

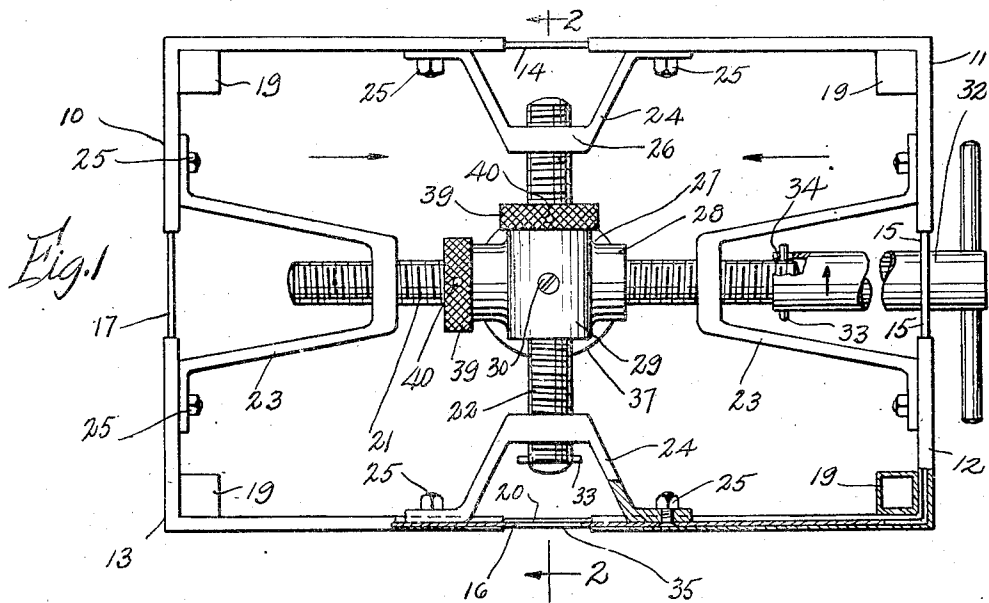
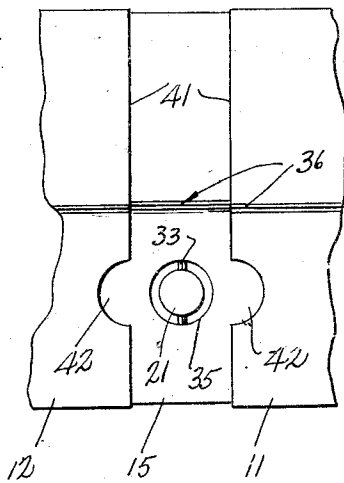
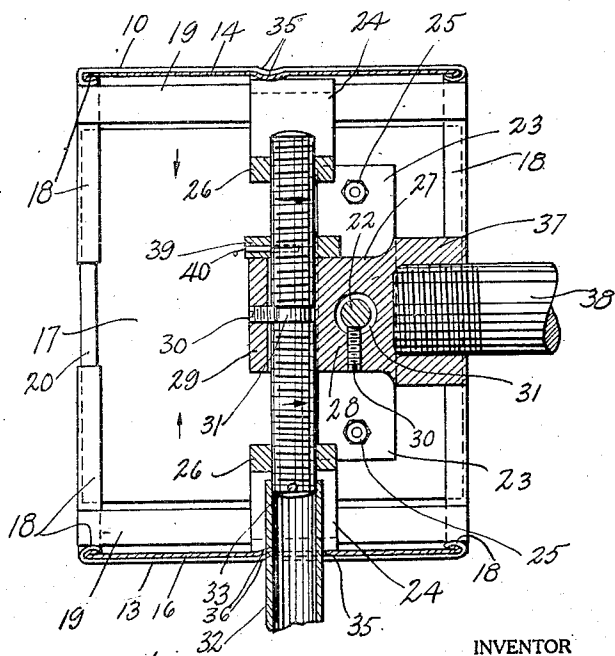
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BOX FORMER

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BOX FORMER.

Application filed November 30, 1925. Serial No. 72,145.

This invention relates to paper box making machinery and has particular reference to box formers or the like.

