B. W. TUCKER.

TYPEWRITING MACHINE.

APPLICATION FILED SEPT. 17, 1917.

1,351,355.

Patented Aug. 31, 1920.

2 SHEETS—SHEET 1.

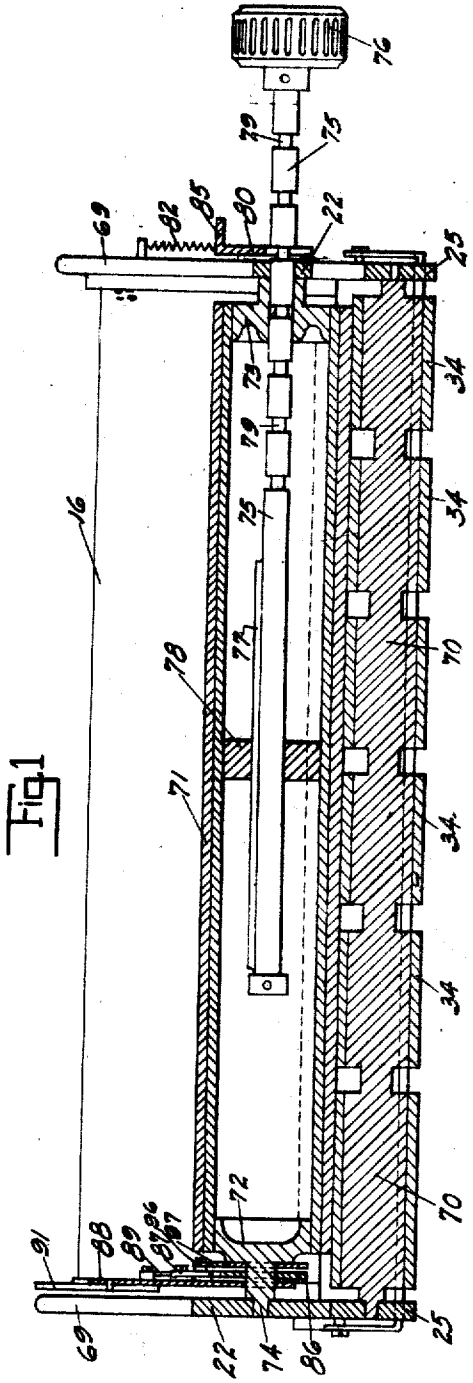

Fig. 1

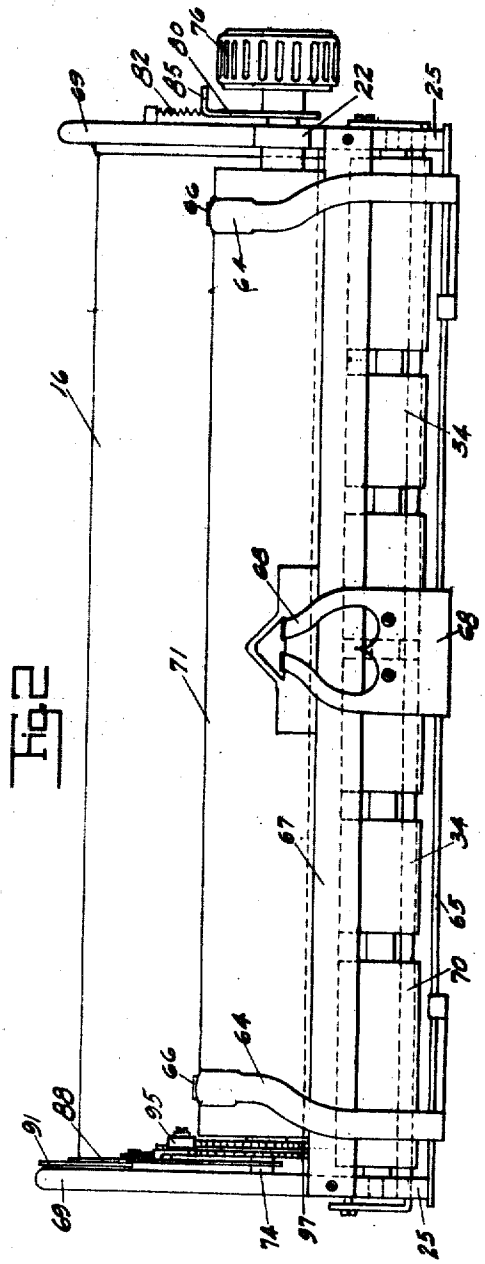

Fig. 2

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2 SHEETS—SHEET 2.

