June 24, 1930. W. A. BUCHANAN 1,765,564

PAPER BAG MACHINE

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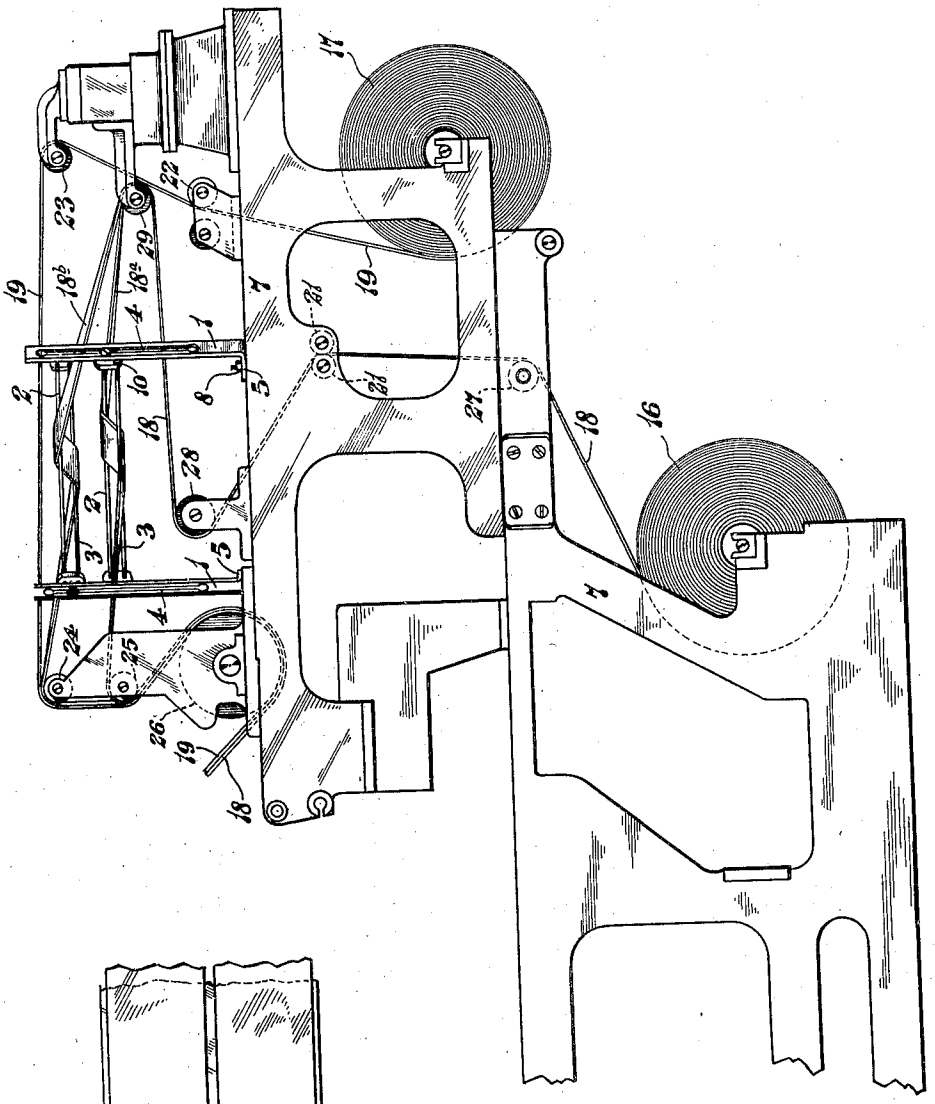


Fig. 1.

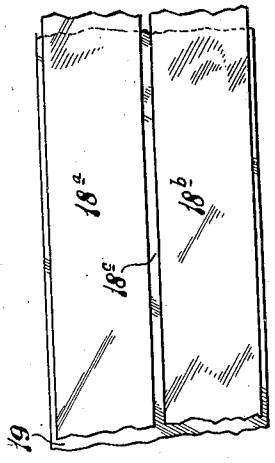


Fig. 2.