Among the objects of this invention is to provide a box former which is of particularly simple construction and compact form and is arranged to be easily operable to permit of the manufacture of a box in the usual manner, said box former being adjustable in size to permit of the making of boxes of various shapes and sizes.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof, reference is had to the accompanying drawings in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a plan view with a part in section of the box former.

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a fractional end view of the box former.

Referring now more specifically to the drawings, I show my box former as comprising a plurality of corner sections 10, 11, 12, and 13 which have suitable co-operation with slidable means such as the plates 14, 15, 16, and 17, whereby said corner sections are retained in reliable position with respect to each other to provide a box former having four walls which are expansible in length as desired, to form rectangular boxes of various sizes and shapes. More specifically, said corner sections are provided with guide means such as the members 18 whereby in effect the slidable means or plates have telescopic engagement with said corner sections. Suitable re-enforcing means is provided as, for instance, the square bars 19 which may be made of tubular stock if desired and used at the angles of the corner sections as reinforcements. Said bars extend transversely of the box former and are preferably secured to the guide members 18 as by means of soldering or in any other suitable manner. Thus the slidable plates are removable telescopically within the corner sections wholly to the vertices of the angles of the corner sections and beneath the bars 19. The slidable members may be re-enforced

along their edge portions by being beaded at 20. It will now be seen that a box section has been provided which is expansible longitudinally of the box former or transversely thereof through slidable engagement of the corner sections with the telescopic plates.

In order to insure of proper and continuous actuation of the corner sections toward or away from each other as may be desired in course of construction of boxes of various sizes or shapes, a pair of actuating members such as screws 21 and 22 are provided each of which is threaded right hand at one end thereof, and left hand at its opposite end. Brackets 23 are provided to co-operate individually with the end portions of the screw 21, and brackets 24 to co-operate in a similar manner with the end portions of the screw 22. Each of said brackets is secured individually to a slidable plate as by means of screws 25. Screws 21, 22 have threaded engagement with the respective brackets at 26. When one of the screws is rotated the brackets having threaded engagement therewith are moved relatively of each other and consequently a force is imparted to the sliding plates wherewith said brackets have engagement, thus causing a movement of the corner sections of the box former along a line parallel to the axis of the rotating screw.

A body 27 is provided having a pair of bearings 28 and 29 having individual co-operation respectively with the screws 21 and 22, it being understood that said screws are offset laterally of each other so as to provide the necessary clearance, said bearings being offset correspondingly and being arranged with axes transverse to each other as shown. Means is provided to prevent longitudinal movement of the screws in their respective bearings, said means taking any convenient form, though preferably for the sake of simplicity I provide set screws 30 or the like which have co-operation within annular grooves 31 provided centrally of the length of each of said screws, the set screws 30 being threaded into the walls of the bearings 28 and 29. It will be observed that the body 27 acts as a reliable strengthener and re-enforcement for the box former as a whole and insures entirely symmetrical co-operation and movement of the various parts of the box former in every position of operation.

To provide for easy actuation of the screws 21 and 22, the slidable plates are preferably perforated at 35 axially of said screws to permit of the insertion of a tool such as a socket wrench 32, each of said screws being provided with suitable engaging means such as the transversely positioned pins 33 at one end, said pins being arranged to be received within the notches 34 of the socket wrench to permit of easy rotation of the screws in a well known manner.

Additional re-enforcing means may be provided for the box former if desired though I have found that if it is constructed in the manner shown it is amply sufficient for all operating purposes. However, if desired re-enforcement notches or grooves 36 may be provided to extend wholly along the walls of the box former within the corner sections of the sliding plates, the grooves in each of said parts being arranged to correspond in such manner as to provide for the requisite movement and with a minimum of friction.

The body 27 can be used as the means for supporting the box former and this may be done in any convenient manner as, for instance, by providing said body with a threaded hub or connection 37 into which a bar 38 is threaded, said bar being in turn so positioned as to be rotatable to permit the box former to be turned constantly about a transverse axis. In other words, when the operator begins forming a box she will place the paper along the outer surface of the wall of the box former and then rotate the same through 90° about the axis of the bar 38 and smooth the paper down along another wall of the box former and so on continuously in such manner as is well known in the box manufacturing art until the box is completed. Means is provided auxiliary to the wrench 32 to permit of easy operation of the screws 21 and 22 in the event that the wrench should be lost. This means takes the form preferably of a device permanently engaged or secured to one or both of said screws as may be desired. More specifically, I provide thumb nuts 39 or the like, one for each of said screws, said thumb nuts being preferably rigidly connected to said screws as by means of pins 40, said thumb nuts being positioned adjacent to the bearings 27 and 28 to provide for a maximum of clearance with the brackets. It will be seen that rotation of a screw can be obtained by direct manual actuation of said thumb nuts which may be knurled or otherwise formed suitably on their outer surfaces for this purpose.

