June 17, 1930. J. F. KACHLINE 1,764,632

ADJUSTABLE FORM FOR BOX COVERING MACHINES

Filed Oct. 25, 1928 2 Sheets-Sheet 1

Fig. 1.

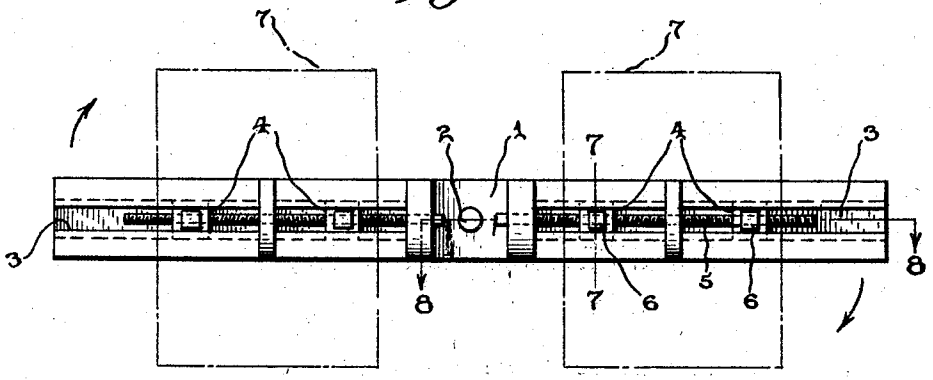


Fig. 2.

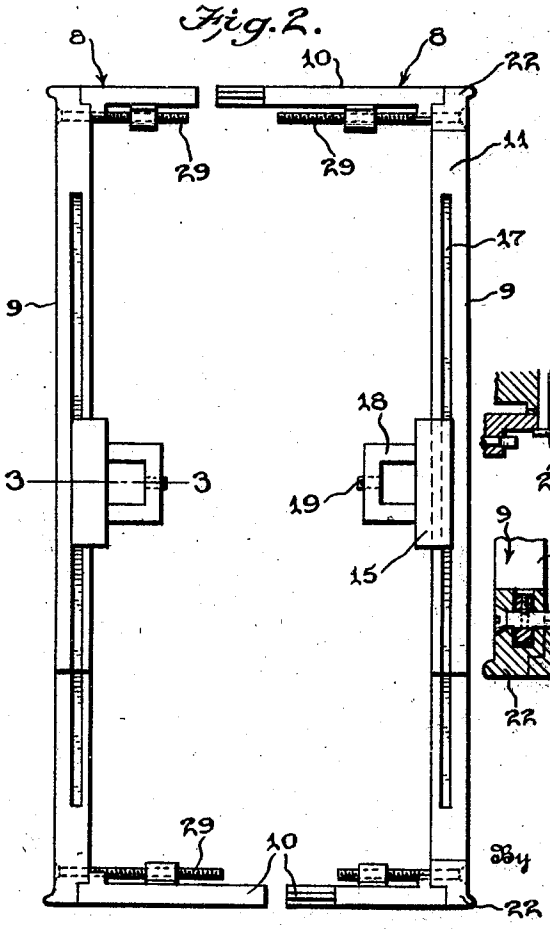


Fig. 7.

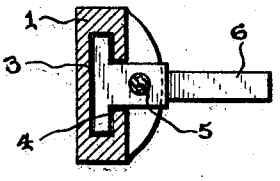


Fig. 8.

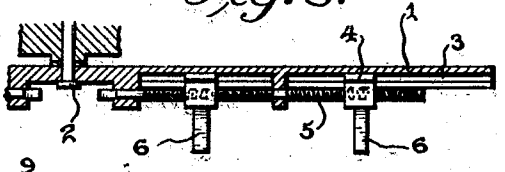
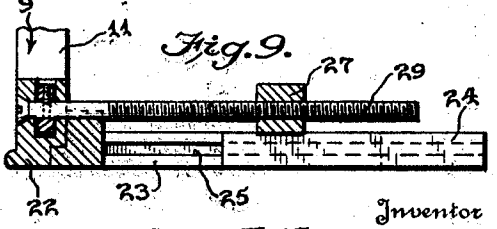


Fig. 9.



Inventor
John F. Kachline

By W. A. D. Mallard
Attorneys

June 17, 1930. J. F. KACHLINE 1,764,632

ADJUSTABLE FORM FOR BOX COVERING MACHINES

Filed Oct. 25, 1928 2 Sheets-Sheet 2

Fig. 3.