Fig 3

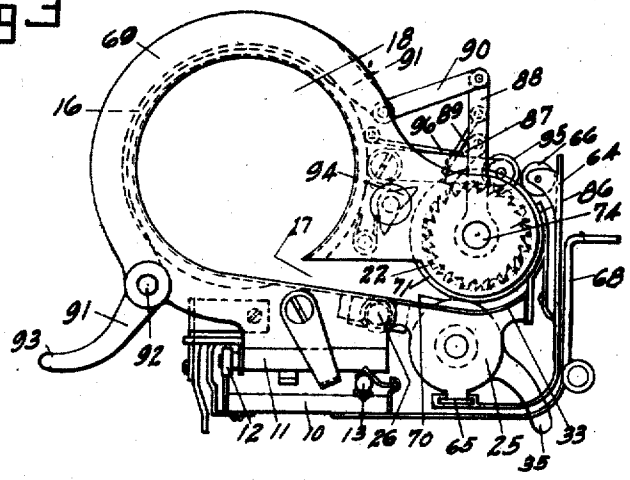


Fig. 4

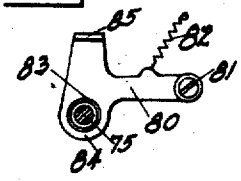


Fig. 5

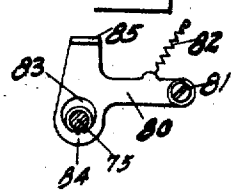
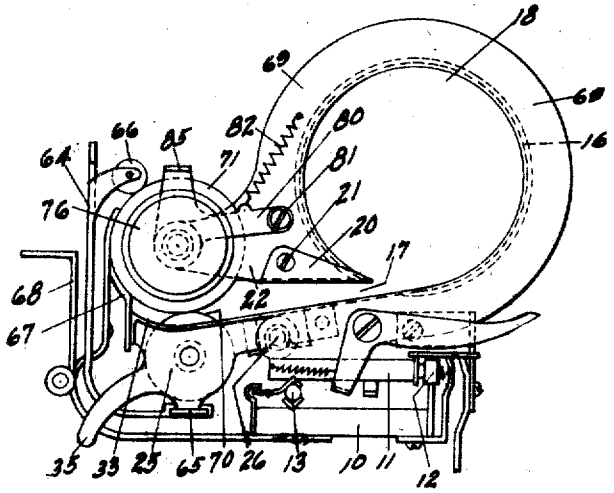


Fig 6



Inventor

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UNITED STATES PATENT OFFICE.

BENJAMIN W. TUCKER, OF SOUTH ORANGE, NEW JERSEY, ASSIGNOR TO CORONA TYPEWRITER COMPANY, INC., OF GROTON, NEW YORK, A CORPORATION OF NEW YORK.

TYPEWRITING-MACHINE.

1,351,355. Specification of Letters Patent. Patented Aug. 31, 1920.

Original application filed May 26, 1916, Serial No. 100,037. Divided and this application filed September 17, 1917. Serial No. 191,660.

To all whom it may concern:

Be it known that I, BENJAMIN W. TUCKER, a citizen of the United States, and a resident of South Orange, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Typewriting-Machines, of which the following is a specification.

This invention relates more particularly to the carriages of typewriting machines in which work sheets wider than the carriage may be written upon.

This application is a division of my copending application Serial No. 100,037, filed May 26, 1916.

One of the principal objects of the invention is to provide a carriage for a writing machine in which a platen may be mounted, and which is so constructed that work sheets, as wide paper, long envelops, and the like, may be placed about the platen and the work sheet handled in as ready a manner as in the ordinary machine, without making the carriage extensible and without in any way interfering with the proper working of the parts of the carriage or the parts usually associated therewith.

Another object of the invention is to provide a simple and efficient carriage in which the platen may be supported at its ends and the work sheet so held about the platen that the platen may be independently rotated or moved for line spacing, notwithstanding the fact that the work sheet may extend on either or both sides beyond the ends of the platen.

