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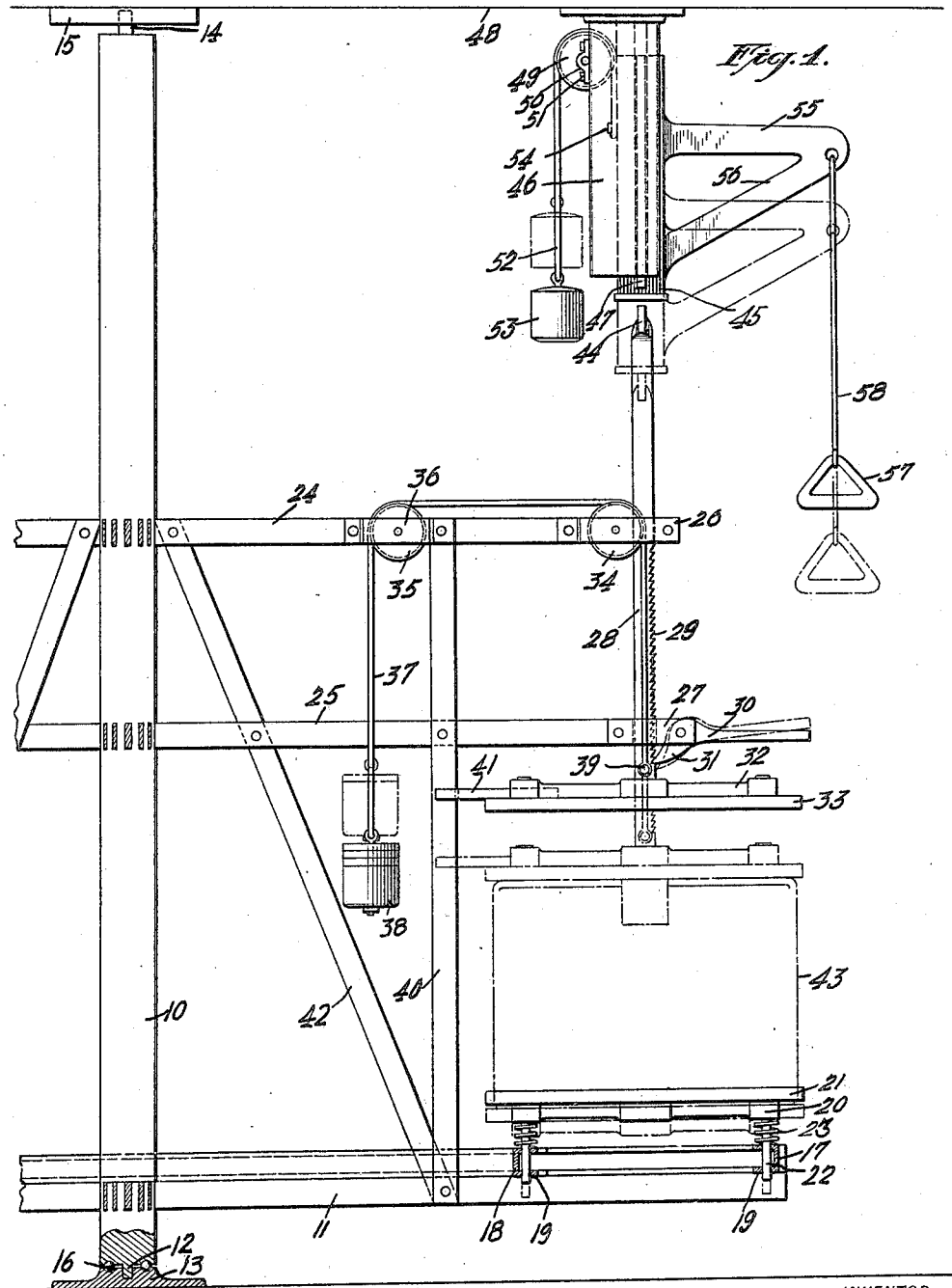
BOX GLUING APPARATUS.

APPLICATION FILED AUG. 20, 1920.

1,390,052.

Patented Sept. 6, 1921.

