Oct. 2, 1928. 1,686,132

T. E. HEETER

METHOD OF CUTTING AND WRAPPING INDEX TABS

Filed April 20, 1927 2 Sheets-Sheet 1

Fig. 1.

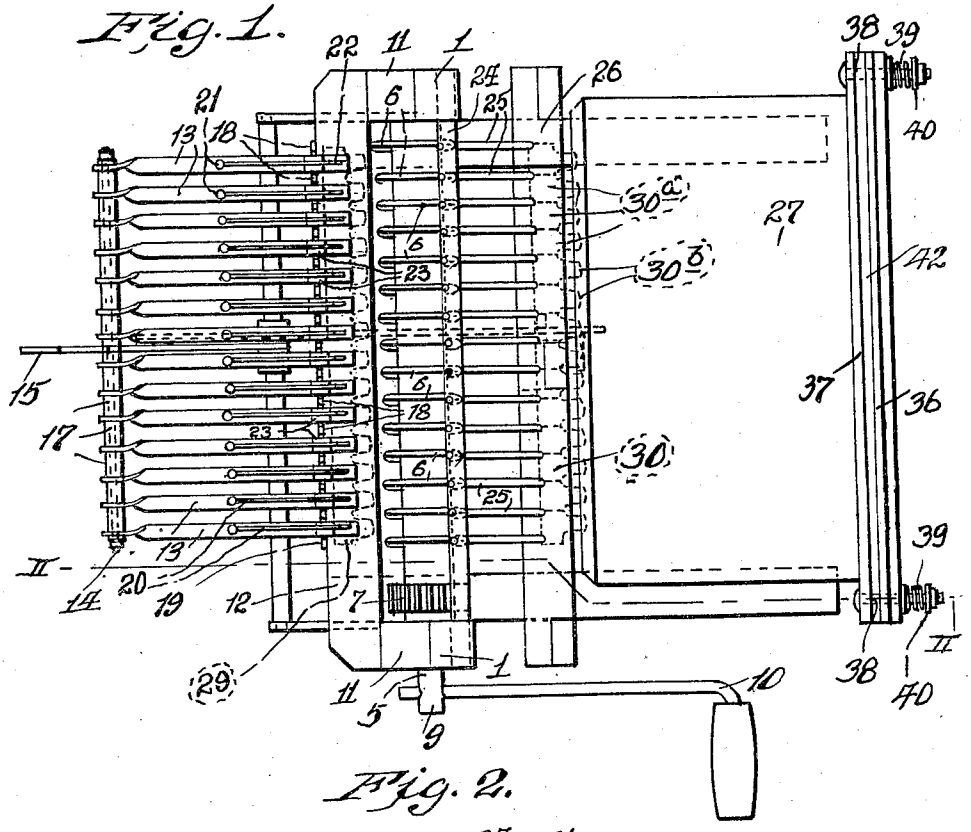

Fig. 2.

