

March 10, 1942.

L. A. O'BRIEN ET AL
TELETYPEWRITER EQUIPMENT

2,275,798

Filed Sept. 28, 1938

2 Sheets-Sheet 1

FIG. 1

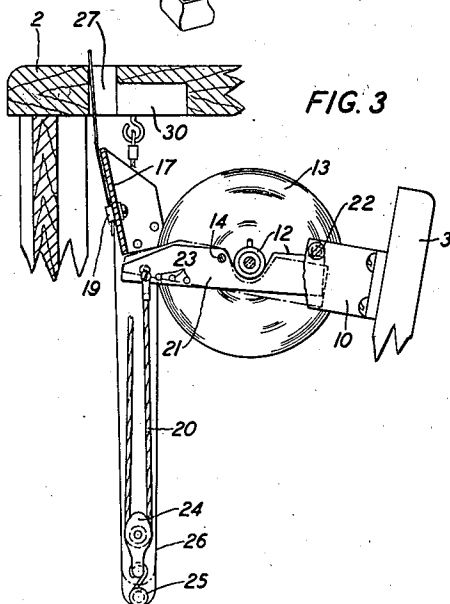
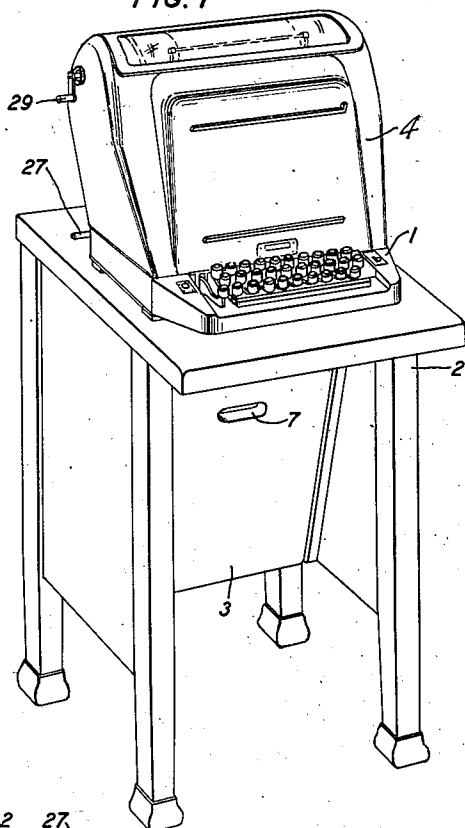


FIG. 3

FIG. 4

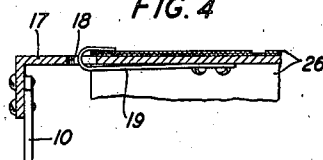


FIG. 5

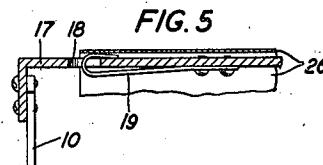
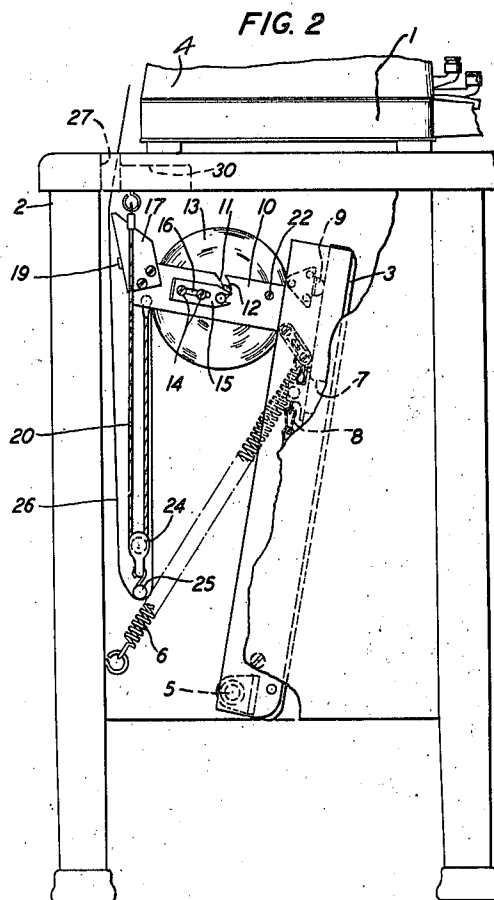


