April 25, 1933. C. FENSKY 1,905,834

COPYHOLDER

Filed June 21, 1930 3 Sheets-Sheet 1

Fig. 2.

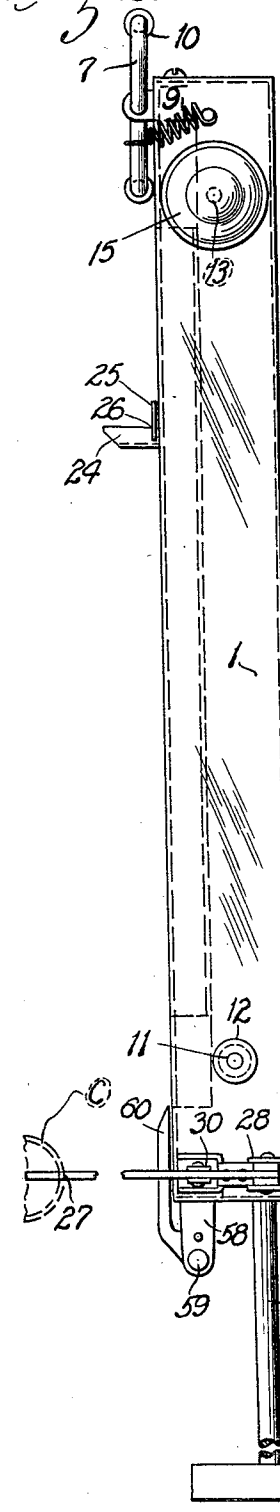
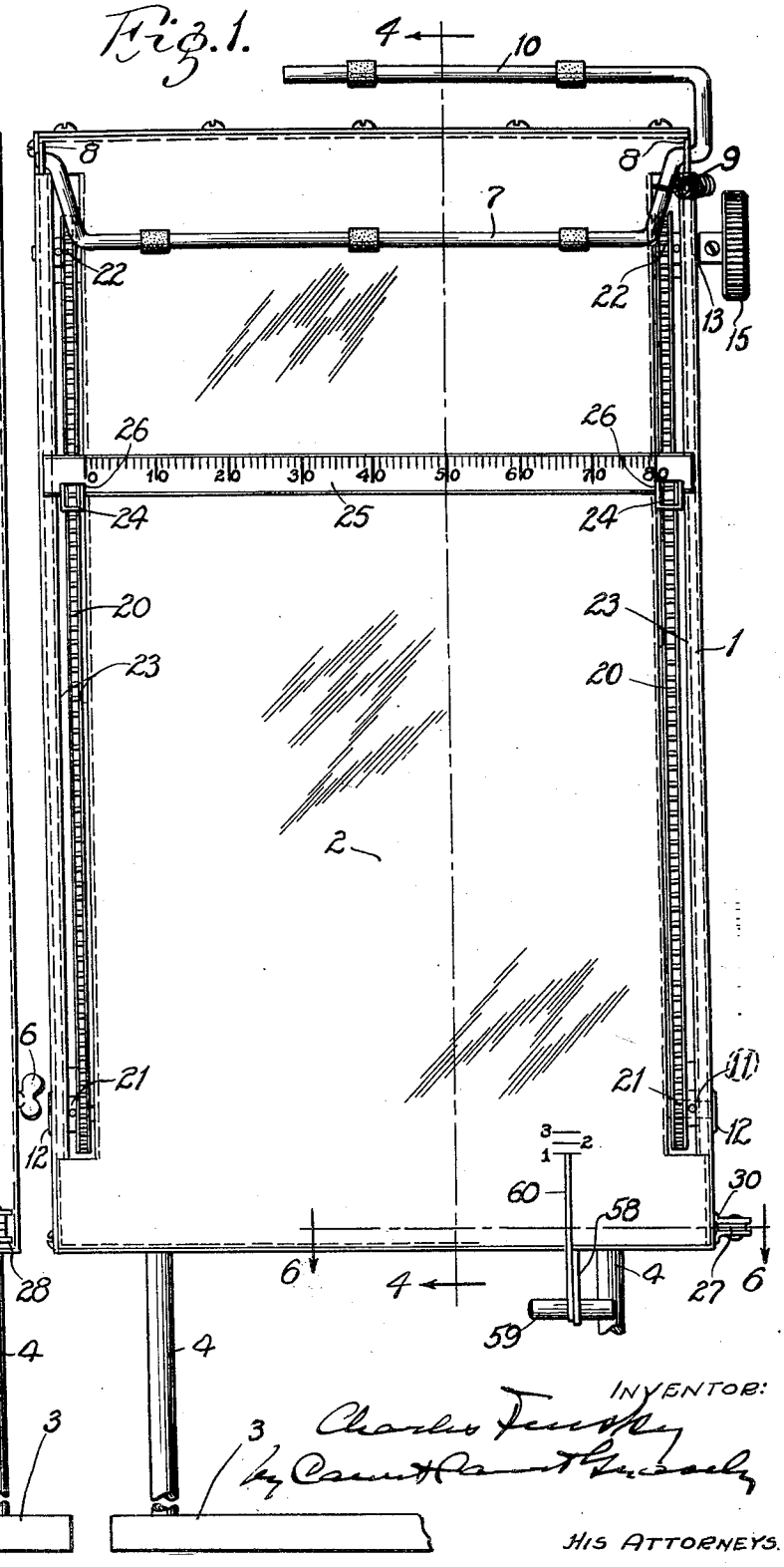


