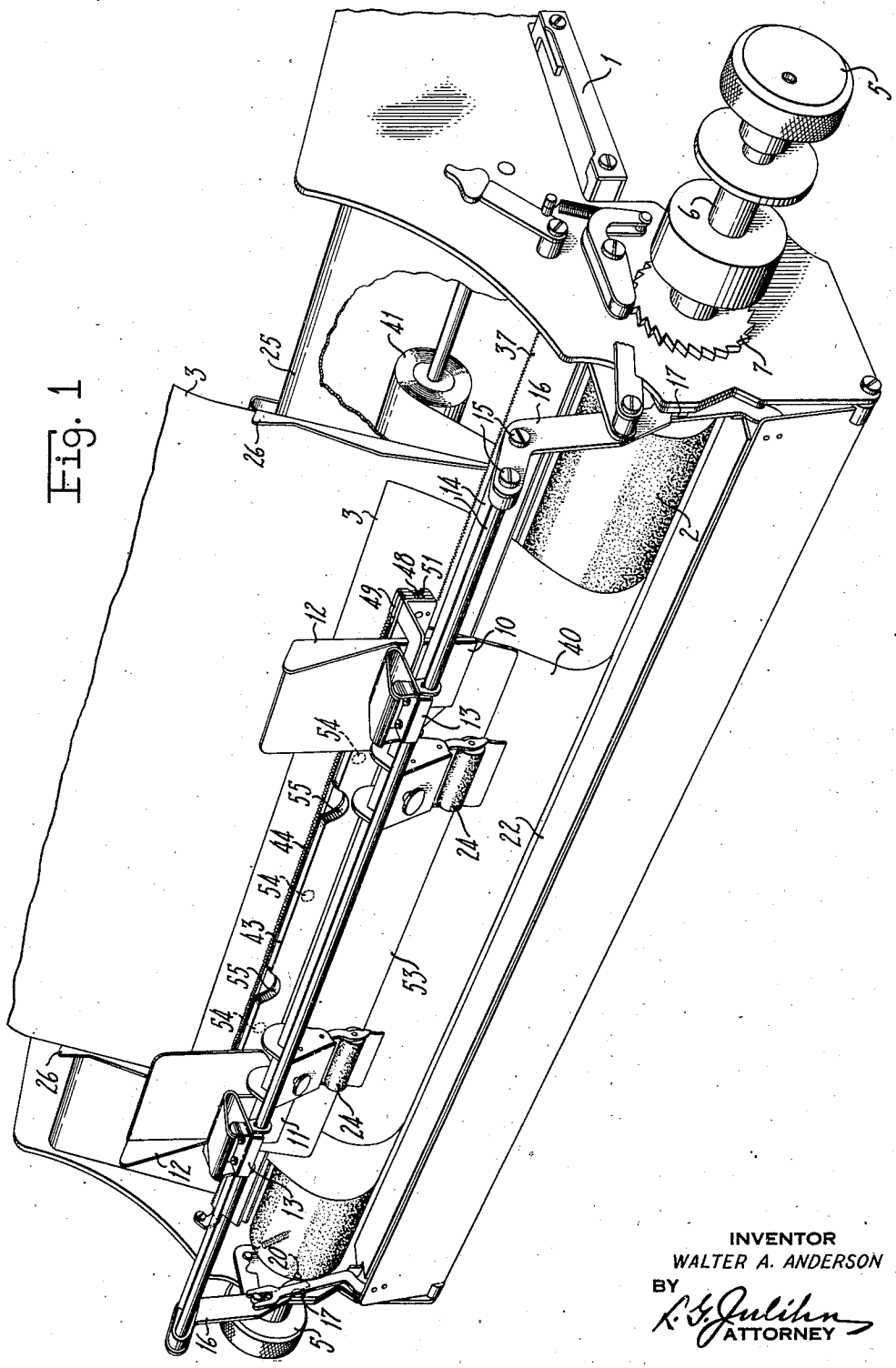
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CARBON PAPER SUPPORT FOR ACCOUNTING MACHINES