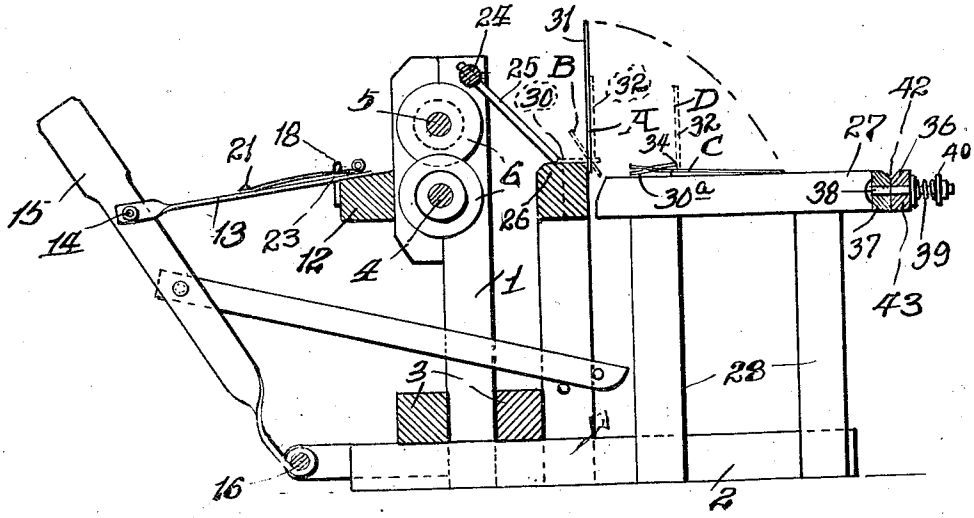

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Fig. 3.

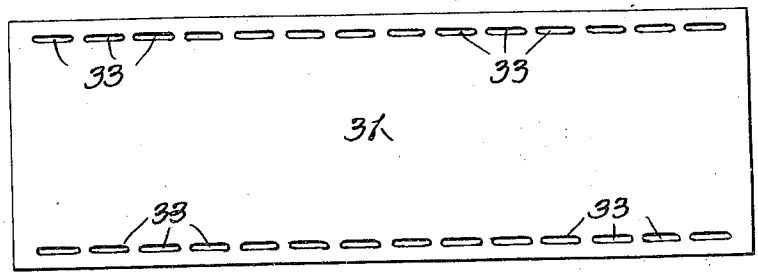

Fig. 4.

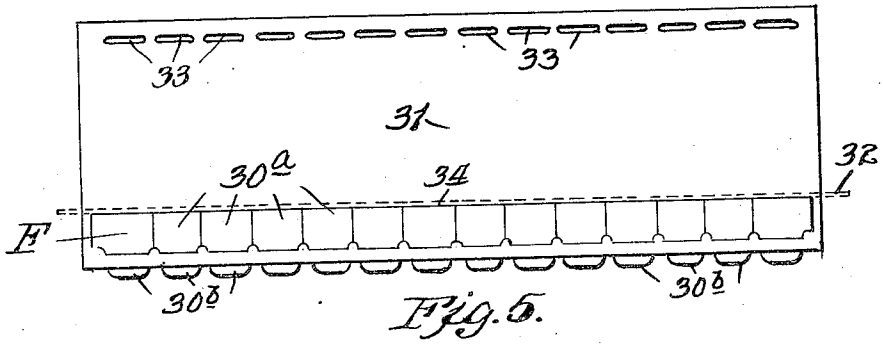

Fig. 5.

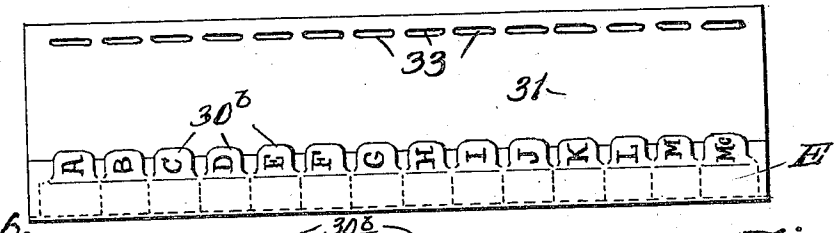

Fig. 6.

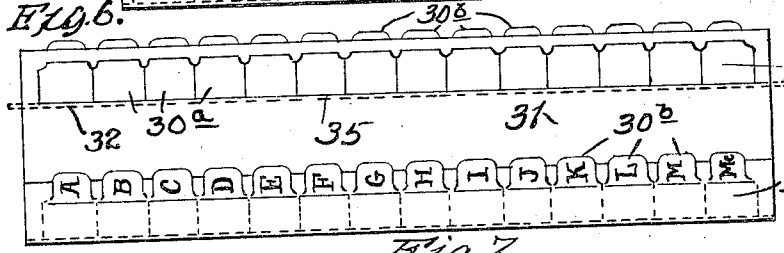

Fig. 7.

