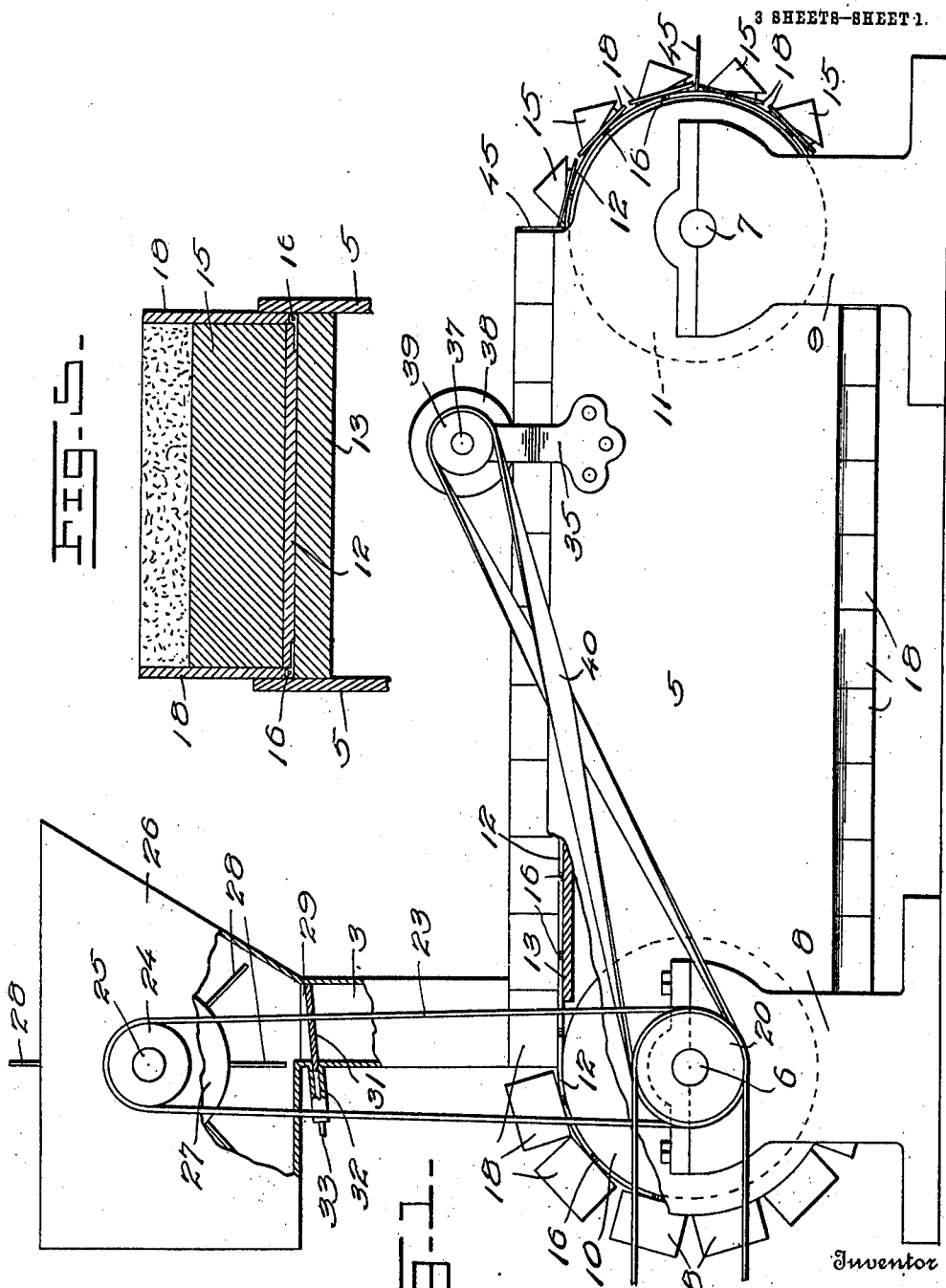


W. M. COWLEY.
GYPSUM BLOCK MAKING MACHINE.
APPLICATION FILED JAN. 28, 1910.

980,144.

