Jan. 4, 1938. J. B. JANNEY 2,104,484

PAPER WEB SUPPORT

Filed Jan. 10, 1931 3 Sheets-Sheet 1

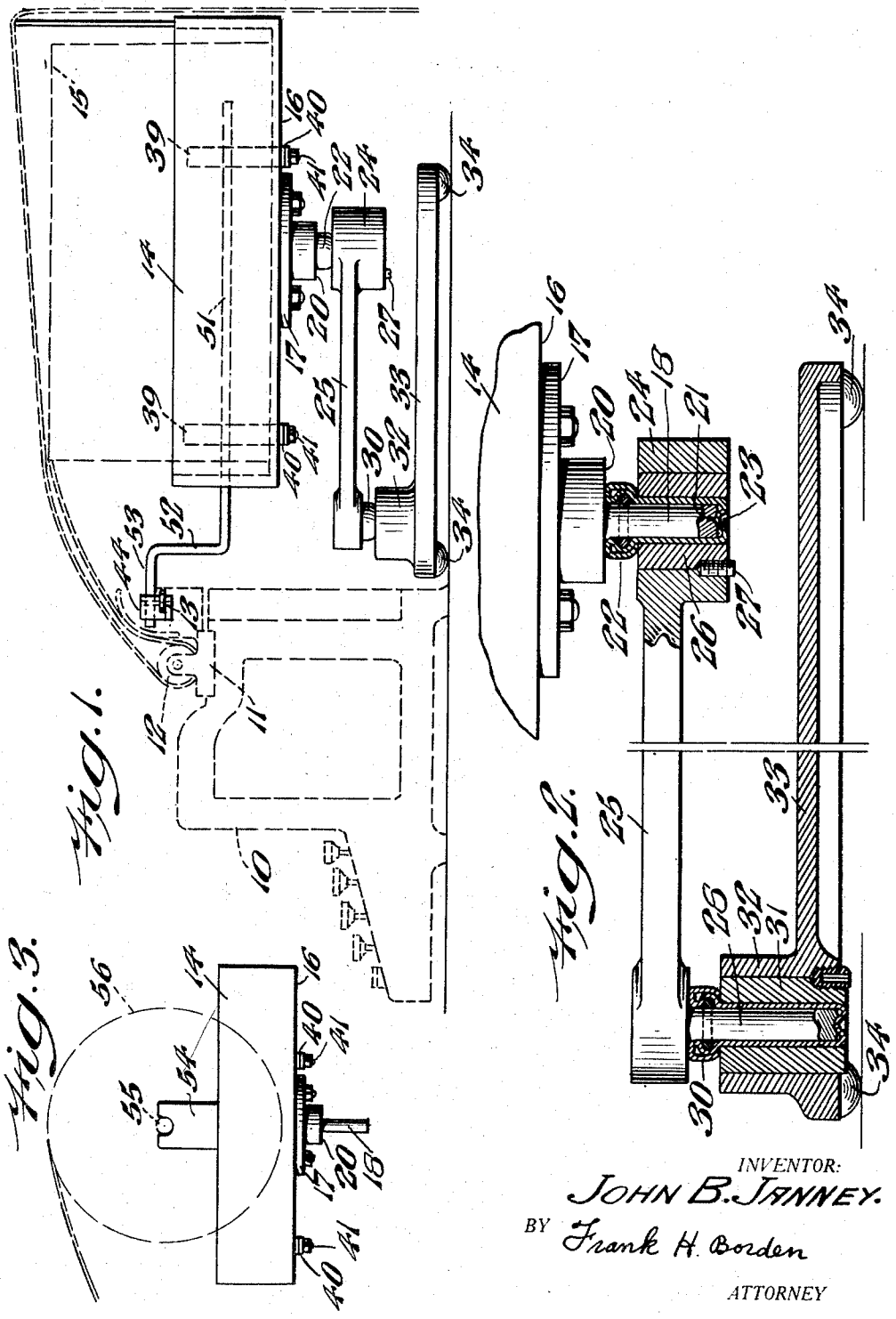


Fig. 1.

Fig. 2.

Fig. 3.