Fig. 1.



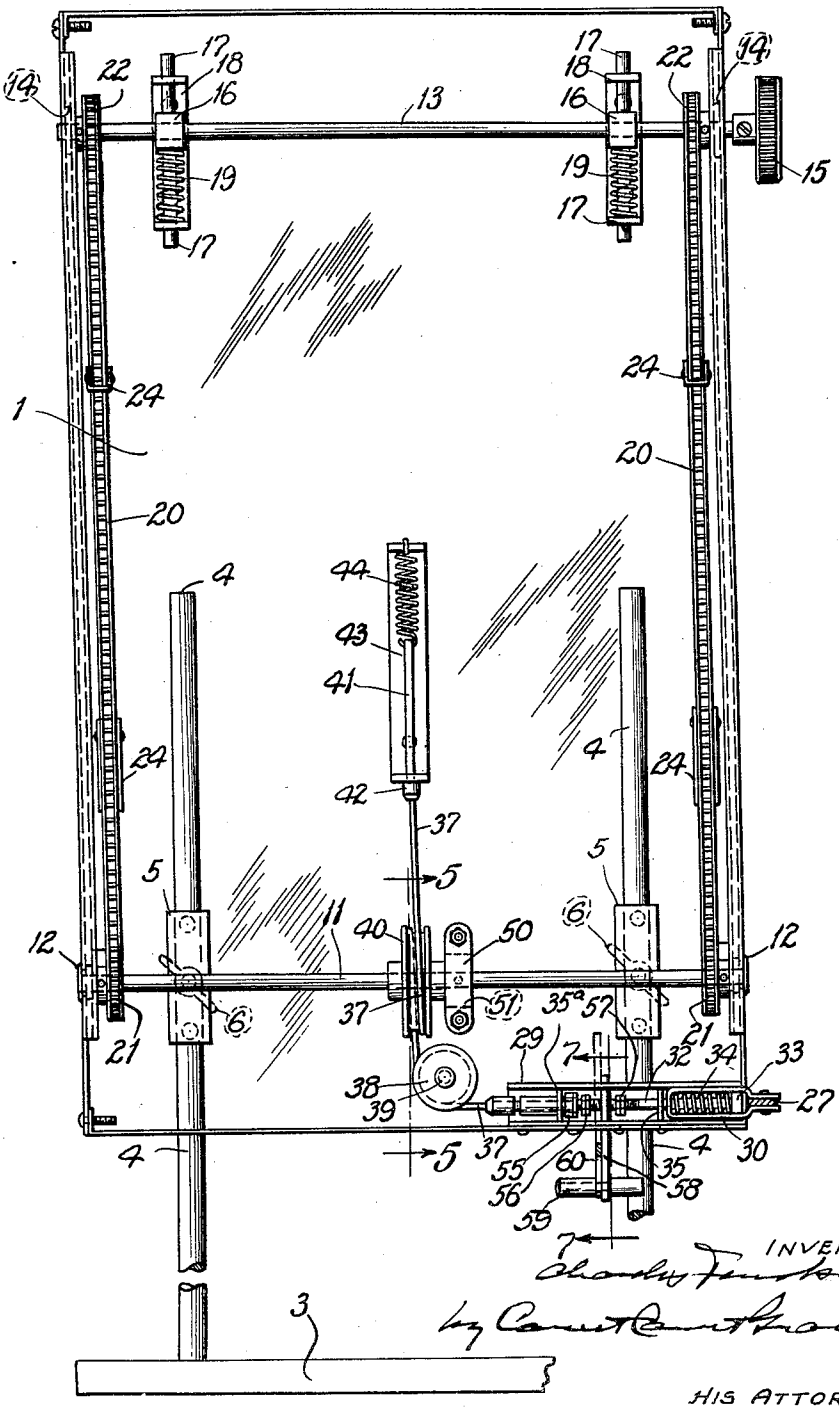
INVENTOR:
Charles Fensky
By Cameron & Cameron
HIS ATTORNEYS.

