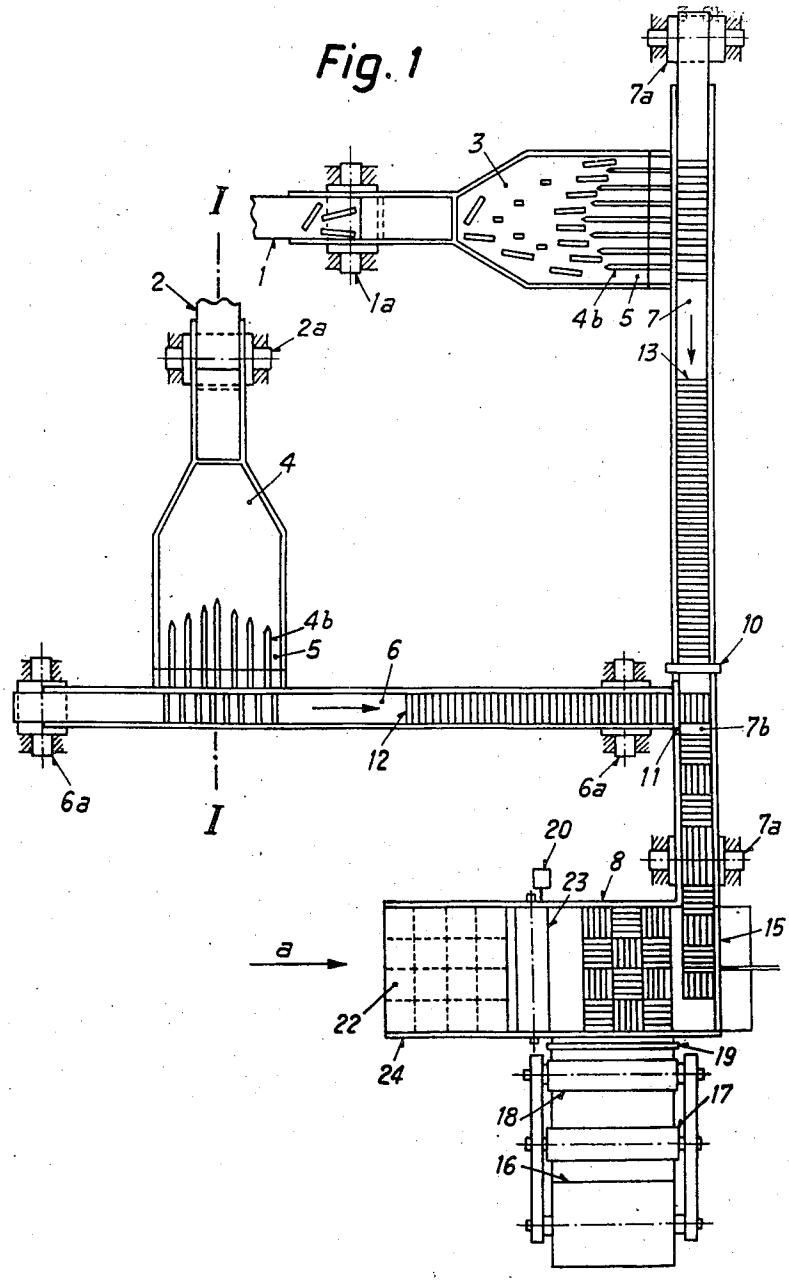
April 1, 1958 M. BAUMANN 2,828,794

MACHINE FOR ASSEMBLING MOSAIC PARQUET BLOCKS

Filed Sept. 22, 1955 3 Sheets-Sheet 1

Fig. 1



INVENTOR.
MANFRED BAUMANN
BY Leon M. Strauss
ATT.