INVENTOR:
JOHN B. JANNEY.
BY Frank H. Borden
ATTORNEY

Jan. 4, 1938. J. B. JANNEY 2,104,484

PAPER WEB SUPPORT

Filed Jan. 10, 1931 3 Sheets-Sheet 2

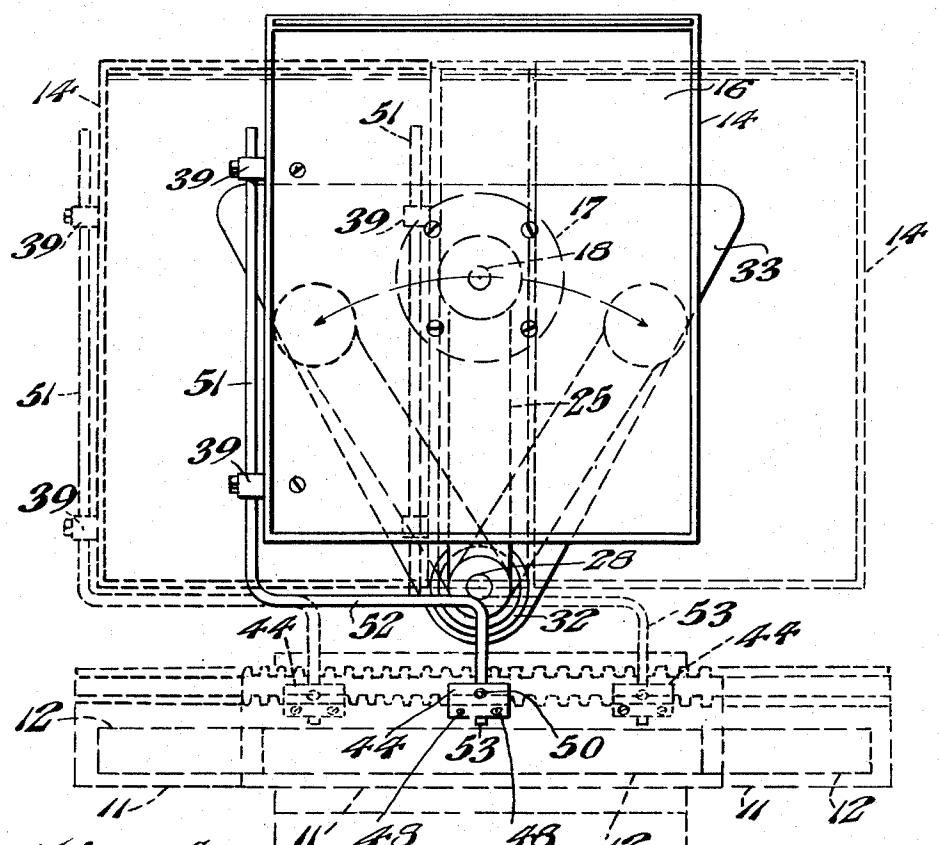


Fig. 4.

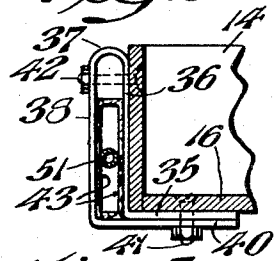


Fig. 5.

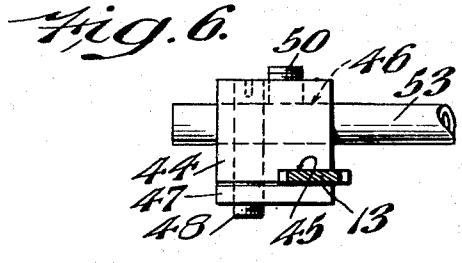


Fig. 6.

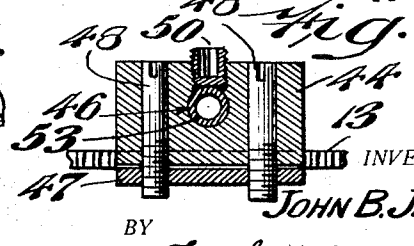


Fig. 7.

INVENTOR:
JOHN B. JANNEY,
BY
Frank H. Borden
ATTORNEY

Jan. 4, 1938. J. B. JANNEY 2,104,484

PAPER WEB SUPPORT

Filed Jan. 10, 1931 3 Sheets-Sheet 3

Fig. 9.