FIG. 2



INVENTORS: L. A. O'BRIEN
E. M. SMITH
BY *J. H. Schmied*
ATTORNEY

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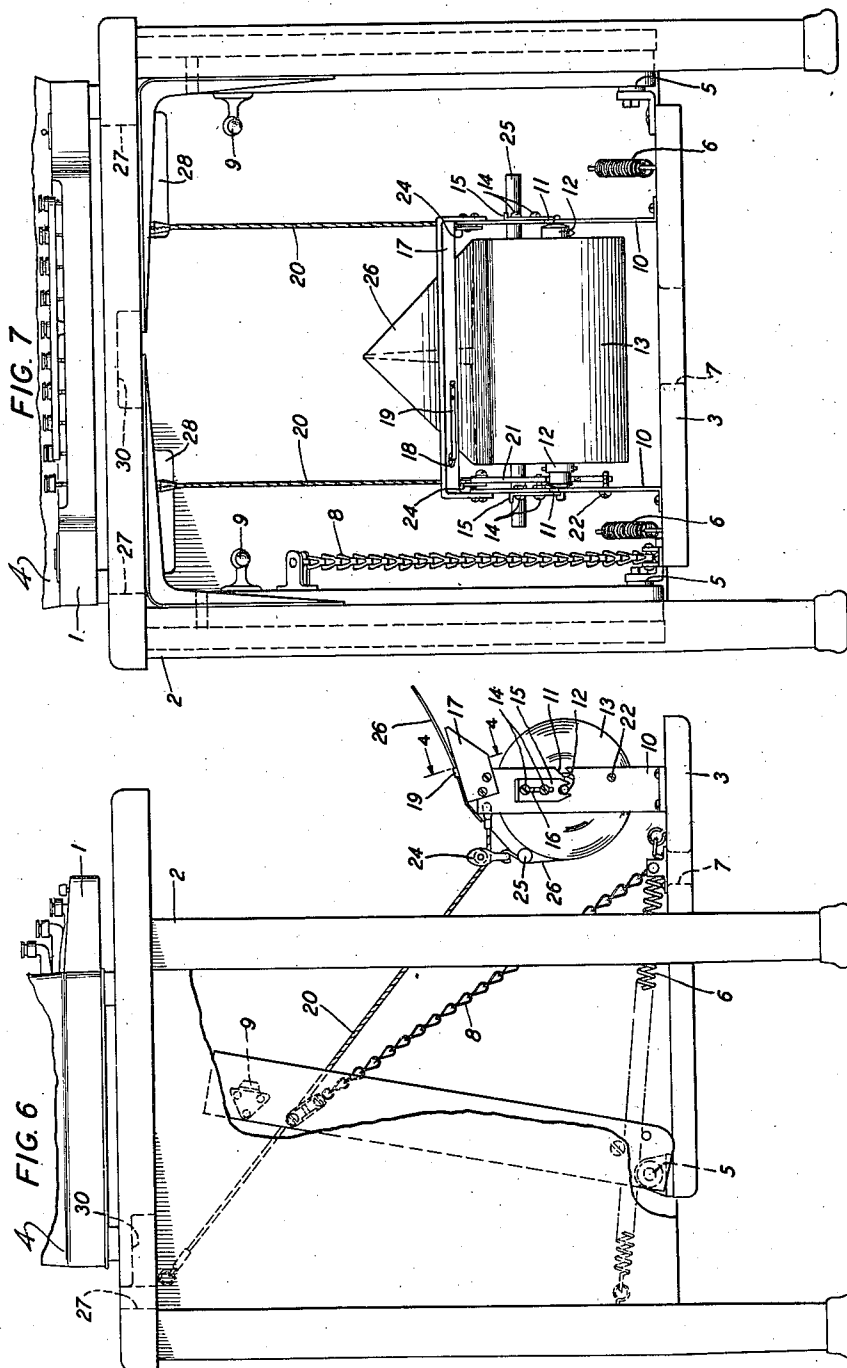
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TELETYPEWRITER EQUIPMENT