April 1, 1958 M. BAUMANN 2,828,794

MACHINE FOR ASSEMBLING MOSAIC PARQUET BLOCKS

Filed Sept. 22, 1955 3 Sheets-Sheet 2

Fig. 2

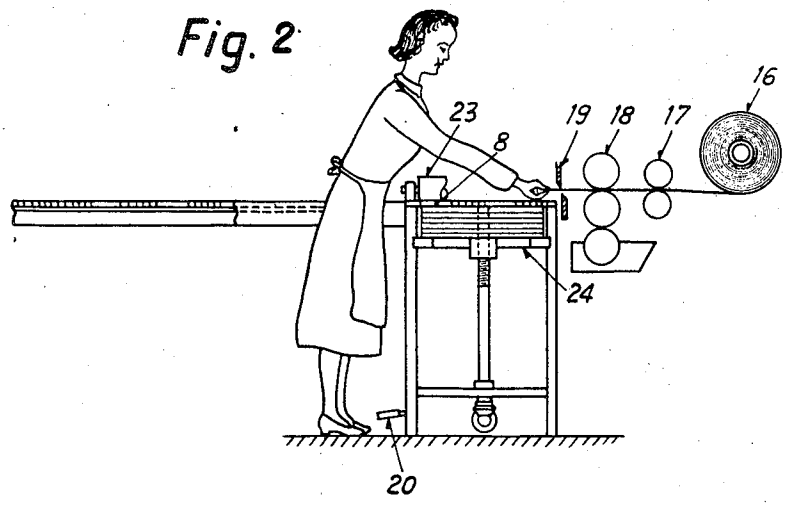
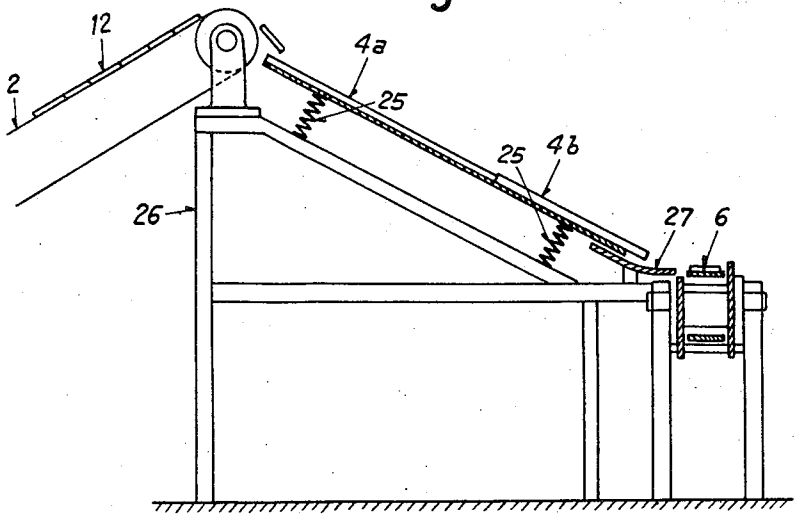


Fig. 3



INVENTOR.
MANFRED BAUMANN
BY Leon M. Strauss
AGT.

