

E. G. STAUDE.  
MACHINE FOR MAKING BOX BLANKS.  
APPLICATION FILED APR. 10, 1908.

955,713.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.

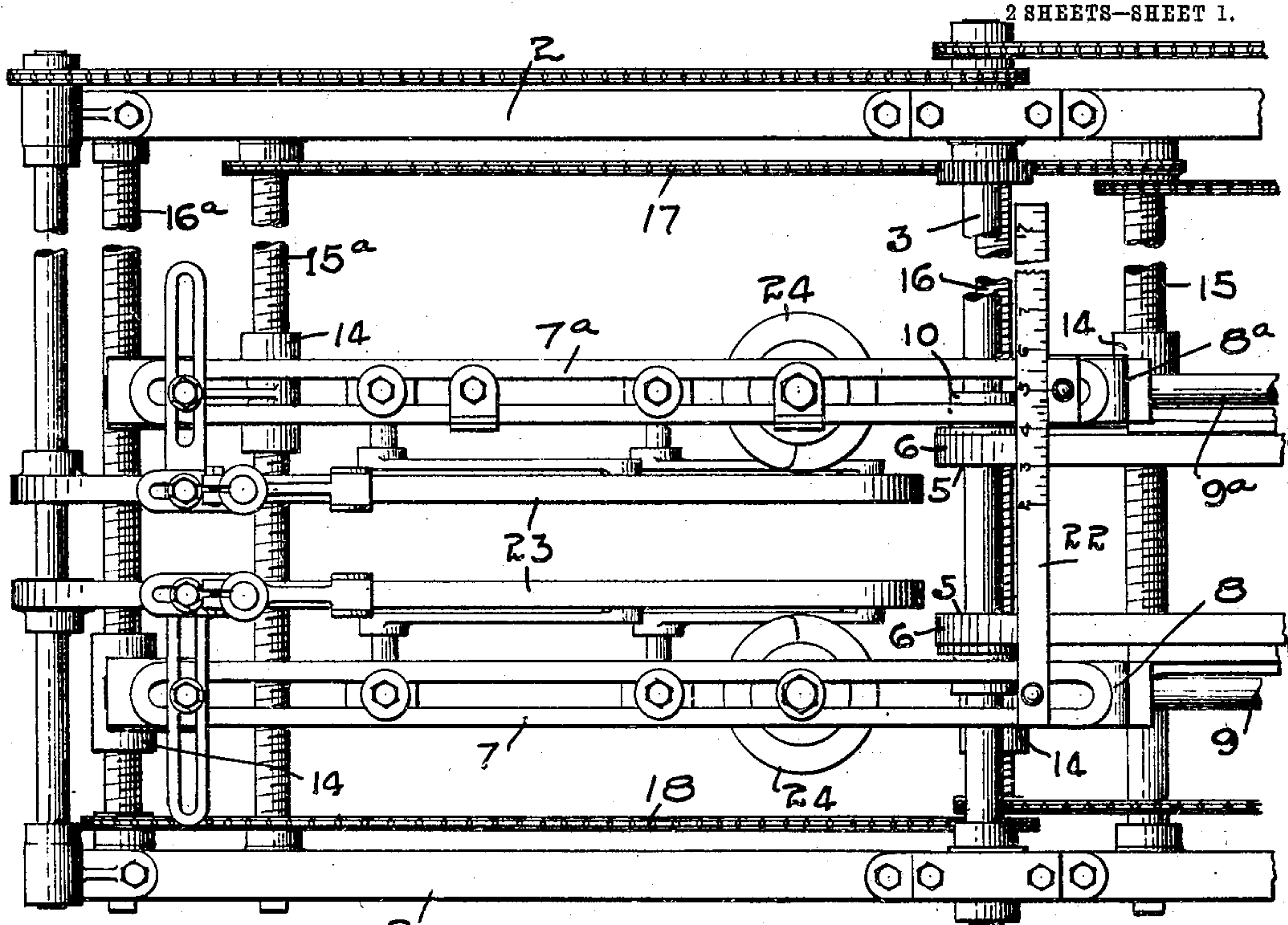


FIG. 1.

