

H. J. FLOOD.
BRICK PRESS.

APPLICATION FILED SEPT. 11, 1909.

Patented Feb. 28, 1911.

4 SHEETS—SHEET 1.

985,153.

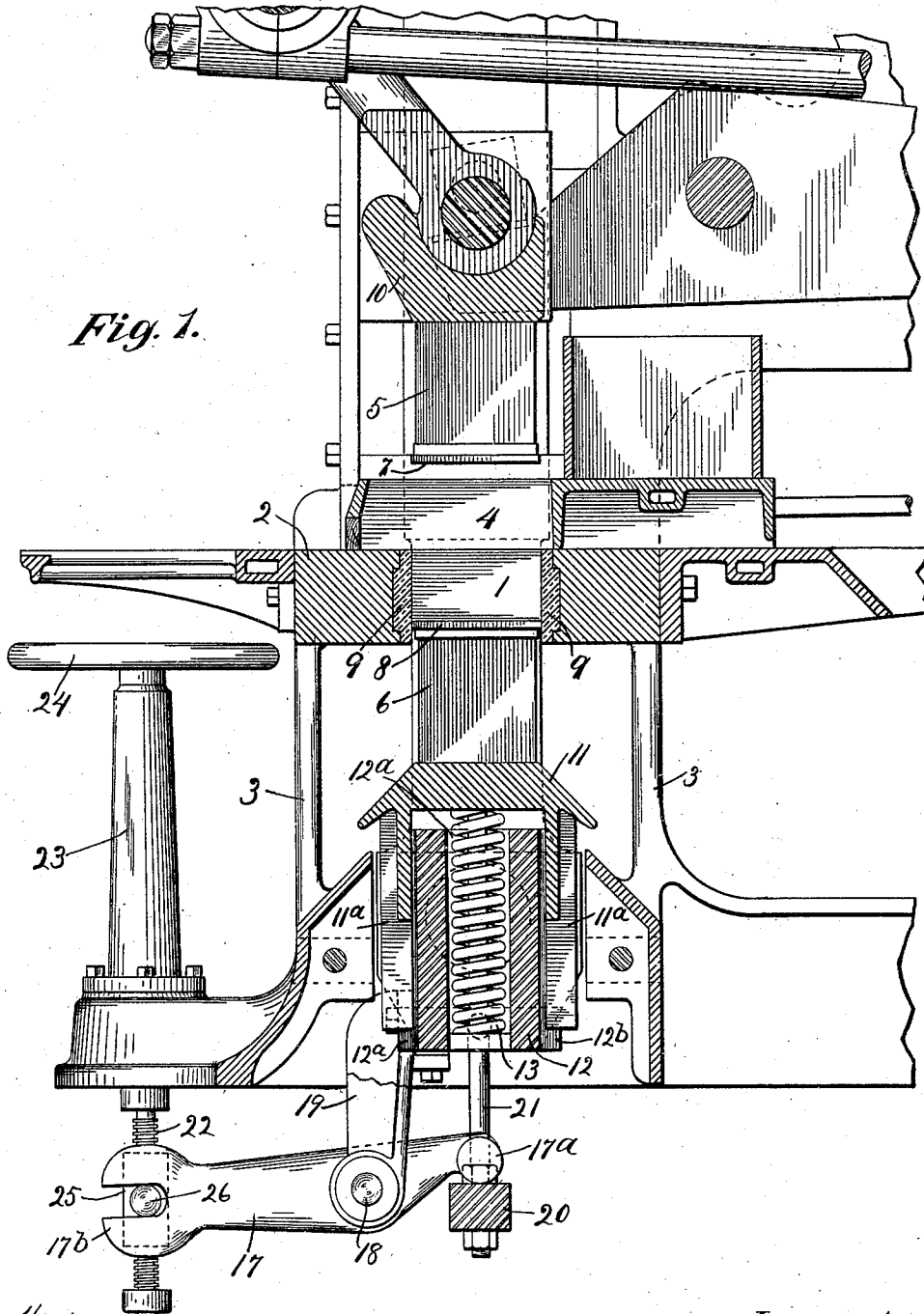


Fig. 1.