April 1, 1958 M. BAUMANN 2,828,794

MACHINE FOR ASSEMBLING MOSAIC PARQUET BLOCKS

Filed Sept. 22, 1955 3 Sheets-Sheet 3

Fig.4

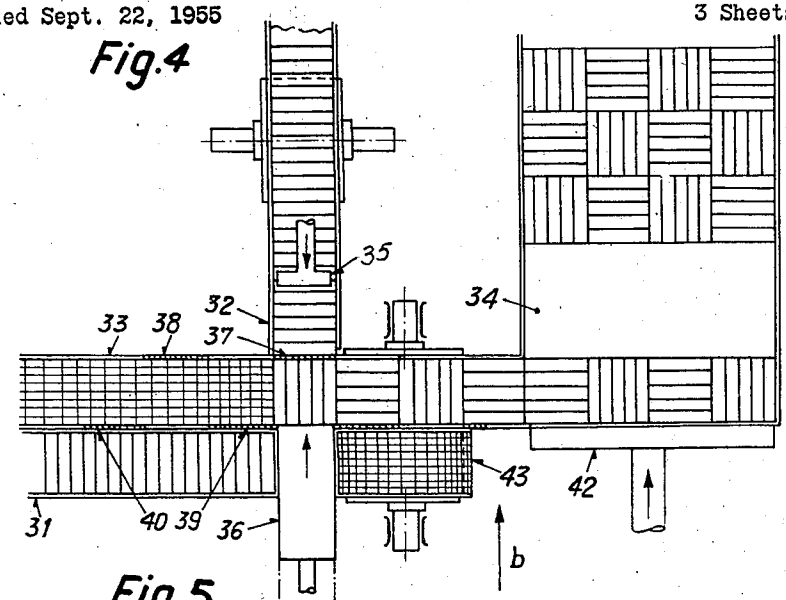


Fig.5

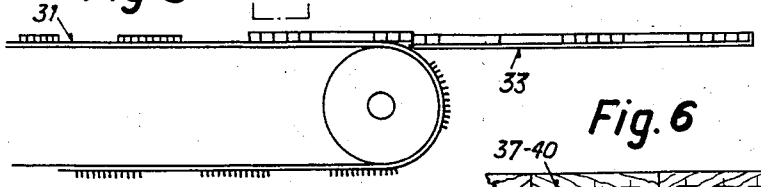


Fig.6

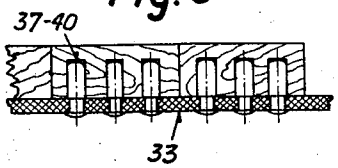
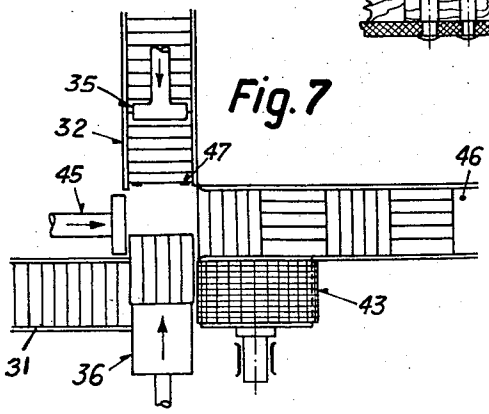


Fig.7



INVENTOR.
MANFRED BAUMANN
BY Leon M. Strauss
ATT.

United States Patent Office 2,828,794 Patented Apr. 1, 1958

2,828,794

MACHINE FOR ASSEMBLING MOSAIC PARQUET BLOCKS

Manfred Baumann, St. Margrethen, Switzerland, assignor to Bauwerk A. G., St. Margrethen, Switzerland, a Swiss company

Application September 22, 1955, Serial No. 535,936

Claims priority, application Switzerland September 24, 1954

10 Claims. (Cl. 154—1.6)

The kind of floor known as a mosaic parquet, which consists of a number of small wooden strips not directly connected to one another, is generally, with a view to being subsequently laid in a building, prepared on the manufacturer's premises by the assembly of small wooden strips into a pattern, the strips so assembled being then connected together by means of a sheet of paper or other suitable means. In the past this assembly of the individual wooden strips has been performed almost exclusively by manual labor, the individual wooden strips, preferably of rectangular shape, being assembled in different directions in order to impart a pleasing appearance to the finished floor. A pattern of chess-board type, in which a specific number of strips with their grain-directions parallel are assembled into squares, the squares then being laid side by side with their respective grain-directions offset by 90°, is very popular.

The object of the present invention is a machine characterized by the fact that the individual wooden strips are conveyed by two feed devices, which are approximately at right angles to each other, to a gate portion whose positively controlled gates open the exit from the feed devices for a certain number of strips at a time in the sequence necessary for the assembly of the desired mosaic pattern.

