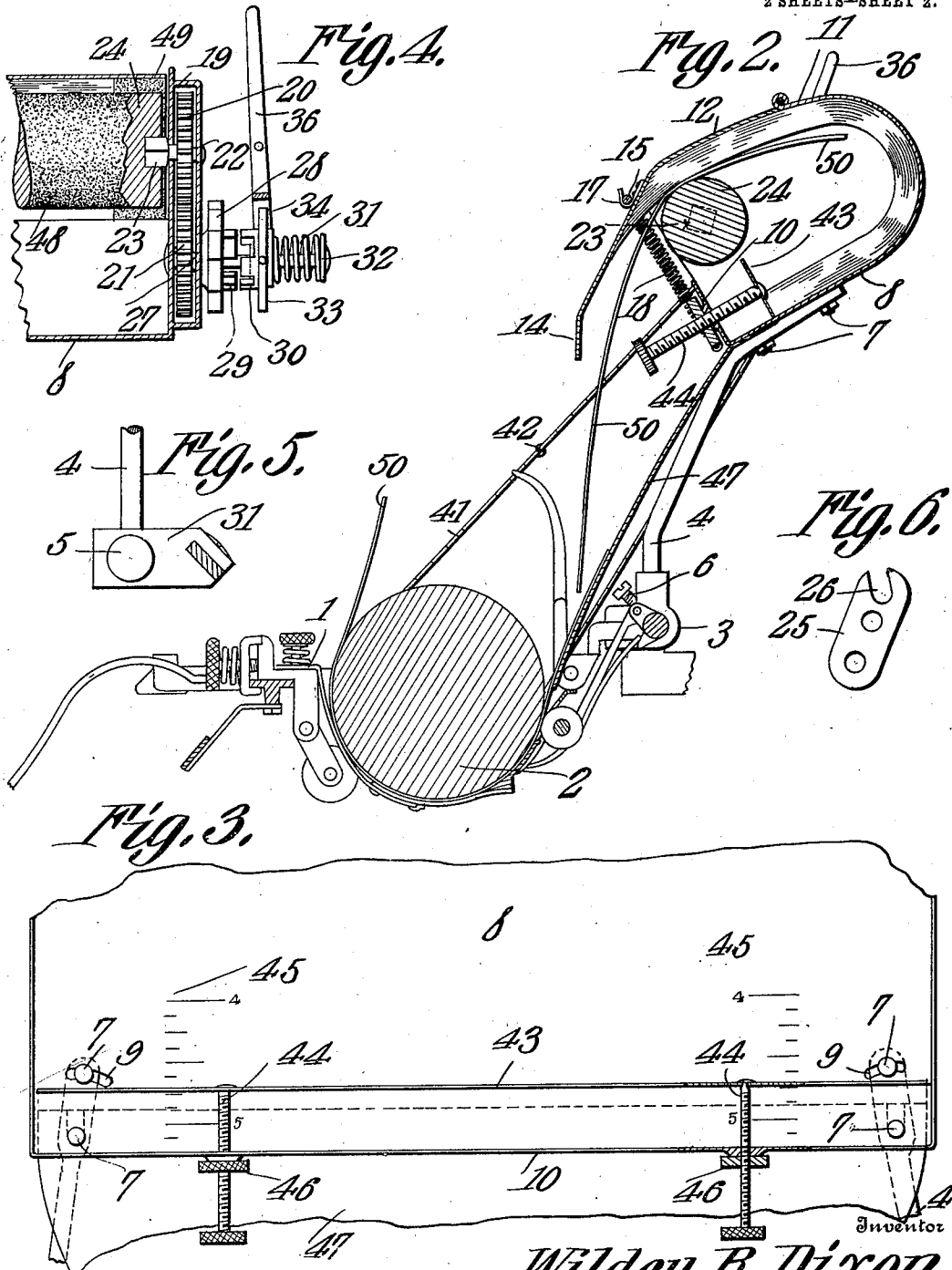
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UNITED STATES PATENT OFFICE.

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PAPER-FEED ATTACHMENT FOR TYPE-WRITERS.

946,724.

