R. S. WHITE, Jr. & C. N. BANCROFT.

ROTARY WALL BLOCK MACHINE.

APPLICATION FILED MAR. 30, 1911.

1,087,475.

Patented Feb. 17, 1914.

4 SHEETS—SHEET 1.

Fig. 1.

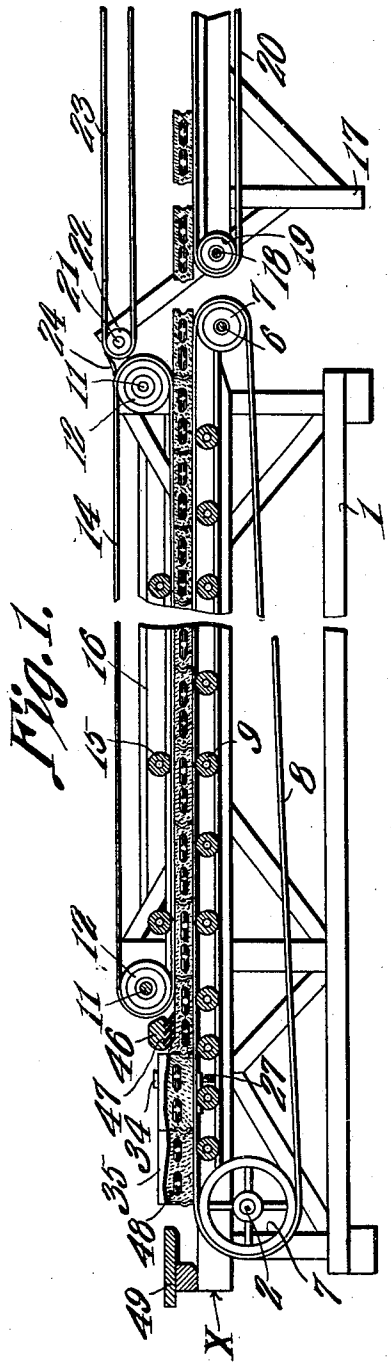
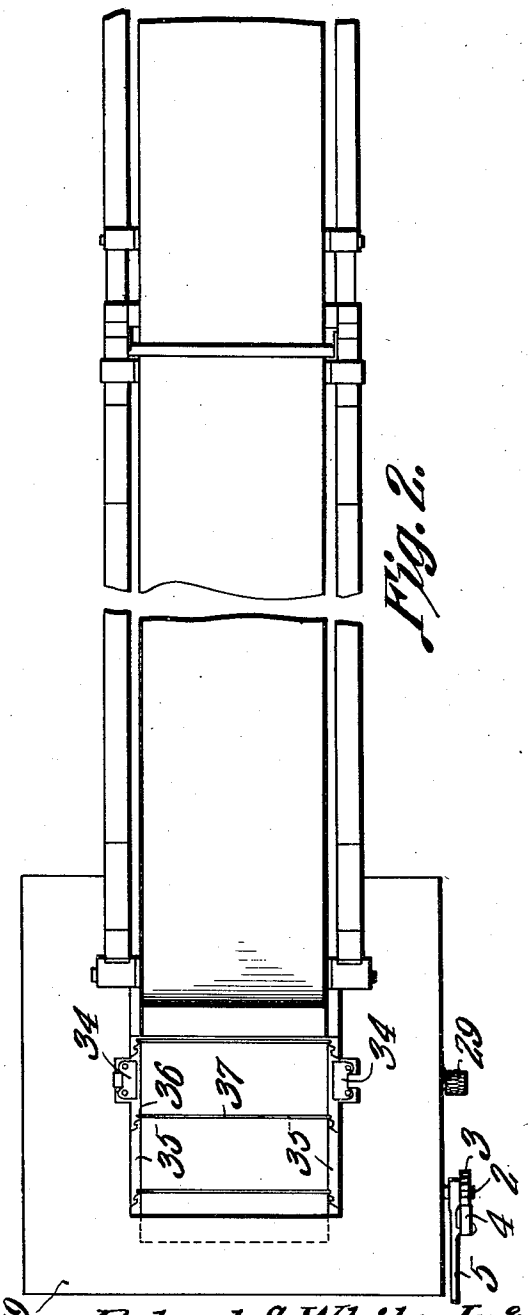


Fig. 2.



