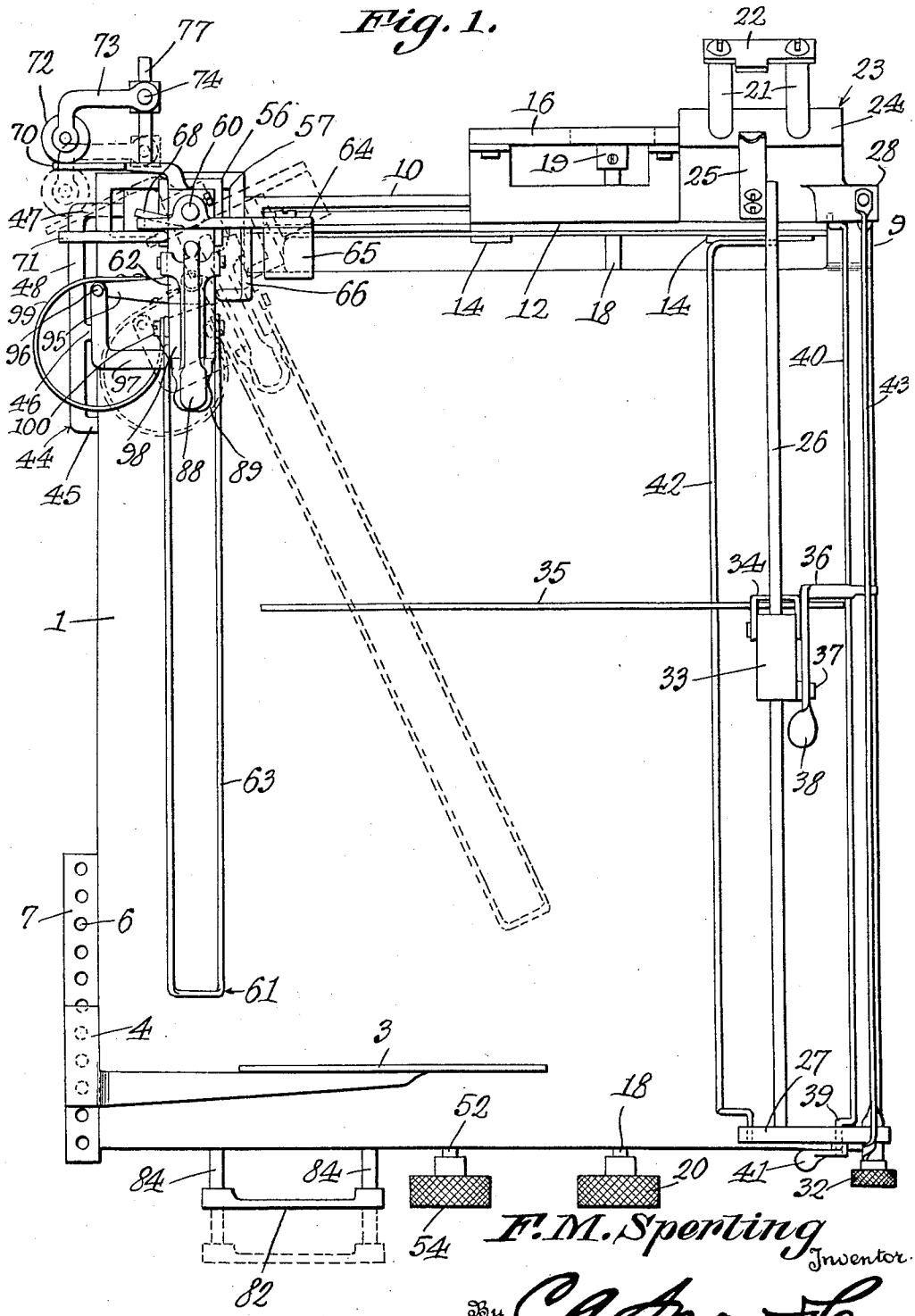
Oct. 4, 1932. F. M. SPERLING 1,881,102

COPYHOLDER

Filed March 8, 1932 5 Sheets-Sheet 1

Fig. 1.



F. M. Sperling Inventor.

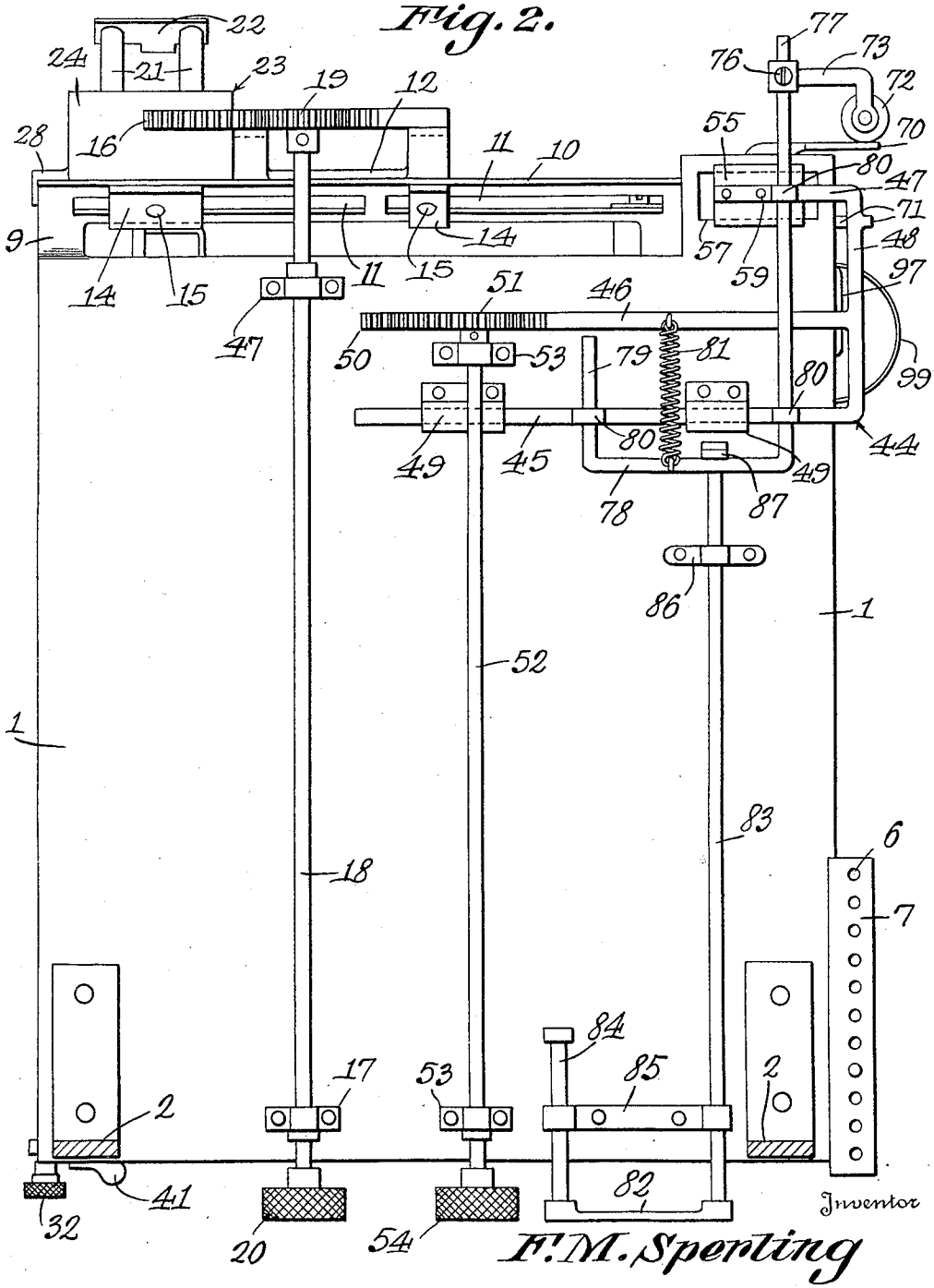
By C. A. Snow & Co. Attorneys.