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INVENTORS: L. A. O'BRIEN
E. M. SMITH
BY *J. W. Schmied*
ATTORNEY

UNITED STATES PATENT OFFICE

2,275,798

TELETYPEWRITER EQUIPMENT

Laurence A. O'Brien, South Orange, and Edward M. Smith, Montclair, N. J., assignors to Bell Telephone Laboratories, Incorporated, New York, N. Y., a corporation of New York

Application September 28, 1938, Serial No. 232,070

6 Claims. (Cl. 242—55.2)

This invention relates to tables for supporting printing telegraph machines and, more particularly, to apparatus for supporting a roll of paper inside a teletypewriter table.

Heretofore, it has been the general practice to support a roll of paper on the outside of a teletypewriter table. Some of the disadvantages resulting from this practice are that more space is required, the appearance of the teletypewriter and table is not of the best, and it is easy for dust to collect on the paper and then be carried inside the teletypewriter where it will accumulate and cause trouble.

Accordingly, it is an object of this invention to provide a teletypewriter table with mechanism for holding a roll of paper inside the table, this mechanism being attached to a pivotally mounted panel of the table which may be swung down for facilitating insertion of the paper.

It is also an object of the invention to provide the paper roll mechanism with a braking device for preventing the paper roll from spinning when paper is fed from the roll.

A further object of the invention is to provide the paper roll mechanism with a spring clamp for holding the end of the paper strip in such a position that, when the pivotally mounted panel is shut, the paper will project through a slot in the top of the table thereby facilitating the insertion of the paper into the teletypewriter.

These objects of the invention are attained by pivotally mounting one of the panels, such as the front panel, and attaching thereto a pair of brackets for holding a spindle upon which the paper roll is supported. Secured to the tops of the brackets is a plate having a spring clamp fastened thereto for detachably holding an end of the paper strip. Two cords are provided for supporting a so-called "slack" bar for causing the paper strip to form a loop sufficient to permit edgewise movement of the paper caused by the travel of the carriage of the teletypewriter. One of these cords has one of its ends tied to a braking device pivotally mounted on one of the brackets. The operation of the braking device is controlled by the weight of the slack bar in a manner that will be described hereinafter.

These and other features of the invention will be described in detail in connection with the following description of the drawings in which:

Fig. 1 is a three-dimensional perspective view of a teletypewriter mounted upon a table constructed in accordance with the invention;

Fig. 2 is a side view of the table with a por-

tion of one panel broken away to show the paper roll mounted upon its brackets and also showing the slack bar mounted upon its cords, one of which is tied to the braking device;

Fig. 3 is a side view of the braking device with a portion of the bracket removed to show in full lines the normal, or unoperated, position of the braking device and also to show its operated position in dotted lines;

Fig. 4 is a sectional view taken along the line 4—4 in Fig. 6 and illustrating the manner in which the clamp spring engages the paper strip;

Fig. 5 is a sectional view somewhat similar to Fig. 4 but showing the paper strip disengaged from the spring clamp and passing over it;

Fig. 6 is a side view of the teletypewriter table with the front panel in its open position and with one of the side panels partly broken away to show the manner in which the front panel is held in its open position with the paper roll readily accessible; and

Fig. 7 is a front view of the teletypewriter table with the front panel in its open position.