2 SHEETS—SHEET 1.



WITNESSES

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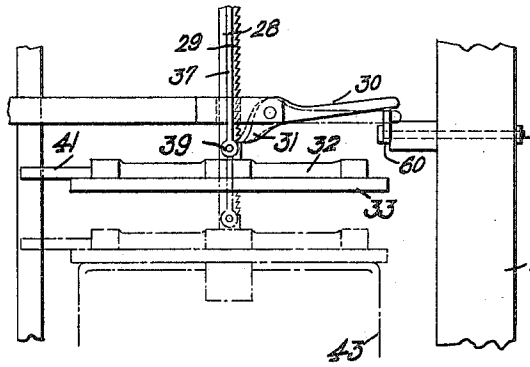


Fig. 3.

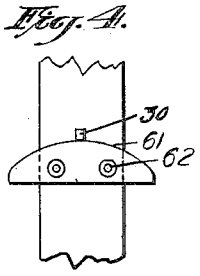


Fig. 4.

Fig. 2.

WITNESSES

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BOX-GLUING APPARATUS.

1,390,052. Specification of Letters Patent. Patented Sept. 6, 1921.

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To all whom it may concern:

Be it known that I, ORLO A. LUCAS, a citizen of the United States, and a resident of Richwood, county of Nicholas, and State of West Virginia, have invented a new and Improved Box-Gluing Apparatus, of which the following is a full, clear, and exact description.

This invention relates to an apparatus for gluing of paste board boxes, and has for an object the gluing in place of the covers of paste board boxes, said apparatus being adapted to operate on boxes of various sizes.

Reference is to be had to the accompanying drawings forming a part of this specification, in which it is understood that the drawings illustrate only one form of the invention, and in which—

Figure 1 is an elevation of the apparatus with parts broken away to disclose the construction.

Fig. 2 is a fragmentary top view of the apparatus.

Fig. 3 is a fragmentary elevation of a portion of the apparatus.

Fig. 4 is a detail view of the unlocking cam.

Referring to the accompanying drawing by numerals, 10 indicates a vertical center pole to which is secured a plurality of lower radiating ribs or struts 11. The pole 10 is provided at its lower end with a pin 12 which engages a step bearing 13, and a similar pin 14 engages an upper step bearing 15. Ball bearings 16 are provided between the lower end of the pole 10 and the bearing 13 so that said pole with its radiating ribs may be easily rotated.

An outer annular channel bar 17 is supported by the struts 11, and an inner annular channel bar 18 is also supported by said struts, the two channel bars 17 and 18 having their flanges 19 turned adjacent and being concentrically spaced apart. The channel bars 17 and 18 are adapted to support a plurality of spiders 20 to each of which is secured a box platform 21, and studs 22 are vertically secured to the spiders 20, said studs passing through the flanges 19 of the channel bars 17 and 18. A coil spring 23 embraces each of the studs 22 between the spider 20 and the channel bars 17 and 18, so that said spider is resiliently maintained at a short distance above said channel bars.

A plurality of upper struts or ribs 24 and middle struts or ribs 25 are radially secured to the pole 10, the struts 11, 24, and 25 being equal in number and vertically positioned one above the other. Bearings 26 are secured to the outer ends of the struts 24, and bearings 27 are secured to the outer end of the struts 25, said bearings being adapted to slidably support rack bar 28 so that said rack bar is vertically positioned parallel to the pole 10. A plurality of teeth 29 are formed on the outer edge of the rack bar 28, and a pawl 30 is pivotally secured to the outer end of the bearing 27, the end 31 of said pawl engaging the rack teeth 29. The outer end of the pawl 30 is of considerable length so as to normally hold the end 31 in contact with said rack teeth 29. A spider 32 is laterally secured to the lower end of the rack bar 28, and a cover press 33 similar to the box platform 21 is secured to the lower side of said spider 32, said cover press 33 being vertically positioned above said platform.

A pulley 34 is rotatably secured to the bearing 26 adjacent the rack bar 28, and a pulley 35 is rotatably secured to a bearing 36, said bearing being secured to the strut 24 between the pole 10 and the pulley 34. A rope or cable 37 having a weight 38 on one end passes over the pulleys 34 and 35, the end of said cable opposite the weight 38 being secured to the lower end of the rack bar 28 by means of a bolt or pin 39, said weight being adapted to normally hold the press 33 in its highest vertical position. A vertical brace 40 is secured between each set of struts 11, 24, and 25, and a fork 41 is secured to the press 33, said fork engaging the brace 40 so as to guide the movement of said press as the rack bar 28 is reciprocated vertically. An oblique brace 42 is secured to each set of struts 11, 24, and 25 so as to prevent said struts from sagging under the weight of boxes 43 placed on the platforms 21. A cross head 44 is formed on the upper end of each rack bar 28, and a press bar 45 is vertically positioned above the cross head 44, said bar being slidably secured in a slide bearing 46 by means of elongated tongues 47 formed on said bar 45 and engaging similarly shaped grooves in the bearing 46. The bearing 46 is supported by any suitable means such as an over-