Patented Dec. 27, 1910.

3 SHEETS-SHEET 1.



Witnesses
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FIG. 1-

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3 SHEETS—SHEET 2.

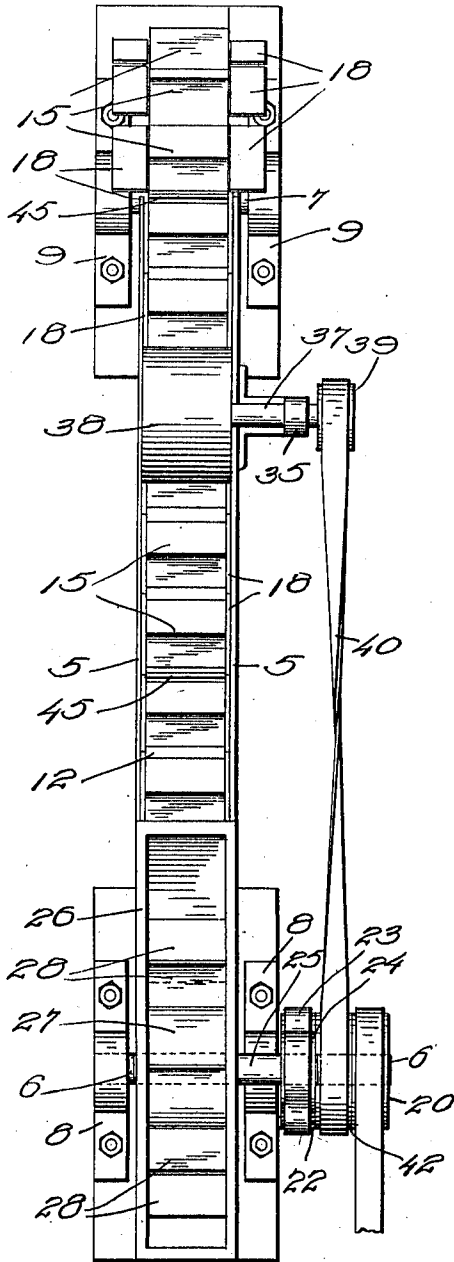


Fig. 2.

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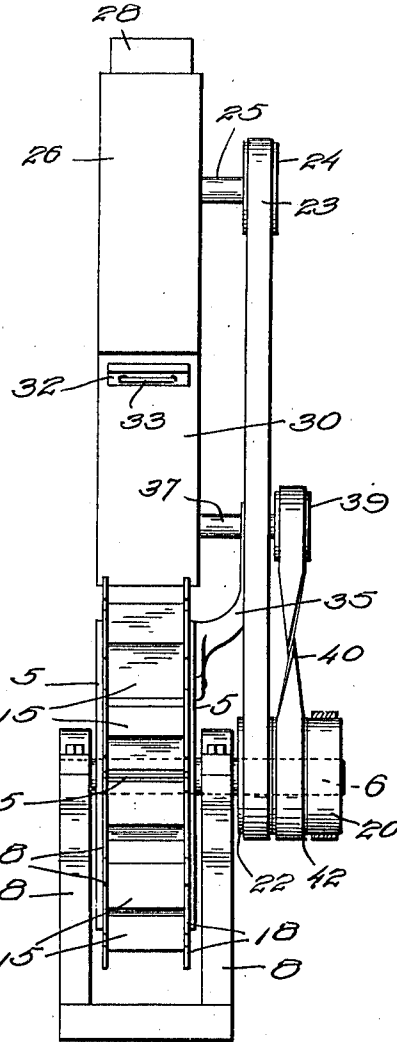


Fig. 3.

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3 SHEETS-SHEET 3.