Fig. 1 shows a teletypewriter 1 which may be of the type shown in Patent 2,230,463 granted February 4, 1941 to C. A. Levin, enclosed in a silencing and dust-excluding cover 4, of the type disclosed in Patent Des. 112,119 issued November 8, 1938, to G. R. Lum et al., mounted upon a table 2 having a front panel 3 which slopes inward to provide space for the legs of an operator. Panel 3 is pivotally mounted on pivots 5—5 (see Fig. 2) and is held in a closed position by two coil springs 6—6. A slot 7 is cut in panel 3 whereby panel 3 may be grasped and pulled outward and downward to its open position where it is supported by the chain 8 (see Fig. 6). Panel 3 is held in its open position by its own weight plus the weight of the apparatus mounted thereon as this combined weight is sufficient to overcome the pull exerted by springs 6—6. During the travel of panel 3 from one position to the other, the weight of panel 3 and the apparatus mounted thereon is counterbalanced by springs 6—6. Back-stops 9—9 have rubber tips and are attached to the inside of the table 2 and springs 6—6 hold panel 3 against the back-stops 9—9 when panel 3 is in its closed position (see Fig. 2).

Secured to the inside upper portion of panel 3 are two brackets 10—10 each of which is provided with a notch 11. Mounted in the notches 11—11 is a spindle 12 for supporting the paper roll 13. Two bolts 14—14 are attached to each bracket 10—10 for slidably securing thereto a

retaining latch 15 provided with a slot 16 for enabling it to slide back and forth within the limits determined by bolts 14—14. One end of each latch 15 has a V-shaped notch for engaging and retaining one end of the spindle 12. Fastened to the tops of the brackets 10—10 is a clamp plate 17 having a small hole 18. Attached to the under surface of plate 17 is a J-shaped spring clamp 19 having a hook-shaped end which projects through the hole 18 and bears firmly against the top surface of plate 17.

Two cords 20—20 each have one end tied to the inside rear top of table 2. One cord 20 has its other end tied to the top of one of the brackets 10 and the other cord 20 has its other end tied to an end of a braking device 21 which is pivotally attached to one of the brackets 10 by one of the bolts 14 which acts as a fulcrum for brake 21. A stop screw 22 is carried by this bracket 10 for limiting the movement of brake 21 when spindle 12 is removed from brackets 10—10. A plurality of holes 23 are drilled in brake 21 at one end so that the cord 20 can be attached to brake 21 at various distances from its fulcrum 14 in order to permit adjustment of the brake pressure as required. Mounted for travel on each cord 20 is a pulley 24. Hanging from the pulleys 24—24 is a slack bar 25 beneath which the strip of paper 26 must pass from roll 13 on its way out of the table 2 into the cover 4 of teletypewriter 1 via slot 27 cut in the top of table 2. Slack bar 25 is free to roll in its pulley supports so as to reduce its frictional drag on the paper 26 and thereby cause less interference with the paper feeding mechanism. If desired, rings could be used instead of the pulleys 24—24. Holes 28—28 are cut in the back panel of table 2 to furnish means for ventilating the inside of table 2 and to provide hand-holes by means of which an attendant may grasp table 2 for moving it.

When it is desired to renew the paper roll 13 in table 2, the attendant inserts a hand in slot 7 and pulls panel 3 outward and downward, springs 6—6 counterbalancing the weight of panel 3 and the apparatus mounted thereon, to its open position shown in Figs. 6 and 7 where it is held by chain 8, thus placing the paper roll holding apparatus and the slack bar 25 in a conveniently accessible position. The attendant then raises the latches 15—15 to release the paper roll spindle 12 which readily disengages itself from latches 15—15 and slides down into the lowest point of notches 11—11 from which position it may readily be removed from the brackets 10—10. Due to the V-shape of notches 11—11, as seen in Fig. 6, the latches 15—15 can, at this time, be allowed to drop down because they will not now reengage the ends of spindle 12 since spindle 12 has now moved to the lowest part of the notches 11—11.