April 25, 1933. C. FENSKY 1,905,834

COPYHOLDER

Filed June 21, 1930 3 Sheets-Sheet 2

Fig. 3.



INVENTOR:

Charles Fensky

by Cameron & Cameron

HIS ATTORNEYS

April 25, 1933. C. FENSKY 1,905,834

COPYHOLDER

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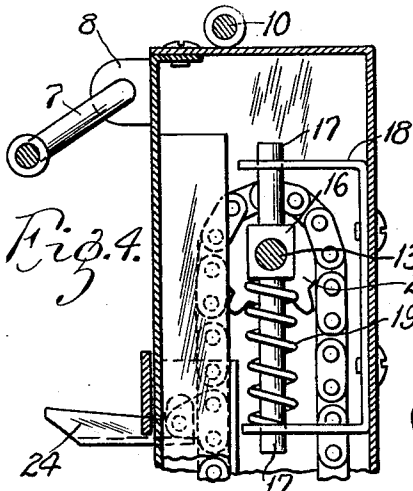


Fig. 4.

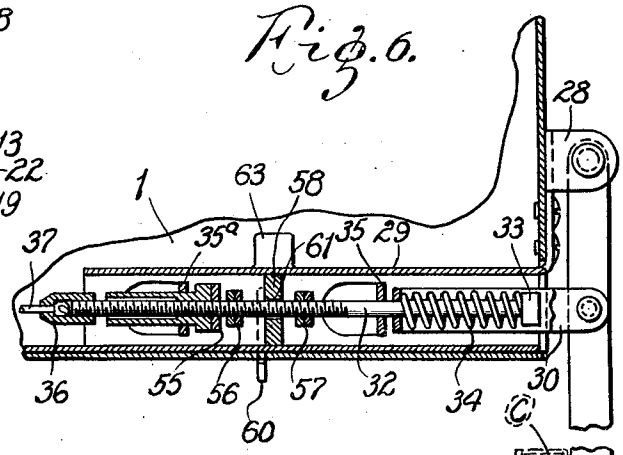
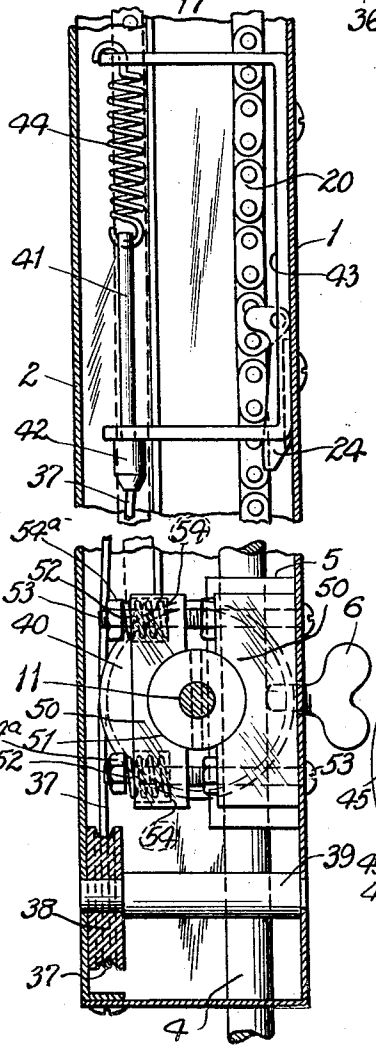


Fig. 6.