Witnesses

J. P. Fowler

L. H. Wilson

Robert S. White Jr. and Charles N. Bancroft, Inventors

by C. A. Snow & Co.

Attorneys

R. S. WHITE, Jr. & C. N. BANCROFT.

ROTARY WALL BLOCK MACHINE.

APPLICATION FILED MAR. 30, 1911.

1,087,475.

Patented Feb. 17, 1914.

4 SHEETS—SHEET 2.

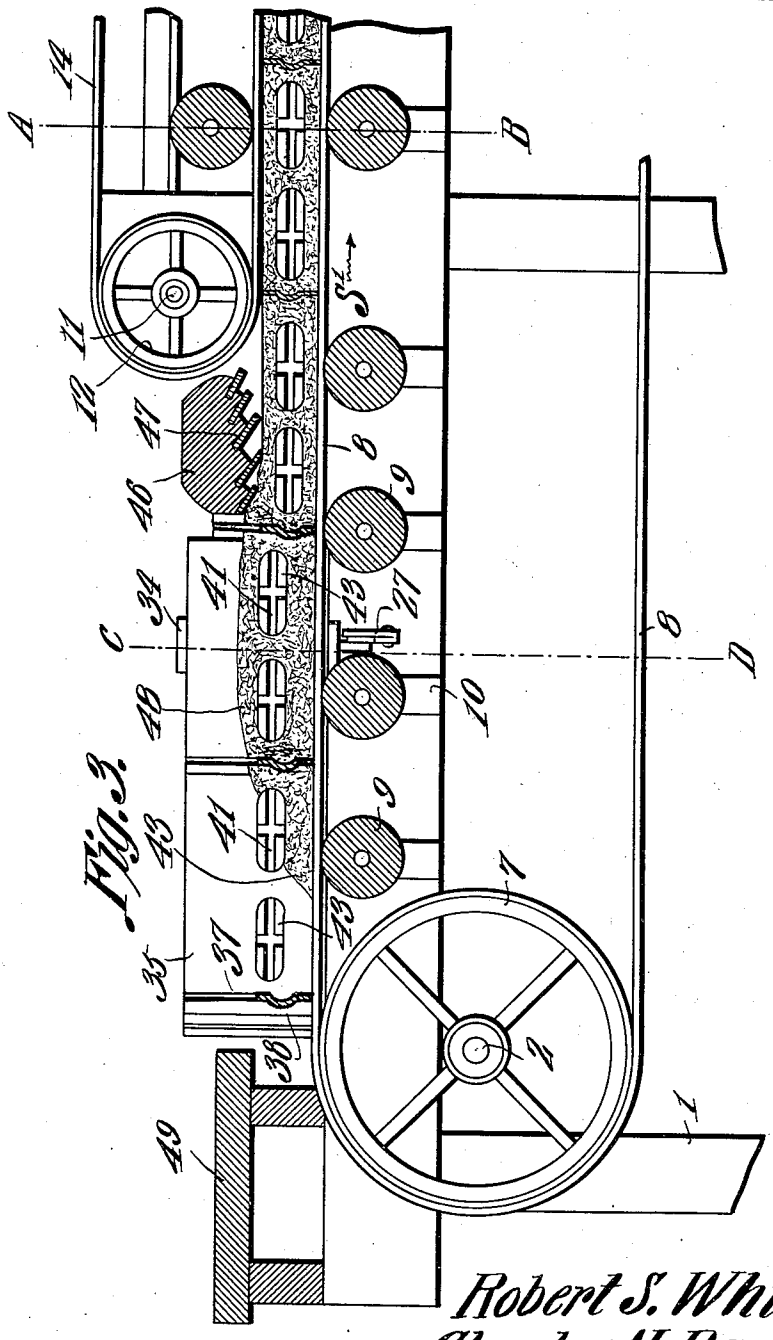


Fig. 3.

Witnesses

J. R. Lonein

L. H. Wilson

Robert S. White Jr.

Charles N. Bancroft,

Inventors

by C. A. Snow & Co.