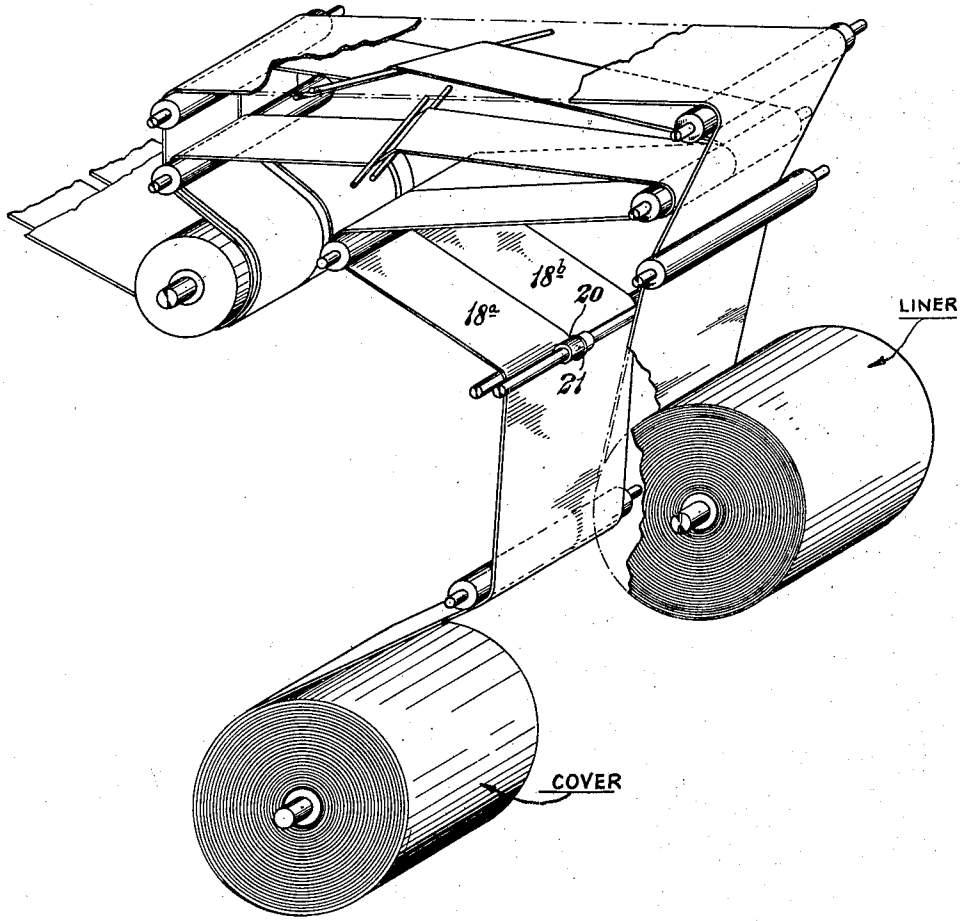
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Fig. 3.



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Fig. 4.

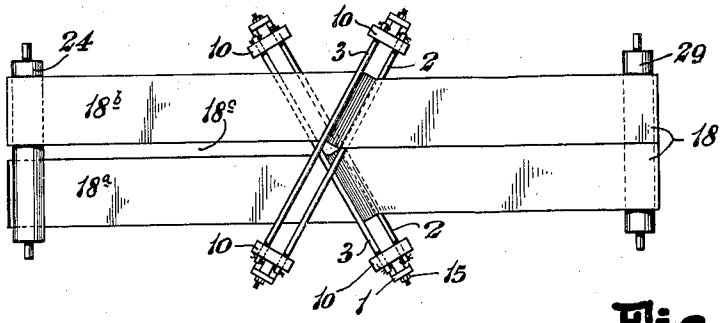


Fig. 6.

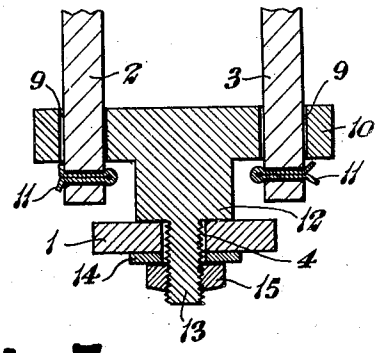


Fig. 5.

