Oct. 12, 1937. H. CHAMBON 2,095,919

MANUFACTURE OF CIGARETTE PAPER BLOCKS

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Fig - 3

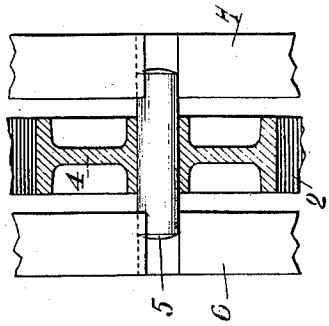


Fig - 4

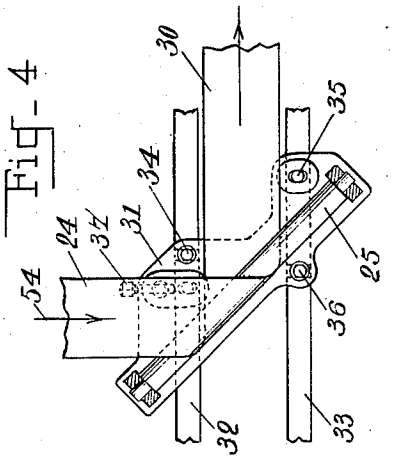


Fig - 2

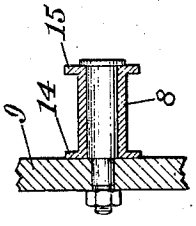
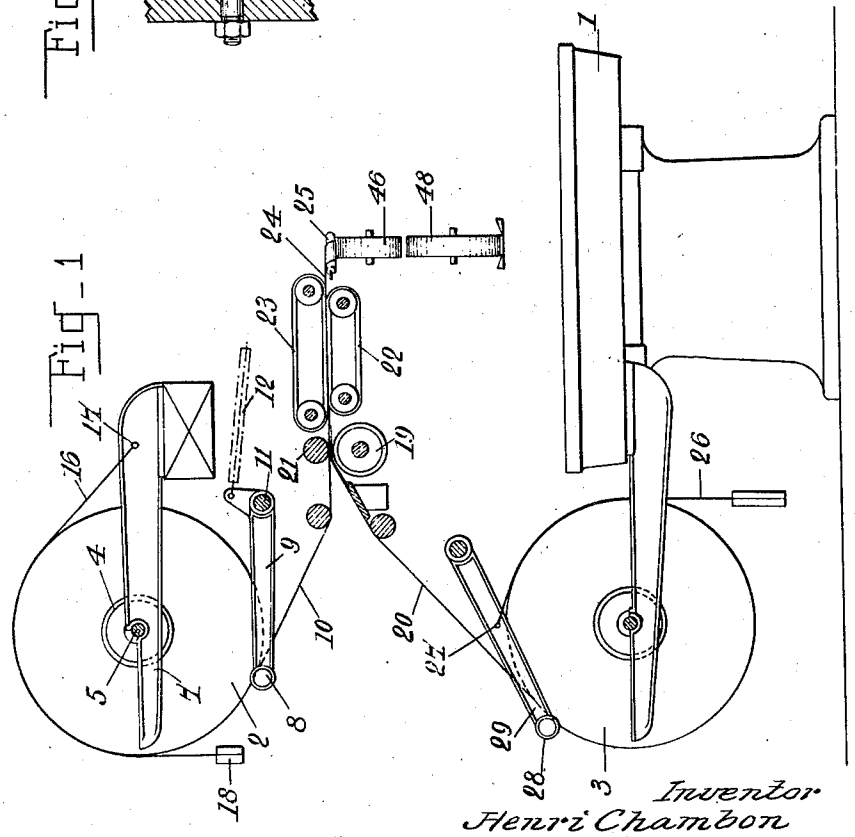


Fig - 1



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MANUFACTURE OF CIGARETTE PAPER BLOCKS