Specification of Letters Patent.

Patented Jan. 18, 1910.

Application filed January 19, 1909. Serial No. 473,173.

To all whom it may concern:

Be it known that I, WILDEY RIDGELY DIXON, a citizen of the United States, residing at Roanoke, in the county of Roanoke and State of Virginia, have invented a new and useful Paper-Feed Attachment for Type-Writers, of which the following is a specification.

This invention has reference to improvements in paper feed attachments for typewriters and is designed to provide a reservoir for sheets of paper to be fed successively and automatically to the platen into position to be operated upon by the type without the necessity of the operator placing the sheets as needed.

The invention is designed particularly for the feeding of sheets of paper, where many sheets are to be used, in succession and rapidly, the speed of the use of the machine being thus greatly augmented by avoiding the necessity of the operator stopping the typewriting in order to change the sheets.

The present invention is designed to be attached to any of the commercial forms of typewriters, being connected directly to the carriage and provision is made for the feeding of the sheets one at a time and in succession to the proper side of the platen, the feeding being performed automatically by and in accordance with the movements of the platen in the act of typewriting. The structure is such that when a sheet is removed from the typewriting machine the next sheet has already been automatically moved into position with relation to the platen to continue the typewriting.

The invention will be best understood from a consideration of the following detail description taken in connection with the accompanying drawings forming a part of this specification in which drawings,

Figure 1 is a perspective view of the attachment applied to the carriage of a commercial form of typewriting machine, Fig. 2 is a vertical section through the structure shown in Fig. 1. Fig. 3 is a plan view of a portion of the reservoir with the cover removed and with parts shown in section. Fig. 4 is a detail section showing the actuating gearing for the feeding roller for the paper. Fig. 5 is a detail view showing a

form of support for the attachment adapting it to a different type of typewriter machine than shown in Fig. 1. Fig. 6 is a detail view of a support for the end of the feed roller remote from the actuating end.

Referring to the drawings there is shown a typewriter carriage 1 which may be taken as typical of any typewriter carriage and the platen of the carriage is indicated at 2.

Fast to a portion of the rear of the carriage near each end thereof is a block 3 in the upper end of which is formed a socket for the reception of a rod 4 held in the socket by means of a thumb screw 5 so that the rod may be readily inserted or removed at will without the use of tools. A set screw 6 serves to hold the block 3 in place since it is not necessary to remove the block in order to remove the attachment and the block may therefore be considered as a permanent attachment to the typewriter carriage if so desired. The upper end of the rod 4 is flattened and bent at an angle away from the platen and is provided with two holes for the passage of bolts 7.

The rods 4, there being two such rods, one near each end of the typewriter carriage, serve as a support for a reservoir 8. The heads of the bolts 7 where they extend through the walls of the reservoir 8 play in slots 9 through the corresponding wall of the reservoir so that a certain amount of adjustment is provided for setting the reservoir to proper relation to the platen 2 and after the adjustment has been made then the nuts of the bolts may be tightened, thereby holding the reservoir in proper position.

The reservoir is shown as U-shaped in cross-section and is as long or slightly longer than the width of the paper to be used. The open end of the reservoir is toward the platen as indicated in Fig. 2 and fast to the lower side of the reservoir 8 is a low partition 10 which may extend entirely across the reservoir if so desired and serves a purpose which will presently appear. The upper face 11 of the reservoir is much shorter than the lower face and to the end of the upper face there is hinged a continuation 12 in the nature of a cover and this continuation or cover is provided with a projecting lip 13 inclined downward at an angle to the main portion of the cover

12 for a purpose which will presently appear, while the free edge 14 of the lip 13 is bent at an angle to the lip, as indicated in Fig. 2.

5 Extending across the cover 12 is a rod 15 having at about its middle a loop 16 constituting a manipulating handle while this rod is normally held in clips 17 fast on the cover 12. The ends of the rod 15 extend
10 beyond the ends of the cover 12 and are there engaged by springs 18 each connected to the corresponding end of the rod 15 at one end and at the other end to a suitable portion of the reservoir 8. The tendency
15 of the springs 18 is to move the cover 12 toward the other side of the reservoir for a purpose which will presently appear.