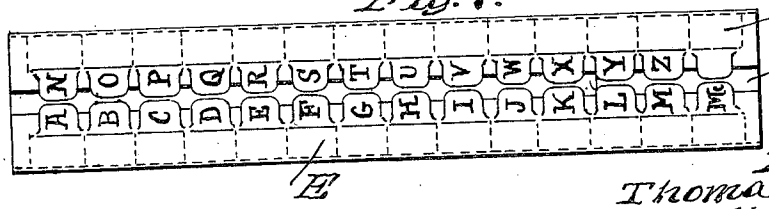

Fig. 9.



Fig. 8



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Patented Oct. 2, 1928. 1,686,132

UNITED STATES PATENT OFFICE.

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METHOD OF CUTTING AND WRAPPING INDEX TABS.

Application filed April 20, 1927. Serial No. 185,336.

This invention relates to an improved method of cutting and wrapping index tabs after they have been cut, the primary object of the invention being to provide a device for cutting each tab strip into sections and to receive the cut sections in a wrapping cover.

Another object of the invention is in providing improved holding means for each tab strip for carrying the strip to the cutters and holding the cut sections of the strip after the cutting operation.

A further object of the invention is in providing a punched wrapping cover for receiving the tab sections after being cut.

Other and further objects will appear in the specification and be specifically pointed out in the appended claims, reference being had in the accompanying drawings, exemplifying the invention, and in which:—

Figure 1 is a plan view of this improved cutting apparatus.

Figure 2 is a vertical longitudinal section taken approximately on the line II—II of Fig. 1.

Figure 3 is a plan view of the punched wrapping cover for receiving the cut sections of two tab strips.

Figure 4 is a plan view of the wrapping cover showing a set of tab sections mounted in a set of the punched openings of the cover.

Figure 5 is a plan view of the wrapping cover illustrating the manner of folding a row of tab sections which are engaged in a row or set of punched openings.

Figure 6 is a plan view showing the wrapping cover having one set of the tab sections in a folded position whereas the other set of tab sections has just been received in the other set of punched openings.

Figure 7 is a view similar to Fig. 6 but showing the wrapping progressed and in which two rows of tab sections are folded toward each other in the wrapping cover.

Figure 8 is an end view of Fig. 7.

Figure 9 is an end view of the wrapping cover after it has been finally folded over two sets of tab sections.

Referring by numerals to the accompanying drawings a pair of uprights are extended from respective longitudinal sills 2, said uprights being further held in position by transversely disposed members 3, said uprights being for the support of a pair of transversely disposed shafts 4 and 5 which are disposed one above the other and rigidly secured to each of said shafts are a series of spaced cutters 6, each cutter of one shaft being cooperative with a respective cutter of the other shaft. Mounted on the shaft 5 adjacent one end is a gear 7, said gear being in mesh with a gear which is mounted on the shaft 4 and secured to the extending end 9 of the shaft 5 is a crank 10.

Secured to each of the uprights 1 adjacent the upper ends thereof is a spacer block 11 and supported from said blocks is a transverse sill 12, said sill being for the support of one end of a series of holding fingers 13, said fingers at their opposite ends being swingingly supported on a rod 14 which is borne by an operating lever 15, said lever at its lower end being pivotally secured at 16 to respective sills 2. The fingers 13 are held apart on the rod 14 by the spacer members 17 and are also held apart at their opposite ends by respective teeth 18 of a rack bar 19 which is secured to the transverse sill 12. Each finger 13 is provided with a leaf spring 20, each leaf spring being secured to a respective finger by a screw 21 each leaf spring having a gripping end 22. Borne by each finger 13 adjacent the gripping end of each spring is a lug 23.

Supported by and between the uprights 1 is a rockable shaft 24 and extended from said rod are a series of retaining fingers 25, said fingers at their lower ends normally resting on the receiving sill 26 and disposed adjacent the sill 26 on a plane lower than the upper surface of said sill is a table 27 which is supported from the sills 2 by uprights 28.