A typical embodiment of the machine is illustrated in the annexed drawing, in which:

Fig. 1 is a plan view of the machine,

Fig. 2 is a view in the direction of the arrow *a* in Fig. 1,

Fig. 3 is a sectional view taken along the line I—I in Fig. 1,

Fig. 4 is a plan view of an alternative machine in which one conveyor belt is used to carry away the strips fed by two conveyor belts,

Fig. 5 is a view taken in the direction of the arrow *b* in Fig. 4,

Fig. 6 is a section of the common conveyor belt according to Fig. 4, and

Fig. 7 is a plan view of another alternative machine in which a table is used as the common conveying means for the strips.

Conveyor belts **1** and **2**, running over rollers **1***a* and **2***a*, lead from machines or strip discharge stations (Figs. 1 and 2) to shaking devices **3** and **4** or other suitable strip feed means in which the strips are aligned by channels **5** formed by ribs **4***b* and are discharged on to conveyor belts **6** and **7** in a position transverse to the centerlines of said belts. Said shaking devices are disposed between at least one strip discharge station and one conveyor belt each. One of said conveyor belts, **7**, leads via rollers **7***a* to the block assembly device **8**, while the conveyor belt **6** abuts the conveyor belt **7** via rollers **6***a* at an at least approximately right angle between the block assembly device **8** and the shaking device **3**. A gate **10** is disposed above the conveyor belt **7**, and the conveyor belt **6** is blocked by the gate **11**. The flow of strips **12** and **13**, which lie on the belt transversely to the centerline thereof and in such a manner as to be

freely displaceable thereupon, is arrested or released by the alternate opening and closing of the gates **10** and **11**. The gates **10** and **11** can be controlled through control devices in accordance with a specific rhythm so that, as is shown, the alternate squares of strips conveyed from the common region adjacent the discharge portions of the belts **6** and **7** to the assembly device **8** by part **7***b* of the conveyor belt **7** are disposed transversely and longitudinally of said belt, respectively. In the assembly of the individual blocks or squares into a composite block of sixteen squares, it is necessary that the last square in every group of four squares should be aligned in the same direction as the first square in the group of four squares succeeding it on the conveyor belt. If a block consisting of, for example, sixteen squares of strips is assembled on the assembly device **8**, then through a gear not shown in the drawing the group is pushed forward on the assembly device by a pusher **15** and a sheet of paper is glued over it so that the strips are held together. For this purpose a paper spool **16**, paper feed rollers **17**, gluing rollers **18** and cutting-off knives **19** are provided alongside the assembly device **8** and are set in operation through a gear not shown in the drawing, by the operation of a pedal **20** by the operator, to coat the underside of a strip of paper with glue and cut it to the desired length. Said strip of paper, coated with glue on its underside, is applied to the blocks by the operator, whereupon the assembled composite mosaic block **22** is discharged under elastic press-up rollers **23** by the pusher **15** on to an automatically lowered stacking table **24**.

Fig. 3 shows a cross-sectional view of a strip feeding means in the form of a shaking table. The strips **12** are raised by means of the conveyor belt **2** from a machine or discharge station and fall on to the shaker plate **4***a*. Said plate is loosely attached to the frame **26** by means of springs **25**, so that it can be shaken by a vibrator not shown in the drawing. The shaker plate **4***a* is provided with ribs **4***b* forming the channels **5** in which the strips are aligned in a direction transverse to the conveyor belt and are transferred to the conveyor belt **6** via the transfer plate **27** at the lower end of the shaker plate **4***a*.

Instead of only two conveyor belts, it is also possible to use a larger number of conveyor belts converging upon one such belt.

An alternative embodiment of the machine is shown in Figs. 4 to 7.

The strips are brought up by the conveyor belt **31** and by the conveyor belt **32** approaching said belt at a right angle. Between said two conveyor belts is disposed a common conveyor belt **33** which merely receives squares of strips from the two conveyor belts and conveys them to the collecting table **34**, said conveyor belt **33** moving intermittently.