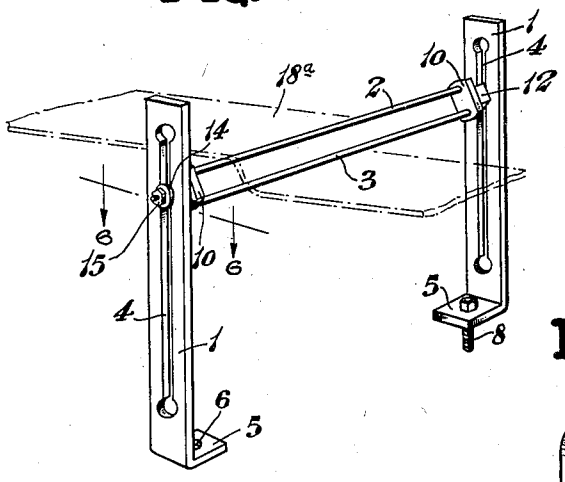


Fig. 7.

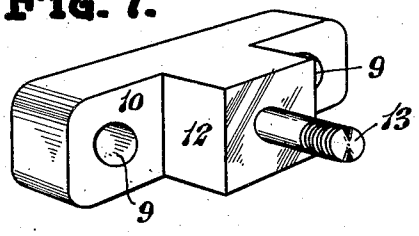
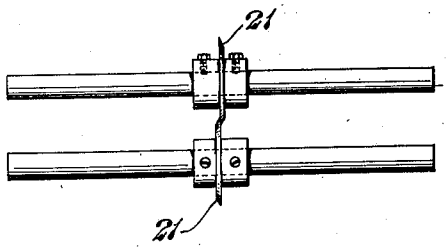


Fig. 8.



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UNITED STATES PATENT OFFICE

WILLIAM A. BUCHANAN, OF CINCINNATI, OHIO, ASSIGNOR TO THE DUPLEX PAPER BAG COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO

PAPER-BAG MACHINE

Application filed August 17, 1928. Serial No. 300,261.

This invention relates to paper bag machines and more particularly to mechanism for splitting the web and spacing one split portion from the other instead of cutting or dieing out a strip, such as a 5/8 inch strip, as has heretofore been the common practice in duplex bag making machines.

The objects of my invention are to provide a spacing device for the longitudinally divided web of paper comprising the cover of the bag whereby a considerable saving in paper is effected; to eliminate an exhaust blower, heretofore necessary when dieing out the 5/8 inch strip to space the webs from each other and place them in proper position beneath the liner web, and to eliminate the motor for operating the blower, and current for operating same.

The invention consists in a pair of spaced apart bars diagonally arranged relative to the cover divided web, one half of said web sliding over one bar and under the other bar, thereby spacing one half of the cover web from the other half after it has been cut or slit therefrom.

The invention further consists in the construction, combination, location and arrangement of parts as hereinafter more fully set forth and claimed.

In the drawings:

Fig. 1 is a side elevation of the rear portion of a bag making machine with my invention installed thereon;

Fig. 2 is a plan view of a portion of the liner and cover webs to clearly illustrate their relative positions after the cover web has been slit and the severad portions spaced apart;

Fig. 3 is an isometric view showing the two rolls of paper, the manner in which the cover web is cut and spaced and the rollers over which the webs of paper pass;

Fig. 4 is a plan view of my invention showing a double set of the spacing bars and a portion of the cover web sliding on and between said bars;

Fig. 5 is a perspective view of one set of spacing bars and the supporting standards therefor;

Fig. 6 is a horizontal section taken on a plane corresponding to line 6—6 of Fig. 5;

Fig. 7 is a perspective view of one of the spacing bar end plates; and

Fig. 8 is a plan view of the slitting discs in detail.

In the embodiment of my invention as illustrated and which shows a preferred construction I provide a spacing device for paper bag machines comprising generally, standards 1, and spacing bars 2 and 3, respectively. The standards 1 are each provided with an elongated slot 4 and their lower ends are bent at right angles to form feet 5. A hole 6 is provided in each foot 5 so that said standards 1 can be securely attached to frame 7 of the paper bag machine by bolts 8, as clearly shown in Fig. 1.

The spacing bars 2 and 3 are spaced apart from each other and the ends are received by holes 9 in the end plates 10 and held therein by cotter pins 11, as clearly shown in Fig. 6. Said end plates 10 are spaced apart from the standards 1 by shoulders 12 and a threaded neck 13 is integrally formed upon each shoulder 12, which necks are of a size suitable for entering the slots 4 in the standards 1. A washer 14 is placed over the end of neck 13 and nut 15 is then screwed upon said neck whereby the end plate 10 is rigidly held upon standard 1, as clearly shown in Figs. 5 and 6, respectively.