In operating this improved apparatus for cutting a tab strip into sections, a tab strip 29 shown in dotted lines in Fig. 1 is horizontally engaged beneath the gripping ends 22 of respective leaf springs 20 and against the lugs 23 and is held in its gripped position between the springs and the fingers 13. The lever 15 is then pushed towards the cutters 6 and the fingers 13 will be carried forwardly by the lever and each finger will pass between respective pairs of cutters and the tab strip will be severed into sections by the cutters as they are passed there between and will be received in their severed condition upon the sill 26 as shown at 30 in Fig. 1 and in this position they will be held by the fingers 13 and the respective springs 20 of said fingers. Further

movement of the lever 15 is stopped by reason of the lever abutting the sill 13 but during the movement of the lever towards the cutters, the strip 29 after passing through the cutters will engage the retaining fingers 25 and swing them upwardly on the shaft 24 sufficiently for the strip to clear or travel beneath and immediately upon the strip 29 passing beneath the depending ends of the fingers, said fingers will immediately swing downward by gravity and engage the sill 26 rearwardly of the cut sections of the strip 29 as shown in Fig. 2.

The lever 15 and fingers 13 operated thereby are held in their moved positions and the fingers 13 will thereby hold respective tab sections 30^a in positions wherein the projecting portion 30^b of each section will project beyond the receiving sill 26 as shown in Figs. 1 and 2 in this position of holding the tab sections, a wrapping cover 31 as shown in Fig. 3 is engaged by the operator and a straight edge 32 is also engaged rearwardly of the cover and there against, both the wrapping cover 31 and straight edge 32 being held in an approximate vertical position as shown in Fig. 2 and in a manner so that one row of the punched apertures 33 of the wrapper is held approximately horizontal and as the apertures 33 are spaced apart an equal distance as are the projecting portions 30^b of the tab sections, the wrapping cover is moved towards the projecting portions 30^b so that said portions 30^b will be projected in respective apertures 33 of the wrapping cover.

The wrapping cover 31 is made of relatively thin paper and obviously the straight edge 32 held there against will provide a stiffener when the wrapping cover and straight edge are presented together as shown at A in Fig. 2 and from experience it is preferable to hold both the wrapping cover and straight edge in the one hand and as soon as the apertures 33 of the wrapping cover have been engaged over the projecting portions 30^b, an upward movement by the thumb of the hand is brought to bear against the wrapping cover and a downward movement by the fingers of the hand is given to the straight edge and at the same time the other hand of the operator is engaged to move the lever 15 to its neutral position and the retaining fingers 25 will prevent the tab sections 30^a from being returned with the fingers 13, said fingers 25 wiping the tab sections 30^a from beneath the springs 20 of the fingers 13. As the tab sections 30^a were wiped from the fingers 13, the upward action of the thumb of the hand of the operator on the wrapping cover 31 and the simultaneous downward action of the fingers of the operator on the straight edge will tilt the tab sections 30^a in the manner shown at B in Fig. 2 and the wrapping cover 31 and the straight edge 32 and tab sections 30^a carried by the wrapping cover are swung downwardly and laid on the table 27 as shown at C in Fig. 2.

The next operation is to place the straight edge in a vertical position against the rear edge 34 of the tab sections 30^a as shown at D in Fig. 2 and force the projecting portions 30^b of the tab sections further into the apertures 33 and with the straight edge still engaged against the tab sections 30^a the tab sections are engaged at their projecting ends and turned upwardly and folded on the line determined by the straight edge and turned over on top of the straight edge and pressed firmly downwardly and the straight edge is then removed, this folded position of the inserted tab sections being shown at E in Fig. 5, the inserted positions of the tab sections in the apertures 33 of the wrapping cover 31 before the folding operation being shown at F in Fig. 4.