Oct. 4, 1932. F. M. SPERLING 1,881,102

COPYHOLDER

Filed March 8, 1932 5 Sheets-Sheet 2

Fig. 2.



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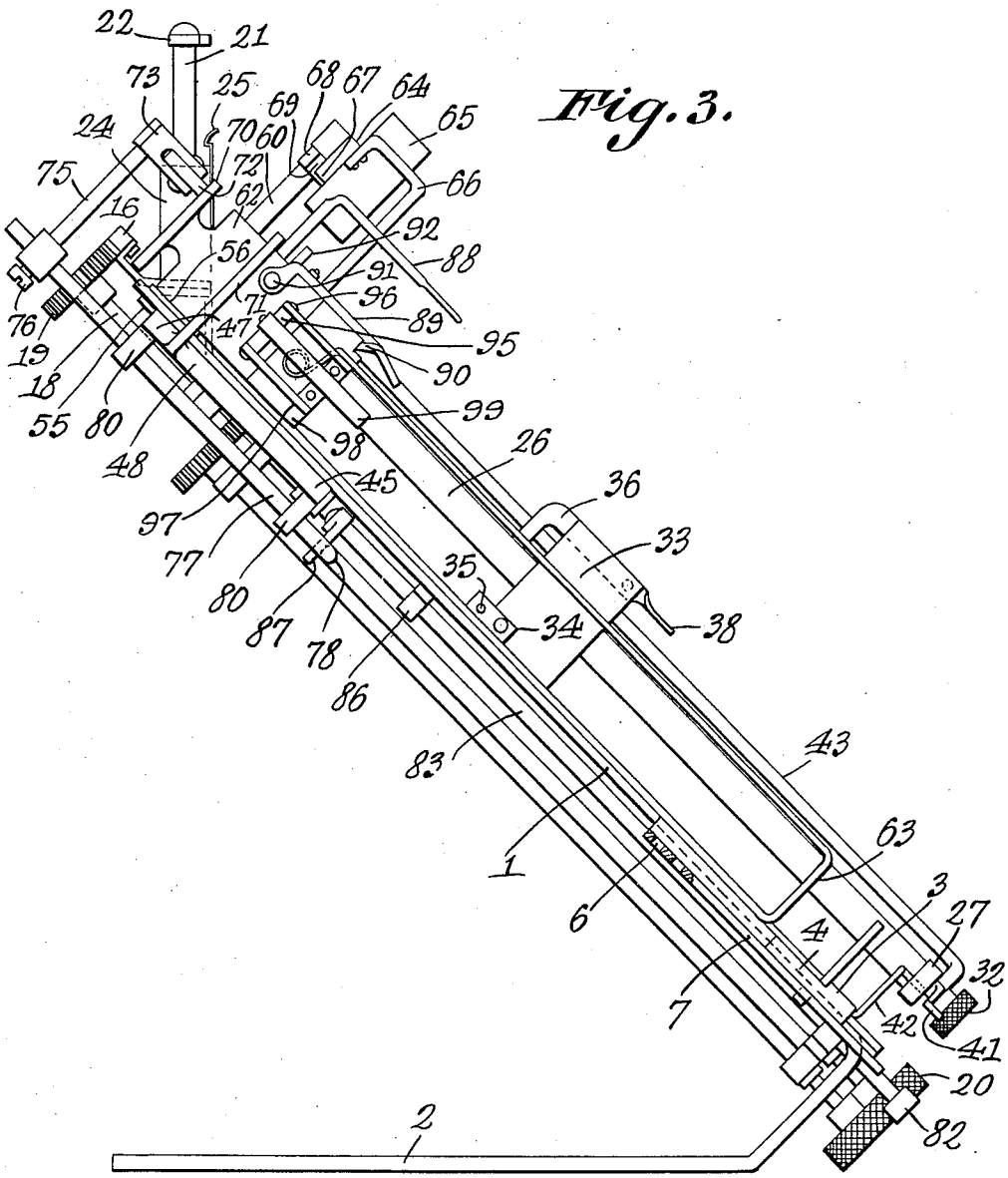
Attorneys.

Oct. 4, 1932. F. M. SPERLING 1,881,102

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Fig. 3.