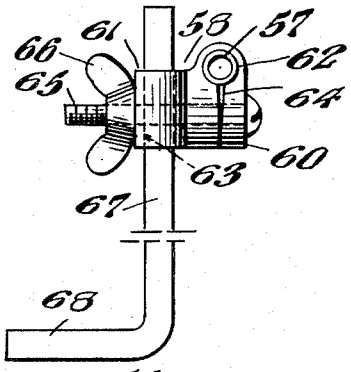


Fig. 8.

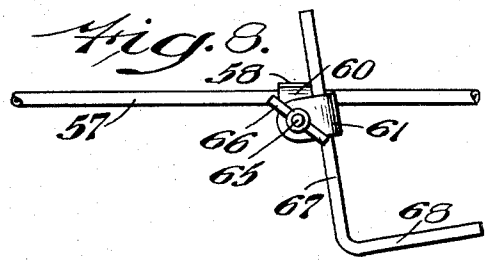


Fig. 11.

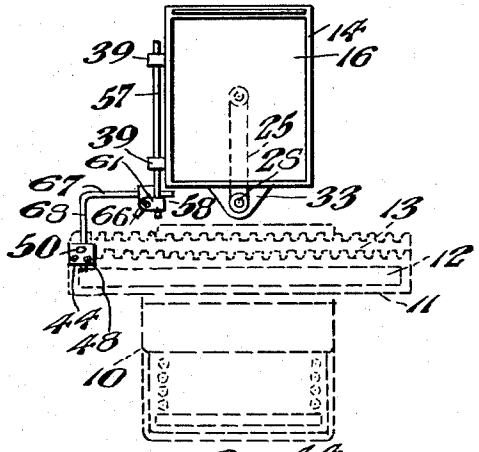


Fig. 10

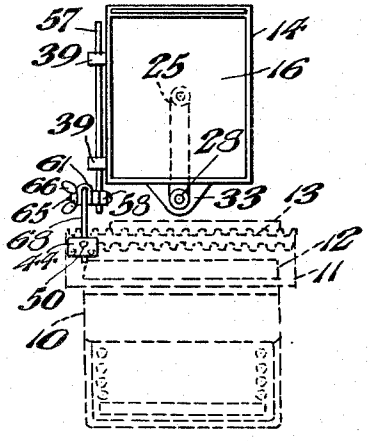


Fig. 12

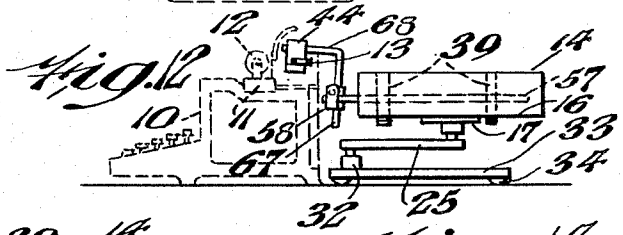


Fig. 13.

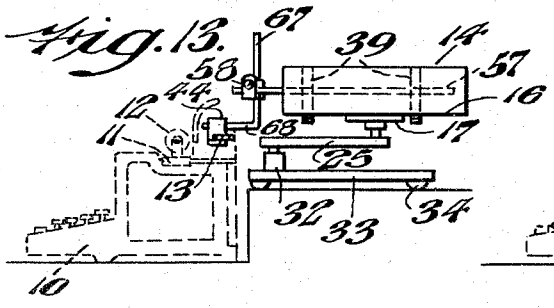
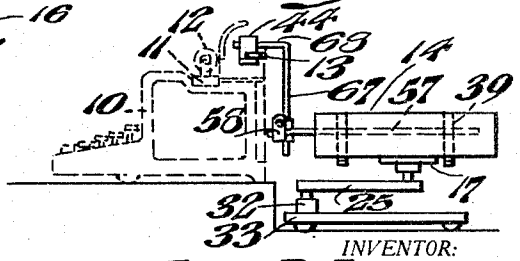


Fig. 14.



INVENTOR:
JOHN B. JANNEY.
BY Frank H. Borden
ATTORNEYS.