A further object of the invention is to provide means for rotating the platen independently of the line spacing mechanism which shall be readily operable from the front of the machine irrespective of the width of the work sheet.

A further object of the invention is to provide a simple and efficient carriage adapted for visible writing, which may be readily made and assembled, and in which the parts need not necessarily occupy much more space than the ordinary carriage.

Other objects of the invention are to provide simple and efficient means whereby the work sheet may be released in order that it may be readily adjusted about the platen, and to provide simple and efficient line spacing mechanism for the platen, readily operable from the front of the machine irrespective of the width of the work sheet.

A still further object of the invention is to provide a carriage which is particularly adapted for small portable writing machines of various kinds.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings which form a part of this application, and will then be pointed out in the claims at the end of the specification.

In the drawings, Figure 1 is a vertical sectional view, partly in elevation, showing a carriage and line spacing means therefor embodying the invention;

Fig. 2 is a front elevation of the carriage;

Fig. 3 is an end elevation of the carriage;

Figs. 4 and 5 are detail views showing a form of latch in a released and a locked position respectively, to adapt the platen to be directly rotated by an extensible stem or shaft; and

Fig. 6 is an end elevation looking in a direction opposite to that shown in Fig. 3.

While the invention is shown as applied to carriages constructed to adapt work sheets of the usual or of widths wider than the carriage to be written upon, it will be understood that many of the features shown may be employed in connection with carriages or writing machines of various kinds and constructions.

The carriage bed 10 may be supported in any desired way, and mounted to travel lengthwise of the bed, under the force of a spring drum or other motor, is a carriage 11. As shown, the carriage is provided with rollers 12 along one edge thereof, and ball bearings 13 along the other edge, so as to adapt the carriage to move readily along its bed. The carriage is also adapted to be controlled by suitable escapement mechanism, but such mechanism as well as the mounting of the carriage may be of any suitable construction.

The carriage frame has end pieces or brackets 69, which may be joined together by a tubular member or work sheet receiver 16. The work sheet receiver 16 may be of open work, as wire or thin plate, either solid or provided with openings to lighten the same, and if made of metal, as aluminum, will add

comparatively little weight to the carriage. The end members or brackets 69 are substantially annular in form, and each of said brackets is formed with a throat or channel 17. The member 16 is substantially cylindrical in form, and is arranged to conform to the shape of the openings 18 in the end brackets 69. The ends of the cylindrical member 16 are not joined together, but provide a throat or opening corresponding to the channel 17, in order that the work sheet may be caused to pass through the openings 18 into and from the work sheet holder 16, as will be presently described. One end of the holder 16 is fastened to the end brackets 69 by screws or otherwise, and the other end of the holder 16 may be provided with upturned parts or lugs 20, by which said end may be secured by screws 21 or otherwise, to the outer surface of said brackets 69.

The end brackets 69 are extended forwardly to provide lugs 22, and mounted in said lugs to rotate therein is a platen 71. The platen is supported at its ends in the lugs 22 in brackets 69, and extends substantially throughout the entire distance between said end brackets, and is adapted to take the impact of the type in the usual way.

The pressure roll 70 is held to rotate in a yieldably supported frame 25 hinged to the carriage frame at 26, so as to be adapted to be shifted downwardly to release the pressure roll from the platen 71. The carriage frame part 25 has a plate 33 on its upper surface which forms substantially a continuation of the forward edge of the holder 16, and said plate with the plate-like cylindrical member 16, provides a proper surface for guiding the work sheet backwardly or forwardly between the platen and pressure roll without offering any obstruction thereto. The plate 33 is cut away to permit the roll 70 to extend through the same, and said roll is also cut away to provide spaced members or parts 34, between which parts a part of the plate 33 extends in order that a substantially continuous table may be provided for the work sheet. A handle 35 may be arranged at either or both sides of the machine on the pressure roll frame 25 to adapt said frame to be moved about the spring hinge 26, to release the pressure roll from the platen to adapt the work sheet to be adjusted. By this means the work sheet may be properly held and fed between the platen 71 and the pressure roll 70, either into the holder 16 or forwardly for printing purposes, as desired. The construction of the yieldably supported pressure roll frame 25 is substantially the same as that shown in Figs. 1 to 6 of my copending application Serial No. 100,037, filed May 26, 1916.