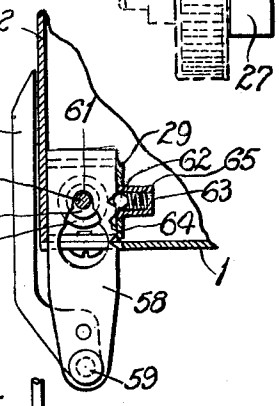
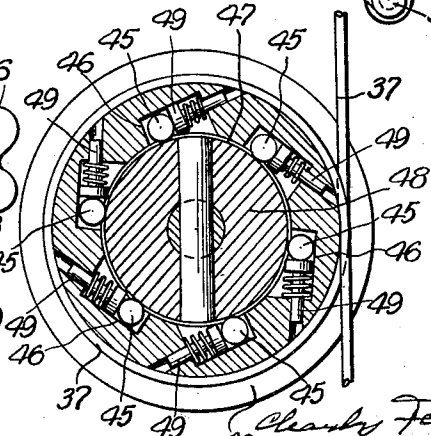


Fig. 7.

Fig. 5.



INVENTOR:
Charles Fensky
by Cushman Darby & Cushman
HIS ATTORNEYS.

Patented Apr. 25, 1933 1,905,834

UNITED STATES PATENT OFFICE

CHARLES FENSKY, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO VERA F. FLADER, OF ST. LOUIS, MISSOURI

COPYHOLDER

Application filed June 21, 1930. Serial No. 462,726.

This invention relates principally to copy-holders of the type wherein the copy is held stationary in such position that it may be conveniently copied by means of a typewriter and the line that is being copied is indicated by a movable marker that is moved with a step-by-step movement by the movement of the typewriter carriage. The principal object of the present invention is to provide a simple and economical mechanism for actuating the marker of such device that is compact and easily operated, is not liable to get out of repair and may be readily adjusted to vary the extent of the step-by-step movement of the marker for different line spacing. The invention consists in the copy-holder and in the construction, combinations and arrangements of parts hereinafter described and claimed.

In the accompanying drawings, which form part of this specification and wherein like symbols refer to like parts wherever they occur,

Fig. 1 is a front elevation of a copy-holder embodying my invention,

Fig. 2 is an end elevation thereof,

Fig. 3 is a front elevation of the copy-holder, with the front wall removed,

Fig. 4 is a vertical cross-section on the line 4—4 of Fig. 1, with the sheet clamp in position to receive a sheet to be copied,

Fig. 5 is a vertical cross-section through the clutch pulley on the lower sprocket shaft, taken along the line 5—5 of Fig. 3,

Fig. 6 is a fragmentary horizontal cross-section on the line 6—6 in Fig. 1; and

Fig. 7 is a fragmentary vertical cross-section on the line 7—7 in Fig. 3.

A copy-holder in the form of a rectangular sheet metal box 1 provided with a removable cover 2 is vertically adjustably supported on a stand comprising a base 3 provided with upright rods 4. Said rods pass through openings provided therefor in the bottom of the box 1 and are slidably engaged in vertical openings provided therefor in brackets 5 that are rigidly secured to the rear wall of said box adjacent to the lower end thereof. The brackets 5 are clamped to the respective rods 4 in any desired position of their sliding movement thereon preferably by means of thumbscrews 6 that are threaded through said brackets with their inner ends in abutting relation to said rods. The sheets or book that are to be copied from are placed against the front cover plate 2 of the box 1 and clamped thereagainst by means of a clamp comprising a bail-shaped rod 7, which extends from side to side of the box with its ends rotatably supported in horizontal openings provided therefor in lugs 8 that project outwardly from the upper corners of said box. A coil spring 9 is provided for swinging the bail 7 towards the cover plate 2 of the box. The pages of the book that have been copied are turned back over the top of the box and are held in such position by means of an arm or extension 10 which is formed integral with the bail 7 at one end thereof and extends parallel to the horizontally disposed copy holding end thereof.