Attorneys

R. S. WHITE, JR. & C. N. BANCROFT.

ROTARY WALL BLOCK MACHINE.

APPLICATION FILED MAR. 30, 1911.

1,087,475.

Patented Feb. 17, 1914.

4 SHEETS—SHEET 3.

Fig. 4.

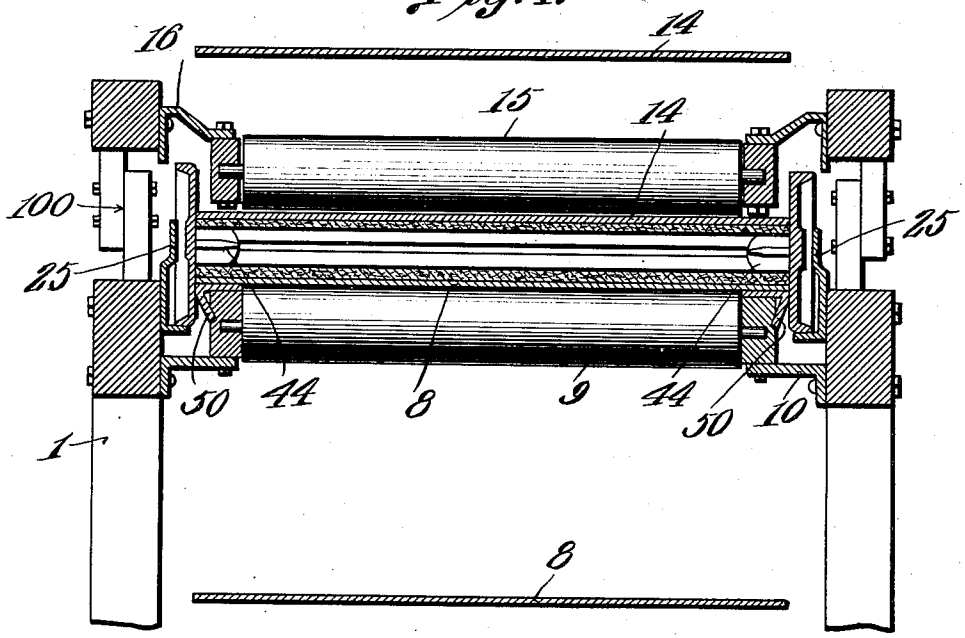
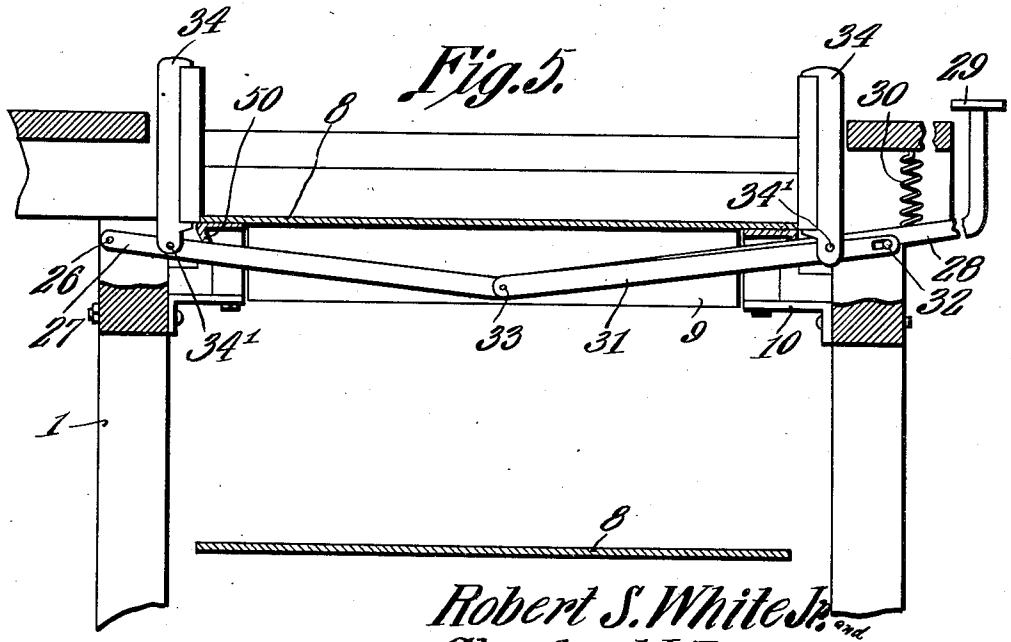


Fig. 5.



