E. JAGENBERG.

BOX MAKING MACHINE.

APPLICATION FILED SEPT. 3, 1914.

1,136,339.

Patented Apr. 20, 1915.

2 SHEETS—SHEET 1.

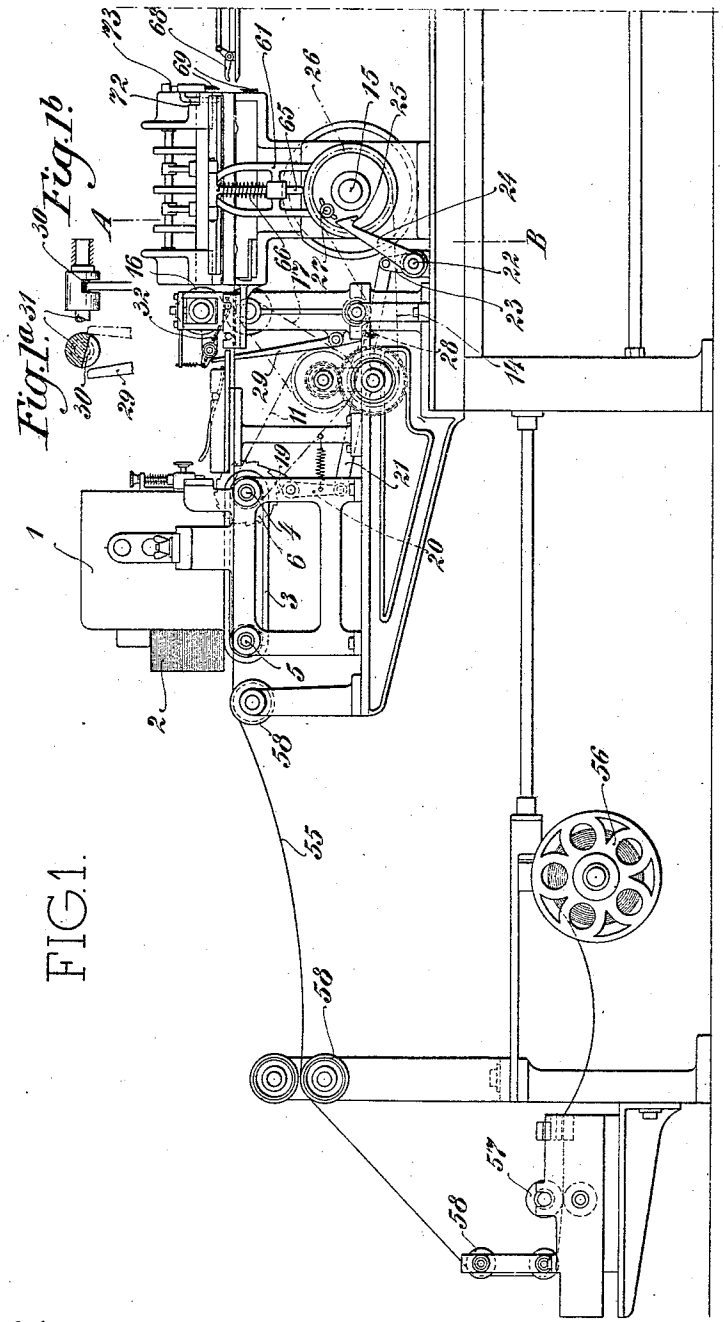


FIG. 1.

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2 SHEETS—SHEET 2.

FIG. 2.

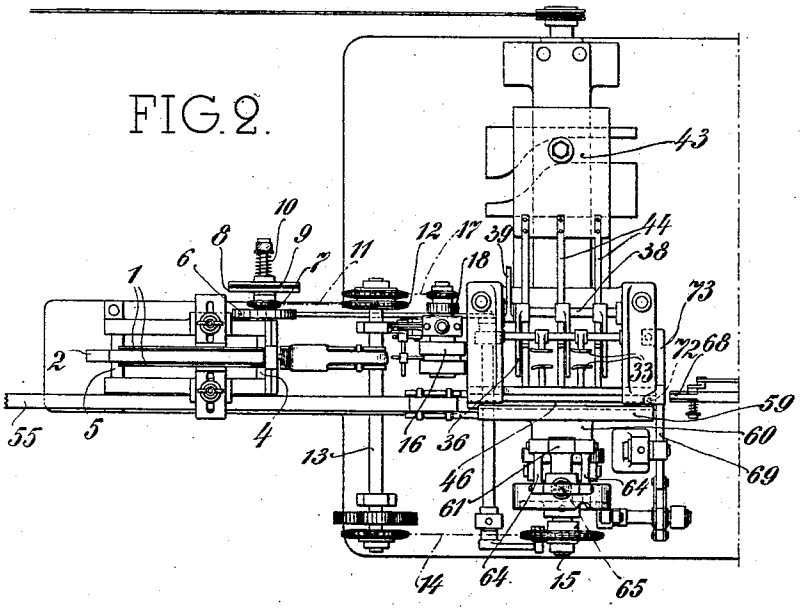


FIG. 3.