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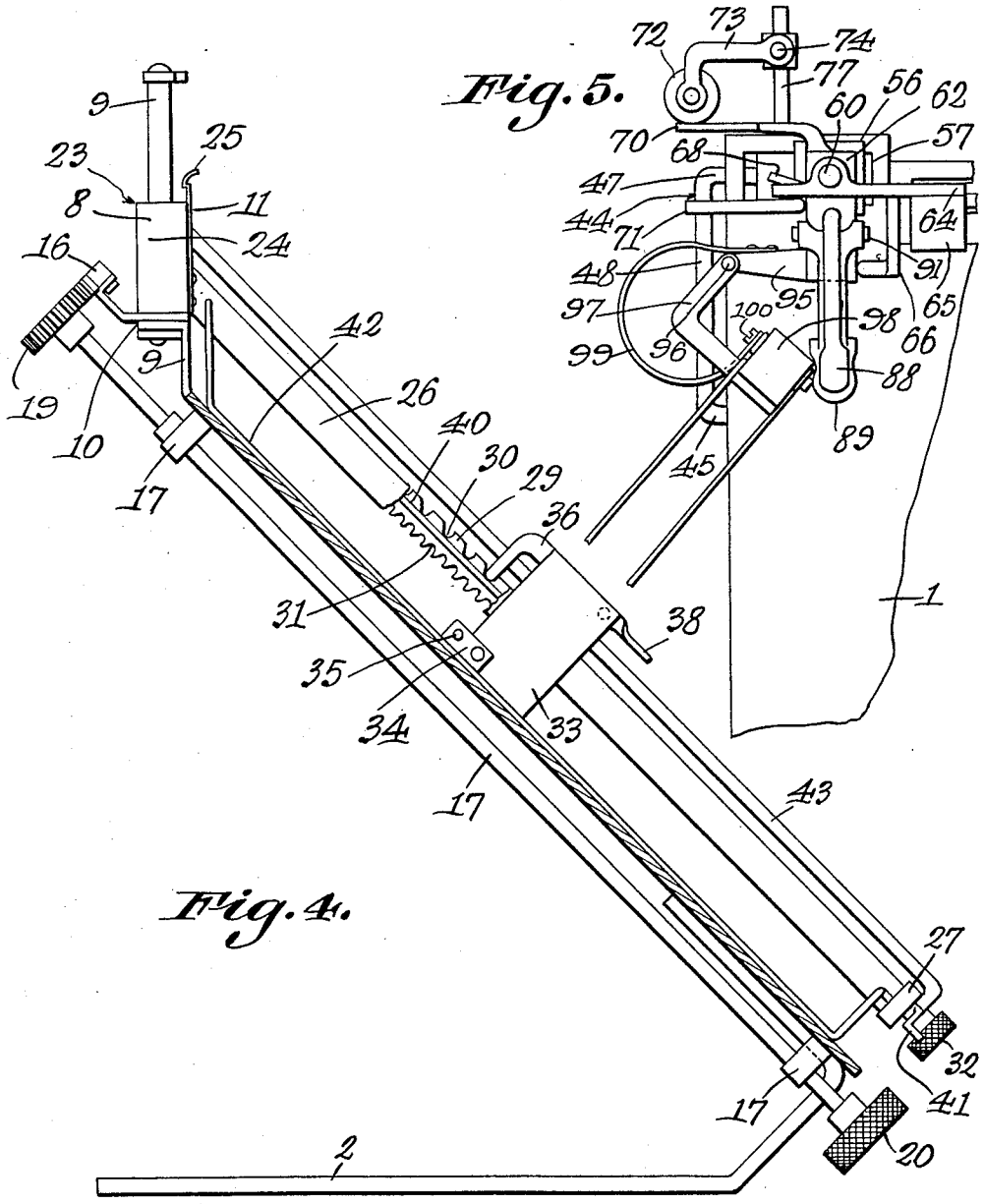


Fig. 5.

Fig. 4.

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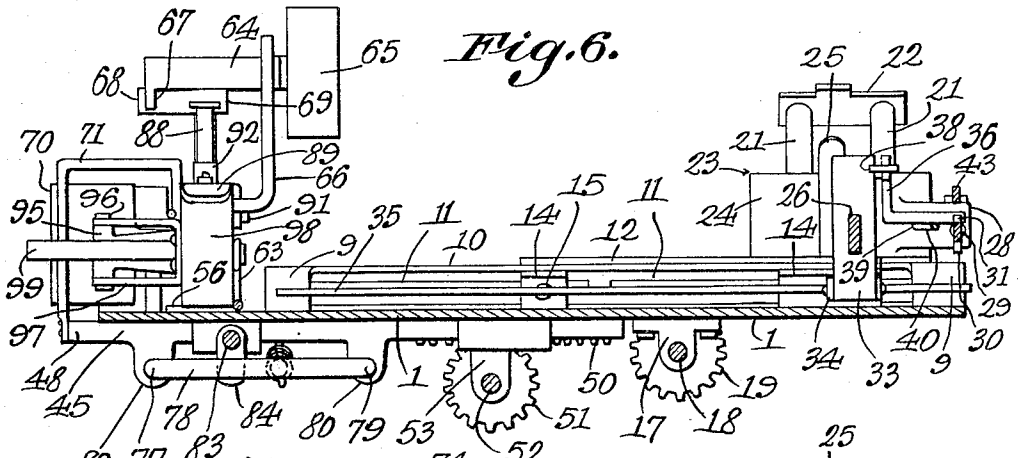
Attorneys.

Oct. 4, 1932. F. M. SPERLING 1,881,102

COPYHOLDER

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Fig. 6.



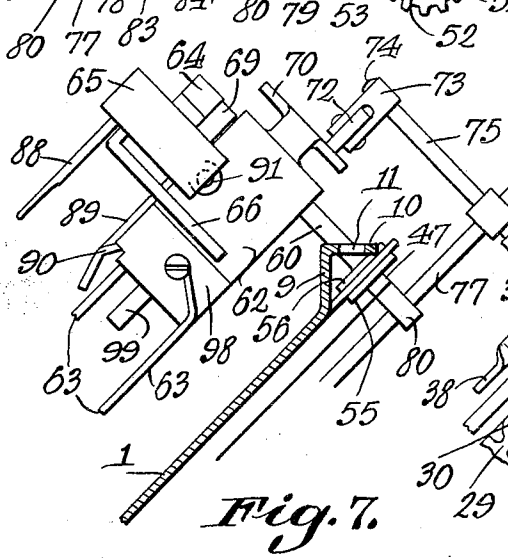


Fig. 7.