Located in the lower portion of the box 1 is a horizontal shaft 11 which extends from side wall to side wall of said box with its ends journaled in suitable bearings 12 therein. Located in the upper portion of the box 1 is a second horizontal shaft 13 which extends parallel to the lower shaft 11 with its ends disposed in vertically elongated slots 14 provided therefor in the side walls of said box. The upper shaft 13 extends beyond one side of the box and has a knob 15 fixed thereto, whereby said shaft may be manually rotated. The upper shaft 13 is rotatably supported near its ends in bearing blocks 16 having pins 17 projecting vertically therefrom at the top and bottom thereof. The pins 17 of the block 16 slidably engage vertically alined openings provided therefor in the outstanding flange portions of brackets 18 that are rigidly secured to the rear wall of the box. Coil springs 19 are sleeved on the lower pins of the bearing blocks 16, between said blocks and the lower flanges of the brackets 18, and thus serve to yieldably support the shaft 13 journaled therein. Located in the box 1 adjacent to the sides thereof are endless sprocket chains 20, which pass over sprocket wheels 21 and 22 fixed to the parallel shafts 11 and 13, respectively, whereby

the two shafts are adapted to rotate together. The coil springs 19, which support the bearings 16 for the upper shaft 13, serve to force said shaft upwardly and thus take up slack in the sprocket chains 20.

The front cover plate 2 of the box 1 is provided opposite the sprocket chains 20 with vertically extending slots 23 adapted to accommodate fingers 24 mounted on said chains. As shown in the drawings, each chain has two fingers 24 secured thereto, the two fingers being arranged so that when one finger is moving downwardly with one stretch of the chain the other finger is moving upwardly on the other stretch of said chain. The fingers 24 are pivotally supported on special links provided therefor in the sprocket chains 20 and have squared inner ends which abut against the chains during the downward movement of the outer stretches thereof and thus maintain said fingers in a horizontal position. During the upward travel of the fingers 20 they are engaged by the rear wall of the box and are swung downwardly into a vertical position alongside of the upwardly moving rear stretches of the chains. A guide bar or marker 25 for indicating the line of the copy that is to be copied is supported on the fingers 24 that project from the sprocket chains 20 through the elongated slots 23 in the front cover plate 2 of the box 1 and is provided at its lower edge adjacent to its ends with notches 26 adapted to straddle said fingers and thus prevent endwise movement of said bar or marker.

The mechanism for turning the lower shaft 11 to move the marker 25 downwardly a line at a time over the copy on the board is operated by an arm 27 pivotally supported adjacent to the lower righthand corner of the box 1 for horizontal swinging movement transversely thereof; and the copy-holder is so positioned with reference to the typewriter that said operating lever is swung to the right by the typewriter carriage C when the latter is at or near the end of its return movement. As shown in the drawings, the operating arm 27 has its rear end pivotally supported in ears or lugs 28 provided therefor in the end of a channel-shaped bracket 29 that extends transversely of the box 1 and is rigidly secured to the bottom thereof. The operating arm 27, which extends forwardly beyond the front face of the box 1, is pivotally secured to the outer end of a yoke or link 30 located in the channel-shaped bracket 29. The opposite or inner end of the link 30 is provided with an opening adapted to slidably receive a pull-rod 32 which extends longitudinally of the channel bracket 29 under the channel thereof. The pull-rod 32 extends into the opening in the link 30 and terminates at its outer end in a head 33; and a coil spring 34 is sleeved on said pull-rod between said head and the inner end of said yoke and thus causes the rod to move with said yoke while permitting relative, longitudinal sliding movement between said pull-rod and said link. The portion of the pull-rod 32 located inwardly of the link 30 is slidably supported in alined openings provided therefor in tongues 35, 35*a* that project outwardly from the vertically disposed web portion of the channel-shaped bracket 29; and a thimble 36 is threaded on the inner end of said pull-rod and serves to secure one end of a cord or cable 37 thereto.

The cord or cable passes upwardly around an idler pulley 38 journaled on a horizontal pin 39, which projects outwardly from the rear wall of the box 1, and is then wrapped one turn about a driving pulley 40 mounted on the lower sprocket shaft 11 and has its end attached to a vertical anchor rod 41 by means of a thimble 42 threaded on the lower end thereof. The anchor rod 41 is located above the driving pulley 40 with its lower end portion slidable in an opening provided therefor in a bracket 43 secured to the rear wall of the box 1. The upper end of the anchor rod 41 is suspended from the upper end of the bracket 43 by means of a coil spring 44, which serves to pull the cord or cable 37 upwardly with the fastening thimble 42 at the lower end thereof in abutting relation to the lower end of said bracket. With this arrangement, as the typewriter carriage nears the end of its return movement, it engages the free outer end of the operating arm 27 and swings the same in a direction which will pull the cord or cable 37 outwardly against the tension of the cord supporting spring 44 and thus rotate the drive pulley 40 on the lower shaft 11.