Witnesses

J. R. Somers

L. H. Wilson

Robert S. White Jr. and Charles N. Bancroft, Inventors

by C. A. Snow & Co.

Attorneys

R. S. WHITE, Jr. & C. N. BANCROFT.

ROTARY WALL BLOCK MACHINE.

APPLICATION FILED MAR. 30, 1911.

1,087,475. Patented Feb. 17, 1914.

4 SHEETS—SHEET 4.

Fig. 12.



Fig. 6.

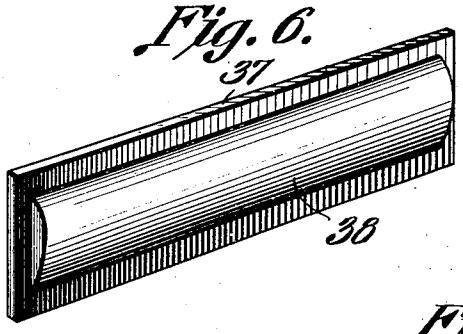


Fig. 7.

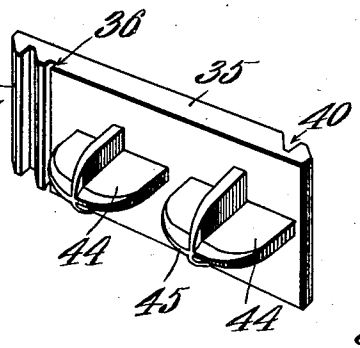


Fig. 8.

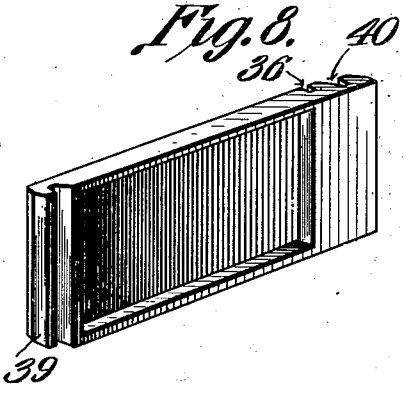


Fig. 9.

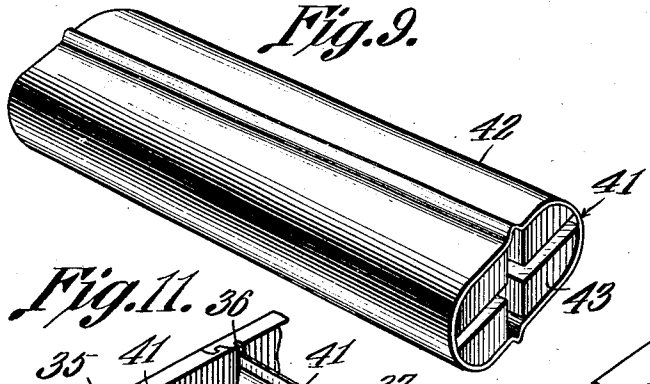


Fig. 11.

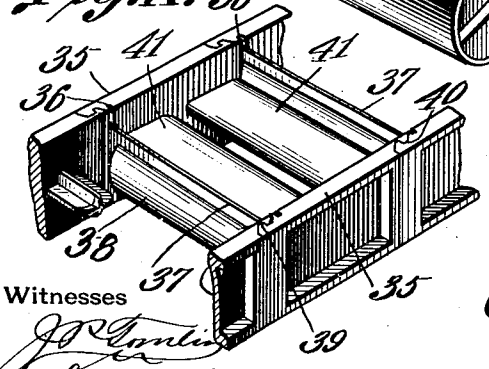
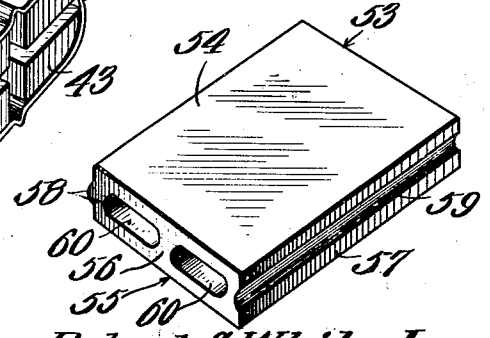


Fig. 10.