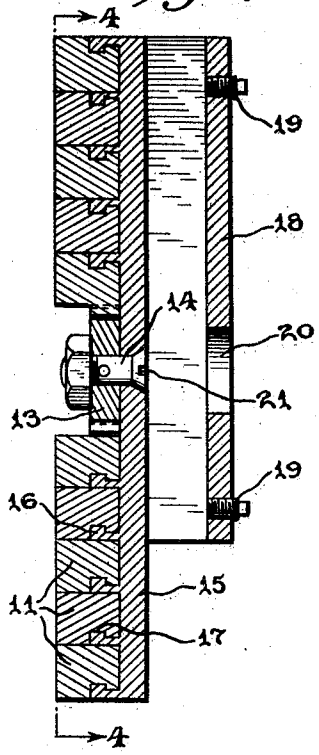


Fig. 4.

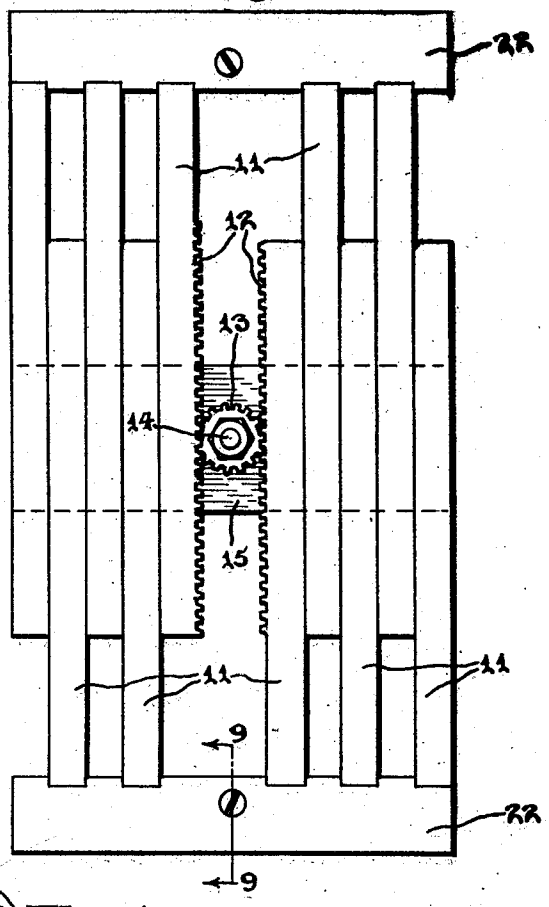


Fig. 5.

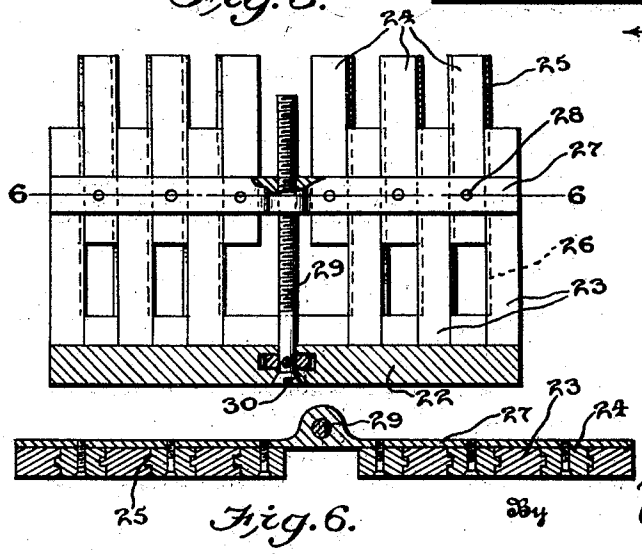


Fig. 6.

Inventor
John F. Kachline

By W. G. & D. McMurray
Attorneys

Patented June 17, 1930 1,764,632

UNITED STATES PATENT OFFICE

JOHN F. KACHLINE, OF READING, PENNSYLVANIA

ADJUSTABLE FORM FOR BOX-COVERING MACHINES

Application filed October 25, 1928. Serial No. 314,960.

This invention relates to box making machines, and more particularly to the means employed for placing a paper strip around the edge of a paper box.

More specifically, the invention pertains to a novel form or chuck used for supporting a paper box on the machine while a paper strip is being placed around the edge or sides of the box.