Said conveyor belt **33** is provided at both edges, over a distance equal to the length of one square of strips, with stops **37** to **40** arranged in such a manner that they permit the forward feed of strips from belt **31**, at the same time blocking the feed of strips from belt **32**, and vice versa. By means of the pushers **35** and **36** squares of strips are fed alternately on to the conveyor belt **33**, which moves forward by paces each equal to the length of one square. As each successive group of four squares of strips used for the formation of a block of sixteen squares has a different sequence of longitudinally and transversely aligned squares, the stops must be arranged accordingly, that is to say in such a manner that on the side of the belt that is the left side in the direction of travel the stops **37** and **38** permit the charging of the transversely aligned strips and on the right-hand side of the belt the stops **39** and **40** permit the charging of

the strips aligned in the direction of conveyance, from belt 32. If the first sequence terminates with a square of transversely aligned strips, then the next sequence likewise begins with a square of transversely aligned strips, the following sequence being thereby yielded: 1—1— —1—1 1—1— —1—1 1—1— and so forth. Four squares at a time are discharged by a pusher 42 on to the block assembly device or table 34, on which sixteen individual blocks or squares of strips are joined together into a composite block by the gluing on of a sheet of paper or the like.

Belts 31 and 33 are led over the common roller 43, which is given a rotary pacing motion by means not shown.

Fig. 6 shows a longitudinal sectional view of a part of the belt 33 in which the groups of stops 37 and 38 and 39 and 40 respectively are mounted. The movement of the pushers 35 and 36, which must likewise take place in accordance with the aforesaid rhythm, may be effected by a pressure medium controlled by a control instrument and acting upon a piston, none of these instrumentalities being shown.

A further alternate embodiment is illustrated in Fig. 7. In this embodiment the conveyor belt 33 is replaced by a pusher 45 which pushes forward the squares of strips discharged by the pushers 35 and 36 on to the common conveyor table 46. This embodiment necessitates the use of stops 47 which arrest or release the supply from belt 32. Said stops 47, and the pushers 35, 36 and 45 may likewise be operated by a pressure medium or electrically through a control instrument.

Various changes and modifications may be made without departing from the spirit and scope of the present invention and it is intended that such obvious changes and modifications be embraced by the annexed claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. A machine for assembling mosaic parquet blocks from strips, comprising the combination with first and second strip-transporting conveyor means arranged substantially at right angles to one another and having their strip-discharging portions located adjacent a region common to both said conveyor means, of first and second shaking means positioned adjacent the strip-receiving portions of said first and second conveyor means, respectively, each of said shaking means being constructed to parallelize strips disposed thereon and to transfer the same in parallel condition to the associated conveyor means for movement thereby to said common region with the longitudinal axes of said strips on the respective conveyor means extending transversely to the direction of motion of said respective conveyor means, a block assembly device, third conveyor means extending from said region common to said first and second conveyor means to said block assembly device for transferring said strips to the latter from said common region, and first and second operating means controlled in accordance with a predetermined number of said strips intended to constitute each parquet block and arranged to alternately permit transfer of further strips from said first and second conveyor means, respectively, to said common region and said third conveyor means after said predetermined number of strips has been transferred to said third conveyor means from the respective first and second conveyor means.

2. A machine according to claim 1, said first and second conveyor means comprising two continuously moving conveyor belts, said strips being disposed on said belts transversely to the respective center lines thereof.

3. A machine according to claim 1, each of said shaking means comprising a vibratory conveyor defining a plurality of parallel channels at its end adjacent the associated first and second conveyor means, said channels receiving strips transported along said vibratory conveyor and aligning said strips in parallel relation for transfer to said associated conveyor means.

4. A machine according to claim 1, said third conveyor means being constituted by an extension of one of said first and second conveyor means, whereby said common region is the intersection of said first and second conveyor means, and pusher means displaceable transversely to the direction of movement of said third conveyor means for displacing a plurality of said blocks of strips simultaneously from said third conveyor means onto said assembly device.

