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MACHINE FOR COATING OPPOSITE EDGES OF SHEET MATERIAL

Filed July 13, 1953

2 Sheets-Sheet 1

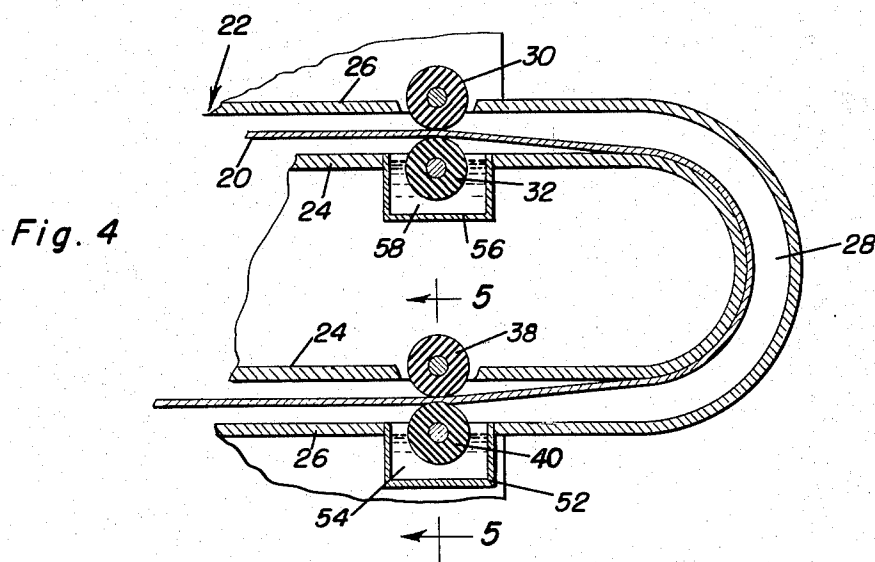
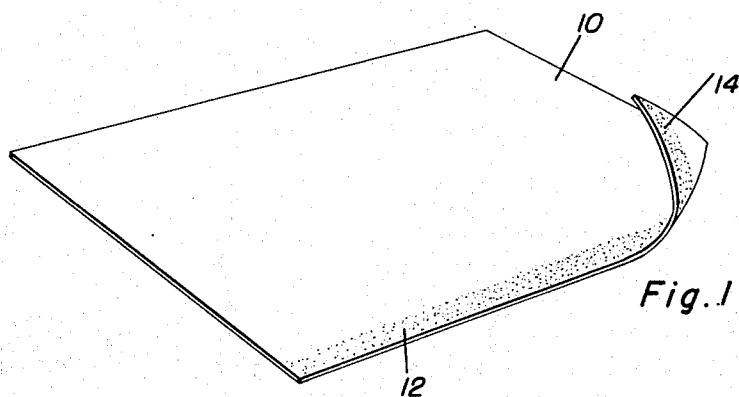
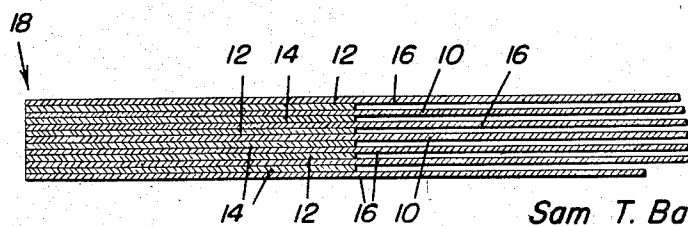