Patented Jan. 4, 1938 2,104,484

UNITED STATES PATENT OFFICE

2,104,484

PAPER WEB SUPPORT

John B. Janney, Philadelphia, Pa., assignor, by mesne assignments, to American Sales Book Company, Inc., a corporation of Delaware

Application January 10, 1931, Serial No. 507,818

2 Claims. (Cl. 197—133)

This invention relates to paper web supports for typewriters.

Modern business has evolved a need for multiple copies of invoices, shop orders, shipping memoranda and the like, or of multiple copies of combinations of such forms, which in the interests of speed and efficiency are simultaneously prepared, as by suitable impressions from a typing machine upon a pre-assembled series of forms separated by suitable reproducing media such as carbon paper. In furtherance of the speed and efficiency of the operator these several sheets of a series are arranged each as a long and substantially continuous web, arranged with creases or perforations, such as to facilitate tearing into individual sheets or groups of sheets after receiving the type impressions. Such a series of continuous webs are pre-arranged and sold either in rolls or in fan-fold packs, the weight and mass of either of which is so appreciable as to be far too cumbersome and heavy for the typewriter carriage to support. It has therefore been the unsatisfactory practice in the past to place such packs on the floor behind the typewriter, or on some portion of the desk behind the typewriter, in a laterally immovable position such that the web feeding to the typewriter platen approaches same in various angular paths as the typewriter carriage moves laterally back and forth in the use of the machine. This is obviously unsatisfactory and purely a makeshift as the disadvantages of any unequal feeding of a plurality of webs to the platen, with the consequent misalignment, tearing, unequal spacing and the like will be readily understood.

There have been some attempts to deal with this problem in the past, such as by providing a transverse track upon which the web might be moved laterally, as well as by providing supports for small webs within the typewriter itself, in addition to those impractical devices purporting to support such webs upon the typewriter carriage, but so far as known not one of these expedients has been commercially successful.

It is among the objects of this invention to provide a support for paper webs of simplicity, economy, and of universal applicability to standard typewriters; to provide a web support which is freely movable in synchronism with a typewriter carriage to maintain rectilinear alignment of the web and the platen; to provide a laterally movable web support with an actuating device which works freely and without binding regardless of the deviation of either the typewriter or the support from a predetermined elevation; to provide a web support for typewriter machines such that there is a slack automatically provided in the web before the platen feeding device is actuated to relieve the operator of the strain of overcoming the inertia of the web in advancing the platen at the end of a line; to provide a typewriter attachment of simplicity and economy and substantial permanence such as may be quickly coupled and uncoupled from a web supporting device; to provide a web supporting device for typewriters arranged for operable association with and disassociation from a typewriter in a very short interval, and which can be quickly moved out of proximity to the typewriter when its use is not required; to provide an adjustable coupling member such that an operative driving engagement may be had between a typewriter and a web supporting device, regardless, substantially, of different relative elevation levels or different relative sizes of the associated typewriter and web supporting device; and many other objects and advantages as will become more apparent as the description proceeds.

In the accompanying drawings:

Fig. 1 represents an illustrative assembly of the web support according to the preferred form of this invention in operative association with a conventional typewriter illustrated in dotted lines,

Fig. 2 represents a fragmentary vertical section partially in full lines through the pivotal assembly of the web support,

Fig. 3 represents a side elevation of a slightly modified web support particularly adapted for supporting webs in the form of a roll,

Fig. 4 represents a plan of an operatively associated web support according to this invention with a conventional typewriter shown in dotted lines and showing in light and heavy dotted lines the extreme positions of a web support in its synchronized movement with the movable carriage of the typewriter,

Fig. 5 represents a fragmentary elevation partially in section of a vertically slotted guide of the invention,

Fig. 6 represents an end elevation of a form of permanent attachment to the typewriter from which the rod, a fragment of which is shown in elevation, is quickly detachable,

Fig. 7 represents a transverse vertical section through the permanent attachment to the typewriter partially in full lines,

Fig. 8 represents a fragmentary side elevation of a preferred form of bar or arm for actuating the web supporting device in response to movement of the typewriter carriage,

Fig. 9 represents an end elevation of the same,

Fig. 10 represents a diagrammatic plan of an assembled web support and typewriter with the actuating arm mounted on the typewriter carriage toward one end thereof,

Fig. 11 represents a diagrammatic plan of the web support operably associated with a typewriter of far greater width than the web support and illustrating the disposition of the adjustable arm to compensate for this factor,

Fig. 12 represents a fragmentary side elevation of a web support according to this invention broken away and with the arm adjusted to compensate for a slight deviation of the tabulator bar from the true horizontal position.

