

BLOCK MAKING MACHINE.

967,467.

Patented Aug. 16, 1910.

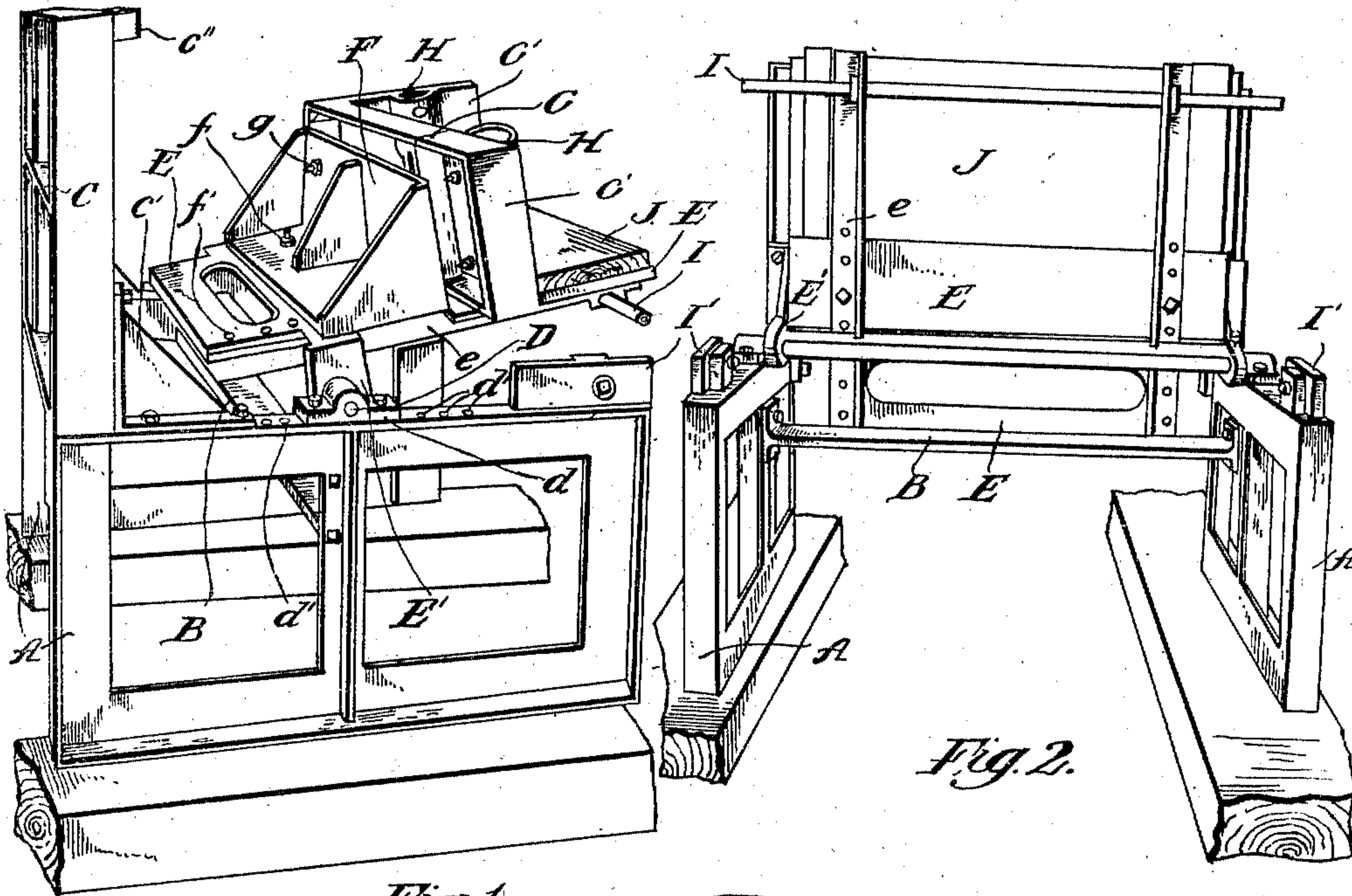


Fig. 1.