The platen 71 may have the usual roll member with the impact receiving cylindrical covering of rubber or other material, and in one end thereof may have a bushing 72 and at the other end may have a bushing 73. The bushing 72 has a stem or stud portion 74 projecting outwardly from one side thereof, and this stem has a reduced part entering an opening in one of the carriage end brackets 69 to rotatably support the platen at one end in the carriage frame. The bushing 73 is provided with a central opening therethrough, and extending through the opening is a shaft or rod 75. The rod 75 extends through an opening in one of the lugs 22 formed on the carriage end bracket adjacent to the bushing 73, some distance into the platen and at one end is provided with a knob or button 76. At the opposite end of the rod 75 within the platen is a key 77 which is adapted to engage a slot or keyway in a collar 78 forming a part of the platen. The key 77 permits the extension of the rod 75 so that said rod may be made to rotate the platen whether the knob 76 is close to the end bracket of the carriage or at a distance therefrom. This permits the platen to be rotated manually at will in either direction independently of the line spacing mechanism in case the work sheet is wider than the carriage is long.

The rod 75 may be grooved at intervals, as at 79, and adapted to engage said grooves is a latch 80. The latch 80 is pivoted at 81 to the carriage frame and is normally forced in one direction by a spring 82. The latch is provided with an opening 83 through which the rod 75 passes and said opening provides an engaging part 84 to enter one of the grooves 79 to prevent the rod from being extended or forced into the platen and to hold the same in its adjusted position until the latch 80 is released. The latch 80 is substantially bell-crank in form, and on one arm thereof is provided with a finger key or part 85 by which the latch may be depressed, as shown in Fig. 5, to release the same from engagement with any one of the grooves 79 and thereby permit adjustment of the rod 75.

The platen is rotated for line spacing through a ratchet wheel 86 fixed on the stem 74 of the bushing 72. This ratchet wheel 86 is adapted to be engaged by a pawl 87 which is pivotally held to a lever 88 and is normally pressed by a spring 89 into engagement with the teeth of the ratchet wheel. The lever 88 is pivotally held to the stem 74 and is connected by a link 90 to a lever 91. The lever 91 is pivoted at 92 to one of the carriage brackets and has a finger portion 93 located at the rear of the carriage. The lever 91 is sickle-like in form, having the main body portion thereof curved to the shape of the cylindrical body of the carriage so as not to interfere with the work sheet. The lever 91 and pawl carrying lever 88 may be restored to normal position by a

spring or otherwise, and the extent of movement of the lever 88 may be limited by a manually movable stop 94 in substantially the same manner as the line spacing action of the pawl is controlled in the Corona typewriter. The platen may also be held in its various adjusted positions by a friction roll, as 95, which is supported at the end of a spring held lever 96, and which engages a notched wheel 97, and serves to hold the platen and still permit it to be rotated in either direction.

The carriage may be provided with paper fingers 64, which are adjustably held to a bar 65 carried by the pressure roll frame 25. These fingers may be adjusted lengthwise of the platen, and at the upper end thereof may have rolls 66 mounted thereon, as is usual. The pressure roll frame 25 may be provided with a scale 67 at the forward edge thereof, and there may be also provided type aligning means 68 which may be hinged to adapt the same to be moved with the pressure roll away from the platen.

It will be evident from the foregoing that a carriage construction is provided whereby wide or long work sheets may be employed and written upon which are wider than the length of the carriage or the platen; that simple means are provided whereby the work sheet is properly held between pressure means and the platen; that the construction is such that the carriage is adapted for front strike or other writing means, and that simple and efficient means is provided whereby the work sheet may be readily adjusted and line spaced irrespective of the width thereof.

What I claim is:—

1. In a typewriting machine, the combination of a carriage, a substantially cylindrical work sheet holder having open ends and a longitudinally extending throat portion having an entrance into said work sheet holder throughout the length of the holder at the forward side of said holder, a platen located forward of the work sheet holder, a roll located beneath the platen and coöperating therewith to hold the work sheet between the platen and the roll, and line spacing means embodying a curved line space lever operatively connected with the platen and extending rearwardly and downwardly about the work sheet holder to a point below the path of the work sheet.