Witnesses

J. R. Tomlin

L. H. Wilson.

Robert S. White Jr. and Charles N. Bancroft, Inventors

by C. A. Snow & Co.

Attorneys

UNITED STATES PATENT OFFICE.

ROBERT S. WHITE, JR., AND CHARLES N. BANCROFT, OF BICKFORD, OKLAHOMA.

ROTARY WALL-BLOCK MACHINE.

1,087,475. Specification of Letters Patent. Patented Feb. 17, 1914.

Application filed March 30, 1911. Serial No. 617,860.

To all whom it may concern:

Be it known that we, ROBERT S. WHITE, Jr., and CHARLES N. BANCROFT, citizens of the United States, residing at Bickford, in the county of Blaine, State of Oklahoma, have invented a new and useful Rotary Wall-Block Machine, of which the following is a specification.

It is the object of this invention to provide novel means whereby a pair of spaced conveyers may be employed for the double purpose of conveying away a series of molds, and for forming the tops and bottoms of the molds.

Another object of the invention is to provide novel means for properly positioning the molds with respect to the conveyers.

A further object of the invention is to provide novel means for conveying away the finished product of the molds, and to provide novel means for returning the constituent elements of the molds, after the products thereof have been fashioned.

Another object of the invention is to provide a mold of novel and improved form.

In the accompanying drawings,—Figure 1 shows the invention in vertical longitudinal section, parts appearing in elevation; Fig. 2 is a top plan; Fig. 3 is a longitudinal sectional detail enlarged from Fig. 1; Fig. 4 is a vertical transverse section upon the line A—B of Fig. 3; Fig. 5 is a vertical transverse section upon the line C—D of Fig. 3; Fig. 6 is a perspective of one of the side plates of the mold. Fig. 7 is a perspective showing one face of one of the end plates of the mold; Fig. 8 is a perspective showing the opposite face of the structure depicted in Fig. 7; Fig. 9 is a detail perspective of the core; and Fig. 10 is a detail perspective of the finished product. Fig. 11 is a perspective of the mold, set up; and Fig. 12 is a transverse section of the division plate shown in Fig. 6.

In the drawings, that end of the structure to which the reference character X is applied, will be considered the forward end, terms being selected accordingly in describing the locations of the parts.

In carrying out the invention there is provided as a primary and fundamental element, a frame 1, adjacent the forward end of which is journaled for rotation a shaft 2, carrying, as shown in Fig. 2, a ratchet 3, adapted to be engaged by a pawl 4, pivoted to a lever 5, movably mounted upon the shaft 2, or otherwise supported. Journaled for rotation upon the frame 1, adjacent the rear end thereof, is a shaft 6, the shafts 2 and 6 carrying pulleys 7, about which is passed a belt 8. The upper run of the belt 8 is supported by rollers 9, journaled for rotation in frame-carried bearing brackets 10.

Journaled for rotation in the frame 1, above the belt 8, are spaced shafts 11, one of which is spaced slightly from the forward end of the machine, as clearly appearing in Fig. 1. The shafts 11 carry pulleys 12, about which is passed a belt 14, the lower run of which is held depressed by means of rollers 15, journaled for rotation, transversely of the frame 1, in frame-supported bearing brackets 16.

Disposed transversely of the frame 1, and supported thereby, intermediate the forward end of the frame 1 and one of the pulleys 12 about which the belt 14 is passed, is a scraper, comprising a bar 46, carrying depending, resilient blades 47.

The invention further includes an auxiliary frame 17, extended in the same direction as the frame 1, and located adjacent the rear end of the frame 1. In the auxiliary frame 17, there is journaled for rotation a shaft 18, carrying a pulley 19, about which is trained a belt 20. The upper run of the belt 20 is disposed in the same plane as the upper run of the belt 8. Likewise journaled for rotation in the auxiliary frame 17, and located above the shaft 18, is another shaft 21, carrying a pulley 22, about which is trained a belt 23. The upper run of the belt 23 is disposed substantially in a common plane with the upper run of the belt 14, a suitable bridge plate 24 being disposed between the adjacent ends of the belts 14 and 23.