The spindle 12 is then removed from the exhausted roll 13 and inserted in a new roll 13 which is placed between the brackets 10—10, the ends of spindle 12 being placed in the notches 11—11. By pushing the roll 13, the ends of spindle 12 will force the latches 15—15 upward until the spindle 12 reaches the ends of notches 11—11 at which point the latches 15—15 will fall downward and the notches in the ends of latches 15—15 will engage the ends of spindle 12 to hold spindle 12 and roll 13 securely in place. If the attendant should forget to push spindle 12 to the point where the latches 15—15 engage its ends, spindle 12 will be automatically latched by grav-

ity while panel 3 is being closed. The end of the paper strip 26 is then fed from the roll 13 by the attendant and carried around the slack bar 25 which has been carried into a conveniently accessible position by its pulleys 24—24 riding on cords 20—20 as is shown in Fig. 6, and then up to the plate 17. Here the attendant makes a 45 degree fold in each corner of the end of the paper strip 26 to form a point as shown in Fig. 7. As the paper strip 26 must be folded to a point to aid in threading it through the teletypewriter 1, folding it at this time serves a dual purpose.

The bottom part of spring clamp 19 is then pushed up against the under surface of plate 17 thereby projecting the hook-shaped end of spring clamp 19 up above the top surface of plate 17 to permit the folded end of the paper strip 26 to be inserted between the end of the paper retaining clamp 19 and plate 17 as is shown in Fig. 4. The upper surface of plate 17 is marked with two lines to indicate the proper location of the folded pointed end of paper strip 26. When the paper 26 is in its proper place on plate 17, the attendant releases his pressure on the bottom part of spring clamp 19 thereby releasing spring 19 which proceeds to clamp the paper 26 securely against plate 17. The advantage derived from this type of spring clamp is that the attendant will not bend the spring 19 beyond its elastic limit.

Panel 3 is now pushed up to its closed position shown in Figs. 1, 2, and 3 where it is firmly held against the rubber back-stops 9—9 by springs 6—6 thereby avoiding the necessity of a latch with its possible rattling caused by vibration. Clamp 19 carries the end of the paper strip 26 along with it to a point midway beneath the slot 27 in the rear of the top of table 2. In so moving, the folded pointed end of the paper strip 26, which brushes against the under surface of the table top as the panel 3 is moved to its closed position, flips to a vertical position in the widened portion 30 of slot 27 as indicated in Fig. 3. The folded tip of the paper strip 26 is thus carried to a position outside of the table top so that it can be readily grasped by an attendant. The attendant then disengages the paper strip 26 from spring clamp 19, as is shown in Fig. 5, by pulling it to one side and proceeds to feed it through the teletypewriter 1.

This clamping device 19 is of considerable assistance to an attendant as it would be quite difficult to feed the paper 26 through the table 2 without it because the attendant would have to reach with one hand from the front of table 2 into the inside thereof to hold the end of the paper strip 26 in slot 27 in table 2 while attempting to grasp with his other hand the tip of strip 26 projecting above the top of table 2. Pivotal mounting of the back or side panels of table 2 would not, in general, help an attendant as these tables 2 are preferably placed with their backs against a wall and generally have other teletypewriter tables or other apparatus adjoining their side panels. Therefore, the front panel is ordinarily the only panel readily accessible to an attendant. The spring clamp 19 greatly facilitates the attendant's work because he simply places the folded tip of paper 26 under clamp 19, shuts panel 3, and immediately the tip of paper 26 pops out of the slot 27 in the top of table 2. A further advantage of this method of feeding the paper strip 26 is that it is so simple that it requires very little training for the attendants to learn to do it properly.