2. In a typewriting machine, the combination of a carriage, a tubular open ended work sheet holder formed with a longitudinally extending throat portion having an entrance into said holder throughout the length of the holder at the forward side thereof, means for supporting said holder upon the carriage with its open ends unobstructed to adapt a work sheet of greater width than the carriage to be written upon, a platen located forward of the throat portion of the holder, a roll coöperating with the platen to hold a work sheet between the platen and said roll, and a line spacing lever pivotally supported intermediate its ends on the carriage and operatively connected at its forward end to rotate the platen, said lever having a handle portion at its rear end extending below the plane of the throat portion of the holder.

3. In a typewriting machine, the combination of a carriage, a tubular open ended work sheet holder formed with a longitudinally extending throat portion having an entrance into said holder throughout the length thereof at the forward side of the holder, means for supporting said holder upon the carriage with its open ends unobstructed, a platen located forwardly of said holder, a pressure roller coöperating with the platen to hold a work sheet, a line space wheel rotatable with the platen, a line space lever and connections for actuating said line space wheel, said lever and connections extending to a point accessible from the front of the machine without intersecting the path of the work sheet, and means extensible transversely of the path of the work sheet operatively connected to rotate the platen in either direction.

4. In a typewriting machine, the combination of a carriage having end brackets and a substantially cylindrical work sheet holder supported in said brackets, said brackets and work sheet holder being formed with a longitudinally extending throat, a platen rotatably supported in the end brackets adjacent said throat, a frame pivotally held to the end brackets, yieldable means for normally forcing the frame toward the platen, a pressure roll rotatably held in the frame and adapted to engage the platen, a knob located at one end of the carriage, an extensible operating connection between the knob and the platen for rotating the platen in either direction, a line spacing wheel for rotating the platen, and a line spacing lever operatively connected to actuate said line spacing wheel accessible from the front of the machine irrespective of the width of the work sheet, said lever and its connections extending to a point at the opposite side of the path of the work sheet from the platen without intersecting said path.

5. In a typewriting machine, the combination of a carriage, a work sheet holder supported on said carriage having unobstructed open ends and formed with a throat having unobstructed open ends to adapt a work sheet of greater width than the carriage to be passed into and from the holder, a platen rotatably supported on the carriage at one side of the path of the work sheet, a pressure roll located at the other side of the path of the work sheet and

coöperating with the platen to feed the work sheet through the throat, a line spacing wheel rotatable with the platen, and means for actuating said line spacing wheel embodying a lever extending around the path of the work sheet to a point at the opposite side of said path from the platen.

6. In a typewriting machine, the combination of a carriage, a platen rotatably supported at its ends upon said carriage, a pressure roll coöperating with the platen to hold a work sheet, a tubular work sheet holder mounted on the carriage and adapted to receive a work sheet of greater width than the carriage, and line spacing means embodying a lever having a handle portion located at the rear of said holder below the path of the work sheet.

7. In a typewriting machine, the combination of a carriage, a platen rotatably supported at its ends on said carriage, a pressure roll coöperating with the platen, a tubular work sheet holder adapted to receive a work sheet of greater width than the carriage, means for supporting said holder longitudinally of the carriage to move therewith, line spacing means for rotating the platen including a lever extending about said holder at the impression side of the path of the work sheet, and means extensible transversely of the path of the work sheet and operatively connected with the platen for rotating the platen in either direction independently of the line spacing means.

8. In a typewriting machine, the combination of a carriage, a tubular open ended work sheet holder formed with a longitudinally extending throat portion having an entrance into said holder throughout the length of the holder, means for supporting said holder upon the carriage with its ends unobstructed to adapt a work sheet of greater width than the carriage to be written upon, a platen rotatably mounted on the carriage, and means extensible axially of the platen for rotating the platen in either direction.

9. In a typewriting machine, the combination of a carriage, a platen rotatably supported at its ends on said carriage, a pressure roll coöperating with the platen to hold a work sheet, a tubular work sheet holder mounted on the carriage and adapted to receive a work sheet of greater width than the carriage, and means extensible transversely of the path of the work sheet for rotating the pressure roll and platen in either direction.