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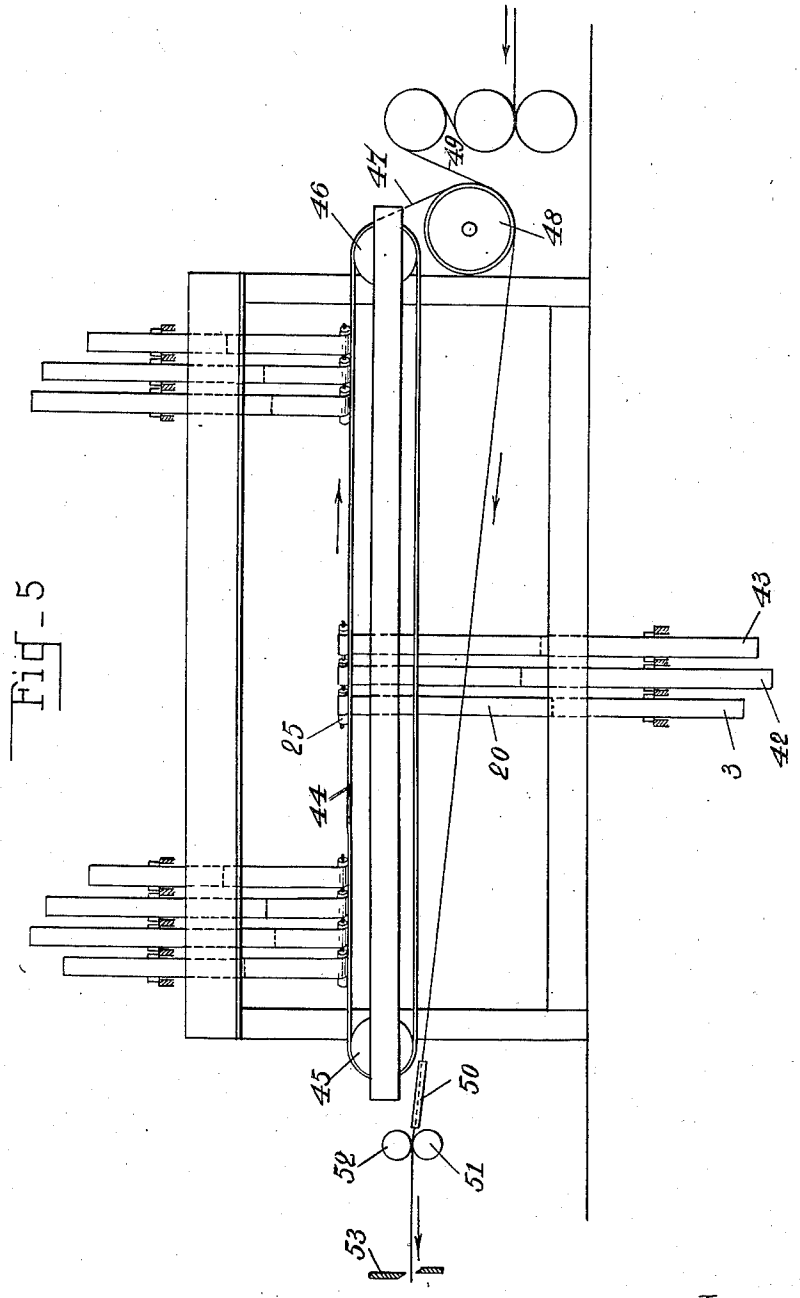


Fig-5

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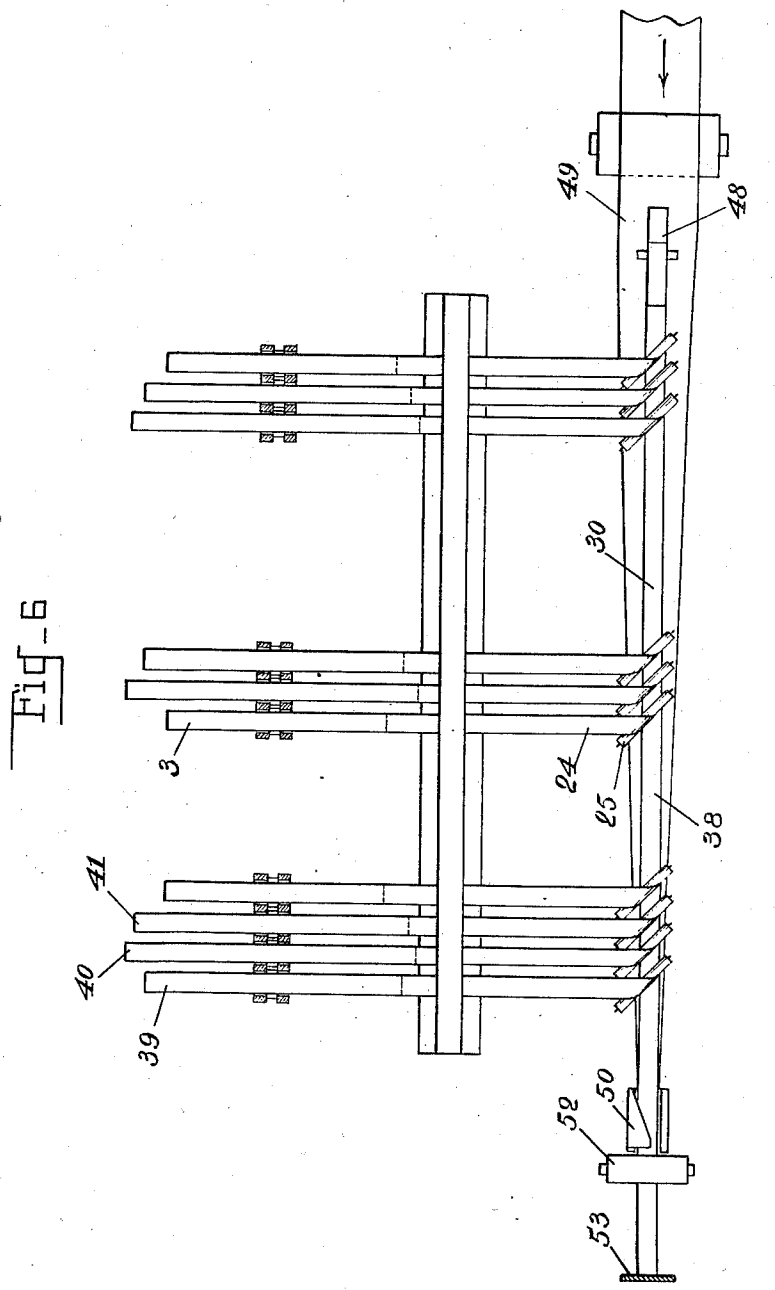
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MANUFACTURE OF CIGARETTE PAPER BLOCKS