Filed June 29, 1939 3 Sheets-Sheet 1

Fig. 1



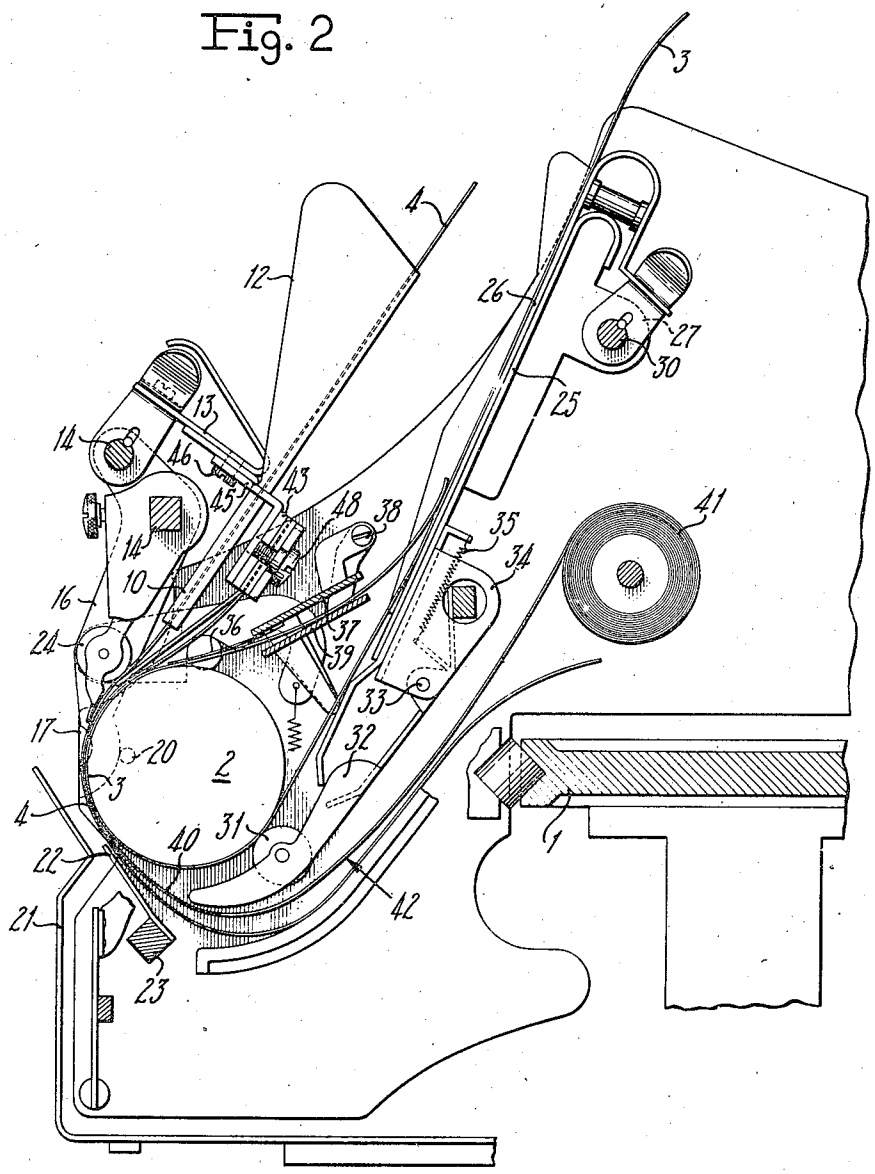
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Fig. 2



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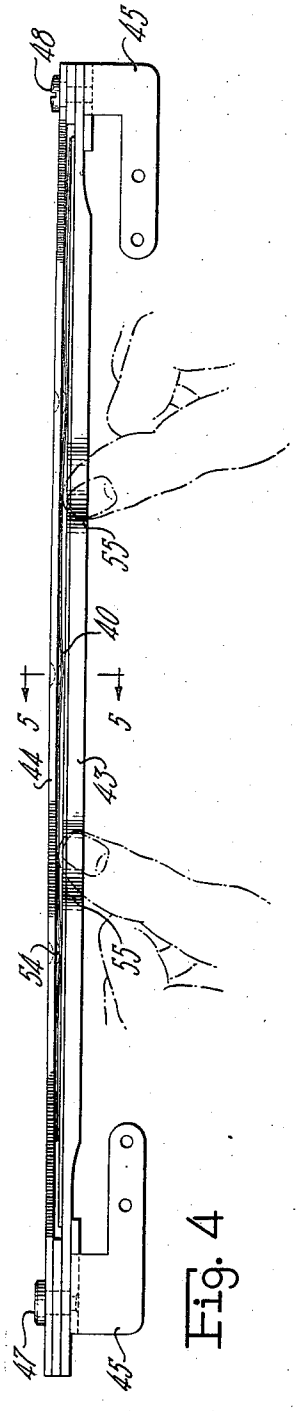