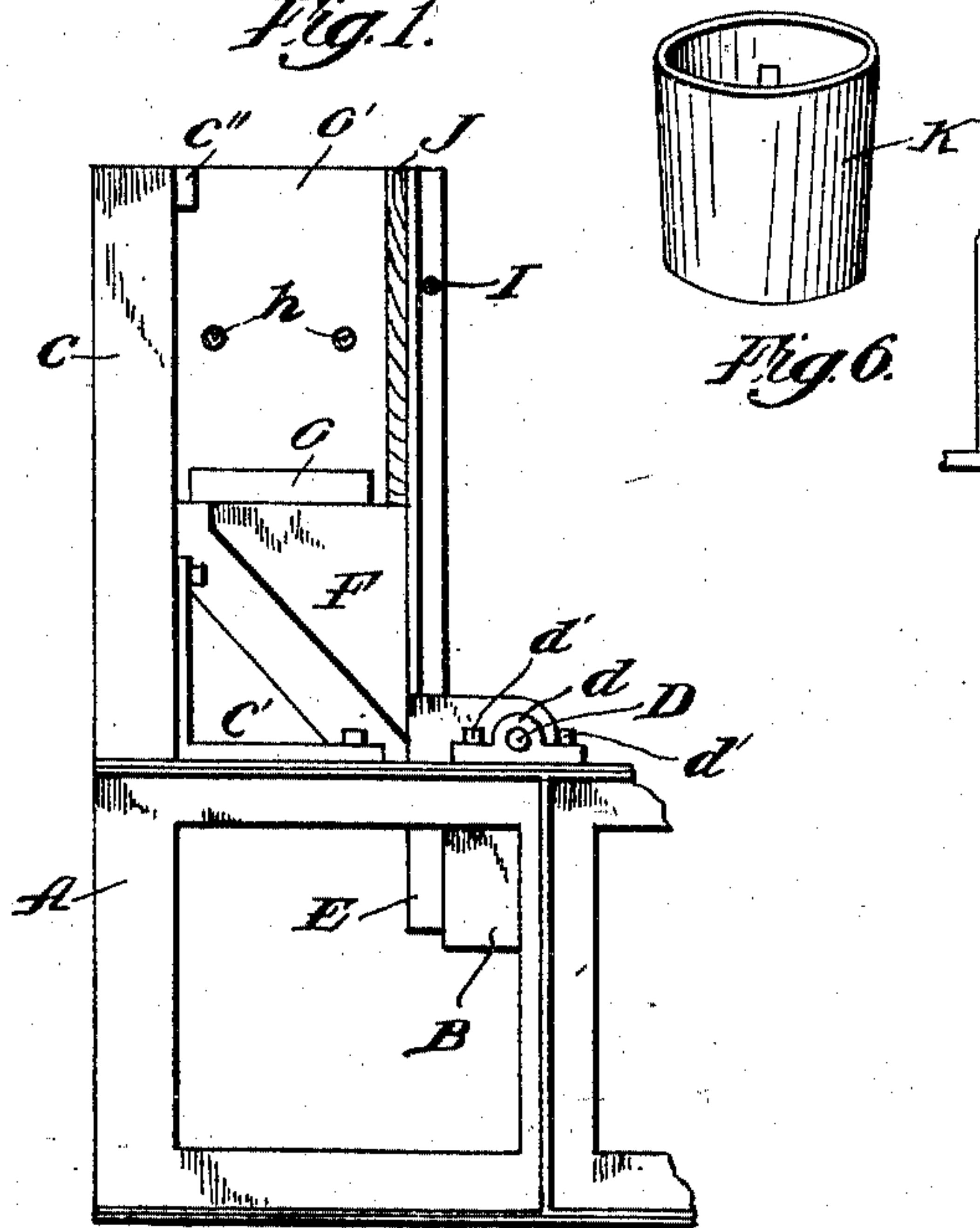


Fig. 6.