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Fig. 6



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UNITED STATES PATENT OFFICE

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MANUFACTURE OF CIGARETTE PAPER BLOCKS

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Application March 20, 1936, Serial No. 69,985
In France April 16, 1935

6 Claims. (Cl. 270—41)

The present invention relates to the manufacture of cigarette paper blocks at a high velocity. The invention enables obtaining, in a single operation, entirely completed blocks at a rate which may be beyond 800 blocks per minute. To this end a bundle or pile is formed with a number of strips of paper which is equal to the number of sheets constituting each block and then the said bundle is cut in sections, each of which will form a block.

According to one of the features of the invention, guide rollers are provided along the path of the bundle and said rollers are arranged parallel to the plane of the bundle and at an angle of about 45° to its axis; the strips coming from the feeding reels reach the guide rollers, run over them and are supplied to the bundle. Preferably the strips which arrive at the guide rollers are in a plane which is substantially parallel to the plane of the bundle and their direction is substantially at right angles to the direction of the bundle. It is advantageous to guide the strips along their path towards the guide rollers, for instance between two driving belts. The guide rollers are advantageously provided with means for adjusting their position by a displacement parallel to themselves and in a plane which is parallel to the plane of the bundle. In one embodiment the bundle is driven by a belt **44** upon which said bundle is applied.

It is advantageous to guide the unwinding motion of the strips of paper by means of a flanged roll applied upon each reel at the point at which the strip is unrolled. In this case, it will be advisable to arrange the reel so that it may be laterally displaced upon its supports.

In order to wrap the bundle with the container board which is intended to form the cover of the blocks, the said board may be supplied in the form of a strip passing between slopes provided in order to fold said strip around the bundle.

It is understood that all the above arrangements and all such as may be further described may be considered separately or jointly as comprised in the scope of the invention.

By way of example and in order to facilitate the understanding of the invention an embodiment thereof is shown in the accompanying drawings in which

Figure 1 is a diagrammatical view in transverse section of a machine according to the invention.

Figure 2 is a sectional view of a flanged roll for guiding the reels.

Figure 3 is a partial view showing the setting of the reels in their bearings.

Figure 4 is a plan view of a guide roll.

Figure 5 is a front view of the machine.

Figure 6 is a diagrammatical plan view of the same.

The machine shown in the drawings comprises a table **1** (Figure 1), having aligned on its side the reels such as **2, 3**, provided with strips of cigarette paper.

Each reel is set on a winding drum **4** (Figures 1 and 3) having its axis supported on bearings provided on parallel supports **6, 7**. Such supports are spaced from each other so that the reels **2** may move transversely between them, whilst the shaft **5** is longitudinally slidable on its bearings.

A flanged roll **8** (Figures 1 and 2) carried by an arm **9** is applied at the periphery of the reel **2** at the point at which the strip of paper **10** is unwound, i. e. where said strip is leaving the reel. The arm **9** is pivoted on the axis **11** and is subjected to the action of a spring **12** which tends to urge the roll **8** against the reel **2**.

The zone of the reel at which the strip **10** is unwound is maintained between the flanges **14, 15**, of the roll **8**. Consequently it cannot be displaced transversely and the strip **10** always remains in the same vertical plane. The reels **2** may happen to be deformed or twisted and in such case the axis **5** will slide longitudinally on its bearings whilst the strip **10** remains unchanged owing to the roll **8**.

The unwinding of the reel **2** is controlled by a braking device comprising a band **16** secured at **17**, carried over the reel **2** and stretched by a counterweight **18**.

The reel **3** is arranged in the same way. However, the band **26** of the brake is secured at **27** on the arm **29** of the flanged roll **28**. The strip **20** which is unrolled from such reel is aligned with the strip **10** for its passage between the rollers **19, 21** and subsequently between the two driving belts **22, 23**.