A roller clutch mechanism is provided between the lower shaft 11 and the drive pulley 40 thereon to cause said shaft to be rotated by said pulley in a direction which will cause the outer stretches of the sprocket chains 20 to travel downwardly. Said clutch mechanism preferably comprises rollers 45 mounted in a series of circumferentially spaced pockets 46 provided therefor in the inner periphery of the drive pulley 40. The clutch rollers 45 roll on a suitable raceway 47 provided therefor in a collar 48 which is pinned on the lower shaft 11 and encircled by the drive pulley 40. The roller pockets 46 are smaller at one end than at the other, and the rollers 45 are yieldably held in the small ends of said pockets by means of spring-pressed pins 49 slidably mounted in small apertures opening into the large ends of pockets 46. By this arrangement, when the drive pulley 40 is rotated by an outward pull on the cord or cable 37, the rollers 45 will bind or wedge between the small ends of the pockets 46 and the raceway 47 on the collar 48 pinned on the lower shaft 11 and thus

cause said shaft to rotate in a direction that will cause the outer stretches of the chains 20 and the marker 25 carried thereon to move downwardlly on the board. When the pressure of the carriage C on the operating lever 27 is released, the cord or cable 37 is again drawn inwardly by the spring 44 at the inner end thereof, thus rotating the drive pulley 40 in the opposite direction and returning the parts to their normal positions; but no motion is imparted to the shaft 11 by reason of the rollers 45 being moved against the pressure of the spring-pressed pins 49 towards the wide ends of the pockets 46 and thus preventing said pulley from being clutched to said shaft. The parallel sprocket shafts 11 and 13 and the chains 20 connecting them are held against movement, except when the operating arm 27 or knob 15 are manipulated, by means of a suitable friction brake which engages the lower shaft 11. Said brake comprises a pair of brake shoes 50 adapted to grip opposite sides of a collar 51 on the lower shaft 11. One of the shoes is rigidly secured to the rear wall of the box 1 and the other shoe is held in yielding engagement with the collar 51 on the lower shaft 11 by means of coil springs 52 that are sleeved on screws 53 passing through the two shoes with their ends in abutting relation to the bottoms of recesses 54 in the outer shoe and nuts 54*a* threaded on the ends of said screws.

The outward sliding movement of the pull-rod 32 is regulated to vary the extent of the step-by-step line spacing movement of the marker 25 by means of abutments 55, 56 and 57 in the form of nuts that are threaded on said rod and are spaced apart longitudinally thereof. The inner-abutment 55 is of larger diameter than the intermediate abutment 56, and both of these abutments are adapted to abut against a stop member 58 hereinafter called a selector bar; and the outer abutment 57 is adapted to abut against a stop formed by the tongue 35 of the outer end of the channel bracket 29. The abutments 55, 56 and 57 are positioned on the pull-rod 32 so that, when the respective abutments engage the stops provided therefor, the outwardly sliding movement of said pull-rod is limited to the amount necessary to obtain a single, double or triple line spacing movement of the marker 25. The selector bar 58 is mounted for vertical sliding movement in notches provided therefor in the top and bottom flanges of the channel-shaped bracket 29 and in the bottom of the box 1. The selector bar 58 is provided at its lower end with cross-pins 59 for lifting the bar; and it is also provided with a pointer 60, which extends upwardly outside the outer front cover 2 of the box 1 with its upper end terminating adjacent to three lines or graduations marked 1, 2 and 3, respectively, on said cover. The selector bar 58 is provided with a horizontal opening 61 through which the pull-rod 32 extends. The upper portion of the opening is of a width adapted to permit the pull-rod, but not the intermediate abutment 56 to slide therethrough; the intermediate portion is of a width to permit the pull-rod and also the abutment 56 to slide therethrough, but not the abutment 55; and the lower portion of said opening is of a width adapted to permit both the intermediate abutment 56 and the slightly larger inner abutment 55 to pass therethrough. The selector plate 58 is yieldably held in each one of the three positions of its vertical movement by means of a ball 62 mounted in a pocket 63 provided therefor in the web of the channel bracket 29 and is adapted to seat within vertically spaced V-shaped notches 64 formed in the rear edge of said selector bar. The ball 62 is forced into the notches 64 by means of a coil spring 65 located in the pocket 63. By this arrangement, the ball 62 is forced into one of the V-shaped notches 64 in the selector bar 58 in the three positions of adjustment thereof and thus serve to releasably hold said selector bar in position.