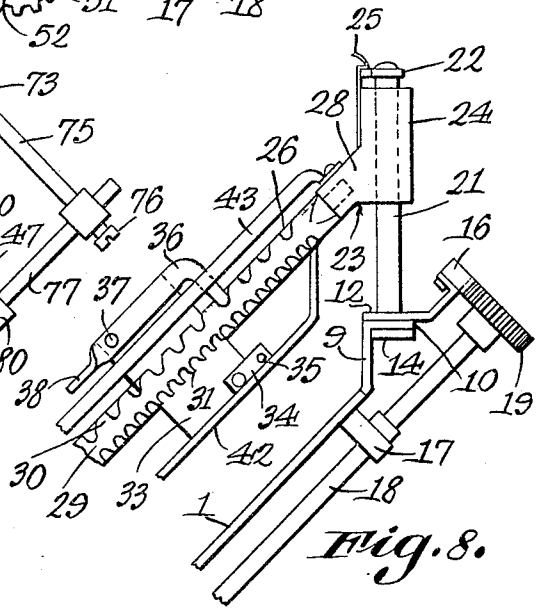


Fig. 8.

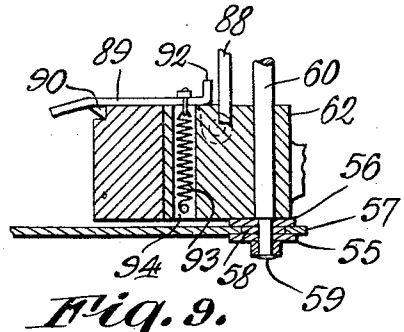


Fig. 9.

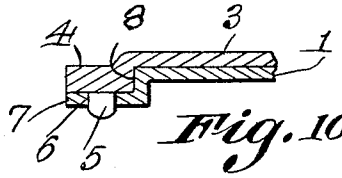


Fig. 10.

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Patented Oct. 4, 1932

1,881,102

UNITED STATES PATENT OFFICE

FRANK M. SPERLING, OF BRISTOL, PENNSYLVANIA

COPYHOLDER

Application filed March 8, 1932. Serial No. 597,530.

The device forming the subject matter of this application is adapted to be used for holding printed matter of any kind, or written matter, which is being copied, such as messages or anything else. The invention aims to provide a device of the class described which will hold firmly, messages or other papers which are folded, soiled, or crumpled, against the displacing action of the wind or drafts.

The invention aims to supply a device of the class described which will make it unnecessary for a copyist to use rubbers, weights or the like, to retain the papers in place. The invention has, for another object, the provision of a device which will hold a single paper, or many papers in a stack.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention apertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:—

Fig. 1 shows, in front elevation, a device constructed in accordance with the invention;

Fig. 2 is a rear elevation;

Fig. 3 is a side elevation;

Fig. 4 is a vertical longitudinal section;

Fig. 5 is a fragmental elevation showing a portion of the left hand paper holder and attendant parts;

Fig. 6 is a transverse section showing much of the structure at the upper end of the table;

Fig. 7 is a fragmental elevation showing part of the left hand paper holder and attendant mechanisms;

Fig. 8 is an elevation illustrating the rack bar mechanism and some parts adjacent thereto;

Fig. 9 is a section taken through the mounting of the left hand paper holder;

Fig. 10 is a fragmental section taken at one edge of the table.

The device forming the subject matter of this application preferably is made of metal throughout.

In defining the relative positions of parts, the words "right" and "left" will be used under the assumption that the operator is looking at the forward side of the device as in Fig. 1, and not at the back of the device as in Fig. 2.

The copyholder forming the subject matter of this application comprises a substantially flat table 1 (Fig. 1) which may be placed as desired. By preference, however, as shown in Fig. 3, the table 1 has a backward slant. Any suitable means may be provided for supporting the table 1, and large latitude is desired in this respect. It may be expedient to support the table 1 on substantially horizontal feet 2, since this feature adapts the device to the well-known Morkrum printing machine, which is used by telegraph companies, railroad companies, and others. The device, of course, may be used not only by railroad and telegraph companies, but by public speakers and others, as well. It will be presupposed, however, without prejudice to any other use, that the article is employed for holding down messages which are to be copied.

The messages, ranging from a single message to a thick stack, are supported at their lower ends, on the table 1, by a transverse shelf shown in Fig. 1 and located near to the lower end of the table. The shelf 3 is vertically adjustable, and, with this consideration in mind, the shelf has an upwardly extended arm 4, supplied with a backwardly extended pin 5 (Fig. 10) adapted to be engaged in any one of a plurality of holes 6 (Fig. 1) formed in a depressed wing 7 on the left hand edge of the table 1. Fig. 10 shows that the table 1 has a shoulder 8, with which the arm 4 of the shelf 3 cooperates, to prevent the inner end of the shelf from swinging downwardly from the position of Fig. 1.

On the upper edge of the table 1 there are

upwardly extended brackets 9 (Figs 6 and 7) to which is secured a transversely extended track 10 (Fig. 2). There are longitudinal slots 11 in the track 10.

A carriage 12, shown best in Figs. 1 and 2, is mounted on the track 10 for sliding movement transversely of the table 1. Beneath the track 10 are located retainers 14 (Fig. 2) connected to the carriage 12 by securing elements 15, the carriage 12 thus being held down on the track 10 for sliding movement thereon. The securing elements 15, cooperating with the track 10 at the ends of the slots 11, limit the movement of the carriage 12 to the right or to the left, when the carriage is operated by a mechanism now to be described.

Figs. 2, 3 and 4 show that a transversely disposed rack bar 16 is secured to upwardly and rearwardly extended parts of the carriage 12. It appears in Fig. 2 that bearings 17 are mounted on the rear side of the table 1, and in these bearings, a shaft 18 is journaled for rotation. A pinion 19 is secured to the upper end of the shaft 18 and meshes with the rack bar 16 of the carriage. For the rotation of the shaft 18, at the will of an operator, the same is provided at its lower end, below the table 1, with a turning button 20.

Two parallel, upwardly extended posts 21 (Figs. 1 and 3) are mounted at their lower ends (Fig. 8) on the carriage 12. The upper ends of the posts 21 are connected by a cross piece 22.