At one end of the reservoir there is a casing 19 housing two gear wheels 20 and 21 in mesh one with the other. The gear wheel 21 is formed with or has secured to it a stub shaft 22 extending through the corresponding end wall of the reservoir 8 and terminating in a squared section 23 within
25 said reservoir. This squared section is adapted to enter a square socket in a roller 24 within the reservoir beneath the cover 12 adjacent to the point of junction with the cover of the lip 13. The other end of
30 this roller is supported in a bracket 25 shown separately in Fig. 6. This bracket is designed to be riveted or otherwise secured to the other end of the reservoir on the inner face thereof and is provided with
35 a socket 26 adapted to receive an axial stud on the corresponding end of the roller.

When the cover 12 is lifted then the roller 24 may be readily removed by disconnecting it from the bracket 25 and then pulling it
40 away from the squared portion 23 of the stub shaft 22.

The gear wheel 21 is mounted on a stub shaft 27 and on this shaft exterior to the casing 19 there is mounted a sprocket wheel
45 28 having a clutch member 29 on the side thereof remote from the casing 19. This sprocket wheel 28 is free to rotate on the shaft 27 but may be coupled thereto by another clutch member 30 rotatable with the
50 shaft but also capable of sliding thereon. The clutch member 30 is urged constantly toward the clutch member 29 by a spring 31 surrounding the shaft 27 and confined between said clutch member 30 and a head 32
55 formed on the outer end of the shaft.

The clutch member 30 carries a collar 33 in which the clutch member 30 is rotatable and this collar is engaged by a fork 34 straddling the collar and connected thereto
60 by pins 35 at diametrically opposite points. The fork 34 is fast to one end of a lever 36 pivoted to a bracket 37 projecting from the corresponding end wall of the reservoir 8. This bracket also carries a spring member
65 38 normally tending toward the bracket 37

and mounted on the side thereof remote from the lever 36. The spring 38 is provided with a projecting finger or stud 39 adapted to be brought into the path of the lever 36 on either side thereof. 70

When the lever 36 is moved in a direction to separate the clutch members, which movement is against the action of the spring 31 the finger 39 will maintain the lever in such position. When it is desired to bring the
75 clutch members together it is only necessary to move the spring 38 in a direction to carry the finger 39 out of the path of the lever 36 when the spring 31 will cause the two clutch members to be brought into engage-
80 ment thus coupling the sprocket wheel 28 to the shaft 27.

Mounted on the arbor of the platen 2 is a sprocket wheel 40 and the sprocket wheels 28 and 40 are connected together by a sprocket
85 chain 41, the continuity of which may be broken by the separable coupling 42 provided for the ready separation of the chain when it is desired to remove the attachment from the typewriter and for the ready
90 coupling of the end of the chain when it is desired to install the attachment on the typewriter. The ready coupling or uncoupling of the chain avoids the necessity of dismantling the typewriter carriage to the extent
95 of disconnecting the platen 2 therefrom.

Whenever the platen 2 is rotated then the gear wheel 27 is likewise rotated if the clutch members 29 and 30 be in engagement, and this rotation is imparted to the roller
100 24 through the gears 20 and 21.

Within the reservoir 8 there is located a follower 43 under the control of two spaced thumb screws 44 each having a threaded
105 bearing in the partition 10 before referred to, so that the follower 43 may be moved to and from the partition at the will of the operator. The inner face of that portion of the reservoir over which the follower 43
110 travels is provided with index markings so that the follower may be adjusted for paper sheets of different lengths. Upon each thumb screw 44 there is a clamp nut 46 so that when the follower 43 is adjusted the
115 thumb screws may be locked in place thus insuring the maintenance of the adjustment of the follower 43.

Extending from the lower portion of the reservoir down to a point close to the platen 2 is an apron 47 secured to the post 4 by one
120 of the bolts 7 in each post.

The outer surface of the roller 24 as well as the inner surface of the cover 12 is roughened preferably though not necessarily by the application of emery thereto. This em-
125 ery surface which may be produced by the application of emery powder and a suitable cement is shown on the roller at 48 in Fig. 4 and on the cover at 49 in Fig. 4.