These forms are employed to support a box during a covering of the sides with a paper strip which is pasted thereto, and the machine with which such forms are used, performs the operations of automatically cutting off a proper length from an adhesive strip, wrapping it around and pasting down of the overhanging edges of the strip on to the bottom of the box.

Heretofore, such forms have usually been made of metal side bars, and wood spacing blocks, it being necessary to substitute spacing blocks of different lengths for each slight variation in the size of the box. Furthermore, several sizes of the metal side bars must be used where the size changes are great.

The primary object of the present invention is to provide an adjustable form or chuck which may be expeditiously contracted or expanded to accommodate boxes of various sizes.

Another object is to furnish a two-part form, each part being of substantially U or channel shape, and including adjustable side bars and adjustable end bars or extensions.

A still further object is to provide a two-sectioned adjustable form of simple and inexpensive construction, in which the parts, when adjusted, will rigidly support the box to be covered.

With the foregoing objects outlined and with other objects in view which will appear as the description proceeds, my invention consists in the novel features hereinafter described in detail, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

Referring to the drawings,

Fig. 1 is an elevation of the rotatable cross arm forming part of one type of box covering machine, and showing in dot and dash lines, the location of the forms thereon.

Fig. 2 is a plan view of one of my improved two-part forms.

Fig. 3 is a sectional view on line 3—3 of Fig. 2.

Fig. 4 is a side view of the form, taken on line 4—4 of Fig. 3.

Fig. 5 is a sectional view of one end of one part of the form, and illustrating the means for adjusting the movable fingers at each end of said part.

Fig. 6 is a sectional view on the line 6—6 of Fig. 5.

Fig. 7 is a vertical sectional view of the machine cross arm, taken on line 7—7 of Fig. 1.

Fig. 8 is a horizontal sectional view on line 8—8 of Fig. 1.

Fig. 9 is a sectional view on line 9—9 of Fig. 4.

As the present invention concerns only the forms used in box covering machines, I have illustrated only those parts of the machine which are necessary for an understanding of the present invention.

In the drawings, 1 designates a rotatable cross arm of the machine which is mounted on, and rotates with the horizontal shaft 2 of the machine, which causes the cross arm to rotate in a clock-wise direction. The cross arm is provided at opposite sides of the shaft with guide grooves 3 in which blocks 4 slide, these blocks being adjusted toward and away from each other by screws 5 having oppositely pitched threads. Obviously, when either one of the screws is turned, the pair of blocks on that screw will be moved toward or away from each other, depending on the direction of turning the screw. Each block has a forwardly projecting pin or suport 6, and each pair of pins supports one of the forms or chucks 7.

With such a machine, as the cross arm rotates, a strip of adhesive paper is applied to the edge of the box, and is wound about the sides of the box to cover the latter.

As stated above, it has been customary in the past, to make such forms of metal side members and wood end members, and these end members were of varying sizes, and had to be substituted one for the other for each slight variation in the size of the box. Also, several sizes of the metal sides had to be used where the variation in the size of the box was great.

Now, according to the present invention, I eliminate the disadvantages heretofore encountered, and provide forms which may be adjusted to accommodate any size box with which the machine is to be used. My improved form, as shown in Fig. 2, consists of two parts 8, 8. Each of these parts or sections comprises a longitudinally extensible side wall 9, and longitudinally variable end extensions 10. The side bars, as best shown in Figs. 3 and 4, are made up of a plurality of sets of strips 11 which inter-fit and may slide toward or away from each other, this sliding movement being brought about by racks 12 which engage a pinion 13 that is fast on a shaft 14, rotatably mounted on a frame or rigid support-engaging member 15. This frame has a plurality of slide ways or tracks 16, and the strips 11 have grooves 17 to permit the strips to slide on the frame.

Each frame has a socket or tube 18 to receive one of the pins 6 of the cross arm of the machine, and screws 19 are employed for clamping the frame to one of the pins. The back of the socket has an aperture 20 to allow the insertion of a screw-driver for turning the grooved head 21 of the shaft 14, and it will be obvious that when the shaft is turned, the pinion will cause one set of the strips 11 to move in one direction, and the opposite side to move in the opposite direction. To permit this, each set of strips is rigidly connected to a corner member 22.

Each corner member is also rigidly connected to fixed fingers 23 (Fig. 5), forming the stationary portion of one of the end extensions 10, and it will be noted from Fig. 2 that the fingers at one end of the form section are of greater length than the fingers at the other end of the form section, so that the fingers at the opposite end overlap or break joints, so as to stagger the gap location.