A vertically adjustable frame, designated generally by the numeral 23 in Fig. 1, is provided, and includes a head block 24, which can be slid up and down, at the will of an operator, on the posts 21 of the carriage 12. On the head block 24 there is an upwardly extended spring latch 25, which, at the will of an operator, may be engaged with the cross piece 22, to hold the frame 23 in elevated position.

The upper end of a guide 26 is rigidly secured to the head block 24, and the guide extends downwardly along the table 1, in spaced relation thereto, as may be seen in Figs. 3 and 4. On the lower end of the guide 26, a transverse arm 27 is mounted, intermediate its ends. The head block 24 has an outwardly extended arm 28.

A bar 29 extends downwardly along the table 1, in parallel relation thereto (Fig. 4), the ends of this bar being journaled (Fig. 8) in the arm 28 of the head block 24 and in the cross arm 27 of the guide 26. Fig. 8 shows that, upon one edge, the bar 29 has a rack 30, the teeth of which are spaced far enough apart to enable the said rack to be used in connection with typewritten matter that is doubled-spaced, an observation which will be explained more fully hereinafter. On the opposite edge of the bar 29 there is a single-space rack 31, the teeth of which are separated less widely than are the teeth of the rack 30. In order that the bar 29 may be turned on its axis, to present either the rack 30 or the rack 31 uppermost, and in operative position, the lower end of the bar 29 is supplied with a knob 32, disposed at the lower end of the table 1.

A slide block 33 (Figs. 1, 3 and 6) is mounted to reciprocate on the guide 26, longitudinally of the table 1. The slide block 33 carries a rearwardly extended yoke 34 in which is mounted (Fig. 1) a line finder 35, disposed transversely of the table 1.

An angular latch 36 is pivoted at 37 to the slide block 33, to move vertically, and the latch may be manipulated by means of a finger piece 38 at the lower end thereof. It is more convenient, however, to manipulate the latch 36 through the instrumentality of a shaft 39, mounted to rock in the arm 28 of the head block 24 and in the cross arm 27 of the guide 26, the shaft 39 being provided at its lower end with a handle 41, disposed below the lower edge of the table 1. The shaft 39 embodies a U-shaped crank arm 40, extended the full length of the table 1 and engaged underneath the laterally projecting portion of the latch 36, as disclosed in Figs. 1 and 6. The said laterally projecting portion of the latch is adapted to engage with the rack 30 of the bar 29 (Fig. 8) or with the rack 31 thereof, depending upon which rack is uppermost, for single-spacing work or for double-spacing work. The laterally projecting end of the latch 36 moves under a stop strip 43, extended the full length of the table 1, one end of the stop strip being connected to the arm 28 of the head block 24, and the other end of the stop strip being connected to the cross arm 27 of the slide 26.

The part 43 is called a stop strip, because when the latch 36 is operated to free it from the racks 31 or 30 of the bar 29, the part 43 engages that portion of the latch which cooperates immediately with the racks. A right hand paper holder 42 extends the full length of the table 1, the upper end of the paper holder being secured (Fig. 4) to the guide 26, and the lower end of the paper holder being secured to the cross arm 27 of the guide.

Passing to Fig. 2 of the drawings, it will be observed that a first or E-shaped slide 44 is mounted on the back of the table 1 for in and out adjustment, transversely of the table. The slide 44 may appropriately be described as being E-shaped, because it includes a bottom bar 45, an intermediate bar 46, and a top bar 47, these bars being parallel, and being connected at their outer extremeties by an end piece 48. On the back of the table 1 there are two guides 49, in which the bottom bar 45 of the member 44 is slidably received.

On the inner end of the bar 46 of the slide 44 there is a rack 50, engaged by a pinion 51, secured to the upper end of a shaft 52 which is journaled in bearings 53 on the back of the table 1. On the lower end of the shaft 52, below the table 1, there is a hand wheel 54, whereby rotation may be imparted to the shaft 52.

Fig. 2 shows that a lower plate 55 is secured to the top bar 47 of the slide 44, and Fig. 1 for instance, shows that an upper plate 56 is disposed above the lower plate 55. The plates 55 and 56 overlap a hole 57 in the corner of the table 1. Between the plates 55 and 56 is disposed a spacer 58 (Fig. 9) fitting closely but slidably in the hole 57 of the table 1. The parts 56, 55 and 58 are held together (Fig. 9) by the reduced end of a post 60, which projects considerably above the table, as Fig. 3 will show, the post, in substance, being carried by the E-shaped slide 44.

On the post 60, a paper holder designated sufficiently for the purposes of the present discussion by the numeral 61 in Fig. 1 is mounted for swinging movement as indicated by the solid line and dash line showings of Fig. 1. The paper holder 61 also has a sliding movement on the post 60, longitudinally of the post, that is, toward and away from the table 1.

The paper holder 61 is a composite structure. It embodies a block or head 62 (Figs. 6 and 9) which is mounted to swing on the post 60, parallel to the table, and also mounted on the post for longitudinal sliding movement on the post, toward and away from the table.

Figures 5 and 6 may be relied upon to show that a lever 64 is mounted, intermediate its ends, on the post, to swing thereon in a direction parallel to the table 1. On the inner end of the lever 64 there is a weight 65. The lever 64 carries a depending arm 66, as shown in Figs. 5 and 7. The arm 66, engaging the inner side of the head 62, limits the swinging movement of the lever 64 under the action of the weight 65. On the other end of the lever 64 there is a depending finger 67, adapted to cooperate with a lateral stop 68 (Fig. 5) which is carried by a collar 69 (Fig. 7) mounted on the post 60, the collar supporting the lever 64 against downward sliding movement on the post 60.

On the upper end of the head 62 there is a laterally and outwardly extended crank arm 70 (Fig. 5) which is of considerable area (Figs. 6 and 3) in a direction at right angles to the table 1. When the paper holder 61 swings to the right from the solid line position of Fig. 1 to the dotted line position of that figure, the crank arm 70 engages a stop 71 carried by the end piece 48 of the first slide 44. Figure 6 shows that the stop 71 is of inverted U-shape.