The next operation is to insert another tab strip 29 beneath the holding ends of the springs 20 of respective fingers 13 and the lever 15 is then engaged and operated towards the cutter 6 and the tab strip 29 is severed in the manner as was the preceding strip and continued movement of the lever 15 will place the severed tab sections on the receiving sill 26, further movement of the lever 15 being stopped by said lever abutting the sill 12 and in this second operation the folded portion E of the wrapping cover having the inserted tab sections is engaged and turned so that the other row of apertures 33 is positioned horizontally so that the apertures 33 will be engaged over respective projecting portions 30^b of the tab sections 30^a on the receiving sill 26 in the same manner as before, the straight edge 32 being engaged rearwardly of the wrapping cover and the upward pulling action of the thumb of the hand of the operator on the wrapping cover and the downward action of the fingers of the operator on the straight edge will tilt the second set of tab sections 30^a in the manner as shown at B in Fig. 2 immediately upon the release of said tab sections 30^a from the springs 20 of respective fingers 13. The wrapping cover 31 and tilt tab sections 30^a carried thereby are then lowered to the position C on the table 27, the wrapping cover and the tab sections carried thereby then being in the positions as shown in Fig. 6 in which the first inserted tab sections 30^a are folded as shown at E whereas the second set of inserted tab sections are not folded as shown at G. The straight edge is then manipulated against the rear edge 35 of the last tab sections inserted and the tab sections are then folded against and over the straight edge 32 and the projection 30^b of the last inserted tab sections will then be disposed opposite to the projections 30^b of the first inserted tab sections as shown in Fig. 7.

The final folding operation of the wrapping cover is then carried out in which

the folded portion E of the wrapping cover is folded over and against the folded portion H, the wrapping cover and the inserted tab sections then assuming the shape as disclosed in Fig. 9.

From the aforesaid operation of this improved apparatus and the method of folding the formed tab sections in which a pair or two rows of tab sections are insertably secured in a wrapping cover it is quite obvious therefore that a new and useful apparatus and method is provided for cutting and folding the cut tab sections and securely holding the tab sections in individual positions for the purpose of packing and shipping as well as storing these sections in their individual places until it is desired to use them as it is essential to keep each tab section in its individual place until used as index tabs on bookkeeping systems and the like.

When the folded portions E and H are folded together as shown in Fig. 5, an adhesive strip 41 is secured over the folded ends of portions E and H for retaining them in folded positions and immediately after the adhesive strip 41 has been applied, the package containing the two sets of tab sections is engaged in the mouth 42 of the clamp 36 which is secured to one end of the table 27, said clamp being comprised of a fixed jaw 37, a movable jaw 43 and a pair of bolts 38 passed through said jaws and a spring 39 mounted on each bolt adapted to engage against the movable jaw 43 and a fixed washer 40. Each package after being folded and secured by the adhesive strip after being put into the clamp 36, is held in the clamp for a period of time during the cutting and wrapping of a pair of other tab sections, the subsequently wrapped tab sections or package upon being inserted in the mouth 42 of the clamp 36 will force the package previously pressed in the clamp outwardly therefrom. This holding of the package in the clamp for a short space of time permits the adhesive material on the strip 41 to set as well as firmly pressing the package to present a new appearance and to enhance packing.

What I claim is:

1. The method of making index tab strips consisting of cutting a tab strip into sections, of holding the sections in a projected position after cutting them into sections, of inserting the projected portions of the sections ito respective apertures of a wrapping cover, and of finally wrapping the sections in said cover.

2. The method of wrapping index tabs consisting of holding the tabs in projected positions, of inserting the projected portions of the tabs into respective apertures of a wrapping cover, and of finally wrapping the tabs in said cover.

3. The method of wrapping index tabs consisting of holding the tabs in projected positions, of inserting the projected portions of the tabs into respective apertures of a wrapping cover, and of finally wrapping the tabs in said cover in their inserted positions.

4. The method of wrapping index tabs consisting of holding the tabs in projected positions from a horizontally alining row, of inserting the projected portions of the tabs into respective apertures of a wrapping cover, and of finally wrapping the tabs in said cover in their inserted positions.

THOMAS E. HEETER.