The brackets 23 and 24 are made in any suitable form or manner and are arranged so as to be of the simplest construction possible and at the same time to possess the requisite strength to withstand with a minimum amount of material the maximum stress

to which they may be subjected. The form of the brackets is such as to provide generally for a maximum of clearance as between the threaded engaging portion 26 of the bracket with the bearings 27 and 28 to provide for a maximum movement of the corner sections toward each other. Likewise the portions 26 are spaced from the side walls of the box former so as to permit of a considerable degree of movement of the ends of the screws away from said side walls while at the same time remaining in threaded engagement with the brackets.

The corner sections are so arranged as to provide in conjunction with the slidable plates a box former having surfaces of as uniform a character as is necessary, the material used being for this reason of comparatively thin stock. The corner sections are so arranged with respect to each other that the adjacent arms thereof are in as close proximity to each other as possible at the free edges 41 of said sections. Moreover, each of said sections is provided with notches 42 adjacent to the perforations 35 in the slidable plates so as to permit a wrench or other tool to be inserted for actuation of one of the screws 21 or 22 even when the box former has been collapsed to its smallest possible position and with the corner sections touching at the edges 41.

I claim:

1. A box former, comprising a plurality of relatively movable corner sections making a box former having four walls expansible longitudinally, slidable means having engagement with said sections at the four walls to permit of a relative movement of a pair of said sections with respect to another pair longitudinally or transversely of the box former, brackets secured to said slidable means, a pair of screws each of which is threaded right hand at one end and left hand at the other end thereof, each of said screws having threaded engagement with a pair of oppositely positioned brackets, whereby when a screw is rotated the walls adjacent to the ends of the screw will be moved relatively of each other, said screws being positioned laterally of each other for clearance, a body having a pair of bearings at right angles to each other to receive said screws, said bearings being positioned centrally of said box former and in spaced relation to said brackets, and means borne by said body and cooperating with said screws to prevent longitudinal movement of said screws with respect to said body.

2. A box former as set forth in claim 1 wherein each of said corner sections comprises a plurality of guide portions at the adjacent sides of the box, said slidable means comprising a member having engagement in the adjacent guideways of a pair of adjacent corner sections.

3. A box former as set forth in claim 1 wherein said slidable means comprises four plates each of which has slidable engagement with a pair of adjacent corner sections, certain of said plates being perforated to permit of the passage of a tool to engage a screw for actuation thereof as aforesaid, the adjacent side portions of a pair of adjacent sections being notched adjacent to a perforation to permit of the passage of said tool when said adjacent portions are close together.

4. A box former as set forth in claim 1 wherein said body is provided with a threaded connection, the axis whereof extends parallel to the walls of the box former, and a supporting member being threaded into said connection to support said box former centrally thereof.

5. In a box former, the combination of a collapsible frame comprising telescopic members, and means within the frame for extending or contracting the same and including a rotatable member, the telescopic members including a plate having a central opening therethrough and two wall members

telescopic over the plate and having a pair of registering notches in the abutting ends to register with the first mentioned plate opening for the passage of a manual tool to actuate the rotatable member when the side is collapsed.

6. In a box former, the combination with an extensible frame having telescopic side walls, of means within the frame and attached rigidly to certain of the wall members for extending or contracting the frame, said internal means including a body, a pair of screws with right and left threaded ends extending at an angle to each other through the body, said body having a laterally projecting hub, a supporting shaft fixed to said hub, and means to prevent endwise movement of the screws with respect to the body.

7. Mechanism as set forth in claim 6 including manual means co-operating with the screws for rotating them to expand or contract the frame.

In testimony whereof I affix my signature.

MOSES B. DISKIN.