Upon examining Figs. 5 and 7, the reader will note that a roller 72 is adapted to cooperate with the crank arm 70, this roller being journaled on a bracket 73, secured at 74 to a finger 75 (Fig. 7), the finger 75 being mounted at 76, for adjustment, on the long arm 77 of a U-shaped second slide 78 having a short arm 79. The arms 79 and 77 of the slide 78 are received for longitudinal movement in bearings 80 on the bottom bar 45 of the first slide 44, as Figure 2 will show, and the long arm 77 has sliding movement in a similar bearing on the bar or arm 47 of the slide 44. The lower end of a pull spring 81 is connected to the slide 78 and is joined at its upper end to the intermediate bar 46 of the slide 44.

A U-shaped third slide 82, shown in Fig. 2, is provided and includes a long arm 83 and a short arm 84. The slide 83 extends down a little way below the lower edge of the table 1. The arms 83 and 84 of the slide are mounted to reciprocate in a guide 85 on the back of the table 1, and the long arm 83 is additionally supported in a guide 86 on the back of the table. On its upper end, the arm 83 of the slide 82 has a backwardly extended finger 87 engaged over the central portion of the second slide 78.

An angular, forwardly extended handle 88 (Fig. 3) is mounted on the head 62. Directly below the handle 88 is located a latch lever 89, adapted to rest on the upper surface of the head 62. The back end of the lever 89 is forked to straddle the head 62, and the forked portion of the latch lever is pivoted at 91 to the sides of the head 62. Figs. 7 and 3 show that, intermediate its ends, the latch lever 89 has a depending projection 90. On the back end of the lever 89 there is an upstanding tit 92, when the latch lever is swung upwardly, engages the vertical part of the handle 88, to limit the upward movement of the latch lever.

The latch lever 89 is drawn downwardly by a pull spring 93 (Fig. 9) located in a bore 94 of the head 62, one end of the pull spring being anchored to the head, and the other end of the pull spring being connected to the latch lever.

Figs. 6 and 1 show that there is a laterally and outwardly extended bracket 95 on the head 62, to which is pivoted, at 96, an angular, two-part radius arm 97, carrying an abutment block 98, adapted to come to rest against the lower or forward end of the head 62, as shown in Figs. 7 and 9. The numeral 99 marks a bowed spring, the upper end of which is connected to the bracket 95 of the head 62, the lower end of the spring being held by a securing element 100 on the abutment block 98. The securing element 100 forms part of the means for holding in place a loop-shaped member 63 on the abutment block 98. The loop-shaped member 63 is the

particular part of the paper holder 61 which engages and holds the paper, near to the left hand edge of the paper, when the paper, or a stack of papers, are mounted on the shelf 3, the papers being held near to their right hand edge by the holder 42 of Fig. 1. Fig. 7 shows that the projection 90 on the latch lever 89 engages the abutment block 98, to hold the abutment block against the head 62, when the paper holding member 63 is in the position of Fig. 1.

In practical operation, the papers to be copied are supported on the shelf 3, and are held down near to the right hand margin by the paper holder 42, the papers being held near to the left hand margin by the arm or part 63 of Fig. 1. The line finder 35 is under the line of matter which is being copied, and casts no shadow. The paper holder 42 can be adjusted readily from right to left so as to hold down the paper, and at the same time obscure none or little of the text. The adjustment of the paper holder 42 from left to right or from right to left is brought about by turning the button 20 of Fig. 1, the shaft 18 of Fig. 2 being rotated, and the pinion 19 on the shaft 18 cooperating with the rack bar 16 of the carriage 12 to move the carriage from left to right. When the carriage 12 is moved transversely of the table 1, the frame 23 (which includes the paper holder 42) is moved laterally, also, because the head block 24 of the frame is carried by the posts 21 of the carriage 12 as the carriage 12 slides on the track 10. The frame 23 may be adjusted vertically, because the head block 24 of the frame can slide vertically on the posts 21 of the carriage 12. This vertical adjustment of the frame 23 and the paper holder 42 of course enables the paper holder to cooperate properly with the papers on the table 1, regardless of the thickness of the stack of papers. The head block 24 and parts carried thereby are heavy enough to cause the holder 42 to have a firm pressure on the papers.

By means of the knob 32, the bar 29 may be reversed on its axis, to bring either the rack 30 or the rack 31 of Fig. 8 uppermost, depending upon whether the matter being copied is double-spaced or single-spaced. The operator presses on the handle 41 and rocks the shaft 39. The crank arm 40 of the shaft 39 cooperates with the laterally extended part of the latch 36, and lifts the latch out of engagement with one tooth of the rack 30 of the bar 29, if that rack happens to be uppermost, and when the handle 41 is released, the laterally extended part of the latch 36 drops into the next lower tooth of the rack 30, the slide block 33 moving downwardly, by gravity, along the inclined guide 26, and carrying the line finder 35 downwardly to assume a place below the next lower line of matter which is to be copied. The latch 36 may be operated by means of the finger piece 38, but the handle 41 and the shaft 39 constitute a more convenient means for moving the line finder downwardly, by hand, and all that that is necessary to do, in order to adjust the position of the line finder 42 is to give the handle 41 a light touch.

If the operator desires, for any purpose, to hold the frame 23 elevated, this can be accomplished by engaging the latch 25 on the head block 24 with the cross piece 22 on the posts 21.

Passing to the left hand side of the device, when the operator wishes to place the papers on the table 1, he places his thumb on the handle 88 of Fig. 3, and raises the latch lever 89 on its pivotal mounting 91. This operation disengages the projection 90 of the latch lever from the abutment block 98, and the abutment block, along with the radius arm 97 which carries it, swings on the pivotal mounting 96, under the action of the spring 99, to the left, from the solid line position of Fig. 1, until the paper holder 61 is substantially clear of the table 1, and inclined to the left of the table. The papers then may be placed underneath the paper holder 42, and the paper holder 43 can be swung back to the solid line position of Fig. 1, to retain the papers, the projection 90 on the latch lever 89 again engaging with the abutment block 98, as in Fig. 3, to hold the abutment block 98 in alinement with the head 62, as shown in Fig. 1 of the drawings.

With the abutment block 98 and the head 62 held rigidly together, and with the part 63 in the position shown in solid line in Fig. 1 of the drawings, the paper holder, designated generally by the numeral 61 in Fig. 1, has another movement.