Along the inner faces of the frame 1, are oppositely disposed guides 25, extended longitudinally of the frame. Disposed transversely of the frame 1, adjacent the forward end of the frame, but spaced therefrom, and fulcrumed at 26 upon the frame, is a lever 27, one end of which is extended beyond the frame, as shown at 28, the extension 28 of the lever terminating in a foot plate 29. The free end of the lever 27 is normally maintained uplifted, by means of a retractile spring 30, one end of which is secured to the lever 27, adjacent

its free end, the other end of the spring 30 being secured to any convenient portion of the frame 1. An auxiliary lever 31 is disposed transversely of the frame 1, this lever 31 being fulcrumed upon the frame, as shown at 32. The fulcrum points 26 and 32 of the levers 27 and 31, respectively, are located upon opposite sides of the frame, the auxiliary lever 31 extending toward the longitudinal center of the frame. The inner end of the auxiliary lever 31 is pivotally connected, as shown at 33, with the intermediate portion of the lever 27. Upright jaws 34 are disposed upon either side of the belt 8, these jaws 34 being pivotally connected, as shown at 34′, with the levers 27 and 31. The jaws 34 are adapted to reciprocate vertically, at right angles to the guides 25.

The structure hereinbefore described, is adapted to be employed in connection with a series of molds, and before explaining the manner in which these molds are employed in connection with the machine, a description of the molds themselves, will be given.

Noting Figs. 6 to 11 particularly, it will be seen that each mold consists of a pair of end plates 35, oppositely disposed. Each of the end plates 35 is notched, adjacent one end, as shown at 36, to receive a division plate 37, these division plates 37 forming the sides of the molds. Each division plate 37 is supplied with an outstanding, longitudinally disposed rib 38. The end plates 35 are provided with transverse flanges 39, adapted to register in grooves 40 of the next adjoining side plates, the construction being such that a long series of side plates 35 may be terminally interlocked, the partitions 37 being held in place in the grooves 36, as hereinbefore described.

Extended transversely of the mold, is a core 41. There may be any number of these cores, depending upon the number of openings which it is desired to form in the finished block. Each core 41 embraces a tubular, resilient covering 42, to the inner face of which are secured a series of segmental, longitudinally extended blocks 43. Projecting inwardly from the side plates 35, are angularly disposed tongues 44, the extremities of wh'ch are beveled, as shown at 45. These tongues 44 are adapted to register in the spaces between the segmental blocks 43 of the core, in order to expand the covering 42, as will be described hereinafter.

In order that blocks of different thicknesses may be fashioned in the same machine, the pulleys 11, the belt 14 and the rollers 15 are made vertically movable. To effect this end, that portion of the frame 1 which carries the elements above enumerated, is adjustably united with the base portion of the frame, as denoted by the numeral 100 in Fig. 4.