Fig. 2

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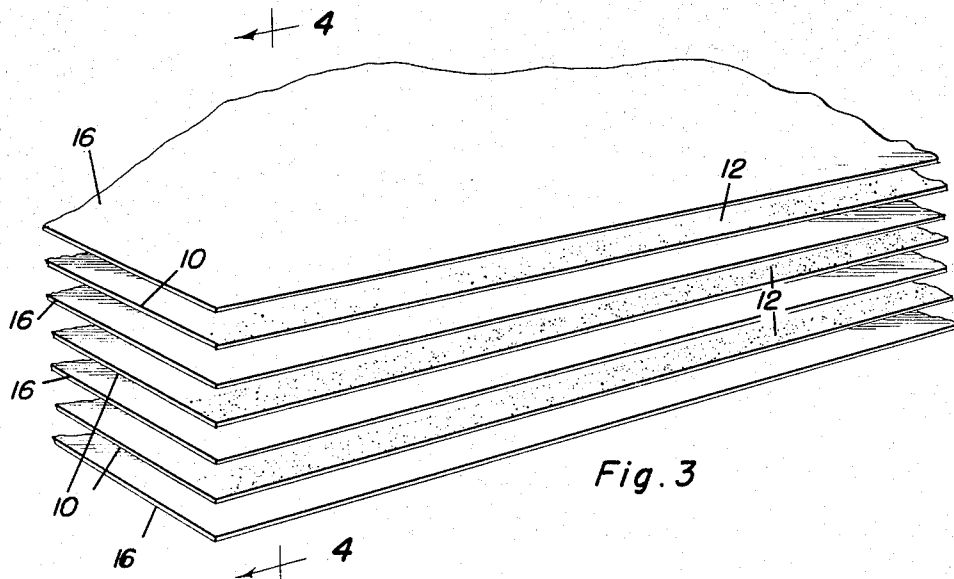
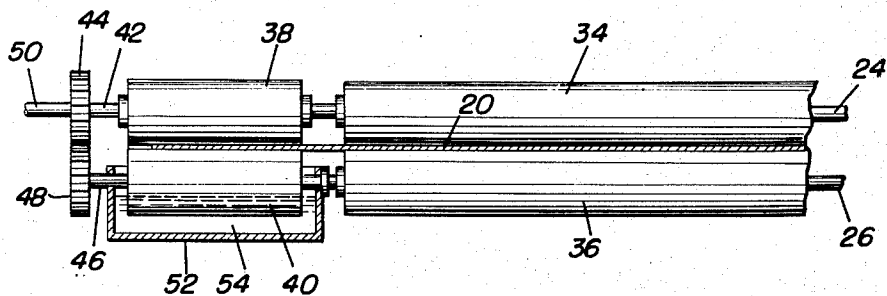


Fig. 5

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MACHINE FOR COATING OPPOSITE EDGES OF SHEET MATERIAL

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2 Claims. (Cl. 118—224)

This invention relates in general to paper forms, and more specifically to an improved interleaved carbon form and the method of manufacturing the same.

At the present time, interleaved carbon forms are being made by directly applying adhesives to printed forms which are to be arranged in sets and then placing carbon sheets therebetween, the adhesive on the printed forms securing the printed forms and carbon sheets together to form an interleaved carbon form. Also, interleaved carbon forms are also made by arranging a plurality of form sheets in sets and positioning carbon sheets therebetween. The plurality of sets are then stacked and suitable adhesive secured to the edges thereof for securing all of the form sheets and carbon sheets together. Then, the sets of forms must be individually separated. It will be seen that in either operation there is a great loss of time.

It is therefore the primary object of this invention to provide an improved method of manufacturing improved interleaved carbon forms whereby the carbon forms may be quickly and easily manufactured in sets without the direct application of adhesives during the interleaving of carbon between individual form sheets and at the same time, ending up with a completed interleaved carbon form set entirely independent of other carbon form sets.

Another object of this invention is to provide an improved method of forming interleaved carbon forms which includes the utilization of carbon sheets having adhesives secured to opposite sides thereof adjacent a preselected edge, the carbon sheets being positionable between form sheets and then properly treated to form a set of interleaved carbon forms.

A further object of this invention is to provide an improved carbon sheet for use in the forming of carbon forms, the carbon sheet being provided with suitable adhesive on opposite sides thereof for the securement thereof to form sheets.

A still further object of this invention is to provide an improved device for applying adhesives to opposite sides of carbon sheets.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of an improved form of carbon sheet which is provided with adhesive in accordance with the spirit of this invention;

Figure 2 is a fragmentary sectional view taken through a carbon form which is made through the use of the carbon sheet of Figure 1, only the edges of the sheets of the carbon form being illustrated;

Figure 3 is an enlarged exploded perspective view of the interleaved carbon form of Figure 2 and shows edges of the sheets forming the same in spaced relation prior to their securement together;

Figure 4 is a fragmentary sectional view through a device for applying adhesive coatings to opposite sides of carbon sheets along selected edges thereof; and

Figure 5 is a sectional view taken substantially upon the plane indicated by the section line 5—5 of Figure 4 and shows the relationship of both feed rollers and adhesive applying rollers of the device of Figure 4.

Referring now to the drawings in detail, it will be seen

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that there is illustrated in Figure 1 a carbon sheet 10 conforming to the spirit of this invention. The carbon sheet 10 is provided with adhesive coatings 12 and 14 on opposite sides thereof along a preselected edge. The adhesive utilized in the adhesive coatings 12 and 14 may be of any suitable adhesive readily obtainable on the market that is of either a heat, pressure or moisture setting type.