The entire paper holder 61 can be swung to the right, from the solid line position of Fig. 1 to the dotted line position of that figure, the head 62 turning on the post 60. When the paper holder 61, and, particularly, the arm 63 thereof, are in the dotted line position of Fig. 1, the lower, left hand corner of the sheet of paper that has been copied, is set free, and the operator can pull out the sheet that has been copied, from beneath the arm 63, the line finder 35, and the paper holder 42, leaving the next sheet there beneath exposed for copying.

When the arm 63 swings to the dotted line position of Fig. 1, the arm 70 on the head 72 engages with the end of the stop 71, and this limits the lateral swinging movement of the arm 63 to the right, and stops the movement of the arm with the arm in the dotted line position of Fig. 1.

The arm 66 (Fig. 5) of the lever 64 bears against the side of the head 62, under the action of the weight 65, and causes the arm 63 of the paper holder to swing to the left, from the dotted line position of Fig. 1 to the

solid line position of that figure, and when the arm 63 is in the solid line position of Fig. 1, it is stopped in that position by the engagement between the head 62 and the stop 71, as can be seen readily when Figs. 1 and 6 are examined.

The entire paper holder 61 can be slid up and down, that is, toward and away from the table 1, to accommodate the thickness of the stack of papers which is being copied, the head 62 having a sliding movement on the post 60, in a direction at right angles to the table 1. The stop 71 of Fig. 6 is high enough so that it will engage the side of the head 62, and limit the left hand movement of the arm 63 to the position of Fig. 1, regardless of whether the paper holder be raised or lowered with respect to the table 1. Moreover, the left hand end of the crank arm 70 of the head 62 is of such vertical extent that the roller 72 of Fig. 1 will always have a bearing on the crank arm 70, regardless of whether the paper holder 61 be raised or lowered on the post 60.

Although the lever 64 and the weight 65 constitute a means for swinging the arm 63 from the dotted line position of Fig. 1 to the solid line position of that figure, a means is provided for stopping the swinging movement of the lever 64, under the action of the weight 65, and this means operates independently of the engagement between the head 62 and the stop 71, as shown in Fig. 6. The means for stopping the movement of the lever 64, under the action of the weight 65, as hereinbefore referred to, is the depending finger 67 (Fig. 6) on the lever 64, which engages the lateral stop 68 on the post 60, as best disclosed in Fig. 5.

It has been stated hereinbefore, simply, that the paper holder 61, and, specifically, the arm 63 of Fig. 1 can be swung by an operator from the solid line position of Fig. 1 to the dotted line position of that figure, but that statement does not mean that the operator has to lay hold of the arm 63 directly, since a means is provided for swinging the arm 63, as aforesaid. In this connection, let reference be made to Fig. 2 of the drawings.

The operator pulls downwardly upon the third slide 82, and the finger 87 on the third slide, cooperating with the second slide 78, holds the second slide downwardly, against the action of the spring 81, the slide 78 having movement, downwardly in the bearings 80 on the bar 45 of the first slide 44, and in the corresponding bearing on the plate 55.

When the second slide 78 is carried downwardly, the roller 72 of Fig. 2 is carried downwardly also. Passing now to the showing of Fig. 1, it will be obvious that when the roller 72 moved downwardly, it will cooperate with the crank arm 70 of the paper holder 61, to swing the paper holder from the solid line position of Fig. 1 to the dotted line position. Owing to the weight of the third slide 82 and the weight of the first slide 44 of Fig. 2, the parts remain in lowered position, after they have been lowered by hand. This is desirable, because, after the third slide 82 has been drawn down from the solid line position of Fig. 1 to the dotted line position, and after the paper holder 61 has been swung to the dotted line position, the operator has to take his hand off the slide 82 and take hold of the lower left hand corner of the sheet of paper on the table 1, to pull the sheet of paper out from beneath the holders 61 and 42. The slide 78 of Fig. 2 is raised automatically by the spring 81, and the roller 72 is moved upwardly with respect to the crank arm 70 on the head 62 of the carrier 63. This sets the carrier 63 free, and the carrier can swing back to the solid line position of Fig. 1, under the action of the weighted lever 64. It is preferable that when the line finder 35 is not in use, it can be slid upwardly to a position near to the upper end of the table 1.

The paper holder 61, and especially the arm 63 thereof (Fig. 1) may be shifted laterally from right to left, to accommodate the width of the paper and to accommodate the left hand margin of the printed matter on the paper. This lateral adjustment of the paper holder 61 is brought about by the instrumentality of the hand wheel 54 of Fig. 2, the shaft 52 being rotated, and the pinion 51 cooperating with the rack 50, to move the slide 44 back and forward, from left to right. During this back and forward movement of the slide 44, from left to right, the second slide 78 has corresponding movement, as the arms 79 and 77 of the slide 78 are engaged in the bearings 80 of the bar 45 of the slide 44, the slide 78 having a lateral movement with respect to the finger 87 on the long arm 83 of the third slide 82. During the lateral movement of the second slide 78, the roller 72 which is carried thereby can roll on the crank arm 70 that is carried by the head 62 of the paper holder 61.

The plates 55 and 56, of Figs. 2 and 5, respectively, together with the spacer 58 of Fig. 9, form a fourth slide, or, considered differently, form a part of first slide 44, since they are connected to the top bar 47 of the slide 44. When reciprocation is imparted to the parts 55 and 56, the post 60 receives lateral movement from right to left, in Fig. 1, and the paper holder 61, of course, participates in this movement.

Because the arms 79 and 77 of the slide 78 are engaged in the guides 80 of the bar 45 of the slide 44, the slide 78 participates in the lateral movement of the slide 44, but the bar 45 of the slide 44 has longitudinal movement with respect to the finger 87 on the slide 83. During the lateral movement of the slide 78, the roller 72 can move on the crank arm

70 that is carried by the head 62 of the paper holder 61.

The post 60 receives a lateral movement from the parts 55 and 56 which carry it, and the paper holder 61 of Fig. 1, which is carried by the post, participates in this movement, and is carried in and out, transversely of the table 1.

Although, as shown in Fig. 3, the machine is shown as mounted on the feet 2, to adapt the device to the Morkrum printing machine, it will be understood that the device may be mounted on a base of any desired form.

The construction described in connection with the left hand paper holder 61 of Fig. 1 can be altered, and still have the right hand paper holder 42 operate properly.