Fig. 13 represents a diagrammatic side elevation of an assembled web support and typewriter with the connecting arm adjusted so as to compensate for the initial higher elevation of the web support relative to the elevation of the typewriter, and

Fig. 14 is a similar view in which the arm is adjusted.

The typewriter **10** of any standard construction includes a movable carriage **11** including a platen **12** and a tabulator bar **13**, which travel laterally across the typewriter frame as a unit. It is common and conventional practice to provide means (not shown) by which the operator may simultaneously advance the platen a desired number of degrees of movement about its axis and in the same motion cause the carriage to travel toward one extreme position relative to the typewriter frame. The return movement, as is well known is usually a step by step spring actuated movement.

The web support of this invention in the preferred form comprises an open sided box **14** within which the compacted web **15**, as of the fan-fold type rests upon the floor **16** of the box. Obviously the web support may, if desired, simply comprise the bottom panel **16** although for general purposes it is preferred to provide the sides of the box as illustrated. Mounted substantially in the center of the lower surface of the floor of the box or of the support comprised of such floor, may be the flanged plate **17** affixed to the floor of the box by suitable screws or the like, terminating in a downwardly depending coaxial pintle **18**, the upper portion of which terminates in an annular shoulder **20** carried by the flange **17**. The pintle **18** at its lower end has a concentric recess **21**. The pintle **18** is received in a co-operating bearing thimble **22** having preferably an inturned concentric tip **23** upon which the end of the pintle **18** is supported in the recess **21**. The thimble **22** may be received directly in a vertical opening provided for it in the enlarged head **24** of the arm **25**, but it is preferred to interpose a bushing **26** locked in place by suitable means such as a set screw **27**. By reference to Fig. 2 it will be observed that the box **14** is provided with a substantially antifriction bearing in the end of arm **25** and turns quite freely relative thereto. The opposite end of arm **25** carries a rigid perpendicularly depending pintle **28** of the same characteristics as pintle **18**, rotatably mounted in a thimble **30** disposed preferably in a bushing **31** in a hub **32** of the base plate **33** or its equivalent. The base plate **33** has short non-scratching legs **34** to give it a firm support and is preferably somewhat longer than arm **25** and is preferably triangular in shape as shown in Fig. 4, so that within the normal range of movements of the arm as disclosed in the last mentioned figure the center of gravity of the web support lies well within the confines of the base plate **33**. It will be understood that the base plate **33** may be a lug having hub **32** (not shown), detachably mounted on the desk or the like.

It is advantageous and it is preferred that the base **33** be so disposed relative to the typewriter **10** that the hub **32** thereof is adjacent the typewriter preferably toward the center thereof so that as the box or web support moves laterally of the base, the center of the pintle **18**, which is the substantial center of the web support, has an arcuate path of movement as indicated by the arrows in Fig. 4.

A pair of vertically slotted guides **39** are provided on a desired side of the box **14** or rising up from the board or floor **16** thereof. While obviously the guides may be of any desired construction, it is preferred that some such formation as is shown in Fig. 5 be utilized. The guide illustrated comprises a single piece of metal such as a strap of brass **35** extending from the bottom of the box upwardly against the side thereof as at **36** describing a U bend **37** and extending downwardly at **38** in parallelism with the leg **36** and bending back against the strip **35** as at **40**. It may comprise a shallow U-shaped piece fastened to the side of the box so that the box side forms one side of the slot. The guide is suitably fastened to the box as by means of screws **41** and **42** and may be and preferably is lined with an insulating material such as a sheet of fibre **43** to reduce noise and to limit the play of the actuating arm to be described. It is preferred that a pair of the vertically slotted guides **39** be mounted on the side of the web support and preferably longitudinally spaced on each side of the axis passing through the pintle **18** so as to maintain the rectilinear alignment of the box with the carriage or platen. Obviously as many of the guides may be provided as may be desired, or the same effect may be attained by providing a single slotted guide of appreciable longitudinal length, although in the interests of simplicity and economy the guides disclosed are preferred.