Referring now to Figure 3 in particular, it will be seen that there is provided a plurality of spaced form sheets 16 which have disposed therebetween a plurality of carbon sheets 10. It will be understood that the form sheets 16 may be of different colors so as to indicate the copies or the original, and that suitable indicia will be printed thereon, the indicia not being shown.

It will be understood that the adhesive coatings 12 and 14 on the carbon sheets 10 are utilized to secure the carbon sheets and the form sheets 16 together to form an interleaved carbon form 18 which is best illustrated in Figure 2. In the forming of the interleaved carbon form 18, a plurality of sets of form sheets 16 and carbon sheets 10 are arranged in overlying relation. Then, the desired treatment of the adhesive coatings 12 and 14 is given to the adhesive coatings, and the carbon forms 18 allowed to set. Inasmuch as there is no adhesive between adjacent form sheets of adjacent interleaved carbon forms 18, it will be seen that once the treatment of the adhesive coatings 12 and 14 has been completed, the individual sets of interleaved carbon forms 18 may be quickly and easily separated.

It will be understood that the carbon sheets 10 are supplied with the adhesive coatings 12 and 14. Then, during a printing operation of the form sheets 16, the carbon sheets 10 may be placed between the desired form sheets 16 through the use of inserting machinery now commonly in use.

Referring now to Figures 4 and 5 in particular, it will be seen that there is illustrated a device for applying the adhesive coatings 12 and 14 to the carbon sheet 10. During the manufacture of the carbon sheet 10, the carbon sheet is in the form of an elongated sheet 20. The sheet 20 may be run through an elongated guideway 22 during a step in its manufacture into carbon sheets. The guideway 22 includes an inner guide 24 and an outer guide 26. The guideway 22 is also provided with a return bend 28.

Disposed at the beginning of the return bend 28 is a pair of rollers which includes an upper feed roller 30 and a lower feed roller 32. A similar pair of rollers, upper feed roller 34 and lower feed roller 36, are provided at the end of the return bend 28.

Referring now to Figure 5 in particular, it will be seen that the feed rollers 34 and 36 are provided with extensions 38 and 40, respectively. The extensions 38 and 40 are disposed at one edge of the sheet 20 and mounted on shafts coextensive with the shafts of the rollers 34 and 36. It will be noted that the roller 34 is mounted on a shaft 42 which is provided with a gear 44. The roller 36 is mounted on a shaft 46 which is provided with a gear 48. The gear 48 is intermeshed with the gear 44, whereby the rollers 34 and 36 may be rotated in opposite directions to feed the sheet 20 therebetween. The shaft 42 is provided with an extension 50 which is suitably driven to rotate the same.

The roller extension 40 has the lower portion thereof disposed within a suitable container 52 in which is disposed adhesive 54. It will be seen that as the rollers 34 and 36 feed the sheet 20 through the guideway 22, the edge of the sheet 20 passes between the extensions 38 and 40 with the result that the roller extension 40 continuously applies adhesive 54 to the associated side of the sheet 20.

It will be noted that the extension of the roller 32 is also provided with a container 56 in which adhesive 58 is contained. Thus, the extension of the roller 32 applies adhesive to the sheet 20 in advance of the application of adhesive by the roller extension 40. However, due to the reverse bend 28, although both roller extensions are below the sheet 20, adhesive 54 and 58 is applied to opposite sides of the sheet 20.

After passing through the guideway 22, the manu-

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facture of the sheet 20 into carbon sheets is continued, with the result that the carbon sheet 10 is formed with the adhesive coating 12 and 14 on opposite sides thereof.

From the foregoing, the construction and operation of the device will be readily understood, and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A device for applying an adhesive coating to opposite sides of a carbon sheet along a selected edge thereof, comprising a guideway, said guideway being provided with a return bend intermediate its ends, pairs of feed rollers disposed adjacent opposite ends of said bend, said

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feed rollers being provided with extensions, one extension of each pair being associated with an adhesive source for applying adhesive.

2. A device for applying an adhesive coating to opposite sides of a carbon sheet along a selected edge thereof, comprising a guideway, said guideway being provided with a return bend intermediate its ends, pairs of feed rollers disposed adjacent opposite ends of said bend, said feed rollers being provided with extensions, one extension of each pair being associated with an adhesive source for applying adhesive, said one extensions being disposed in similar relation to said guideway.

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