In the meantime, the weight of slack bar 25 has forced the paper roll 13 to turn until the paper strip 26 has formed a loop extending nearly to the bottom of the table panels for permitting edgewise movement of the paper 26 caused by the travel of the teletypewriter carriage. The weight of slack bar 25 then pulls down that end of the brake 21 to which it is attached by cord 20. This causes brake 21 to turn counter-clockwise on its pivot 14 thereby forcing the other portion of brake 21 to bear against spindle 12 as is shown in dotted lines in Fig. 3. The resulting friction is sufficient to stop spindle 12 and paper roll 13 from further rotation at this time. As was stated above, the pressure of brake 21 on spindle 12 can be varied by tying cord 20 to a different hole 23 in brake 21. The paper strip 26 and its related apparatus is thus placed in the condition shown in Fig. 2.

During operation of teletypewriter 1, the paper strip 26 is fed through the teletypewriter 1 by means of the line feed mechanism (not shown) in teletypewriter 1. If the paper strip 26 consists of a series of forms, it often happens that only a few lines are printed upon each form. In such case, the unprinted portion of the forms are rapidly fed through teletypewriter 1 by a succession of line feed operations which cause the paper roll 13 to rotate rapidly. Other types of service comprise the transmission of a series of short messages with several line spaces between the messages. Sometimes roll 13 is caused to rotate rapidly when an attendant operates the platen crank 29 at a fast rate. Rapid rotation of roll 13 is objectionable because it has a tendency to impart a certain amount of momentum to the movement of roll 13 with the result that, if it were not for brake 21, an excess of paper would be fed from roll 13 and would accumulate in the lower portion of table 2 where it might become snarled with the apparatus inside table 2. Spinning of roll 13 is objectionable for other reasons also. For example, since table 2 has no bottom, an attendant, in slamming shut panel 3, might cause the slack bar 25 to be thrown against the paper strip 26 and cause a long loop to form and extend down to the floor where it would become soiled and might be stepped upon.

However, the weight of slack bar 25 operates brake 21 and causes it to bear against spindle 12 with the result that the paper roll 13 is held stationary. When a line feed operation is performed in teletypewriter 1, the paper strip 26 is pulled upward out of slot 27 in table 2 thereby shortening the loop formed by the paper strip 26 inside table 2 as is shown in dotted lines in Fig. 3. Shortening of this loop causes the paper strip 26 to elevate the slack bar 25 slightly, thereby reducing the tension of cord 20. A decrease in the tension of cord 20 effects a corresponding decrease in the force exerted by brake 21 on spindle 12 with the result that spindle 12 and roll 13 will be released for rotation.

Since, at this time, the weight of slack bar 25 is carried by the loop formed by the paper strip 26 and since spindle 12 and roll 13 are now released for rotation, the weight of slack bar 25 will force the paper strip 26 to extend its loop by unreeling more paper from roll 13. As the loop is extended, slack bar 25 is lowered to a point where it is again supported by its cord 20 instead of the paper strip 26. At this point, the tension in cord 20 causes brake 21 to operate to prevent further rotation of spindle 12 and roll 13

at this time. This process is repeated with the next line feed operation.

The invention has been described with reference to its preferred embodiment and its preferred application. It is to be understood that the invention is capable of other applications and may be embodied in other forms of apparatus than that specifically shown in the drawings. It is not limited to use with printing telegraph machines and may be used with other printing devices, such as electrically operated typewriters. Consequently, the invention is not to be limited to the particular form and use shown and described, but is to be limited only by the claims appended hereto.

What is claimed is:

1. A table comprising a top adapted to support a printing machine, said top having a slot therein, a movable panel in the table having an open position and a closed position, holding means adapted to hold a strip of paper in roll form, securing means for securing the holding means to the panel, an instrumentality adapted to hold one end of the strip of paper, and means for attaching said instrumentality to said holding means at a point which is beneath and adjacent to said slot when said panel is in its closed position whereby the end of the strip of paper held by said instrumentality is carried into the slot in the top of the table when the panel is moved from its open position to its closed position.