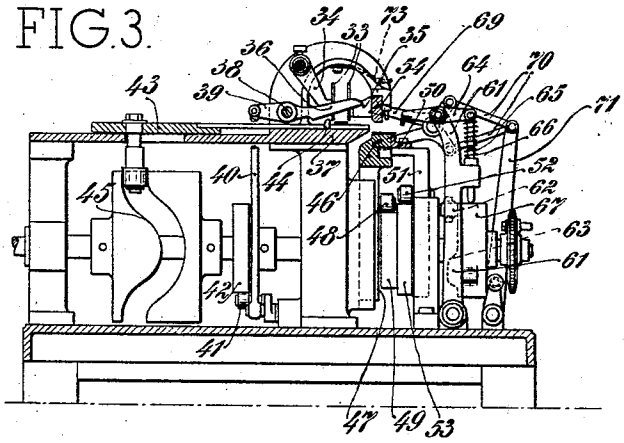


FIG. 4.

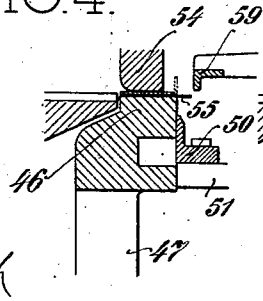
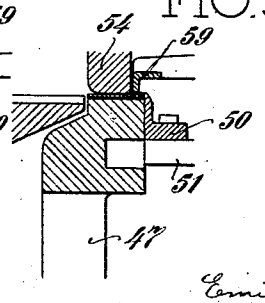


FIG. 5.



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UNITED STATES PATENT OFFICE.

EMIL JAGENBERG, OF DUSSELDORF, GERMANY.

BOX-MAKING MACHINE.

1,136,339. Specification of Letters Patent. Patented Apr. 20, 1915.

Application filed September 3, 1914. Serial No. 860,001.

To all whom it may concern:

Be it known that I, EMIL JAGENBERG, a subject of the German Emperor, and resident of 107 Himmelgeisterstrasse, Dusseldorf, Germany, have invented certain new and useful Improvements in and Relating to Box-Making Machines, of which the following is a statement.

The present invention relates to a box making machine as described in the United States Patent 608,201.

The invention has been exemplified in the accompanying drawing.

Figure 1 is a side elevation. Fig. 2 is a plan, and Fig. 3 is a cross section on the line A—B. Figs. 4 and 5 show the folding mechanism in two different operative positions. Fig. 1ª, is an end view of the paper strip feed locking means and Fig. 1ᵇ a side view thereof.

Between the walls 1 a pile of pasteboard strips 2 lies on rubber bands 3, which are laid around rollers 4, 5. To the roller 4 is fitted a toothed wheel 6 and also loosely thereon a sprocket 7 and attached thereto a clutch member 8. Toward this clutch member 8 the clutch member 9 displaceable but not rotatable on shaft 4 is pressed by a spring 10. The sprocket 7 is driven by means of chain 11, which travels over a sprocket 12 on shaft 13. The shaft 13 is driven by means of a chain drive 14 from shaft 15 and drives the rollers 16 by means of the chain drive 17 and the toothed wheels 18. In toothed wheel 6 engages a pawl 19 which is fitted to a lever 20 the free end of which is coupled by a rod 21 with the lever 23 journaled on shaft 22. On the shaft 22 is also fitted a lever 24, the nose-shaped end of which 25 lies in the path of an abutment 27 fitted to the sprocket 26. The rod 21 has a pin 28 which engages in a slot in the double-armed lever 29. The upper end of this lever is situated in front of a slot 30 in a shaft 31, to which a feeler 32 is fitted which projects between the rollers 16.

