July 15, 1924. 1,501,625

G. J. SAFFERT

MOLDING METHOD AND APPARATUS

Filed Oct. 27, 1923 2 Sheets-Sheet 1

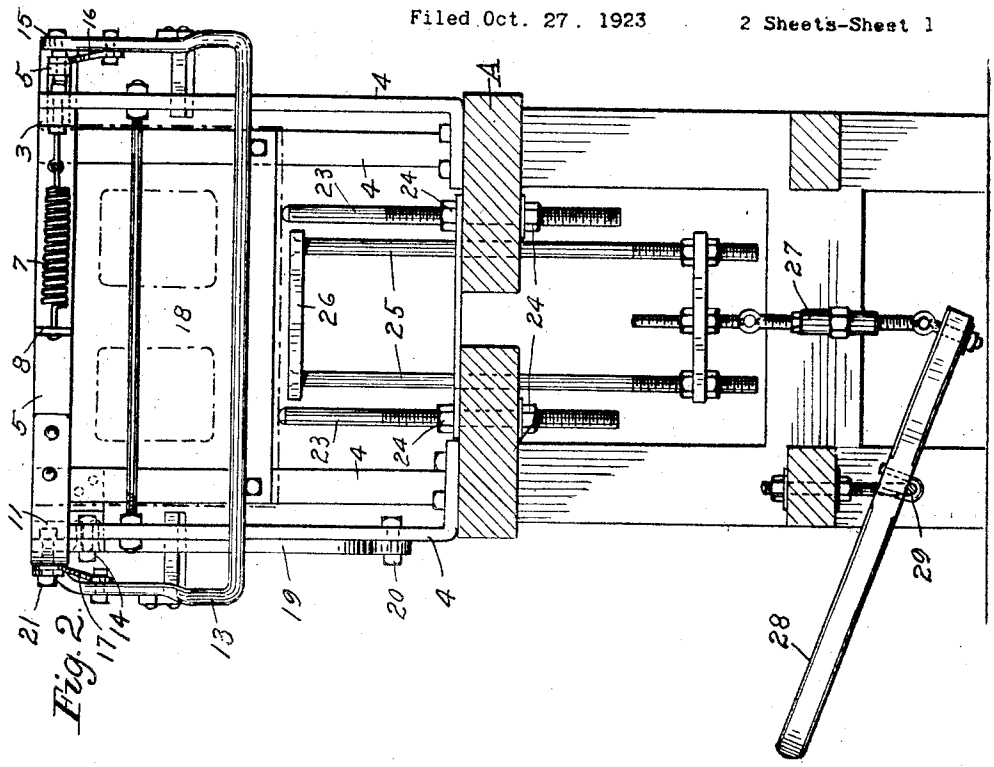


Fig. 2.

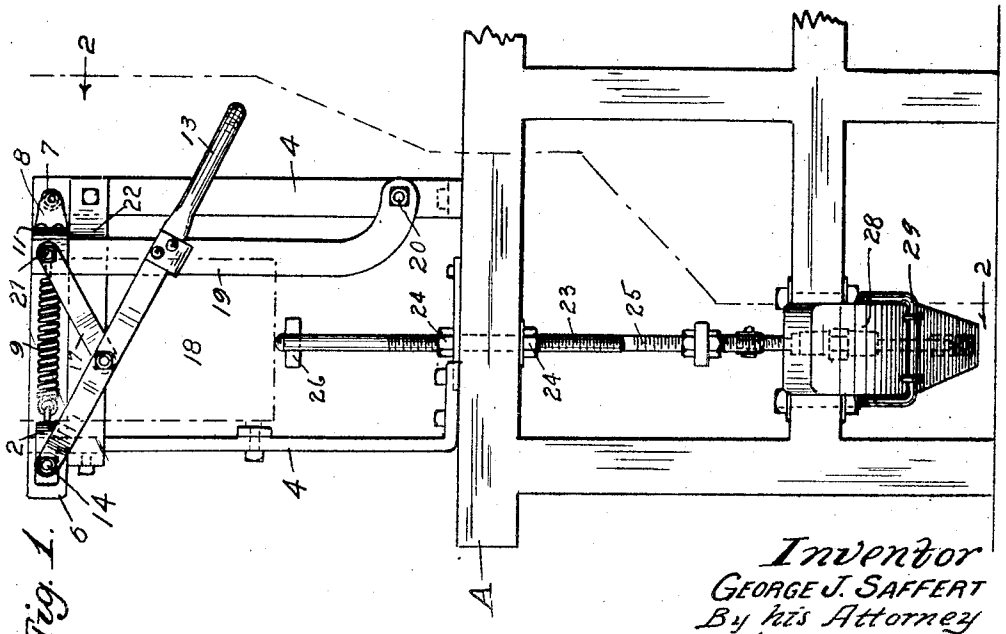


Fig. 1.