head beam 48 and a pulley 49 is rotatably secured in bearings 50, said bearings being secured to a slide bearing 46 by bolts 51. A cable 52 passes over the pulley 49, and a weight 53 is secured to one end of said cable, the other end of said cable being secured by bolts 54 to the bar 45.

A horizontally extending bracket 55 is formed on the bar 45, and an oblique supporting brace 56 extends between the end of said bracket 55 and the bar 45. A handle 57 is suspended by a cable 58 from the outer end of the bracket 55, said handle being adapted to be lowered by a workman so that the lower end of the bar 45 will engage the cross head 44 thus pushing the rack bar 28 and the box press 33 downwardly and firmly into engagement with the cover of the box 43, said box press 33 remaining in contact with said cover until the glue thereof is dry. A vertical post 59 is positioned adjacent the outer end of the struts 25, and a cam 60 having an upper arcuate surface 61 is secured to the post 59 by bolts 62, said surface 61 being adapted to engage the outer end of the pawl 30 so as to release the pawl end 31 from the rack teeth 29, thus causing the press 33 to move vertically under the action of the weight 38 so as to release the box cover when the glue is dry.

In operation a workman glues the covers of the boxes, and places said boxes on the platforms 21 one at a time. When each box is in place on the platform, the handle 57 is moved downwardly thus causing the box press 33 to engage the cover of the box 43 and be held in engagement until the glue is dry by the point 31 of the pawl 30. The workman rotates the apparatus about the pole 10 as each box is put in place, and after a box completes most of a revolution, the end of the pawl 30 will engage the cam surface 61, thus causing the pawl point 31 to be disengaged from the rack teeth 29 so that the box press 33 will be moved vertically under the action of the weight 38 so that the box 43 may be removed by the workman with the glue of the box cover dry and hard. The apparatus is especially advantageous in that boxes of various sizes may be glued and the springs 23 maintain the box platform 21 resiliently so that the apparatus readily conforms itself to any slight irregularities in the boxes.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the mechanical details herein illustrated, since manifestly the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In an apparatus of the character described a supporting element provided with a plurality of box receiving members adapted to support the boxes having glued covers, each of said box supporting members having a resilient supporting platform, means for pressing the cover of said box until said glue is dry and a releasing mechanism arranged adjacent said rotatable supporting element, said releasing mechanism acting to release said pressing means from the box as the respective boxes pass the same.

2. In an apparatus of the class described, a vertically positioned and rotatably mounted pole, a plurality of substantially horizontally positioned platforms resiliently supported by said pole, each platform being adapted to support a box having a glued cover, means for pressing said box until the glue of said cover is dry, and a cam element for releasing said pressing means when said glue is dry.

3. A device as described in claim 2, characterized by a slidably mounted and manually controlled element adapted to move said pressing means into engagement with said box.

4. A device as described in claim 2, characterized by an element adapted to act under the action of gravity, and coöperate with said cam element in causing said pressing means to be disengaged from said box when said glue is dry.

5. In a box glue apparatus a vertically positioned and rotatable pole, a plurality of supporting members secured to said pole, a plurality of box platforms supported by said supporting members, said platforms being adapted to support boxes having glued covers, a box press slidably positioned above each box platform, means for moving said box presses downwardly into engagement with said box covers, a slidably mounted rack bar with teeth arranged above each of said platforms, the lower ends of said rack bars being secured to the respective box presses, means for moving said rack bars axially so that said box presses will engage said box covers and a pawl adapted to engage said teeth so as to maintain said box presses in engagement with said boxes until the glue in said covers dry.

6. A device as described in claim 5, characterized by a cam element adapted to disengage said pawl from said rack teeth when said glue is dry, and an element acting under the influence of gravity adapted to disengage said box press from said box when said pawl is disengaged from said rack teeth.

ORLO A. LUCAS.