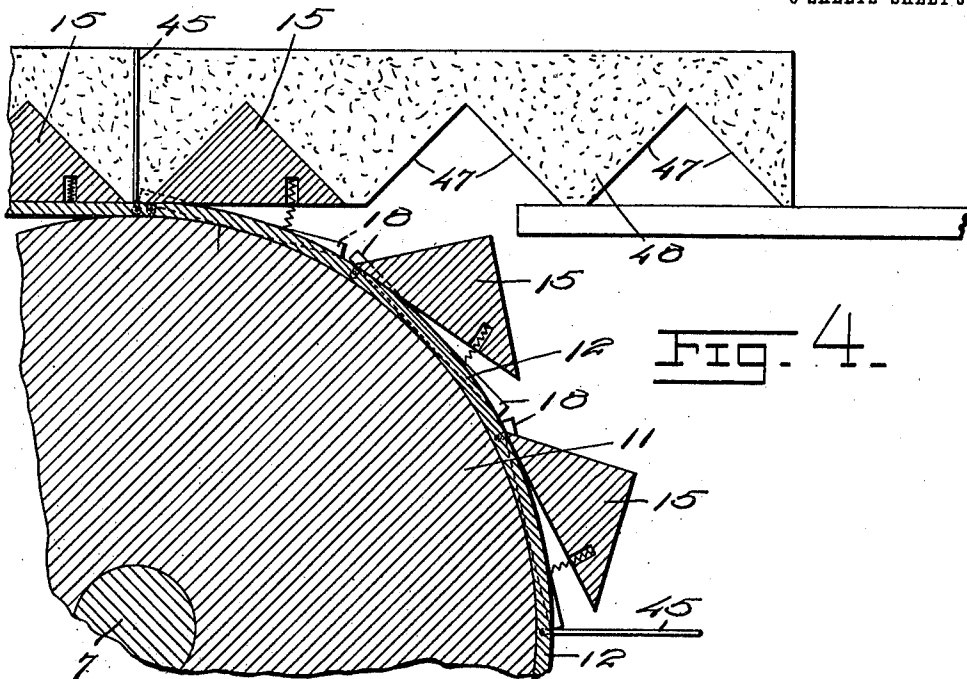


Fig. 4.

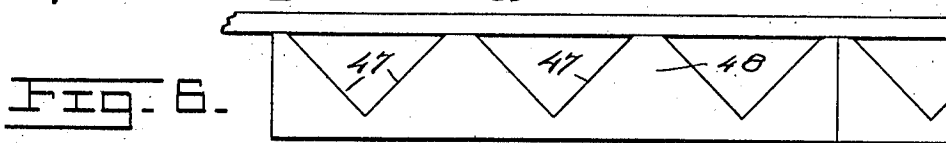


Fig. 6.

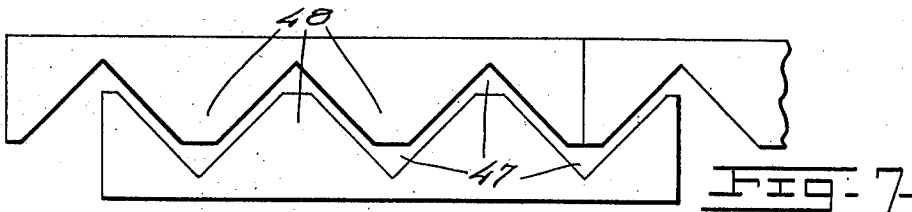


Fig. 7.

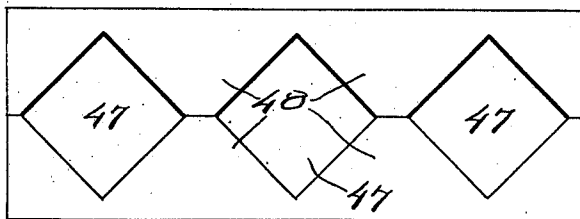


Fig. 8.

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UNITED STATES PATENT OFFICE.