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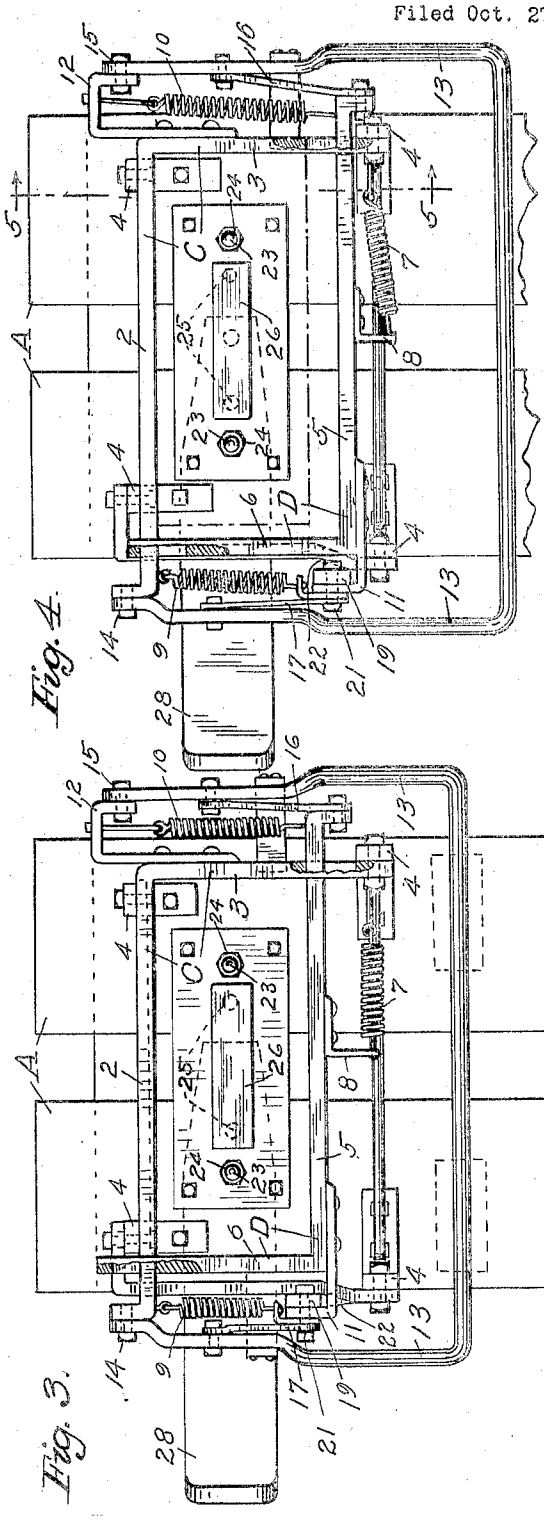


Fig. 4.

Fig. 3.

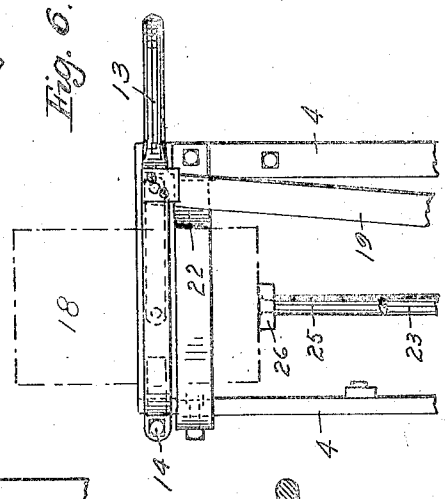


Fig. 6.

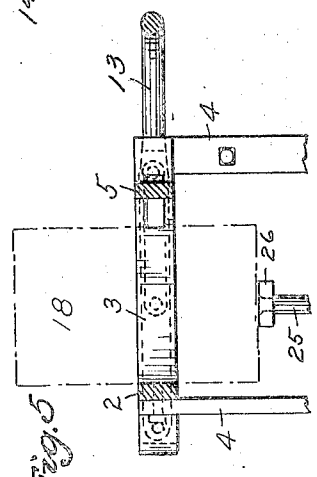


Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE J. SAFFERT, OF NEW ULM, MINNESOTA.

MOLDING METHOD AND APPARATUS.

Application filed October 27, 1923. Serial No. 671,140.