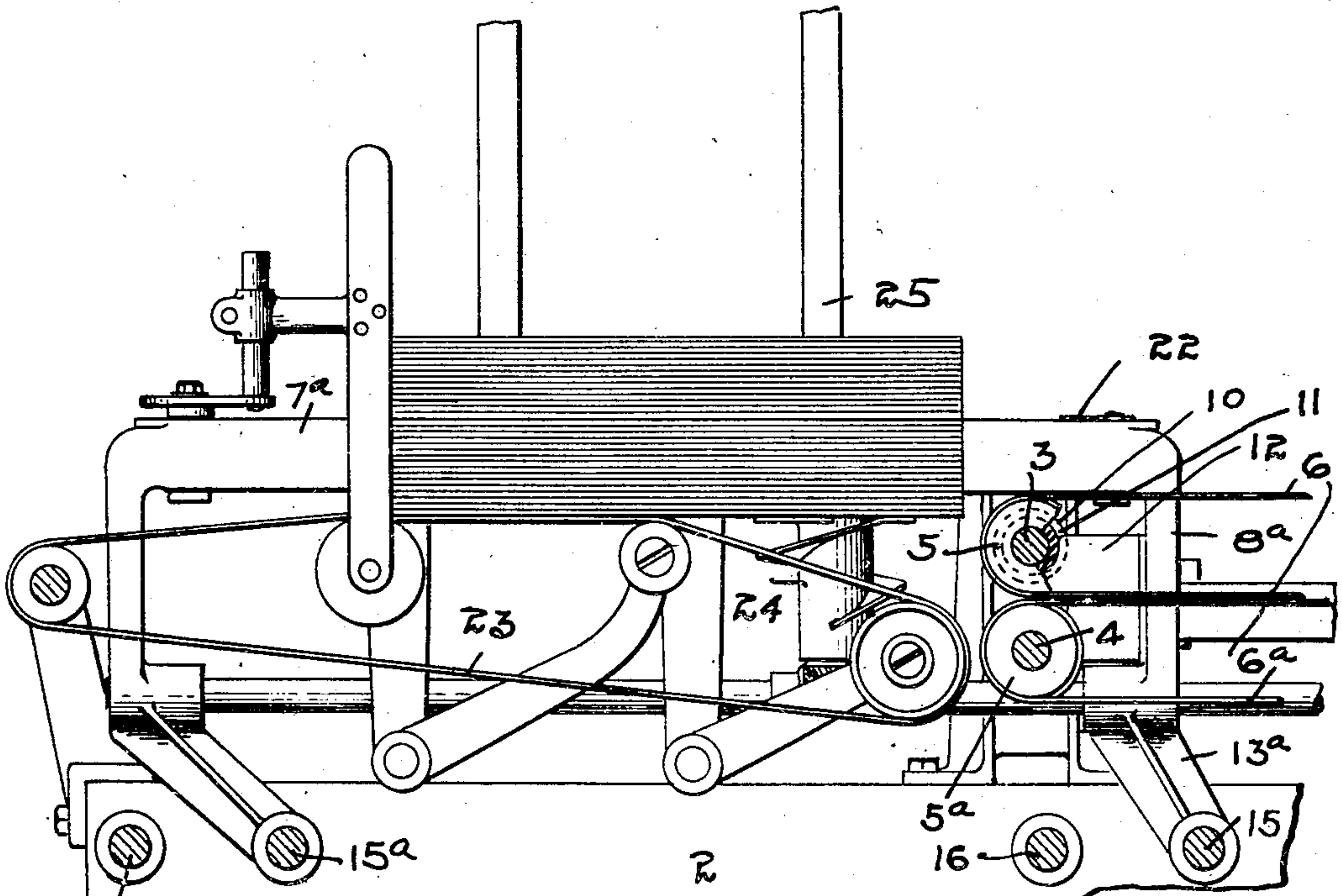


FIG. 2.