5. A machine according to claim 1, further comprising a sheet material feed unit positioned adjacent said assembly device for dispensing a reach of sheet material over said parquet blocks when positioned on said assembly device, means for applying glue to that surface of said sheet material disposed for contact with said blocks, whereby said sheet material may be glued to a group of said blocks, and a self-lowering stacking unit positioned adjacent said assembly device for sequentially receiving groups of blocks glued to said sheet material.

6. A machine according to claim 1, said third conveyor means comprising a separate conveyor table extending parallel to one of said first and second conveyor means and transversely to the other of said first and second conveyor means, said first and second operating means comprising first and second pusher means for alternately transferring respective groups of strips from said first and second conveyor means to said common region, respectively, and said third conveyor means further comprising additional pusher means for transferring said groups of strips sequentially from said common region to said conveyor table.

7. A machine according to claim 1, said third conveyor means extending at least partly along one of said first and second cenveyor means and arranged for stepwise movement in the direction of said assembly device.

8. A machine according to claim 7, said third conveyor means comprising a conveyor belt provided along its opposite sides with stops, the stops on each side of said conveyor belt being spaced from one another and staggered with respect to the stops on the opposite side of said conveyor belt.

9. A machine for assembling mosaic parquet blocks from strips, comprising the combination with first and second strip transporting conveyor means having strip receiving portions and arranged substantially at right angles to one another and having their strip discharging portions located adjacent a region common to both said conveyor means, of strip feeding means positioned adjacent said strip receiving portions of said first and second conveyor means, respectively, said strip feeding means being constructed to direct strips disposed thereon and to transfer the same in substantially parallel relationship to each other onto the associated conveyor means for movement thereby to said common region with the longitudinal axes of said strips on the respective conveyor means extending transversely to the direction of motion of said respective conveyor means, a block assembly device, third conveyor means extending from said region common to said first and second conveyor means to said block assembly device for transferring said strips to the latter from said common region, and first and second operating means controlled in accordance with a predetermined number of said strips intended to constitute each parquet block and arranged to alternately permit transfer of further strips from said first and second conveyor means, respectively, to said common region and said third conveyor means after said predetermined number of strips has been transferred to said third conveyor means from the respective first and second conveyor means.

10. A machine for assembling mosaic parquet blocks from strips, comprising the combination with first and second strip transporting conveyor means having strip receiving portions and arranged substantially at right angles

to one another and having their strip discharging portions located adjacent a region common to both said conveyor means, of strip feeding means positioned adjacent said strip receiving portions of said first and second conveyor means, respectively, said strip feeding means being constructed to support the strips disposed thereon and to transfer the same in parallel relationship to each other onto the associated conveyor means for movement thereby to said common region with the longitudinal axes of said strips on the respective conveyor means extending transversely to the direction of motion of said respective conveyor means, a block assembly device, third conveyor means extending from said region common to said first and second conveyor means to said block assembly device for transferring said strips to the latter from said common region, first and second operating means controlled in accordance with a predetermined number of said strips intended to constitute each individual parquet block and arranged to alternately permit transfer of further strips from said first and second conveyor means, respectively, to

said common region and said third conveyor means after said predetermined number of strips has been transferred to said third conveyor means from the respective first and second conveyor means, and a sheet material feed unit positioned adjacent said block assembly device for dispensing a reach of sheet material over a predetermined number of said individual parquet blocks when positioned on said assembly device, whereby said sheet material may be secured to said predetermined number of individual parquet blocks to thereby form a composite parquet block unit.

References Cited in the file of this patent

UNITED STATES PATENTS

1,491,335	Childers	Apr. 22, 1924
1,724,764	Jones et al.	Aug. 13, 1929
2,401,648	Kahr	June 4, 1946
2,713,380	Baumann	July 19, 1955
2,725,910	Kahr	Dec. 6, 1955