To all whom it may concern:

Be it known that I, GEORGE J. SAFFERT, a citizen of the United States, residing at New Ulm, in the county of Brown and State of Minnesota, have invented certain new and useful Improvements in Molding Methods and Apparatus, of which the following is a specification.

My invention relates to improvements in means for holding concrete blocks and similar products, being designed particularly for the purpose of holding and handling a block in the process of applying a facing thereto, and consists further in the method of applying the facing to the block to most efficiently bind a facing to a block that has already set sufficiently for handling.

To this end, my invention consists in the improved features of construction and method hereinafter particularly described and claimed.

In the accompanying drawings, forming part of this application:

Figure 1, is a front elevation of my improved block holding means.

Figure 2, is a side elevation of the same, shown in section on line 2—2 of Figure 1.

Figure 3, is a plan view, showing the parts in closed position.

Figure 4, is a similar view, showing the parts in block releasing position.

Figure 5, is a sectional view on line 5—5 of Figure 4, with the block shown in partly raised position; and

Figure 6, is a side elevation of the parts shown in Figure 4, with the block in a further raised position than that shown in Figure 5.

Referring to the drawings, 2 and 3 represent fixed side and end walls, preferably shown formed of a single member C, supported from the frame work A by standards 4. 5 and 6 represent slidable side and end walls, preferably as shown composed of a single member D. The slidable side wall member D has a coil spring connection 7 with one of the supporting standards 4, the coil spring 7 at one end being connected with the standard and at the other end with a bracket 8, projecting outwardly from the side wall 5, whereby to normally hold the slidable end wall 6 in indrawn position.

For the purpose of holding the slidable side wall 5 in indrawn position, I provide the coil springs 9 and 10, the coil spring 9 connecting one end of the fixed side wall with a bracket 11 secured to the corresponding end of the opposed slidable side wall.

The spring 10 connects the opposite end of the slidable side wall with a bracket 12 carried by the corresponding end of the fixed side wall. The springs 9 and 10 thus normally hold the slidable side wall 5 drawn inwardly toward the opposed fixed side wall 2.

For the purpose of separating the members C and D, constituting the fixed side and end walls and the slidable side and end walls, I provide a handle 13 having at one side pivotal support 14 upon one end of the fixed side wall 2, and upon the other side pivotal support 15 upon the bracket 12, carried by the fixed side and end wall member C.

The handle 13, at one end of the block holder is connected by a toggle lever 16 with the adjacent end of the slidable side wall 5, and at the opposite end similarly connected by a toggle lever 17 with the adjacent end of the slidable side wall 5 through the medium of the bracket 11. The parts are so adjusted, that when the handle 13 is in the downturned position shown in Figure 1, the slidable walls of the holder will be held in indrawn position by the coil springs 7, 9, and 10 to exert spring pressure upon the contained block 18. Raising of the handle 13 to the horizontal position shown in Figures 5 and 6 will, through the medium of the toggle connections 16 and 17, pull the slidable side and end wall member in a direction away from the fixed side wall and against the tension of the springs 9 and 10 to relieve the pressure of the side walls upon the sides of the block.

For the purpose of longitudinally sliding the slidable side and end wall member to relieve pressure upon the ends of the block, I provide a lever arm 19 having a pivotal support 20 at its lower end upon one of the standards 4, and at its upper end pivotal support upon the pivot 21 connecting the toggle arm 17 with the bracket 11. As the upper end of the lever arm 19 is brought into the position shown in Figure 6 by raising of the handle 13, it comes in contact with the cam surface 22, pulling the slidable side and end wall member D against the tension of the coil spring 7, away from the opposed fixed end wall 3 to relieve the pressure against the ends of the block.

As the handle is turned to the horizontal position shown in Figures 5 and 6, the slidable end and side wall member is pulled away both from the fixed side wall and the fixed end wall, freeing the block and allowing it to be lifted in the manner hereinafter set forth. When the handle is lowered to the position shown in Figure 1, the coil springs 7, 9, and 10 pull the slidable side and end wall member longitudinally and laterally inward to apply spring pressure to both the ends and sides of the block.

For the purpose of supporting and lifting the block, I provide the following described means:

Supported in the horizontal frame work, below the holder, are the vertical rods 23, forming, as shown in Figure 2, supports for the blocks 18. The rods are vertically adjustable by means of nuts 24, threaded upon the rods above and below the frame work A. Slidable through the frame work A, intermediate the rods 23, are the rods 25, connected at their upper ends by the plate 26. The lower ends of the rods 25 are adjustably connected, through the medium of a turn-buckle 27 and connecting parts, with the inner end of the foot lever 28. The foot lever 28 has central fulcrum support 29 in the frame work.