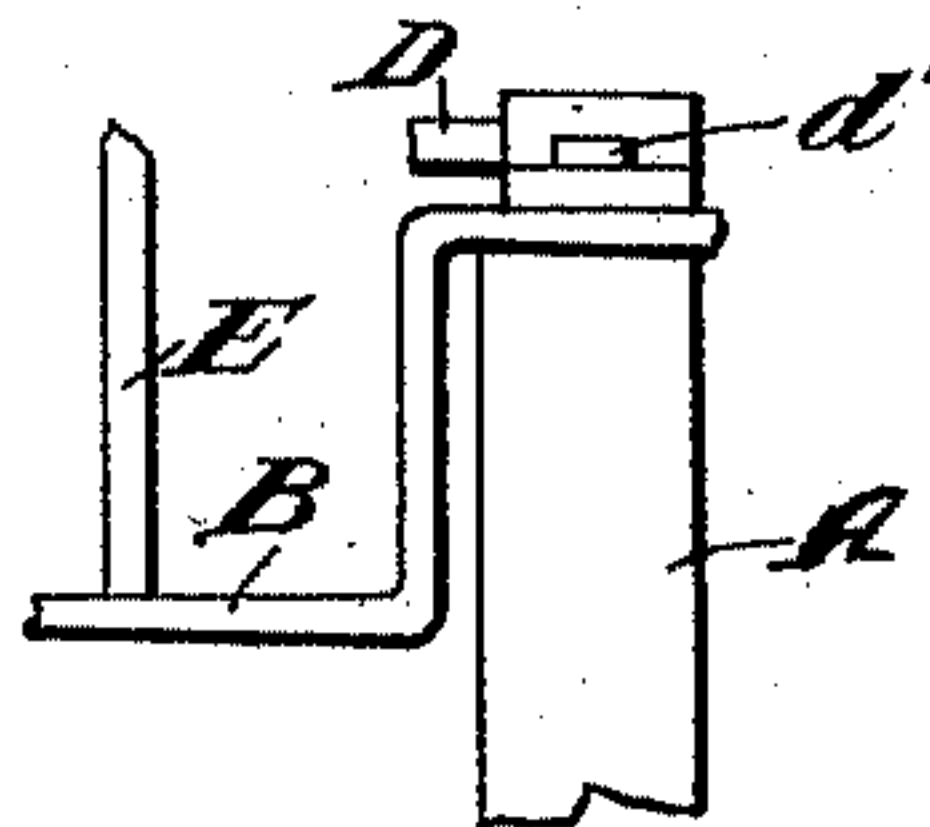


Fig. 4.

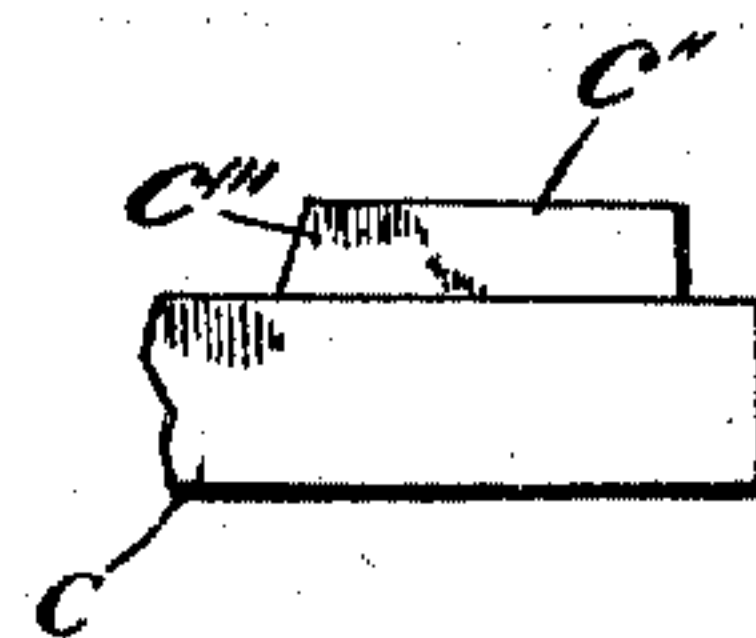


Fig. 5.