Fig. 4

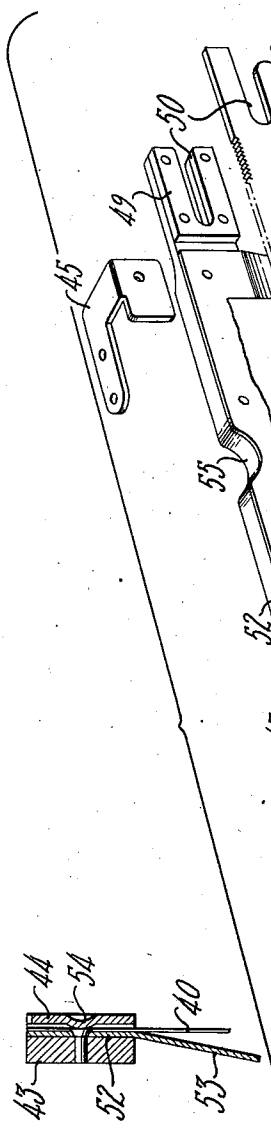


Fig. 5

Fig. 3

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Patented Apr. 1, 1941

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UNITED STATES PATENT OFFICE

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CARBON PAPER SUPPORT FOR ACCOUNTING MACHINES

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Application June 29, 1939, Serial No. 281,776

4 Claims. (Cl. 197—131)

This invention relates to paper carriages for accounting machines, and more particularly to means for facilitating insertion, removal and adjustment of carbon paper thereon.

In bookkeeping work it is customary to make a carbon copy on a journal sheet of the postings that are printed on a ledger sheet, the journal sheet remaining in the machine until all of the individual entries made upon a number of ledger sheets have been completed. It is the usual practice to have the carbon paper interleaved between these two sheets and line spaced therewith. This results in a waste of carbon paper in that the space between the lines of printing is unused. This waste becomes increasingly extravagant when the paper advancing mechanism is set for double or triple line spacing.

It is, therefore, an object of the present invention to provide a means for advancing the carbon paper only the necessary amount and only at such times as it is found necessary.

A further object of the present invention is to provide a means that will hold the carbon paper securely in its adjusted position, and which will permit insertion and removal of the carbon sheets in a simple manner.

With these and incidental objects in view, the invention consists in certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims, and a preferred embodiment of which is hereinafter described with reference to the drawings which accompany and form part of the specification.

In the drawings:

Figure 1 is a perspective view of a carriage equipped with the present invention,

Figure 2 is a right side sectional elevation thereof,

Figure 3 is an exploded perspective of the improved carbon paper holding means,

Figure 4 is a top plan view of the holding means assembled, illustrating the adjustment of the carbon, and

Figure 5 is a detail sectional view taken on the line 5—5 of Figure 4.

The invention is illustrated in connection with the type of carriage used on the machine disclosed in the application of Oscar J. Sundstrand, Serial No. 581,800, filed December 18, 1931, now Patent No. 2,194,270, issued March 19, 1940, and may be readily adapted to the type of carriage disclosed in U. S. Patent No. 2,060,954, issued to Oscar J. Sundstrand on November 17, 1936, or on those disclosed in U. S. applications of Walter A. Anderson, Serial No. 92,164, filed July 23, 1936, and Serial No. 192,675, filed February 26, 1938, now Patent No. 2,185,424, issued January 2, 1940.

Carriage in general

Referring to Figure 1, the carriage is mounted for movement along a track 1. As the carriage moves from right to left, it is stopped in various columnar positions so that type bars (not shown) on the accounting machine may print on the work forms fed around a platen 2. The mechanism for tabulating the carriage from column to column and for returning it to its initial position is disclosed in application Serial No. 581,800, now Patent No. 2,194,270, issued March 19, 1940.

The carriage is adapted to accommodate both rear fed paper, such as the journal sheet 3, and front fed paper, such as the ledger sheet 4 (Figure 2). The platen may be rotated manually by knobs 5 (Figure 1) secured to each end of the platen shaft 6, and may be rotated automatically during operations of the machine by suitable feed pawl mechanism (not shown) cooperating with teeth on a ratchet wheel 7 secured to shaft 6. This mechanism is disclosed in Patent No. 2,060,954.

