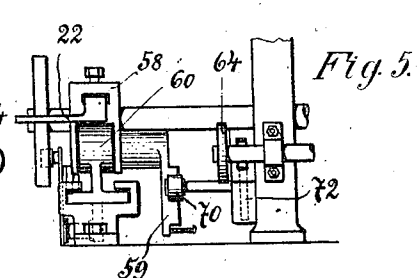
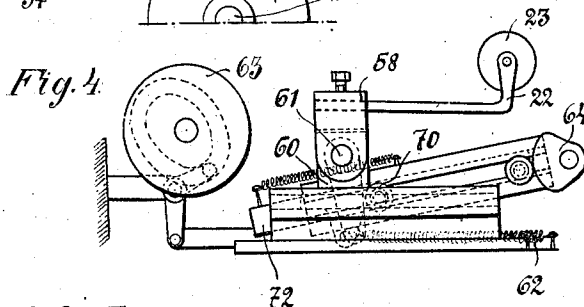
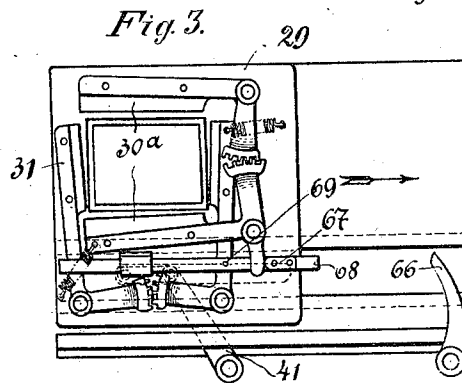
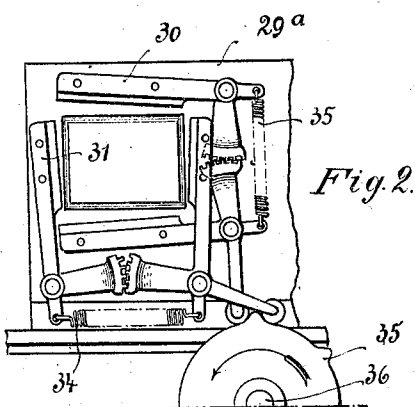
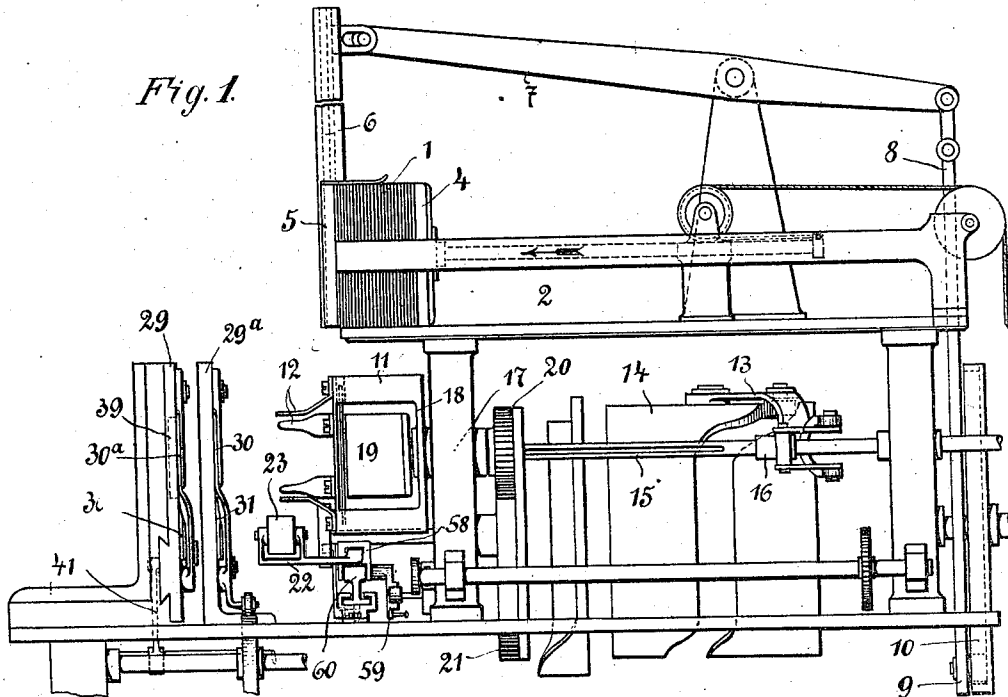


R. HOGFELDT.
MACHINE FOR MAKING PASTEBOARD BOXES.
APPLICATION FILED APR. 19, 1910.

996,856.

Patented July 4, 1911.