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BLOCK-MAKING MACHINE.

967,467.

Specification of Letters Patent.

Patented Aug. 16, 1910.

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To all whom it may concern:

Be it known that we, ALVARO G. VAN SCHAICK and EDWARD L. CATLIN, citizens of the United States, residing at Rome, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Block-Making Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

Our invention relates to an improved block making machine, and we declare the following is a full, clear, concise and exact description thereof, sufficient to enable one skilled in the art to make and use the same, reference being had to the accompanying drawings, in which like reference characters refer to like parts throughout.

The device is a machine used in the manufacture of building blocks, the particular feature of the invention being that the machine has those parts and the combination and arrangement of parts by which it can be very quickly adjusted to make blocks of different sizes. In all such machines, so far as we have been able to discover, the construction is such as to permit the making of a block of a given size according to the size of the machine and the location of its parts. Such blocks are widely used in building and are ordinarily of a height when placed in the building of eight inches. Some machines are constructed to form blocks eight inches wide when laid and sixteen inches long, or sometimes twenty inches long. Other machines are built for making blocks of different height, length and thickness, but a different machine has to be used when a different size block is to be built. It will be understood when speaking of the dimensions of these blocks, we mean the dimensions as they appear when the block is laid in the wall. Many of the machines which are now used for the building of these blocks are very complicated in their construction and consequently very expensive in construction, and they also have a variety of attachments used in operation. To illustrate, some of them have a former or matrix made up of parts hinged together to form the four sides, and in others certain catches or locks are provided to hold the machine in its closed position.

The advantages of the construction which we show will be apparent from examination of the specifications and drawings.

In the drawings Figure 1 is a perspective view of the machine open nearly to its full extent, the swinging parts being slightly held up for better illustration; Fig. 2 is a perspective view from the rear of the machine, where the operator stands, the machine being closed; Fig. 3 is a side view of the machine in its closed position; Fig. 4 shows a modified method of mounting the brace; Fig. 5 is a partial top view of the machine, and Fig. 6 illustrates a general form of a core.

Referring to the figures in detail, A is a frame made of suitable material, preferably of iron, to give it necessary strength and rigidity, and it is to be made of suitable form for the work and of a height to be convenient to the operator. This frame is double, one portion on each side of the machine, suitably braced together, here shown as held in part by brace B. At one end of this frame is mounted an upright member, which we call a platen and shown at C. It has a smooth surface on the face toward the operator, but the other side may be of any suitable construction, it being here shown as having cross brackets or cleats *c*. The purpose is to provide a smooth back surface, suitably braced as by brackets *c'* to form one surface or boundary for the block which is to be made. *c''* show blocks, one end mounted adjacent the top of the platen and near the sides, having their inner ends *c'''* beveled, the blocks being so positioned that when the parts to be described are swung into closed position will bring the swinging side members into proper location.

The movable parts of the machine are mounted on shaft D supported in journal boxes *d* which are bolted onto the top of the frame A as by bolts *d'*. The top of the frame is provided with a series of bolt holes *d''* so that the movable parts or swinging members can be moved to and from the platen. This allows, as will be seen, for the construction of blocks of different height.

The swinging members or the frame consist of what may be called a table E made of iron or other suitable material. In this showing it has angle irons *e* extending from top to bottom, one near each side. This table is not mounted directly on the shaft D but considerably off that center, as by brackets *E'*. This frame and its connected parts being of iron have considerable weight and they are supported considerably at one

side of the shaft bearing in order that the weight of the same when in upright position and against the platen will be sufficient to hold it firmly in place to allow the tamping of the block material in the form and obviate the necessity of any hooks or locks.

On the table E is mounted a bracket member F by bolts *f* passing therethrough and through corresponding holes *f'* in the table. On this bracket F is mounted the member which is constructed to form the face and the sides of the block. It consists of what is termed a face-plate G secured as by bolts *g* to the bracket F. This face-plate G is given a configuration to represent the rough surface of building stone. It may be given any variety of form and may be shaped to produce a block of angular or curved face, as will be apparent to any one skilled in the art.