Within the reservoir there is shown a stack 130

of sheets 50 of the paper to be used with the typewriter. In order to place these sheets of paper in the reservoir the cover 12 is raised and the roller 24 is removed after which the sheets of paper bent into U form are introduced into the reservoir with the ends of the sheets at one end of the stack all brought into abutment with the follower 43. Because of the shape of the stack of paper sheets within the reservoir the other ends overlap in spread-count order and the bending of the lip 15 with relation to the cover 12 is such as to conform substantially to the shape of the end of the stack caused by the overlapping of the sheets. While the cover is still raised and the corresponding end of the stack of sheets is sufficiently elevated the roller 24 is replaced and then the cover is brought down so that the roller will engage the innermost sheet of the stack, the latter being held to the roller by the retractive force of the springs 18. The follower 43 is adjusted to conform to the length of the sheet so that the overlapping ends will be brought into engagement with the lip 13 as indicated generally in Fig. 2. If now the platen 2 be turned in the direction necessary to feed a sheet of paper around the same the motion is transmitted through the chain 41 to the gear wheel 21, the clutch members being then in engagement, and this motion is imparted to the roller 24 in a direction however the reverse of the direction of rotation of the platen 2 so that the roller 24 will tend to move the adjacent sheet 50 of the paper in a direction out of the reservoir and under the lip 13 when it is directed toward the apron 47 by the continuation 14 of the lip 13 and is ultimately guided into position to be fed to the platen and engaged by the same in the usual manner.

Let it be assumed that a sheet of paper has already been fed to the platen and that another sheet is being fed thereto as indicated in Fig. 2. It will be noticed that the second sheet overlaps the first sheet for a distance so that by the time the first sheet has been moved out of the line of the type the second sheet has been moved into the line of the type with a suitable upper margin. This is due to the overlapping of the sheets at the feed end of the reservoir since when a sheet escapes from the roller 24 the next sheet is engaged at a point somewhat distant from its end so that it tends to overlap the preceding sheet for a like distance. This is due to the manner of supporting the sheets within the reservoir. As the sheets are fed out from the reservoir the next succeeding sheets are kept in contact with the roller 24 by the action of the springs 18 moving the cover 12 toward the said roller.

When the sheets have become exhausted a new supply may be quickly inserted in the manner already described. Should it be

desired to use sheets of a greater or shorter length than those for which the reservoir is first set, the follower 43 may be readily adjusted to accommodate such sheets so that the overlapping ends have always the same relation to the roller 24, and the follower 43 also serves for the alining of the corresponding ends of the sheets without attention on the part of the operator.

The attachment is adapted for different commercial forms of typewriters and in Fig. 5 is shown a block 3' whereby the attachment may be connected to the typewriter carriage of a different style of typewriter than that shown in Fig. 1. This may be taken as indicative of the manner of connecting the attachment to different styles of typewriters and it will therefore be unnecessary to show other forms of connecting blocks since the only change in the structure needed to adapt the attachment to various makes of typewriters is in the form of the attaching block 3 or 3'.

What is claimed is:—

1. A typewriter attachment provided with a reservoir of substantially U shape for holding superposed sheets returned on themselves with one end of the sheets arranged in spread-count order and the other end of the sheets all in the same plane, and means engaging the sheets at the said end where they are in the spread-count order to feed them successively in overlapping relation.

2. A typewriter attachment provided with a reservoir for a pile of sheets, said reservoir having substantially parallel walls both engaged by the face of the outermost sheet of the pile, said parallel walls being joined by a rounded end wall, a follower for engaging one end of the pile of sheets in substantially one plane with the other end of the pile disposed in spread count order, and means within the reservoir for delivering the sheets one at a time therefrom.

3. A typewriter attachment provided with a reservoir for a pile of sheets, said reservoir having substantially parallel walls joined by a rounded end wall, a follower in said reservoir for determining the position of one end of the pile of sheets, and means within the reservoir in operative relation to the other end of the pile of sheets for delivering the sheets one at a time from the said reservoir.