It is a feature of modern standard typewriters to provide a spacing or tabulating bar **13**, usually in the form of a serrated or toothed rack and which moves backward and forward with the platen. For such typewriters it is preferred to use a more or less permanent attachment such as is shown in Figs. 4, 6 and 7, but which obviously may take other forms. The only thing that is of importance in the connection being that the attachment be more or less inconspicuous, be free to be mounted substantially permanently without interfering with any of the normal uses of the typewriter, and be provided with means for quick attachment and detachment of a guiding bar or arm. This invention contemplates that one form facilitating such quick attachment and detachment is found in a device incorporating an opening controlled by a set screw or the like. In the form disclosed in Figs. 6 and 7, a block **44** having an undercut recess **45** in parallelism with an aperture **46** extending preferably through the block is arranged to seat upon the spacing or tabulating bar **13** as shown in Fig. 6, and to be clamped rigidly thereto as by means of a plate **47** applied against the lower side of the spacing or tabulating bar **13** by means of set screws **48**. The block **44** may be mounted at a convenient point to the bar **13** as, for instance, in the center as shown in

Fig. 4, although preferably at an end, as shown in Figs. 10 and 11, may be locked in position and may travel with the bar 13 without interfering with the free normal use of the typewriter. It should be noted that it is preferred that a suitable rigid bearing be provided on each side and in spaced relation to the aperture 46 so that torsional strains imparted to the block will be ineffectual to effect disconnection. The block preferably has a set screw 50 operable relative to the aperture 46.

In order to establish a driving relation between the typewriting carriage and the web support there may be provided an arm 51 slidably insertable into the vertically slotted guides 39, having a perpendicular portion 52, and terminating in a short end 53, substantially parallel with the main body of the arm 51 and axially insertable into the aperture 46 under the set screw 50. The short end 53 may be cylindrical in shape as shown or may have an angular contour to register with angular contours of the aperture 46, (not shown). Or it may be slotted or flattened in any desired manner to effect a non-rotatable lock with the set screw 50. For general purposes, however, the end 53 may be cylindrical for an advantage that will be pointed out later herein.

For general purposes the integral tubular bar disclosed in Fig. 4 may be availed of, although there are many situations in which the integral one-piece bar may not be used with complete freedom. For this reason it is preferred that the bar or arm be comprised of two elements susceptible to rigid but variable operative angular association. As disclosed in Figs. 8 and 9 such an adjustable arm is effected by providing a substantially straight tubular arm 57 having sliding engagement in a gripping member 60 of a two-way clamp 58 comprised of two gripping members respectively 60 and 61, having each a bore, respectively 62 and 63, to receive the elements to be clamped, and having each a slot communicating with the bore as at 64, and being simultaneously clamped in adjusted positions by a bolt 65 tightened by the wing nut 66. A short arm 67 having the short end 68 at a right angle to the main portion 67, is arranged for sliding clampable engagement with the other half 61 of the clamp 58.

Such clamping assembly of arm, wherein the short end 68 may assume any desired angular relation to, or distance from, the straight portion 57, permits of correction for deficiencies in the equipment with which the web support is to be associated. For instance, as disclosed in Fig. 12, the tabulator bar or other part of the carriage to which the block 44 is to be affixed may be slightly bent out of its proper alignment so that attachment of the rigid integral bar disclosed in Fig. 4 to the block would cause the arm 51 to be unevenly spaced in the vertical slotted guides, whereas suitable adjustment of the universal clamp 58 enables the bar 57 of the preferred form of arm to be properly horizontally aligned with the guides 39 regardless of the angular disposition of the short end 68.

As the short end 68 of the two-piece arm can be adjusted toward and away from the arm 57, it will be apparent that small inequalities of elevation the typewriter or of the tabulator bar thereof and of the slotted guides on the web support may be so compensated for as to have the proper guiding disposition. To this end it may be preferred to mount the block 44 on an end of the tabulator bar 13 rather than in the middle as shown in Fig. 4. This is shown in Fig. 10 as is the disposition of the bars of the two-piece arm in securing proper alignment of the parts. Fig. 11 discloses the disposition of the two-piece arm when associating the web support with the typewriter 70 of appreciably greater width than the web support. As may be noted in this assembly the arm 67 extends substantially horizontally rather than substantially vertically as shown in Fig. 10. For exaggerated conditions in initial elevation as shown in Figs. 13 and 14, the actuating arm of this invention may be adjusted in the manner shown. This adaptibility of the invention to varying conditions is an important factor in its utility.