G' represent end-doors, so-called, one on each end of the face-plate. One of them, in Fig. 1, being shown as in closed position and the other in open position. On these face-plates are fastened formers H as by bolts *h* which are designed to form a hollow in the end of the block so that contiguous blocks will have, when laid in the wall, an air space of twice the size of the former H.

I shows a bar passed from one side to the other side of the machine which serves to illustrate suitable handle means for operating it.

I' is a block to support the bar I in convenient position for operation and substantially level.

The brace B is shown as being secured to the side of A at opposite faces. In Fig. 4 it is shown as being extended and supported on the top of the side frames and as having the journal boxes supported thereon. The rigidity and strength of the parts described are presumed to be sufficient to stand any shock of tamping the blocks, but for added support the cross-bar B made in the form shown in Fig. 1 and Fig. 2 consists of a flat bar and being so positioned that when the frame or swinging table is lifted the lower edge of the frame or the lower ends of the angle irons *e* will come to rest on the cross bar B in supporting contact for the former on the latter. In the form of construction shown in Fig. 4 it will be seen that the cross bar B will be moved with the journal boxes and the bar B always be in position to support the bottom of the frame, it being of course so bent as to pass from the point of its support on the former to a line co-incidental with the lower end of the table when raised.

It should be noted that the parts shown as G and G' which form the bottom and the ends of the box in which the block is to be formed can be made of any size or dimensions desired, one being readily removed

from support on the bracket F and another as readily put in its place.

J is what is termed a palette and in this instance is presumed to consist of a board supported on the frame E and so positioned that the end toward E' can swing over the face of it, and of such a size as is suitable for use, its width or height when the machine is closed being that of the width of the block when laid. This palette is simply supported on, without being secured to the swinging frame.

It will thus be seen that we have provided a machine wherein blocks of any dimensions or form can be made by one machine by simple changes which any workman of ordinary intelligence can make. For instance, if one wishes to make a block that will be four inches high when laid he removes bolt *d'* and slides the swinging table closer to the platen. If he desires to make a block which will at the same time be ten inches wide when laid, instead of eight, the usual size, he will remove the bolts *f* and lower the bracket F two inches. The frame A and the table E are bored at intervals for the replacing of the respective bolts so that it is impossible for one to make any inaccuracies in re-adjusting the machine, as there is only one position which the parts can be given, which is the correct position. The adjustment, therefore, is positive and not left to the skill of the workman or to the nicety of any adjusting mechanism. Of course, it is evident however that in making a four-inch block instead of an eight-inch, or a longer block instead of a shorter one, or a wider one instead of a narrower one, a face-plate with end-doors is selected and put in place according to the work to be done. The palette J will need to be changed according to the width of the block, but not necessarily as to the length, as the end-doors swing over the face of the palette. Of course, one face-plate with swinging doors will make any number of blocks of its proper size, but the principal feature is that other members of the machine can be adjusted to receive different sizes of such face-plate and connected members, so that one machine is adaptable to the making of any size block.

In operation the workman swings the doors up to form the ends of the block. He then tilts the table into vertical position and the edge of the face-plate and the end doors rest against the platen which forms one of the vertical surfaces of the block when laid, the platen on the opposite side forming the other. He then puts in sufficient quantity of the proper material to form the face portion of the block and proceeds to build the block up with other suitable material. At the proper time he inserts in the block a core of proper form,

such as K, Fig. 6, and proceeds to tamp around that so that when the block is finished the core will leave an air space vertically of the block and material and within the same. When the form is about filled he puts on a layer of facing material and by familiar operation smooths off the top. The top edge of the platen, the end doors and the palette being on a level, in closing the device the end-doors are guided by contact with the edge c''' of the block on the platen into exactly vertical position. Should they be crowded farther in by any means they are readily pressed back to such face of the blocks, so that the operator is sure of having the ends true to the face, according to the desired construction, the blocks being moved to different position in case the end is to be made angular to the plane of the face.