10. In a typewriting machine, the combination of a carriage, a platen rotatably supported on said carriage, a tubular work sheet holder adapted to receive a work sheet of greater width than the carriage, means for supporting said holder on the carriage, line spacing means including a lever located rearwardly of the platen and extending to a point accessible from the front of the machine without intersecting the path of the work sheet, and means extensible axially of the platen operatively connected to rotate the platen in either direction.

11. In a typewriting machine, the combination of a carriage, a tubular open ended work sheet holder formed with a longitudinally extending throat portion having an entrance into said holder throughout the length thereof, means for supporting said holder upon the carriage with its ends unobstructed, a platen located forward of the holder, means coöperating with the platen to hold the work sheet, line spacing means including a lever extending rearwardly and downwardly from the platen to a point below the path of the work sheet without intersecting said path, and means connected with the platen and extensible axially thereof for rotating the platen in either direction independently of the line spacing means.

12. In a typewriting machine, the combination of a carriage, a tubular open ended work sheet holder formed with a longitudinally extending throat portion having an entrance into said holder throughout the length thereof, means for supporting said holder upon the carriage with its ends unobstructed to adapt a work sheet of greater width than the carriage to be written upon, a platen located forward of the holder, a roll coöperating with the platen to hold a work sheet, line spacing means embodying a lever extending rearwardly and downwardly about said holder to a point below the path of the work sheet, and means extensible longitudinally of the carriage for rotating the platen in either direction to feed the work sheet.

13. In a typewriting machine, the combination of a carriage, a tubular open ended work sheet holder formed with a longitudinally extending throat portion having an entrance into said holder throughout the length thereof, means for supporting said holder upon the carriage with its ends unobstructed to adapt a work sheet of greater width than the carriage to be written upon, a platen rotatably supported on the carriage, means coöperating with the platen to hold a work sheet, line spacing means located at one end of the carriage and accessible from the front of the machine and below the work sheet and irrespective of the width of the work sheet without the hand of the operator intersecting the path of the work sheet, and means located at the opposite end of the carriage and extensible longitudinally thereof for rotating the platen in either direction independently of the line spacing mechanism.

14. In a typewriting machine, the combi-

nation of a carriage having end brackets of substantially annular form, a substantially cylindrical work sheet holder supported at its ends in said brackets and having unobstructed open ends, said end brackets and holder being formed with a throat having unobstructed open ends, a platen rotatably supported at its ends in said brackets, line spacing mechanism accessible from the front of the machine irrespective of the width of the work sheet and extending from the platen to a point below the path of the work sheet without intersecting said path, and means extensible longitudinally of the carriage for rotating the platen in either direction independently of said line spacing mechanism.

15. In a typewriting machine, the combination of a carriage, a platen, a pressure roll coöperating with the platen to hold a work sheet, means for supporting the pressure roll and platen on the carriage to receive a work sheet of greater width than the carriage, line spacing mechanism embodying a lever and connections extending from the platen to a point within the vertical planes of the ends of the carriage at the opposite side of the path of the work sheet from the platen without intersecting the path of the work sheet, and means extensible axially of the platen and operatively connected therewith for rotating the platen in either direction independently of the line spacing mechanism.

16. In a typewriting machine, the combination of a carriage, a platen rotatably supported on said carriage, means coöperating with the platen to hold a work sheet, a shaft slidably and rotatably mounted on the carriage and having one end extending within the platen axially thereof, a key-and-slot connection between said shaft and platen to adapt said shaft to be shifted longitudinally and to rotate the platen in its different adjusted positions, and line spacing mechanism located wholly within the vertical planes of the ends of the carriage and wholly out of the path of the work sheet and accessible from the front of the machine irrespective of the width of the work sheet.

17. In a typewriting machine, the combination of a carriage, a platen, a pressure roll, means for supporting the platen and pressure roll on the carriage to receive a work sheet of greater width than the carriage, a shaft slidably and rotatably mounted at one end of the carriage axially of the platen and having a constantly maintained driving connection with the platen for rotating the same in all slidably adjusted positions of said shaft, and line spacing mechanism located wholly within the vertical planes of the ends of the carriage out of the path of the work sheet and having an operating handle at the opposite sides of the path of the work sheet from the platen.

This specification signed this 14th day of September, A. D. 1917.

BENJAMIN W. TUCKER.