Mechanism for guiding and holding front fed paper

For introducing front fed sheets, a pair of guide chutes 10 and 11 (Figure 1) are provided. These chutes are formed with sides 12 which act as edge guides, and are secured on separate brackets 13 mounted for sliding movement along rods 14. The opposite ends of rods 14 are secured by screws, such as 15, to upstanding arms 16, pivoted on semi-cylindrical studs 17 (see also Figure 2). Arms 16 are held in engagement with studs 17 by studs, such as 20 (Figure 2) secured in the carriage side walls. In operation, this bail structure is swung forwardly from what is known as the closed position shown in Figure 2, to what is known as the open position shown in Figure 1, the paper then inserted, and the bail swung back to the position shown in Figure 2.

After the paper is passed downwardly through the chutes, it is directed under the platen, first by the upper portion of a plate 21 (Figure 2) secured to the frame of the accounting machine. Plate 21 deflects the paper toward a guide which takes the form of a lip 22 secured on a square rod 23 pivoted in the carriage side walls. Movement of the bail to closed position causes the lip to pivot upwardly from the position shown in Figure 1 to a position quite close to the platen, as shown

in Figure 2, in the manner disclosed in Patent No. 2,185,424. This serves to bend the paper around the platen from a position below the printing point. Pressure rolls **24** are provided to hold the paper firmly against the platen above the printing point.

Mechanism for guiding and feeding rear fed paper

The rear fed paper may be a single sheet, as shown in Figures 1 and 2, or may take the form of a continuous journal sheet, as illustrated in Patent No. 2,185,424.

It first passes over a paper table **25** extending across the entire width of the carriage. The paper table **25** is suitably secured to the carriage side walls and extends downwardly to a point quite close to the platen, and is held at its lower end securely in the carriage frame by screws (not shown). A pair of paper guides **26** lie over the paper table **25** and are curved at their upper ends, as shown in Figure 2. Brackets such as **27** are secured to guides **26** and are apertured to receive a rod **30** fixed at its opposite ends in the carriage side walls. Brackets **27** grip rod **30** sufficiently to retain the paper guides in any position to which they are adjusted.

After passing over the paper table **25**, the journal sheet then passes between the platen and rear feed rolls such as **31**, that are each supported in cradles such as **32**, pivoted at **33** in brackets such as **34**, fixed to the rear of paper table **25**. Springs **35** tension cradles **32** clockwise about pivots **33** to hold feed rolls **31** in pressure contact with platen **2**.

After passing between the platen and the feed rolls **31**, the paper then continues around the platen **2** and passes under a pressure finger **36**. This finger is secured to a tear plate **37** pivoted at its opposite ends on screws such as **38** secured in the carriage side walls. Further rotation of the platen moves the paper rearwardly between the tear plate **37** and another plate **39** suspended beneath tear plate **37**, and likewise pivoted at its opposite ends on screws **38**. The paper then passes upwardly and to the rear, as shown in Figure 2.

This mechanism is disclosed in detail in Patent No. 2,185,424.

Mechanism for holding and adjusting carbon paper

Mechanism is provided to hold a sheet or strip of carbon paper **40** along its upper edge. The carbon paper is interleaved between ledger sheet **4** and journal sheet **3**, and may take the form of a continuous strip fed from a supply roll **41** or a single sheet terminating at approximately that point indicated by the arrow **42** in Figure 2. The means for holding the carbon along its upper edge comprises a bar **43** and a plate **44** (Figure 3) arranged to be detachably secured on brackets **45**, fixed on brackets **13** by screws such as **46** (Figure 2). One of the brackets **45** carries a headed stud **47** and the other is threaded to receive a headed screw **48** for securing bar **43** and plate **44** on the brackets. Spacing plates **49** secured on the opposite ends of bar **43** provide clearance between the opposing surfaces of the bar and plate **44** when the parts are assembled on stud **47** and screw **48**. The opposite ends of bar **43** and plate **44** have slots **50** and **51** for so mounting the bar and the plate in assembled relation on stud **47** and screw **48**, respectively. The inner surface of bar **43** has riveted thereon a strip of Pyralin or other suitable material **52** having a depending skirt **53**, and plate **44** has a plurality of inwardly depressed nodes **54** at spaced points therealong.