By the arrangement described, when it is desired to adjust the marker 25 so that during each step of its movement it will move a distance corresponding to the single line spacing of a typewriter, the selector bar 58 is adjusted to bring the end of its pointer 60 opposite the line marked 1 on the front cover plate 2 of the box 1, thereby causing the small upper end of the opening 61 in said selector bar to be brought into a position opposite the pull-rod 32 and thus enabling said bar to serve as a stop for the intermediate abutment 56. When it is desired to obtain a movement of the marker 25 corresponding to the double line spacing of the typewriter, the selector bar 58 is raised far enough to bring its pointer 60 opposite the graduation marked 2 on the front cover plate of the box, thereby bringing the wider intermediate portion of the opening 61 in said selector bar in line with the pull-rod abutments and thus permitting the pull-rod to move outwardly until the inner abutment 55 strikes the selector bar. Movement of the marker 25 corresponding to a triple line spacing of the typewriter is obtained by bringing the upper end of the selector bar pointer 60 opposite the graduation mark 3, thereby bringing the greatest width of the opening 61 in the selector bar in line with the pull-rod abutments. With the parts in this position the inner and intermediate abutments 55 and 56 pass through the opening in the selector bar and the outer abutment 57 is permitted to travel outwardly with the pull-rod until it strikes the tongue 35, this outward travel of the pull-rod being sufficient to move the marker 25 a distance corresponding to the triple line spacing of the typewriter.

Obviously, the hereinbefore described copy-

holder admits of considerable modification without departing from my invention. Therefore, I do not wish to be limited to the precise construction shown and described.

What I claim is:

1. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement, and means for adjusting said mechanism for varying the extent of the step-by-step movement of said line indicator, said adjusting means including a vertically slidable plate located behind said copy-holding support and provided with a pointer for indicating upon the front face of said copy-holding support the extent of the step-by-step movement, and a spring-pressed member bearing against said plate for releasably holding the same in the desired positions of its vertical sliding movement.

2. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement, and means for adjusting said mechanism for varying the extent of the step-by-step movement of said line indicator, said adjusting means including a vertically slidable bar provided with vertically spaced notches and a spring-pressed member adapted to seat in said notches and releasably hold said bar in the desired positions of its sliding movement, said bar having a pointer for indicating the extent of such step-by-step movement.

3. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement in one direction only, said mechanism including a longitudinally slidable pull-rod, means whereby said pull-rod when slid in one direction only will cause a feed of said line indicator equal to one step and when slid in the other direction will impart no movement to said line indicator, an operating arm connected to the said copy-holding support, and a yielding connection between said operating arm and said pull-rod.

4. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement, said mechanism including a pull-rod slidably mounted on said copy-holding support and operatively connected to said line indicator to actuate the same when slid in one direction only, a spring operatively connected to said pull-rod for sliding the same in the other direction, an abutment on said pull rod, and a stop disposed in the path of said abutment.

5. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement, said mechanism including a pull-rod slidably mounted on said copy-holding support and operatively connected to said line indicator to actuate the same when slid in one direction of its sliding movement, a spring operatively connected to said pull-rod for pulling the same in the other direction of its sliding movement, an abutment on said pull-rod, and a stop on said copy-holding support disposed in the path of said abutment, said abutment being adjustable longitudinally of said pull-rod.

6. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement in one direction only, said mechanism including a pull-rod slidably mounted on said copy-holding support and operatively connected to said line indicator to actuate the same when slid in one direction of its sliding movement, a spring operatively connected to said pull-rod for pulling the same in the other direction of its sliding movement, abutments mounted on said pull-rod and spaced apart longitudinally thereof, and a plate mounted on said copy-holding support for sliding movement transversely of said pull-rod, said plate having an opening therein through which said pull-rod extends, said abutments being of different width and the opening in said plate having portions thereof shaped to permit the pull-rod and certain of the abutments to pass therethrough when the plate is shifted to bring said portions in line with said abutments.

7. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement, said mechanism including a pull-rod slidably mounted on said copy-holding support and operatively connected to said line indicator to actuate the same when slid in one direction only of its sliding movement, a spring operatively connected to said pull-rod for pulling the same in the other direction of its sliding movement, abutments mounted on said pull-rod and spaced apart longitudinally thereof, a plate mounted on said copy-holding support for sliding movement transversely of said pull-rod, said plate having an opening therein through which said pull-rod extends, said abutments being of different width and the opening in said plate having portions thereof shaped to permit the pull rod and certain of the abutments to pass therethrough when the plate is shifted to bring said portions in line with said abutments, and means for releasably holding said plate in the desired position of its sliding movement.

8. A copy-holder comprising a copy-holding support, a line indicator movable there-

over, mechanism for moving said line indicator with a step-by-step movement, said mechanism including a pull-rod slidably mounted on said copy-holding support and operatively connected to said line indicator to actuate the same when slid in one direction only of its sliding movement, a spring operatively connected to said pull-rod for pulling the same in the other direction of its sliding movement, abutments mounted on said pull-rod and spaced apart longitudinally thereof, a plate mounted on said copy-holding support for sliding movement transversely of said pull-rod, said plate having an opening therein, through which said pull-rod extends, said abutments being of different width and the opening in said plate having portions thereof shaped to permit the pull-rod and certain of the abutments to pass therethrough when the plate is shifted to bring said portions in line with said abutments, means for releasably holding said plate in the desired position of its sliding movement, and a pointer movable with said plate and adapted to cooperate with a scale on said copy-holding support to indicate the different positions of adjustment of said plate.

9. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement, said mechanism including a shaft operatively connected with said line indicator, a drive pulley on said shaft, means for automatically clutching said drive pulley with said shaft in one direction only of the rotary movement of said drive pulley, a friction brake permanently engaging said shaft, a cable for rotating said pulley in a direction that will rotate said shaft against the pressure of said brake, and means for returning said cable to normal position.

10. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement, said mechanism including a shaft operatively connected with said line indicator, a drive pulley on said shaft, means for automatically clutching said pulley of said shaft in one direction only of the rotary movement of said drive pulley, a friction brake permanently engaging said shaft, a cable for rotating said pulley in a direction that will rotate said shaft against the pressure of said brake, and means for returning said cable to normal position, said means comprising a spring connection between the inner end of said cable and said copy-holding support.

11. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement, said mechanism comprising parallel shafts journaled in said copy-holding support, sprocket chains connecting said shafts, fingers on said chains for supporting said line indicator, a drive pulley on one of said shafts, means for automatically clutching said drive pulley to said shaft in one direction only of the rotary movement of said drive pulley, a friction brake permanently engaging said shaft, a cable for rotating said pulley against the pressure of said brake, and means for returning said cable to normal position.

12. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement, said mechanism comprising parallel shafts journaled in said copy-holding support, sprocket chains connecting said shafts, fingers on said chains for supporting said line indicator, a pull-rod mounted on said support for sliding movement longitudinally of said shafts, a drive pulley on one of said shafts, means for automatically clutching said drive pulley to said shaft in one direction only of the rotary movement of said drive pulley, a cable wrapped around said drive pulley, a spring for anchoring one end of said cable to said copy-holding support, and means for securing the other end of said cable to said pull-rod.

13. A copy-holder comprising a copy-holding support, a line indicator movable thereover, mechanism for moving said line indicator with a step-by-step movement, said mechanism comprising parallel shafts journaled in said copy-holding support, sprocket chains connecting said shafts, fingers on said chains for supporting said line indicator, a pull-rod mounted on said support for sliding movement longitudinally of said shafts, a drive pulley on one of said shafts, means for automatically clutching said drive pulley to said shaft in one direction only of the rotary movement of said drive pulley, a cable wrapped around said drive pulley, a spring for anchoring one end of said cable to said copy-holding support, means for securing the other end of said cable to said pull-rod, abutments mounted on said pull-rod, and stops adapted to cooperate with said abutments for limiting the outward sliding movement of said pull-rod.

Signed at St. Louis, Missouri, this 19 day of June, 1930.

CHARLES FENSKY.