WITNESSES  
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BY Paul Paul  
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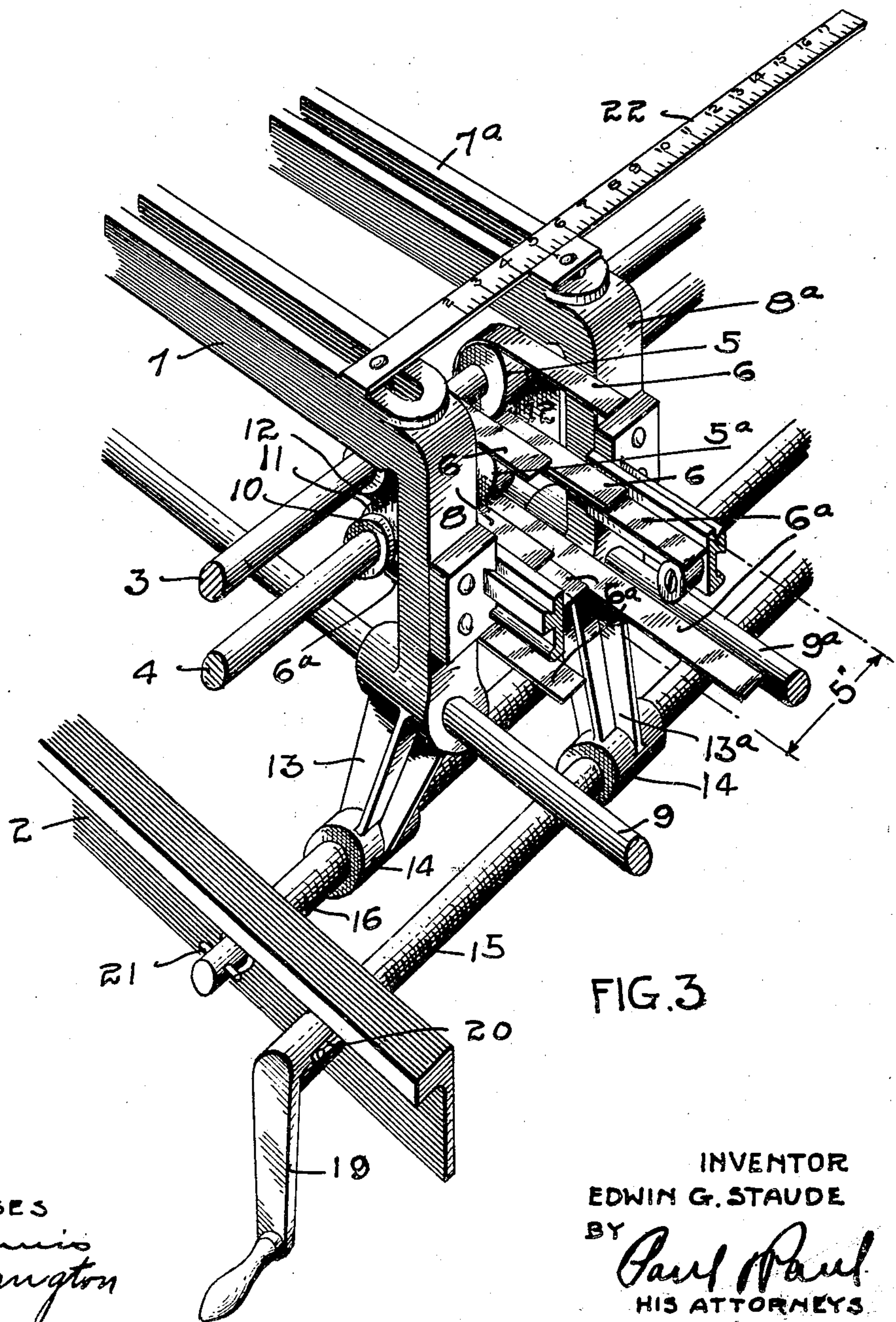


FIG. 3

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# UNITED STATES PATENT OFFICE.