When it is desired to insert a sheet or strip of carbon, bar **43** and plate **44** are removed from brackets **45**. The upper edge of the carbon is then placed between the parts, as shown in Figure 3, and the parts are brought together and so held, until slots **50** and **51** have been mounted on stud **47** and screw **48**. In this position, nodes **54** hold the carbon in contact with the inner surface of strip **52** (Figure 5). After the parts are mounted, screw **48** is tightened to hold them in assembled position.

The upper edge of bar **43** has a pair of thumb notches **55** to permit line adjustment of carbon **40**. As before stated, it has been customary to advance the carbon with the work forms when the latter are line spaced, the same sheet of carbon being used over and over for successive work forms until the carbon ceases to give satisfactory impressions. With the present mechanism, however, the carbon is not advanced with the work forms, but is kept in one location for successive impressions, until it no longer gives satisfactory impressions, whereupon it is advanced only an amount sufficient to bring a fresh carbon impression line into alignment with the printing line of the platen. This permits the entire carbon surface to be used.

To advance the carbon in this manner, the operator merely rests her thumbs on the bottoms of notches **55**, as shown in Figure 4, presses against plate **44** sufficiently to release the pressure of nodes **54** on the carbon, and by a very slight rocking movement of the thumbs raises the carbon a distance equal to the height of the printed characters. The thumbs are then withdrawn, allowing the nodes to again press the carbon against strip **52**, holding the carbon in its advanced position. Plate **44** is serrated along its upper edge so that when the carbon has been thus advanced an appreciable amount, the surplus used portion may be torn off. This prevents such used portion from contacting and smudging the journal sheet **3**. Skirt **53** of strip **52** serves as a protective guide for the portion of the carbon **40** that extends above the platen.

When it is desired to insert a new sheet or roll of carbon, screw **48** is loosened and the left paper guide bracket **13** (Figure 1) is slid to the left, removing stud **47** from slots **50**, whereupon the entire holder may be slid toward the left, removing slots **51** from screw **48**. The upper edge of the new sheet may then be placed between bar **43** and plate **44** as above described, and the unit replaced on the carriage.

This construction effects a considerable saving of carbon paper, it being found that as many as 30 or 40 satisfactory carbon impressions may be made on one setting of the carbon paper before advancing it to a new position.

While the form of mechanism herein shown and described is admirably adapted to fulfill the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form of embodiment herein disclosed, for it is susceptible of embodiment in various forms, all coming within the scope of the claims which follow.

What is claimed is:

1. In a paper carriage having a platen, means situated above the platen for holding a sheet of carbon paper in printing position, the means in-

cluding two parts, one part being movable in relation to the other part and having means located at the right and left edges of the paper for pressing it toward the other part, said one part also having a portion that may be engaged by the operator for moving the said one part to release the pressure so that the carbon may be advanced an increment in relation to the holding means to press an unused portion to the printing line.

2. In a paper carriage having a platen, means for supporting a sheet of carbon paper in printing position, said means comprising a rigid bar and a yielding bar arranged to be mounted in juxtaposition on the carriage above the platen, a plurality of nodes on one of the bars to hold the upper edge of the carbon against the other bar, and one of said bars having finger openings to permit momentary separation of the bars by the operator while the carbon is advanced a slight increment.

3. In a paper carriage having a platen, means for supporting a sheet of carbon paper in printing position, said means comprising a rigid element and a yielding element, means for detachably mounting the elements in spaced relation above the platen, nodes on one of the elements pressing against the other element to hold the carbon paper therebetween, said rigid element having openings whose bottoms serve as rests for the operator's fingers so that slight inward and upward pressure upon the carbon causes release of the pressure of the nodes and permits advancement of the paper a slight increment.

4. In a carbon paper holding means for paper carriages having a roller platen, a pair of bars arranged to embrace the opposite faces of the upper end of the paper, one of said bars being rigid and having spacing blocks at its opposite ends, the other of said bars being yielding and having nodes of a depth greater than the thickness of said blocks, means for detachably mounting the bars in assembled relation above the platen, said rigid bar having openings to accommodate the operator's fingers, by means of which he may flex said yielding bar and advance the carbon a slight increment.

WALTER A. ANDERSON.