4. A typewriter attachment provided with a reservoir for a pile of sheets, said reservoir having substantially parallel walls joined by a rounded end wall, and a feed roller within the reservoir adjacent the end of the latter remote from the rounded end and underriding and upholding the sheets against the corresponding end of the reservoir, said roller when actuated causing the delivery of the sheets one at a time from the said reservoir.

5. A typewriter attachment provided with a reservoir for a pile of sheets, said reservoir having substantially parallel walls one above the other and joined by a rounded end well, an elastic continuation of the end of the upper one of the parallel walls remote from the rounded connecting wall and a feed roller within the reservoir adjacent to and below the said elastic continuation and between the same and the corresponding end of the other one of the parallel walls.

6. An attachment for typewriters comprising a substantially U-shaped reservoir for a pile of sheets, said reservoir being adapted to be attached to a typewriter carriage, a feed-roller in said reservoir, and a cover for said reservoir hinged thereto and overriding and in operative relation to the roller, said cover being elastically constrained toward said roller.

7. An attachment for typewriters comprising a substantially U-shaped reservoir for a pile of sheets, said reservoir being adapted to be attached to a typewriter, a feed roller in the reservoir, and an elastically mounted cover for said reservoir overriding and in operative relation to the roller and having a lip projecting therefrom at an angle to said cover.

8. An attachment for typewriters comprising a substantially U-shaped reservoir for a pile of sheets, said reservoir being adapted to be attached to a typewriter carriage in a position elevated above the typewriter platen, a feed roller in said reservoir under-riding the delivery end thereof, an elastically mounted cover for said reservoir overriding and in operative relation to the roller, and a guide apron below the roller between the reservoir and platen.

9. An attachment for typewriters comprising a reservoir adapted to hold a pile of sheets with one end of the pile in spread-count order, a feed roller in the reservoir in operative relation to the said end of the pile of sheets, a hinged cover for the reservoir overlying the spread end of the pile of sheets, and means for holding the cover in elastic engagement with the said sheets.

10. An attachment for typewriters comprising a reservoir adapted to hold a pile of sheets with one end of the pile in spread-count order, a feed roller in the reservoir in operative relation to the said end of the pile of sheets and provided with a frictional engaging face, a hinged cover for the reservoir overlying the spread end of the pile of sheets and also provided with a frictional engag-

ing face, and means for holding the cover in elastic engagement with the said sheets.

11. An attachment for typewriters comprising a reservoir adapted to hold a pile of sheets with one end of the pile in spread-count order, a feed roller in the reservoir in operative relation to the said end of the pile of sheets, a hinged cover for the reservoir overlying the spread end of the pile of sheets, and means for holding the cover in elastic engagement with the said sheets comprising a rod extending across the cover and removable therefrom, and springs connected to the ends of the rod.

12. In a paper feeding attachment for typewriters, a reservoir for the sheets, feeding means for the sheets at the delivery end of the reservoir, and means at the other end of the reservoir for holding all the sheets at said end in the same plane, the last named end of the reservoir having indications to show the proper position of sheets of different lengths to bring their other ends in proper relation to the feeding means.

13. In a paper-feeding attachment for typewriters, a reservoir for the sheets, and means for feeding the sheets from the reservoir comprising a feed roller, driving means between the same and the platen of the typewriter, and means for connecting the driving means to and disconnecting it from the sheet-feeding roller at will.

14. In a paper-feeding attachment for typewriters, a reservoir for the sheets, and means for feeding the sheets from the reservoir comprising a readily removable feed roller, driving means between the same and the platen of the typewriter, and a manually operable clutch for connecting the driving means to and disconnecting it from the sheet feeding roller at will.

15. In a paper-feeding attachment for typewriters, a reservoir for the sheets of paper, and means for feeding the sheets from the reservoir comprising a feed roller, a drive shaft therefor to which the roller is removably connected, a clutch between the shaft and a power source, said clutch tending to maintain the engaged position, and means for holding the clutch in the disengaged position against its normal tendency.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILDEY RIDGELY DIXON.

Witnesses:

MISS M. C. KEELEY,

J. C. LANE.