Having described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. In a device of the character described, the combination of a frame, a table hingedly mounted on the frame at points between the ends of the table whereby partially to balance its weight, the table being supported by brackets raising the table when in horizontal position a substantial distance above the frame whereby the weight of the table when in vertical position holds it securely in place, a bracket mounted on the opposite face of the table and secured thereto by removable means, the table having holes therefor regularly spaced whereby to provide positive adjustment of the bracket to make blocks of standard sizes, the said bracket being apertured to hold each of the various block forming members according to the size of the block to be made, substantially as described.

2. In a block forming machine, a frame with a cross-brace and a fixed vertical platen, a swinging table mounted intermediate its ends on the frame and adapted to swing into a vertical position, with a portion of it resting on the brace, a bracket adjustably mounted on the table and a forming box consisting of interchangeable parts removably mounted on the bracket, substantially as described.

3. In a block making machine, a frame, a fixed platen, a table adjustably and swingably supported on the frame, laterally projecting brackets mounted on the table and supporting it on the frame, a bracket adjustably mounted on the table and supporting removable side, face and end pieces of the molding box whereby on adjustment of the table and the use of proper size face and end parts supported on the bracket to mold blocks of different height in the wall, substantially as described.

4. In a block forming machine, in combination,

a frame, a table hingedly mounted on the frame and supported thereon by brackets raising it a substantial distance above the frame when it is in horizontal position, a bracket mounted on the opposite face of the table by removable means, the table having regularly spaced apertures for said means whereby to provide positive adjustment of the bracket to make blocks of different standard wall-thickness, the said bracket being also apertured to hold each of various block-forming members according to the wall-height and wall-length of the block, each of said members consisting of a palette supported on the table, and a face-plate secured to the bracket having wings swung thereon to form the ends of the blocks, substantially as described.

5. In a block forming machine, a frame, a platen, a swinging table, and an auxiliary support for the table, the table having members extending to rest on said support when the table is in operative position, substantially as described.

6. In a block forming machine, a frame having a fixed platen, a table swingably supported on the frame by means of lateral projections supporting it when in horizontal position at a distance above the frame, the table being adapted to support the frame at a plurality of fixed points regularly spaced to graduate the distance between the platen and the table, and the corresponding wall height of a block, when in vertical position, a bracket movably mounted on the table, the table being adapted to receive the bracket at a plurality of regularly spaced points graduated to adjust the machine to form blocks of different wall-thickness, the bracket being adapted to receive the members of a molding box interchangeable to form blocks of different sizes whereby, on the adjustment of the table on the frame the bracket on the table and the use of a given molding box, blocks of different sizes and proportion may be formed, substantially as described.

7. In a block-forming machine, the combination of a frame having a fixed platen with blocks mounted thereon and beveled on their inner faces adjacent the platen, a table mounted to swing thereon from horizontal to vertical position and supported a substantial distance above the frame when in horizontal position, the frame having a plurality of regularly spaced pairs of holes for such mounting in various fixed positions, a bracket mounted on the table by means secured in one of a plurality of regularly spaced pairs whereby to provide positive adjustment of the bracket, block-forming members removably mounted on the bracket and consisting of a removable block-supporting palette and plates to form the face and ends of the block, the same being of a size to form blocks of given size, the end-forming members being swingably mounted

and adapted to be engaged by the beveled blocks on the platen in the vertical position of the table and be held thereby in the desired angle relative to the face-forming member, substantially as described.

8. In a device of the character described, a frame, an upright platen, beveled blocks on the platen, a table hinged on the frame by brackets extending outward on one side and a folding block-forming means mounted on the table, the same being held in fold-

ed position when the table is closed by engagement thereof with the said beveled blocks engaging the edge of the end pieces of said means, substantially as described. 15

In testimony whereof we affix our signatures in presence of two witnesses.

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EDWARD L. CATLIN.

Witnesses:

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ELLIOTT O. WORDEN.