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GYPSUM-BLOCK-MAKING MACHINE.

980,144.

Specification of Letters Patent. **Patented Dec. 27, 1910.**

Application filed January 28, 1910. Serial No. 540,556.

To all whom it may concern:

Be it known that I, WILLIAM M. COWLEY, a citizen of the United States, residing at Richfield, in the county of Sevier and State of Utah, have invented certain new and useful Improvements in Gypsum-Block-Making Machines, of which the following is a specification.

This invention has relation to certain new and useful improvements in gypsum block making machines.

The object of my invention is to provide a machine so constructed that the same may be continuously operated in the manufacture of gypsum building blocks.

With the above and other objects in view the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and particularly pointed out in the appended claims, it being understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a part of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 shows a side view of a machine embodying my invention. Fig. 2 shows a top view thereof. Fig. 3 shows an end view. Fig. 4 shows a partial longitudinal section. Fig. 5 shows a partial transverse section. Fig. 6 shows one form of building block, while Figs. 7 and 8 show other modifications of a building block.

In carrying out the aim of my invention I employ a mixing hopper, an endless mold, a presser roller and means to synchronously operate said instrumentalities.

In the drawings the numeral 5 designates the two similar side members or panels of a machine constructed according to my invention through which extend the driving shaft 6 and the idler shaft 7. These shafts 6 and 7 support the side panels 5 and are respectively held within the pillow blocks 8 and 9.

Secured to the shaft 6, is the drum 10, while secured to the shaft 7 is another drum

11. Passing over these drums 10 and 11 is the endless belt 12, this belt above working over and upon the table 13, this table being held between the panels 5.

Secured to the belt 12 are the triangular mold blocks 15, while secured to the edges of the belt 12 by means of the hinges 16 are the side boards 18. As shown, the side panels 5 extend upward a suitable distance beyond the belt 12 and these ends are arranged to hold the side boards 18 firmly against the ends of the mold blocks 15. The shaft 6 is provided with a pulley 20 arranged to receive a suitable driving belt. This shaft 6 further gives support to the pulley 22, arranged to receive the endless belt 23 which passes over the pulley 24 fixed to the shaft 25, which passes through the mixing hopper 26. This shaft 25 carries the cylinder 27, from which extend the mixing blades 28. At a point below the shaft 25 the mixing hopper is provided with the discharge opening 29 communicating with the chute 30, the opening 29 being closed by means of the valve or gate 31 sliding within the slot 32 and provided with the operating handle 33. The lower end of the chute 30 terminates immediately above the side boards 18, which, as shown, extend a considerable distance above the mold blocks 15.

Extending from the side panels 5 are the bearing brackets 35 giving support to the shaft 37 carrying the presser roller 38, this roller traveling upon the side boards 18. The shaft 37 is provided with a pulley 39 arranged to receive the driving pulley or chain 40, which at the end opposite passes over the pulley 42 secured to the driving shaft 46. The mold blocks 15 are each separately secured to the belt 12, so that as these molds pass over the drum 11 at the discharge end of the machine, they open up to expel the molded brick or block.

Hingedly connected to the belt 12 at predetermined points between the blocks 15 are the dividing panels 45 which extend upward to the end of the side boards 18 and determine the length of the several building blocks. An endless conveyer of any suit-

able construction is positioned below the discharge end of the machine to receive and carry off the blocks as they drop out of the mold.

5 The gypsum is placed within the mixing hopper 26 in a semi-liquid plastic condition and this viscous mass is forced out of the hopper through the chute 30 and into the mold. These molds are, however, slowly
10 traveling below the chute, the chute ending a suitable distance above the side boards of the mold. The gypsum blocks rapidly dry but before completely hardening engage the presser roller 38, which forces and compresses the gypsum into the mold. The
15 traveling belt 12 is of such a length and travels at such a speed that by the time the building blocks are dropped out of the mold, they are sufficiently hardened to withstand the shock of dropping upon the endless drying apron or conveyer.