When the abutment 27 strikes against the nose 25, the pawl 19 is lifted and the lever 29 is forced through the slot 30, the shaft 31 turning until the lever 29 has penetrated the slot. Then the shaft 31 turns back so that lever 29 cannot return. When the pawl 19 is lifted the shaft 4 can revolve. The sprocket 7 which revolves continuously carries with it shaft 4 by means of the clutch members 8, 9, so that the endless rubber bands 3 are driven and the lowermost strip of pasteboard is drawn from the pile. When this strip reaches between the rollers 16, it lifts the feeler 32. Thereby the shaft 31 is turned in such a manner, that the lever 29 can return through the slot 30. In consequence thereof the levers 24 and 20 can rock backward whereby the pawl 19 is reëngaged and the shaft 4 is stopped, so that now the two clutch members grind on each other. The rollers 16 push the pasteboard strip between the walls 33, which are held suspended by the arms 34 and 35. When the pasteboard strip is here at rest, several bars 36 lower on it and press it down onto the table 37. The bars 36 are fitted to the shaft 38, which is operated by means of a lever 39, a rod 40 and a roller 41 from a cam disk 42. When the pasteboard strip lies flat on the table 37, the slides 44 fitted to the carriage 43 are advanced by means of the grooved disk 45 so that they bear against a longitudinal edge of the pasteboard strip and force the latter sidewise, whereby it passes through a slot between the table and the one wall 33 and reaches a bar 46. On this bar 46 lies a strip of paper 55, which is wider than the pasteboard strip. This paper strip unwinds from a roller 56 and is passed over gumming rollers 57 and guide rollers 58 to the rail 46, on which it lies longitudinally but over which it projects at the sides (Fig. 4). Onto this paper strip the somewhat narrower pasteboard strip is advanced.

The bar 46 is fitted to a vertically guided carriage 47 which is raised and lowered by means of roller 48 and the cam disk 49. Next to the bar 46 an angular bar or first folder 50 is fitted to a vertically guided carriage 51, which is likewise raised and lowered by means of a roller 52 and a cam disk 53. When the pasteboard strip is lying on the bar 46 the latter rises and presses the pasteboard strip against a stationary bar 54 (Fig. 4). Then the angle bar rises and bends up the free edge of the paper strip. Now a bar or second folder 59 advances and folds the rising edges of the paper strip over onto the pasteboard strip (Fig. 5). The bar 59 is pivotally fitted by a broad arm 60 to the lever 61, on which a roller 62 is fitted, which rides on the cam disk 63. The arm 60 has two extensions 64, to the ends of which a rod 65 is hinged, which projects through an eye on the lever 61, and on which a spring 66 is fitted. The lower end of the

rod 65 bears on a cam disk 67. First the bar 59 is swung forward by means of lever 61 and cam disk 63, whereby the edge of the paper strip is folded over. Then, at its further advance the bar is lowered by means of rod 65 and the cam disk 67, so that it presses the paper strip against the upper side of the pasteboard strip (Fig. 5). When the bar 59 has receded and the bar 46 has been lowered a little, a gripper 68 advances, grips the front edge of the pasteboard strip and draws it with the paper strip from the bar 46. The paper strip is thereby unwound from the roll 56. Then a shears 69 closes by its blades being operated by the rods 70 and the lever 71. On the bar 54 a pin 72 is fitted vertically displaceable, which is depressed by a spring 73. This pin is held in lifted position by the upper blade of the shears, but when this blade is lowered for cutting, also the pin 72 will sink onto the pasteboard strip and hold the same during the cutting operation. The pasteboard strip on which the paper strip has been pasted is then taken by the gripper to the known box making machine.

I claim:

1. In a box-making machine, a paper-strip feeding band, means for operating said band, a pair of feed rollers, a feeler interposed between said rollers, means actuated by the feeler for arresting the band operating means, a table adapted to receive the paper strip, a bar, a slide for shifting the strip from the table to the bar, means for feeding a second paper strip to the bar, means for gumming said second strip, and means for folding said second strip around one edge of the first named strip.

2. In a box-making machine, a paper strip feeding band, means for actuating said band, walls between which the strip is adapted to enter, a bar, means for advancing said strip onto said bar, means for feeding a second paper strip to the bar, means for gumming said second strip, means for lifting the bar, a vertically movable folder located sidewise of the bar, and adapted to turn upward a projecting end of the second strip, and a second folder adapted to fold said end over the first-named strip.

3. In a box-making machine, a paper strip feeding band, means for actuating said band, walls between which the strip is adapted to enter, a bar, means for advancing said strip onto said bar, means for feeding a second strip to the bar, means for gumming said second strip, means for folding the second strip around one edge of the first named strip to form a compound strip, grippers for drawing the compound strip off said bar, shears for cutting the compound strip and means for holding the compound strip during the cutting operation.

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Witnesses:
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