Although the device has been described as being used for holding messages and other papers whilst they are being copied, it will be understood that it can be used conveniently by public speakers or others, who wish to retain one or more sheets of manuscript in such position that they can be read without danger of having them blown away from the reading stand.

What is claimed is:—

1. A device of the class described, comprising a table, a carriage movable transversely of the upper edge of the table, means for moving the carriage transversely of the table, a frame including a paper holder cooperating with the table, and means for mounting the frame on the carriage for movement in a substantially vertical direction, substantially at right angles to the table.

2. A device of the class described, comprising a table, a carriage movable transversely of the table, means for moving the carriage transversely of the table, at the will of an operator, a frame, means for mounting the frame on the carriage for vertical adjustment, the frame comprising a guide extended downwardly along the table, a slide mounted to reciprocate on the guide, a line finder mounted on the slide, and mechanism carried by the frame for imparting step by step movement to the slide and the line finder.

3. In a device of the class described, a table, a carriage movable transversely of the table, means for moving the carriage transversely of the table, a frame, means for mounting the frame on the carriage for vertical movement, the frame comprising a guide extended downwardly along the table, a slide mounted to reciprocate on the guide, a line finder mounted on the slide, and mechanism carried by the frame for imparting step by step movement to the slide and the line finder, said mechanism comprising a bar rotatably mounted on the frame and having differently stepped racks, and a latch carried by the slide and engageable with either of the racks when the bar is rotated to present one of the racks to the latch.

4. In a device of the class described, a table, a carriage movable transversely of the table, means for moving the carriage transversely of the table, a frame, means for mounting the frame on the carriage for vertical adjustment, the frame comprising a guide extended downwardly along the table, a slide mounted to reciprocate on the guide, a line finder mounted on the slide, a rack carried by the frame, a latch on the slide and cooperating with the rack, and mechanism for releasing the latch from the rack, said mechanism comprising a shaft mounted to rock on the frame and having a crank engaging the latch, and means for operating the shaft from a point adjacent to the lower portion of the table.

5. In a device of the class described, a table, a head, a paper holder cooperating with the table, means for hinging the paper holder to the head, to enable the paper holder to be swung outwardly with respect to the table, independently of the head, to a first position, means for holding the paper holder and the head releasably together for swinging movement as one piece, inwardly with respect to the table, to a second position, and mechanism for mounting the head for swinging movement to carry the paper holder inwardly with respect to the table, and outwardly to a third position intermediate the first and second positions and above the table.

6. A device of the class described, constructed as set forth in claim 5, and further characterized by the provision of means for swinging the head to carry the paper holder to said third position, and means for stopping the head with the paper holder in said third position.

7. A device of the class described, constructed as set forth in claim 5, and further characterized by the provision of a lever mounted to swing with respect to the paper holder, and carrying a weight, the lever engaging the head to move the head and the paper holder to said third position, and means for stopping the head with the paper holder in said third position.

8. A device of the class described, constructed as set forth in claim 5, in combination with spring means for swinging the paper holder to said first position, and means for stopping the paper holder in said first position.

9. In a device of the class described, a table, a slide mounted on the table to move transversely of the table, a pivot element carried by the slide, a head mounted to swing on the pivot element, in a direction substantially parallel to the table, and mounted on the pivot element to slide thereon toward and away from the table, a paper holder cooperating with the head, means for hinging the paper holder to the head to enable the paper holder to be swung outwardly with re-

spect to the table, independently of the head, to a first position, means for holding the paper holder and the head releasably together for movement as one piece, inwardly with respect to the table, to a second position, and means for stopping the swinging movement of the head, with the paper holder in a third position, intermediate the first and second positions, and above the table.

10. In a device of the class described, a table, a slide movable transversely of the table, means under the control of an operator for moving the slide transversely of the table, a pivot element carried by the slide, a paper holder mounted to swing on the pivot element, in a direction substantially parallel to the table, a crank arm carried by the paper holder, another slide mounted to reciprocate on the first slide, in a direction substantially at right angles to the movement of the first-specified slide, and means carried by said other slide for engagement with the crank arm, to impart swinging movement to the paper holder.

11. In a device of the class described, a table, a slide movable transversely of the table, means for moving the slide transversely of the table at the will of an operator, a pivot element carried by the slide, a paper holder mounted to swing on the pivot element, in a direction substantially parallel to the table, a crank arm on the paper holder, a second slide mounted to reciprocate on the first slide in a direction substantially at right angles to the movement of the first specified slide, means carried by the second slide and cooperating with the crank arm to swing the paper holder, and a stop with which the crank arm engages, to limit the movement of the paper holder.

12. In a device of the class described, a table, a slide movable transversely of the table, means for moving the slide transversely of the table, a pivot element carried by the slide, a paper holder mounted on the pivot element to swing substantially parallel to the table, another slide mounted to move on the first-specified slide in a direction substantially at right angles to the movement of the first-specified slide, and under the control of an operator, and means carried by the second-specified slide for imparting swinging movement to the paper holder.

13. In a device of the class described, a table, a first slide movable transversely of the table, means under the control of an operator for moving the first slide transversely of the table, a pivot element carried by the first slide, a paper holder mounted to swing on the pivot element, in a direction substantially parallel to the table, a second slide movable on the first slide, transversely of the direction of movement of the first slide, and cooperating means on the second slide and on the paper holder for imparting swinging movement to the paper holder when the second slide is moved with respect to the first slide, and a third slide under the control of an operator and mounted on the table for movement in a direction substantially at right angles to the direction in which the second slide moves, the first and second slides having interengaging elements which permit the second slide to move transversely of the first slide.

14. In a device of the class described, a table, a slide mounted to move on the table, transversely of the table, a pivot element carried by the slide, a paper holder mounted to swing on the pivot element, in a direction substantially parallel to the table, a crank arm on the paper holder, a second slide mounted to reciprocate on the first slide, in a direction substantially at right angles to the direction in which the first slide moves, means on the second slide for engaging the crank arm to impart swinging movement to the paper holder, and a stop on the first slide wherewith the crank arm engages, to limit the swinging movement of the paper holder, means under the control of an operator for imparting reciprocation to the first slide, and means under the control of an operator for imparting reciprocation to the second slide.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

FRANK M. SPERLING.