Only one of the reels **2, 3**, may be unwound at a time and in this case the other reel is set up and ready to come into operation in order to rapidly substitute one strip for the other when the first reel is emptied.

After leaving the driving belts **22, 23**, the bundle **24** which comprises the strips **10** and **20** runs over a guide roller **25** (Figures 1, 4, 5 and 6) arranged substantially at 45°. The bundle is thus carried on at right angles at **30** (Figure 4). For the adjustment of the position of said bundle **30**, the roller **25** is arranged on a bearing **31** secured to the rods **32, 33**, by means of the pins **34, 35, 36**, arranged in order to provide for slight displace-

ments of the bearing **31**. The proper position is obtained by unlocking the bolts through an adjusting screw **37** which is shown in dotted lines in Figure 4. The said screw enables moving the support in the direction of the arrow **54** without changing the obliquity of the cylinder **25**.

Owing to said adjustment, the bundle **30** is exactly superimposed on a bundle **38** (Figures 5 and 6) which comes from the preceding reels. The apparatus comprises a row of upper reels **39**, **40**, **41**, arranged side by side and with their axes such as **5** (Figure 1) in alignment with each other. Above the said row is arranged another row of reels **3**, **42**, **43**. For sake of clearness, only a number of the reels of each row is shown in Figures 5 and 6, but in fact the upper and lower rows extend along the entire machine.

The bundle **38** is driven by a belt **44** running over the pulleys **45**, **46**. It travels from left to right (Figures 5 and 6) and is supplied with two strips at each roller **25**. The total bundle coming out at **47** is constituted by a number of strips which is equal to the number of cigarette paper sheets which will be comprised in each block.

The said bundle is carried over a drum **48** (Figure 5) and returns from right to left. It is then provided with a board strip **49** intended to form the cover of the blocks. To this end, the strip **49** is wider (Figure 6) than twice the width of the bundle **47**. The strip **49** is folded over the said bundle along the path comprised between the drum **48**, and the folding means such as **50**. The bundle thus wrapped is driven by the cylinders **51**, **52**, and subsequently sectioned by a device which is diagrammatically shown at **53** (Figures 5 and 6).

Having now particularly described and ascertained the nature of my invention and in what manner the same is to be performed, I declare that what I claim is:

1. An apparatus for manufacturing cigarette paper blocks comprising a series of drums for holding webs of cigarette paper, guiding means for the edges of each web located at the point where each web leaves its drum and means for mounting said drums so that said drums may rotate freely on their axes and move longitudinally of said axes.

2. An apparatus for manufacturing cigarette paper blocks comprising a drum for holding a web of cigarette paper, a roller, flanges upon said roller guiding the edges of the web of paper located at the point where said web leaves said drum, means urging said roller with said flanges against the web upon said drum and means for mounting said drum so that said drum may rotate freely on its axis and also move longitudinally of its axis.

3. An apparatus for manufacturing cigarette paper blocks comprising a series of drums for holding webs of cigarette paper, guiding means for the edges of each web located at the point where each web leaves its drum, means for mounting said drums so that said rollers may rotate freely on their axes and move longitudinally of said axes, endless feeding means between which said webs are led after leaving said drums, a direction changing roller for said webs for changing the direction of said webs after leaving said endless feeding means and endless feeding means for said webs located at substantially right angles to said first mentioned feeding means.

4. An apparatus for manufacturing cigarette paper blocks comprising a series of drums for holding webs of cigarette paper, means for mounting said drums so that said drums may rotate freely on their axes and move longitudinally of said axes, fixed guiding means for each web located at the point where each web leaves its drum, means for feeding said webs after leaving said guiding means, means for changing the direction of said webs after leaving said feeding means and a second feeding means for aligning all said webs in a compact bundle.

5. An apparatus for manufacturing cigarette paper blocks comprising a series of drums for holding webs of cigarette paper, means for mounting said drums so that said drums may rotate freely on their axes and move longitudinally of said axes, fixed guiding means for each web located at the point where each web leaves its drum, means for feeding said webs after leaving said guiding means, means for changing the direction of said webs after leaving said feeding means and a second feeding means for aligning all said webs in a compact bundle, and means for associating a cover strip with said bundle.

6. An apparatus for manufacturing cigarette paper blocks comprising a series of drums for holding webs of cigarette paper, means for mounting said drums so that said drums may rotate freely on their axes and move longitudinally of said axes, fixed guiding means for each web located at the point where each web leaves its drum, means for feeding said webs after leaving said guiding means, means for changing the direction of said webs after leaving said feeding means and a second feeding means for aligning all said webs in a compact bundle, means for associating a cover strip with said bundle, and means for cutting said bundle with associated cover strip into cigarette blocks.

HENRI CHAMBON.