Each set of the fingers 23 cooperates with a set of adjustable fingers 24, that have tongues 25 at their sides sliding in grooves 26 in the sides of the fingers 23.

A tie bar 27, which is movable along the stationary fingers, is rigidly connected by screws 28 to the movable fingers 24, and acts as an operating member to cause all of the fingers of the set to move in unison.

A screw 29 engages a threaded aperture in the intermediate portion of the tie bar, and the head portion of this screw is rotatably mounted in one of the corner members 22. When a screw-driver is inserted in the groove 30 at the head of the screw, the movable fingers may be adjusted so as to shorten or lengthen the ends of the form.

Fig. 2 shows the sides 9 of the form adjusted to lengthen the latter and also shows the end extensions 8 of one of the form sections lengthened, but the end extensions of the other form section in contracted position.

In operation, it will be readily understood that when one of the screws 5 of the machine cross arm is turned, the pins 6 which cooperate with said screw will be moved toward or away from each other, and this will cause the form sections 8 mounted on those particular pins, to move with the latter. When these form sections have been moved sufficiently, the turning of the screw 5 is discontinued, and then the operator, by means of a screw-driver, may turn some or all of the screws 29 to adjust the movable fingers 24 to accommodate the adjustment of the pins 6. Then, if desired, the operator can also operate the pinions 13 to cause the opposite sets of strips 11 of each of the side walls 9 to move to proper position to accommodate the particular box that the form is to support.

From the foregoing, it is believed that the construction, operation and advantages of the invention may be readily understood, and it is apparent that changes may be made in the details disclosed, without departing from the spirit of the invention, as expressed in the claims.

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

1. In combination with a box covering machine having adjustably spaced form supports, a box-carrier form consisting of two cooperating parts respectively mounted on said supports, each of said parts comprising a longitudinally extensible side wall having rigid end corner pieces, said corner pieces having longitudinally variable extensions movable in planes perpendicular to said side wall.

2. In combination with a box covering machine having adjustably spaced form supports, a box carrier form consisting of two parts respectively mounted on said supports and each comprising a rigid support-engaging member formed with a plurality of slide ways, reversely projecting slide members in said ways having corner-forming outer connecting ends, and means carried by said support-engaging member for reversely moving said slide members to varyingly spread their corner-forming ends.

3. In combination, with a box covering machine having adjustably spaced form supports, a box carrier form consisting of

two parts respectively mounted on said supports and each comprising a rigid support-engaging member formed with a plurality of slide ways, reversely projecting slide members in said ways having corner forming outer connecting ends, said corner ends having right-angled extensions spaced to form slide ways, slide members movably mounted in said ways, means for jointly moving the latter longitudinally to vary said extensions, and means carried by said support engaging member for reversely moving said first mentioned slide members to varyingly spread their corner forming ends.

4. A box carrier form consisting of two cooperating substantially U-shaped sections, each section comprising a longitudinally extensible side wall, corner pieces rigidly connected to the ends of said side wall, and adjustable extensions connected to the corner pieces and movable perpendicularly to the side wall.

5. A box carrier form consisting of two cooperating sections, each of said sections comprising a longitudinally extensible side wall having rigid corner pieces, said corner pieces having longitudinally variable extensions movable in parallel planes arranged perpendicularly to said side wall.

6. A box carrier form comprising two co-operating sections, each section including a frame having guide ways, reversely projecting slide members engaging said guide ways and forming a side wall, corner pieces connected to the ends of the side wall, extensions connected to the corner pieces and arranged at right angles to the side wall, and means for reversely moving said slide members to varyingly spread their corner-forming end extensions.

7. A box carrier form consisting of two sections, each section comprising a frame formed with a plurality of slide ways, reversely projecting slide members on said ways, forming a side wall and having corner forming end extensions, said end extensions including members movable in planes perpendicular to said side wall.

8. A box carrier form consisting of two cooperating sections, each section being of substantially U-form and comprising a longitudinally extensible side wall and longitudinally extensible end members.

9. A box carrier form consisting of two cooperating sections, each section being of substantially U-form and comprising a longitudinally extensible side wall and longitudinally extensible end members, and means for expanding or contracting said side wall.

10. A box carrier form consisting of two cooperating sections, each section being of substantially U-form and including a side wall and end extensions, the side wall consisting of a frame having guideways thereon, strips slidably engaging said guideways, and a rack and pinions for adjusting said strips relatively to each other.

In testimony whereof I affix my signature.

JOHN F. KACHLINE.