The shape of the building block is determined by the conformation of the mold block. In Figs. 6, 7 and 8, I show various
25 forms of blocks.

A machine constructed according to my invention is simple of construction, durable and positive of operation.

This machine is especially designed for
30 the construction of blocks of the type illustrated, and it will be observed that they are all constructed on the principle involving an approximately right angular recess 47, or a plurality of such on one side of the block, the recesses opening through the upper and lower faces of the block; and similarly formed projecting portions 48 arranged to fit snugly into the recesses 47 of
35 opposite blocks if desired, or to be disposed in registered opposition with the similar projections of other blocks, as shown in Figs. 7 and 8. It will be observed that the apices of the projections are provided with flattened surfaces whereby a broad contacting
40 portion is presented, liable in a minimum degree to fracture, and adapted to support a maximum weight.

By the use of this form of block, walls of various thicknesses may be constructed
50 with the same sized block and without the use of additional materials when wider walls are desired. With the apices of the projections disposed in registering contact as shown in Fig. 8, or separated as desired,
55 an air space is formed in the walls constructed serving to deaden the passage of sound therethrough as well as being adapted to other uses to which walls having such passages therein are put.

60 When used as illustrated in Fig. 7 a wall of unusual strength is provided, which saves considerable labor in tying the opposite layers of blocks.

It will be understood of course that the

blocks may be formed either of gypsum concrete, lime concrete, Portland cement concrete or other suitable material; and the mechanism described may be used as well in the formation of blocks from one material as from another.

Having thus described my said invention, what is claimed is:

1. The combination in a machine of the character described, of a suitably supported driving drum, a suitably supported idler
75 drum, an endless belt passing over said drum, mold blocks secured to said belt, dividing panels hingedly secured to said belt and side boards hinged to said belt for coaction with said blocks.

2. The combination with a driving drum, of an idler drum, an endless belt passing over said drum, mold blocks secured to said belt, side boards hinged to said belt adjacent to the ends of said mold block, dividing
85 panels hingedly secured to said belt and means to hold said side boards at times against said mold blocks.

3. The combination with a suitably supported endless belt, of mold blocks secured to said belt, side boards hinged to said belt arranged to work against the ends of said block, means to hold said side boards at times against said block, and dividing panels
95 hingedly secured to said belt at predetermined points between said blocks and side boards.

4. The combination with a suitably driven endless belt, of a table below said belt, mold blocks secured to said belt, dividing panels
100 secured to said belt between said molding blocks at predetermined points, side boards hingedly secured to said belt working against the end of said mold blocks, dividing panels hingedly secured to said belt at
105 predetermined points between said blocks and said boards, and means to hold said side boards at times against the end of said mold blocks.

5. The combination with a suitably supported driving drum, a suitably supported idler drum, an endless belt passing over said drum, a table positioned below said belt, mold blocks carried by said belt, side boards
110 hingedly connected to said belt, for coaction with said blocks, dividing panels hingedly secured to said belt at predetermined points between said blocks and said boards, means to hold said side boards against said mold blocks at times, a chute terminating above
120 said belt, a pressing roller, and means to synchronously operate said belt and pressing roller.

6. The combination with a suitably supported driving drum, of an idler drum suitably supported, an endless belt passing over said drum, a table below said belt, molds carried by said endless belt, a pressing roller

traveling over said rolls, a chute ending
above said molds, a hopper communicating
with said chute, a cylinder in said hopper,
mixing blades carried by said cylinder, di-
5 viding panels hingedly secured to said belt
at predetermined points between said blocks
and said boards, and means to synchronously
operate said belt, pressing roller, and cylin-

der, all arranged substantially as and for the
purpose set forth. 10

In testimony whereof I affix my signature,
in presence of two witnesses.

WILLIAM M. COWLEY.

Witnesses:

R. W. SENEX,
PARLEY POULSON.