In assembling the operative assembly of the invention the block 44 is detached from the arm 51 or the arm 68 and applied to the tabulator bar in rigidly clamped relation with the aperture 46 extending preferably parallel with the longitudinal axis of the typewriter. The block is inconspicuous and may ride back and forth on the tabulator bar during the normal operation of the typewriter without being in any way undesirable. In the locked position of the block on the tabulator bar it may be noted that the shoulder of the block abuts the edge of the margin bar for an an appreciable space so as to afford a bearing surface adequate to prevent the block from moving about a vertical axis.

When the web support is to be used it is moved into proximity with the typewriter as disclosed in Fig. 4 (for instance) the detachable arm 51 or 57 is inserted longitudinally of the web support in the pair of slotted guides 39 after which the end 53 of arm 51, or short end 68 of the composite arm is inserted longitudinally into the aperture 46 into gripping engagement with the set screw 50. With the arm 68 engaged in the block 44, the double clamp 58 is properly tightened and the arm made rigid. As thus easily and quickly assembled it will be observed that the web supported by the web support may be fed forward under the platen 12, and that movement of the typewriter carriage moves the now substantially rigidly mounted arm 57 laterally of the typewriter and through the pivotal mounting of the web support it will move laterally of the typewriter with a maintenance of rectilinear alignment of the web support with the carriage of the typewriter. Disassembly, when the web support is no longer needed, is conveniently and quickly achieved by simply releasing set screw 50 and pushing the arm away from the typewriter and either removing the web support or turning it about its axis to a position in spaced relation to the typewriter where it is out of the way.

It is a feature of importance in some cases that the web support move on an arc, the axis of which is toward the typewriter, as this results in the web support being spaced furthest from the typewriter carriage in the middle of its movement while at each end of its lateral movement it is closest to the typewriter carriage. As the movement of the carriage under the manual operation of the typist is customarily accompanied by the advance of the platen to feed the web to the next line to be typed, this in certain cases presents such a heavy load, due to the inertia of the web, as to reduce the efficiency of the typist. With the arrangement disclosed, however, the spring actuated transverse movement of the carriage accompanied by the arcuate movement of the web support results in a loosening of the web on the support up to the central position of the web support and thereafter continued lateral movement simply provides a degree of slackness in

the web such as to facilitate its feeding by movement of the platen. Although this is of importance in the case of a fan-fold pack it is of even greater importance where the web is in the shape of a roll, as shown in Fig. 3 where the normal movement of the web is solely by the rotatable advancement of the platen. This modified form is shown in Fig. 3 and simply incorporates a pair of standards **54** having recesses to receive an axle **55** carrying a concentric web of paper or the like **56**. The arms **54** may be permanently attached to the box or may be detachable therefrom.

Another feature of importance in the universal use of the invention lies in the vertical slots provided in the guides **39** in association with the substantially rigid arm **57** in that certain typewriters, upon use of the shift key, effect vertical movements of the carriage, which is contemplated in the construction shown in Fig. 5, as arm **57** simply moves upwardly in the guides.

I claim as my invention:

1. In a device of the character described, an actuating arm comprising an L-shaped bar, a straight bar, and a universal clamp slidable relative to both bars and arranged for rigidly holding the bars in a desired angular relation, and adjustable to permit a change in such angular relation and in the effective length of a bar.

2. In a writing machine, in combination, a web support mounted for movement laterally of the writing machine and positioned at the rear thereof, a rigid power transmitting arm for transmitting driving energy to said web support and having two sections, a driving connection for connecting one of said sections to the carriage of the writing machine, a driving connection for connecting the other of said sections to said web support, a clamping device having relatively adjustable sections for rigidly connecting said arm sections together in different angularly adjusted positions thereof, one of said clamping sections having a clamping seat in which one of the driving arm sections is longitudinally adjustable, and one of the sections of said power transmitting arm having angularly disposed end parts, one of which is connected to said clamping device and the other angularly disposed part being attached to one of said driving connections.

JOHN B. JANNEY.