EDWIN GUSTAVE STAUDE, OF MINNEAPOLIS, MINNESOTA.

MACHINE FOR MAKING BOX-BLANKS.

955,713.

Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed April 10, 1908. Serial No. 426,214.

REISSUED

*To all whom it may concern:*

Be it known that I, EDWIN G. STAUDE, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Machines for Making Box-Blanks, of which the following is a specification.

My invention relates to machines for making boxes and particularly to those in which a flexible material is cut and folded to form box blanks of different dimensions.

The object of my invention is to provide a mechanism whereby the folding means can be easily and accurately adjusted to turn out a box blank of the desired dimensions.

A further object is to provide means by which the folded frames supporting suitable folding means, not shown can be easily and quickly adjusted to adapt them for handling blanks of different sizes and adapt the feed mechanism of the machine to the position of the glue pot.

The invention consists generally in means which will permit one of the folder frames to be adjusted to the extreme side of the machine and the other adjusted independently of the first frame at any point between that frame and the opposite side of the machine.

Further the invention consists in a folder frame adjusting mechanism which will permit movement of both frames without changing their relative position.

Further the invention consists in a graduated bar in connection with said folder frames.

In the accompanying drawings forming part of this specification, Figure 1 is a top view of a box blank forming machine embodying my invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a detail perspective view illustrating the mechanism by means of which the different adjustments are obtained.

In the drawing, 2 represents a suitable frame in which the operating parts of the machine are mounted.

3 and 4 are shafts carrying pulleys 5 and 5<sup>a</sup> for the belts 6 and 6<sup>a</sup> between which the blanks are fed. The pulleys are adapted to slide lengthwise on the shafts 3 and 4, and folder frames or brackets 7 and 7<sup>a</sup> are provided having legs 8 and 8<sup>a</sup> that are journaled on longitudinal rods 9 and 9<sup>a</sup>. These rods are capable of transverse movement in the machine with the folder frames. The folder frames 7 and 7<sup>a</sup> extend lengthwise of the

machine, as indicated in Fig. 3, and support a suitable blank folding mechanism, not shown. Each of the pulleys 5 and 5<sup>a</sup> has a hub 10 with an annular groove 11 therein to receive the edge of a plate 12 mounted on the folder frames and the legs 8 and 8<sup>a</sup> of the folder frames have hangers 13 and 13<sup>a</sup> provided with hubs 14 that are interiorly threaded to receive transverse screw shafts 15 and 16 whose ends are journaled in the machine frame. I prefer to provide a pair of these screw shafts at each end of the folder frames, the pair opposite from those shown in Fig. 3 being designated by the same reference numerals with the addition of the exponent "a". These screw shafts are belted together in pairs. That is, the shaft 15 has a belt connection 17 with the shaft 15<sup>a</sup> and the shaft 16 has a belt connection 18 with the shaft 16<sup>a</sup> and consequently, when the crank 19 is applied to one of the shafts 15 or 16 and the shaft revolved, a corresponding movement will be imparted to the other shaft through the belt connection.

The crank preferably has a slot 20 to receive a pin 21 in the end of the shaft. The operation of these screw shafts will move the folder frames and a blank folding mechanism, not shown, supported thereby back and forth in the machine one shaft controlling the movement of the frame on one side and for ordinary work the adjustment of this frame alone will be sufficient. Generally it has been necessary to put a blank in the machine of the desired width and adjust the machine accordingly, or in some cases transverse scales have been provided in the bed of the machine and the frames adjusted back and forth over the scale. Such a method of adjustment, however, is objectionable as it is necessarily slow and considerable subtraction is required to determine the proper adjustment of the machine to the width of the blank. To avoid all these objections to machines now in use I provide a bar 22 mounted at one end upon one folder frame and having a sliding bearing on the opposite frame. This bar has a series of graduations thereon by means of which the operator of the machine can accurately determine the proper position of the folder frames for the desired width of box blank and this adjustment can be obtained very quickly and with but little physical or mental effort.