2. A table comprising a top adapted to support a printing telegraph machine, said top having a slot therein, a movable panel in the table having an open position and a closed position, holding means adapted to hold a strip of paper in roll form, securing means for securing the holding means to the panel, a J-shaped spring clamp, a plate having a hole therein, means for attaching said plate to the holding means, and means for securing the J-shaped spring clamp to said plate at a point which is beneath and adjacent to said slot when said panel is in its closed position with the curved end of the spring clamp inserted through the hole in the plate and adapted to hold one end of a strip of paper between the end of the spring clamp and the plate whereby said end of the paper is carried into the upper portion of the table and projected out of said slot when the panel is moved from its open position to its closed position.

3. In combination, supporting means adapted to support a recording instrument, holding means adapted to hold a spindle for supporting a strip of paper in roll form for rotation, a brake lever having a cut-out portion adapted to bear against said spindle, means for pivotally attaching said brake lever to said holding means, a slack bar adapted to form a loop in a strip of paper supported by said spindle held by the holding means, flexible means having one end attached to said supporting means and its other end secured to the brake lever for causing the cut-out portion of the brake lever to bear against said spindle for frictionally retarding its rotation, and means for attaching said slack bar to said flexible means, said brake lever having a plurality of holes therein for enabling said flexible means to be secured to the brake lever at various distances from its fulcrum for adjusting the brake pressure exerted against said spindle.

4. A table comprising a top adapted to support a printing machine, said table having a movable panel having an open position and a closed position, holding means having a V-shaped notch

adapted to support one end of a spindle on which a strip of paper in roll form is mounted for rotation, means for securing the holding means to the panel, a plate having a V-shaped cut-out at one end thereof, means for slidably attaching said plate to the holding means to permit said plate to move only back and forth in a straight line with the open end of the V-shaped cut-out opposite the open end of said V-shaped notch in said holding means, suspensory means for suspending said movable panel in its open position for enabling the spindle to be inserted in one end of the V-shaped notch in the holding means for bearing against that end of said plate that has the V-shaped cut-out therein, and means for holding said panel in its closed position for permitting said plate to be slid back by the weight of a spindle bearing thereon for enabling the end of said spindle to be received within the other end of the V-shaped notch in the holding means and also within the V-shaped cut-out in said plate.

5. In combination, a table having a top supported by a plurality of legs, a plurality of panels for enclosing a portion of the space beneath the top of the table and between said legs, each of said panels having an inside face and an outside face, hinge means for pivotally mounting one of said panels for movement from a closed position to an open position and vice versa, holding means adapted to hold a strip of paper in roll form for rotation thereof, securing means for securing said holding means to the inside face of said pivotally mounted panel, tensile means for holding said pivotally mounted panel in its closed position whereby a roll of paper held by said holding means is supported entirely within said

enclosed space, and suspensory means for suspending said pivotally mounted panel in its open position whereby a roll of paper held by said holding means is supported completely outside the confines of the table.

6. In combination, a table having a top adapted to support a recording instrument, a plurality of legs for supporting said top, a plurality of panels for enclosing a portion of the space beneath the top of the table and between said legs, each of said panels having an inside face and an outside face, hinge means for pivotally mounting one of said panels for movement from a closed position to an open position and vice versa, holding means adapted to hold a strip of paper in roll form for rotation thereof, securing means for securing said holding means to the inside face of said pivotally mounted panel, a slack bar for forming a loop in said strip of paper, tensile means for holding said pivotally mounted panel in its closed position whereby a roll of paper held by said holding means is supported entirely within said enclosed space, suspensory means for suspending said pivotally mounted panel in its open position whereby a roll of paper held by said holding means is supported completely outside the confines of the table, and instrumentalities for suspending the slack bar in a position entirely within said enclosed space when the pivotally mounted panel is in its closed position, said instrumentalities including conveying means for conveying the slack bar to a position completely outside the confines of the table when the pivotally mounted panel is in its open position.

LAURENCE A. O'BRIEN.
EDWARD M. SMITH.