2 SHEETS—SHEET 1.



Witnesses:
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Charles L. Fendanner

Inventor:
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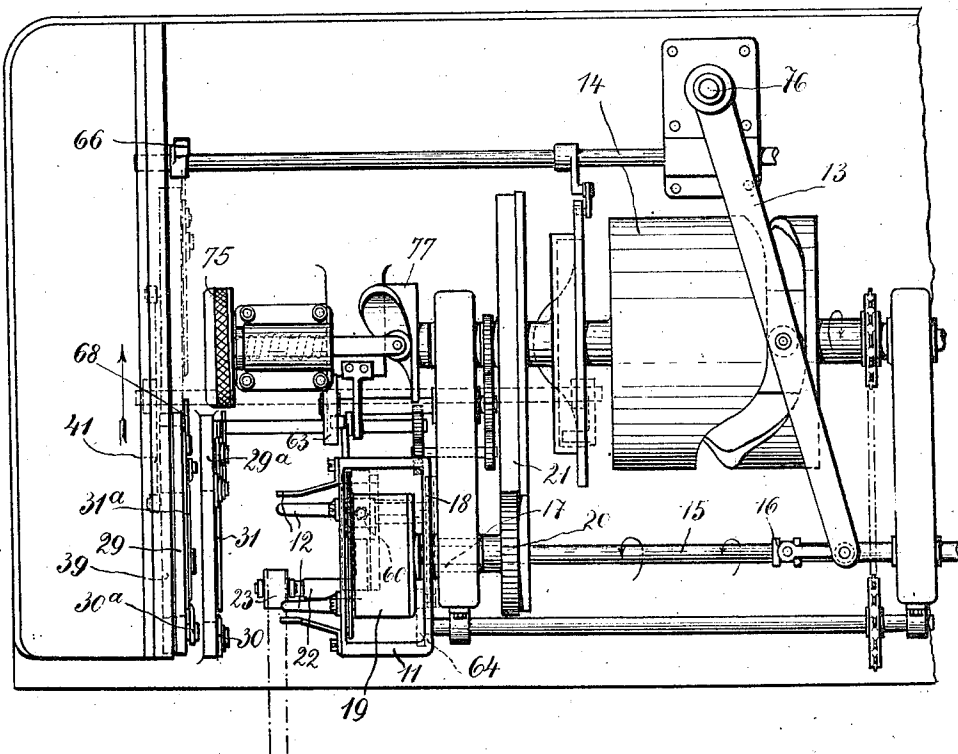
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Fig. 1^a.



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UNITED STATES PATENT OFFICE.

RICHARD HÖGFELDT, OF DUSSELDORF, GERMANY.

MACHINE FOR MAKING PASTEBOARD BOXES.

996,856.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed April 19, 1910. Serial No. 556,359.

To all whom it may concern:

Be it known that I, RICHARD HÖGFELDT, head foreman, a citizen of Germany, residing at Dusseldorf, Brunnenstrasse 1 to 3, in the Province of Rhineland and State of Prussia, Germany, have invented new and useful Improvements in Machines for Making Pasteboard Boxes, of which the following is a specification.

The present invention deals with a machine for producing boxes from pasteboard or other similar material. Its special feature lies in the fact, that two folding devices are provided for turning down the edges of the coating slip projecting over the side-walls of the box. One of these folding devices used for turning down the edges outstanding beyond the inside of the box, carries four slides; these are moved simultaneously but in different planes inwardly, beyond the edges of the box, doubling back in this way the paper slip.

A further characteristic of the machine consists in, that not only an up- and down- but also a gliding movement is imparted to the roller utilized for appressing the paper-slip against the box.

In the accompanying drawings: Figure 1 is a side elevation with some parts broken away of my improved machine for making boxes; Fig. 1^a a plan thereof with the upper parts omitted; Fig. 2 an inner face view of the first folder; Fig. 3 a similar view of the second folder; Fig. 4 a front view of the roller actuating mechanism, and Fig. 5 a side view thereof.

The work-pieces 1 already cut out and scored, are placed in position in close succession on a table 2. The work-piece in front, is pressed by means of a piston 4 against the plate 5 or the like where it is below a slide 6 connected with a lever 7 and a rod 8. The latter is guided with a roller 9 in a disk 10 in such a way that temporarily the slide is moved down comparatively rapidly, pushing thus the work-piece in front into a frame 11 located underneath. This has just the size to receive the work-piece. But the free space incased thereby only corresponds to the cross section of the box to be formed.

The frame 11 carries at its outer face resilient fingers 12, slightly mutually inclined. Back of frame 11, there is fulcrumed at 76 to the machine frame a lever 13, engaging the slot of a cam 14 with a roller or a slide-block mounted thereon. The lever 13