In Figs. 1 and 2 the stacking belts 23 are illustrated to which the blanks are delivered from the belts 5 and 5<sup>a</sup> and elevated by the spirals 24 to the receptacle 25. This portion of the machine, however, forms no part of my present invention and further and detailed description is unnecessary.

The arrangement of the folder frames and the screw shafts in pairs and their connections with said frames permits me to adjust the frames a blank folding mechanism, not shown, supported thereby and the belts back and forth entirely across the machine and I am able to move the frames toward or from one another during such adjustment, or by operating both sets of screw shafts, I can move the folder frames at any point across the machine, without changing their relative adjustment. This construction, which permits the movement of the frames from one side of the machine to the other, I regard of particular importance, as it enables me to readily adapt the feed mechanism of the machine to the position of the glue pot regardless of the difference in sizes of the blanks. That is, in some cases, the blanks will be so small that adjustment of the feed to the extreme side of the machine is desirable, while for larger blanks it is necessary to set the feed devices in the middle of the machine or to the extreme opposite side from the glue pot. With the apparatus above described, the machine is capable of a wide range of adjustment and is readily adapted for blanks of different sizes.

I do not wish, in this application, to be confined to the details of construction herein shown and described, as they are capable of various modifications without departing from the scope of my invention.

I claim as my invention:

1. In a machine for making flexible box blanks, folder frames adapted to support a blank folding means, means for moving both of said frames entirely across the machine without changing their relative position, whereby the machine is readily adapted for large and small blanks.

2. In a machine for making flexible box blanks, folder frames arranged side by side and extending lengthwise of the machine and adapted to support a blank folding mechanism, transverse screw shafts operatively connected to said folder frames, said shafts being arranged in pairs one pair for each frame and each folder frame being connected with one screw shaft of each pair and each screw shaft having a driving connection

with the corresponding shaft of the other pair on the same folder frame, and means for revolving said screw shafts to move said frames back and forth and adjust said folding means to blanks of the desired width.

3. In a machine for making flexible boxes, folder frames adapted to support a blank folding means, means for adjusting one of said frames entirely across the machine without moving the other frame and without increasing or decreasing the distance between the frames, substantially as described.

4. In a machine for making flexible box blanks, folder frames adapted to support a blank folding means, means for moving said frames toward or from one another entirely across the machine to adapt the machine for blanks of different sizes, transverse shafts, and pulleys slidably mounted thereon and connected with said frames, and belts for said pulleys.

5. In a machine for making flexible box blanks, folder frames adapted to support a blank folding means, and means for adjusting said frames one at a time toward or from one another entirely across the machine to adapt them for box blanks of different sizes, and a graduated bar mounted on one frame and slidable with respect to the other frame.

6. In a machine for making flexible box blanks, folder frames, transverse shafts and pulleys slidably mounted thereon and belts therefor, transverse screw shafts, said shafts being arranged in pairs, means operatively connected with said pulleys and also connected with one screw shaft of each pair, and each screw shaft having a driving connection with the corresponding shaft of the other pair, the revolution of said screw shafts permitting the adjustment of said pulleys and belts across the entire width of the machine.

7. In a machine of the class described, folder frames adapted to support a blank folding means, means for adjusting one of said frames to the extreme side of the machine and means for adjusting the other frame independently of said first named frame at any point between said first named frame and the other side of the machine, substantially as described.

In witness whereof, I have hereunto set my hand this 6th day of April 1908.

EDWIN GUSTAVE STAUDE.

Witnesses:

RICHARD PAUL,  
J. A. BYINGTON.