The operation of the device is as follows: The side plates 35 are set up longitudinally of the machine, adjacent the forward end thereof, the tongues 44 of the side plates 35 entering the openings between the segmental blocks 43 of the cores 41, and expanding the covers 42. The partitions 37 are mounted in place in the grooves 36, the ribs 38 of the partitions extending toward the center of the mold. The side plates 35 of one mold are assembled with the side plates 35 of the next adjacent mold, by inserting the flanges 39 of the side plates 35 of one mold, into the grooves 40 of the mold next adjacent. The concrete or other plastic material is shoveled upon the upper run of the belt 8, adjacent the forward end of the machine between the side plates 35, and beneath the cores 41, as denoted by the numeral 48 in Fig. 3. The concrete which is beneath the cores 41 serves to support the side plates 35 prior to the engagement of the side plates with the jaws 34. Referring to Fig. 3 it will be noted that the side plates 35 upstand at a considerable distance above the upper run of the belt 8, thus permitting the concrete to be deposited below the cores 41. The operator, taking his stand upon a suitable platform 49, located adjacent the forward end of the machine, seizes the lever 5 and rotates the drive shaft 2, advancing the upper run of the belt 8. The several molds which rest upon the upper run of the belt 8 will thus be carried forward. The side plates 35 of the molds will ultimately pass within the jaws 34. The foot of the operator is then placed upon the plate 29 of the lever 27, whereupon, through the coöperation of the levers 27 and 31, the jaws 34 will be depressed, carrying with them the side plates 35 of the mold. The molds will thus be depressed, so that the side plates 35 occupy approximately the positions shown in Fig. 4. The concrete will thus be permitted to pass beneath the scraper bar 46, the elements 47 of which will scrape the surplus concrete forwardly, into the next adjoining mold. The belt 8 will thus advance the molds and dispose their contents between the lower run of the belt 14, and the upper run of the belt 8, the upper run of the belt 8 and the lower run of the belt 14 advancing in the direction of the arrow S′ in Fig. 3, the belt 14 being actuated in any desired manner. It will be seen that the belts 14 and 8 thus coöperate to form the upper and lower surfaces of the finished block. The continued movement of the belt 8 ultimately deposits the molds and the blocks upon the upper run of the auxiliary conveyer belt 20. The molds may now be removed from the finished block, the mold parts being placed upon the upper run of the belt 23, which will deliver these parts, through the instrumentality of the bridge plate 24, upon the upper run of the belt 14,

the mold parts being thus carried forward within reach of the operator, whereupon the parts may be assembled again, for further coöperation with the belts 14 and 8. While the molds are moving with the belts 14 and 8, a leakage between the upper run of the belt 8 and the plates 35 is prevented by resilient strips 50, supported upon the bearing brackets 10, as shown in Fig. 4, these elements 50 fitting closely within the angles defined by the lower run of the belt 8 and the plates 35 of the molds.

When the molds are disposed above the forward end of the lower belt 8, as shown at the left hand end of Fig. 3, the concrete may be shoveled readily beneath the cores 41. Subsequently, the molds may be depressed, in the manner hereinbefore described, the concrete which lies between the cores 41 and the upper run of the lower belt 8 being compacted and pressed upwardly above the cores. When the concrete then passes beneath the scraper blades 47, these blades, being resilient, will compact the concrete which lies above the cores 41, thus making the product homogeneous. When the molds move with the belts 8 and 14, the upper surfaces of the blocks will be rendered smooth, by reason of the fact that the lower run of the belt 14 is held against the upper face of the material by means of the rollers 15. It will be recalled that a connected string of molds is continuously passing along with the belts 8 and 14. To advance the string of connected molds, through friction with the lower belt only, would be mechanically impossible, in the absence of interlocking elements upon the molds and upon the lower belt. In the present instance, the string of molds may be advanced readily owing to the fact that the upper belt 14 engages the molds. The molds, therefore, are engaged along their upper and lower edges, between the spaced belts, the construction being such that the entire string of molds will be advanced evenly and without slipping.

The numeral 53 indicates the finished block, and it will be understood that the face 54 of this block is fashioned by the lower run of the belt 14, the opposite face 55 being fashioned by the upper run of the belt 8. The side faces 56 of the block are fashioned by the side plates 35, the end faces 57 of the block 53 being fashioned by the partitions 37. The ribs 38 of the plates 37 serve to fashion the tongues and grooves 58 and 59 respectively, in the block, the cores 41 forming the openings 60 in the finished block.

Having thus described the invention, what is claimed is:—

1. A mold comprising a core consisting of a yieldable covering and segmental blocks within the covering; and side members having outstanding elements adapted to enter between the blocks to expand the covering.

2. In a device of the class described, core supporting side plates; a conveyer; means for moving the side plates with respect to the conveyer; and means for advancing the conveyer transversely of the direction of movement of the side plates.

3. In a device of the class described, a frame; interlocked levers supported by the frame; a conveyer; jaws carried by the levers and movable with respect to the conveyer; mechanism for advancing the conveyer transversely of the direction of movement of the jaws; and core supporting side plates engageable by the jaws.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

ROBERT S. WHITE, Jr.
CHARLES N. BANCROFT.

Witnesses:
W. S. Estep,
L. A. Everhart.