is jointed through the medium of an articular piece with a socket 16, placed on a rod 15 and so adapted that it can turn but not get displaced independently therefrom. The rod 15 is mounted to rotate and it has adapted thereto a plate 18, carrying a socket 17 for receiving the rod, and connected with the frame 11 in such a manner, that the latter must revolve with the rod while this is susceptible of being shifted therein. Rigidly united with the rod 15 is a piston or core 19, the cross-section of which corresponds approximately to the clear aperture of the box to be produced. Moreover the rod has placed thereon a spur-wheel 20 wherein the rod can be shifted in like manner as in the frame whereas it cannot revolve independently thereof. Engaging the spur-wheel 20 is a larger driven spur-wheel 21 which is only partly cogged; on this account it only effects at a part of its revolution the movement of the wheel 20 imparting thus to the latter a full revolution. The slots of the disks 10 and 14 are so shaped that immediately after the pushing down of the work-piece by means of the slide 6 the piston 19 is thrust forward. In this way it turns down rectangularly, when passing the frame, the latter side-walls of the box divided off by folds. The shift of the work-piece by the piston takes place just the amount that the fingers 12 overlap still slightly the edges of the side walls of the box, lying on the piston, holding same in their position. The work-piece has now its position above the roller 23, pivoted in a lever 22. Under assistance of an articular piece 58, this forms with the arm 59 a bent lever, being mounted to rotate at 61 in a cradle or slide 60 and affected by a spring 62. This spring tends to press the roller upwardly and against the box. A rail 72, displaceably mounted at the machine frame and affected by a cam 64, bears with its pin, carrying a roller 70, against the arm 59 holding in this way under normal conditions the pressing roller 23 in its lowest position. The cradle 60 is suitably and slidably mounted in a rail and it is being connected through the medium of a rod-work and of a bent lever with a cam 63.

When the coating slip has been passed with its fore-end intermediate the pressing roller 23 and the box, the cam 64 moves back and, due to the spring 62, it bears securely against the box. The latter begins in this moment its single rotation thus being lined

with the coating slip. During this operation, the spring 62, assisted by the bent lever, admits indeed of an up- and down-movement of the roller 23, causes it, however, at the same time to be evenly and surely pressed against the box. When the tapping of the coating slip has taken place, a lateral shift is imparted to the pressing roller 23 in connection with the cradle 60. Then it glides over the slightly overlapping ends of the coating slip, insuring there likewise a perfect adherence. Now, by the cam 14, a fresh feed of material begins, whereby the work-piece passes into the folding device. This contrivance is composed essentially of a frame 29^a and two pairs of slides 30, 31 adapted thereto, which are shaped as levers. The lever-shaped slides are, as is more particularly shown in Fig. 2, connected to each other in pairs by means of toothed segments; they are so affected, on the one hand by means of springs 34, 34^a and on the other hand by eccentric tappets or disks 35 bearing elevations, that they pass alternately in pairs over the bottom of the box, turning down and pasting on the overlapping edges of the paper-slip. Now, owing to the cam, 14, the piston with the work-piece is advanced farther. This passes in such a way across the first folding device into the matrix 39, contained in the shiftable cradle 29. The cradle has attached thereto a second folding device composed of two pairs of levers 30^a, 31^a which swing in different planes and are to turn down inwardly the edges of the paper-slip projecting toward the inside, as shown in Fig. 3. When the work-piece has been conveyed by the piston into the matrix, the cradle is moved laterally in the direction of the arrow by means of a crank 41. When now the cradle 29 has nearly reached its final position, a rail 68, mounted at the cradle 29 so that it can be shifted, impinges upon an arm 66. Placed on the rail is a projection 67 acting directly on the pair of levers 30^a connected with toothed segments, and indirectly on the pair of levers 31^a through the medium of a pin 69. Thus the lever-like shaped slides are connected with one another in such a way, that they are not cooperating alternately in pairs but that they turn down simultaneously toward the inside all the four sides of the overlapping paper-slip returning then abruptly, this being effected by the springs 34 and 34^a. After the edges of the paper-slip have thus been folded inward and partly around the box-edge, they are by a spring-influenced second plunger 75 folded against the inner faces of

the box, said plunger receiving movement from a rotative cam 77 or otherwise.

I claim:—

1. In a machine of the character described, an intermittently rotative frame, an inclosed core rotatable therewith and axially displaceable relatively thereto, said core being adapted to sustain a box, means for supplying a covering strip for said box at right angles to the core axis, a roller the axis of which extends in parallelism with the core axis, a spring-influenced bent lever supporting the roller, a slide to which said lever is pivoted, and means for reciprocating the slide at right angles to the core axis whereby the roller is caused to be reciprocated in parallelism with the direction of travel of the covering strip.

2. In a machine of the character described, an intermittently rotative frame, an inclosed core rotatable therewith and axially displaceable relatively thereto, a relatively stationary first folding device in axial alignment with the core, a displaceable second folding device back of the first folding device, a plunger, and means for bringing said second folding device in alternating axial alignment with said core and plunger.

3. In a machine of the character described, means for providing a box with a covering strip that projects beyond the bottom and top thereof, a relatively stationary first folding device comprising consecutively actuated pairs of folding levers adapted to fold one of the projecting strip edges against the box bottom, a second folding device comprising simultaneously actuated pairs of folding levers adapted to fold the other projecting strip edge into the open top of the box, and means for laterally displacing said second folding device.

4. In a machine of the character described, means for providing a box with a covering strip that projects beyond the bottom and top thereof, a first folding device comprising two pairs of operatively connected folding levers having stationary fulcrums, a second folding device comprising a slide and two pairs of operatively connected folding levers fulcrumed to the slide, a rail movably supported by the slide and adapted to engage one lever of the first folding device, an operative connection between the rail and one lever of the second folding device, and a fixed abutment adapted to be engaged by the rail.

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Witnesses:

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