In carrying out my invention, I place within the holding frame, concrete products which have already set hard enough to stand handling, the product, after being placed in the frame, resting upon the gauge rods 23 and the handle 13 being lowered so that the coil springs act upon the side and end walls of the holder to apply spring pressure to the product. When the product is thus placed in the holder, with the parts in the position shown in Figure 2, and the top of the product standing below the top of the holder, I apply to the top of the product a heavy coat of a binding material, as neat Portland cement mixture mixed with water to the consistency of heavy cream, which will permeate more or less into the product. This coat I ordinarily apply by a heavy brush. I then apply to the top face of the product a special facing coating, ordinarily of a more impervious character than the product, this coating being applied as by a trowel, and the top of the holder forming a guide in straightening or leveling off the new face, the mixture first applied to the product serving as a binder between the product and the coating. This facing may be of any desired character, as a mixed fancy facing or other exterior finish, that will constitute a facing of different character than the cement product. After this facing has properly set, I first raise the product in the mold by pressing down upon the foot lever 28 and bringing the lifting rods 25 into lifting contact with the bottom of the product. I do this initial lifting of the product without opening the holder, so that the tension springs will maintain the walls of the holder pressed against the product and smooth the edges of the facing and product, and avoid the injury that would be caused thereto by first opening the mold with the product and its facing in lowered position. When I have sufficiently lifted the product to perform this smoothing operation, I open the holder by raising the lever 13 to the horizontal position shown in Figure 5, when the product can be easily lifted out of the holder.

I do not limit myself to the exact features of construction shown, as the construction of holder and tension means and operating parts may be more or less varied without departing from the idea of my invention, the scope of which is defined in the following claims.

I claim:

1. An apparatus of the class described, comprising a holder consisting of slidably cooperating side and end walls, spring means normally holding said walls indrawn, lever mechanism adapted to be actuated to separate said walls against the tension of said spring means, and lifting means slidably supported below said holder, for the purpose set forth.

2. An apparatus of the class described, comprising a holding frame, consisting of slidably cooperating side and end walls, spring means normally holding said walls indrawn toward each other, lever mechanism actuatable to separate said walls against the tension of said springs, vertically adjustable gauge rods positioned below and forming a support for an article within said frame, and lifting means arranged below said frame, for the purpose set forth.

3. An apparatus of the class described, comprising a holding frame consisting of fixed side and end walls and cooperating slidable side and end walls, spring means connecting said fixed and slidable walls and normally holding the same indrawn toward each other, and lever mechanism actuatable to separate said walls against the tension of said spring means.

4. An apparatus of the class described, comprising a holding frame consisting of fixed side and end walls and cooperating slidable side and end walls, spring means connecting said slidable walls with a fixed support to normally hold the walls drawn inwardly toward each other, and lever mechanism connecting said fixed and slidable walls and actuatable to separate the same.

5. An apparatus of the class described, comprising a holding frame consisting of fixed side and end walls and cooperating slidable side and end walls, spring means connecting said slidable walls with a fixed

support to normally hold the walls drawn inwardly toward each other, lever mechanism connecting said fixed and slidable walls and actuatable to separate the same, and gauge rods having vertically adjustable support below said holder, for the purpose set forth.

6. An apparatus of the class described, comprising a holding frame consisting of fixed side and end walls and cooperating slidable side and end walls, spring means connecting said slidable walls with a fixed support to normally hold the walls drawn inwardly toward each other, lever mechanism connecting said fixed and slidable walls and actuatable to separate the same, gauge rods adjustably supported below said holder, and a foot actuated lifting device slidably supported below said holder, for the purpose set forth.

7. An apparatus of the class described, comprising a holding frame consisting of fixed side and end walls and cooperating slidable side and end walls, spring means normally holding said walls indrawn toward each other, lever mechanism actuatable to separate said walls, and lifting means actuatable to lift an article within said holder with the side and end walls thereof held in spring contact with the article.

8. The method of applying a facing to a cementitious block, consisting of holding the block under spring pressure with the top face thereof below the top of the holder, and applying a binding coat to the top of said block, and a facing upon the top of said binding coat up to the top of the holder, and then raising the block within said holder while under spring pressure, for the purpose set forth.

9. The method of applying a facing to a cementitious block, consisting of holding the block within a holder with its top face below the top of the holder, applying to the face of the block a binding material that will penetrate the block, then applying thereto a facing and smoothing the same off with the top of the holder as a guide, and then lifting said block within said holder, for the purpose set forth.

In testimony whereof I affix my signature.

GEORGE J. SAFFERT.