To raise or lower the bars 2 and 3 relative to the frame 7, simply loosen nuts 15, make the desired adjustment by sliding the necks 13 within the grooves 4 and then tighten said nuts 15 to hold the bars in adjusted position.

Referring to Fig. 1 the paper rolls 16 and 17, from which the bags are formed, are mounted on suitable spindles journaled in the frame 7 at the rear of the machine. The web 18 from roll 16 forms the outer ply or cover and the web 19 from roll 17 forms the inner ply or lining for the bag.

Heretofore in duplex paper bag machines it has been the practice to remove (by cutting) a narrow strip of paper from the center of the cover web 18, in order to space the web 18^a from web 18^b when the lining web 19 is superimposed upon said cover webs 18^a and 18^b. This is an expensive way to space

the cover webs 18^a and 18^b for the reasons that the paper strip cut out is approximately $\frac{5}{8}$ inch wide and is wasted, which means that an exhaust blower must be supplied to remove the wasted strip of paper, and a motor for operating the blower, in addition to the current supply for the motor.

To overcome these unnecessary operating expenses in bag making machines, or, in other words, to eliminate the necessity of wasting the strip of paper cut from the cover web, and to elminate the exhaust blower and motor for operating same, I provide a roll 16 of the exact width of the webs 18^a and 18^b, slit the web 18 at 20 (Fig. 3) by slitting discs 21—21 and then space the webs 18^a and 18^b apart by spacing bars 2 and 3, as clearly illustrated in Fig. 4.

Operation.—The operation of my invention is as follows:

Referring to the lining web 19 and to Figs. 1 or 3, it will be clearly seen that said web 19, after leaving roll 17 passes over rollers 22, 23, 24, 25 and 26, respectively. Referring to the cover web 18 and to Figs. 1 or 3, it will be noticed that said web 18, after leaving roll 16, passes under roller 27, between the slitting discs 21—21 thereby dividing the web 18 into two separate webs 18^a and 18^b. Said webs 18^a and 18^b then pass over rollers 28 and 29 and up to this time the webs have not been spaced apart from each other, as clearly shown in Fig. 3.

After web 18^a passes over roller 29 it slides over spacing bar 3, as clearly shown in Figs. 1, 3 and 4, respectively. As the spacing bars 2 and 3 are diagonally arranged relative to the line of travel of the web 18^a, said web is shifted or drawn outwardly and away from web 18^b, thus leaving the necessary space 18^c between the webs 18^a and 18^b to bring said webs into proper registry with the liner web for further operations on said webs to complete the bag.

By actual tests I have used one pair of spacing bars 2 and 3, as shown in Fig. 5, and shifted the web 18^a a sufficient distance to form space 18^c between webs 18^a and 18^b, but if desired a double set of spacing bars may be used, as shown in Fig. 4, and the webs 18^a and 18^b shifted outwardly an equal distance to form said space 18^c.

An advantage of this invention is the simplicity and economy with which the webs 18^a and 18^b are spaced or moved apart to form the space 18^c, therebetween after slitting the web 18 instead of cutting a strip of paper from the web and wasting same.

Another advantage, as stated above, is that a narrower roll of paper 16 of the exact width required to produce the divided webs may be used, thereby reducing the cost of cover paper.

While I have shown and described particular embodiments of the invention it will be understood that certain changes and modifications of the invention can be made without departing from the scope or spirit thereof as defined in the claims.

What I claim as new and desire to secure by Letters Patent is:

1. In a duplex paper bag machine of the character specified, the combination of means carried by the frame for rotatably supporting two rolls of paper, means for synchronously feeding a web from each roll, slitting means for dividing the lower web into two sections, and means for spacing said sections apart and in superimposed relation with the upper web comprising a pair of suitably mounted standards, a pair of bars horizontally arranged between said standards, and adjusting means capable of varying the angle to which the bars can be set with respect to the standards to insure proper positioning of the said sections beneath the upper web.

2. A spacing device for a duplex paper bag machine, comprising, in combination, a pair of standards rigidly mounted upon the frame of said machine and each having a vertical slot therein, a pair of bars horizontally arranged between the standards, plates for said bars, means on each plate for entering the slots in said standards, respectively, and means to lock said plates in various positions upon the standards thereby affording an angular adjustment of the horizontal bars between the standards, for the purposes specified.

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