Witnesses:
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G. P. Lurvey

Inventor:
Harry J. Flood
By Cheever & Cox
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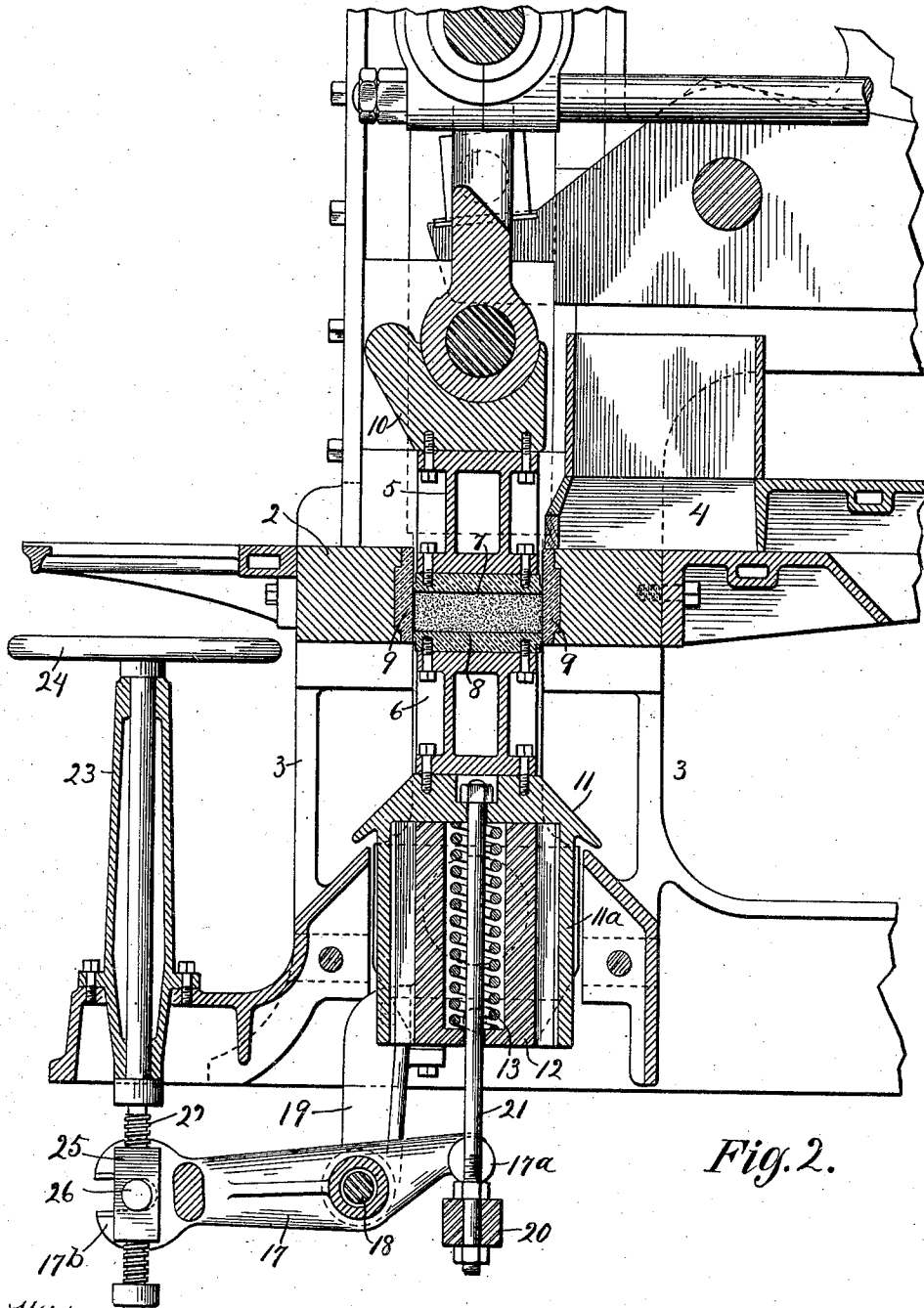


Fig. 2.

Witnesses:
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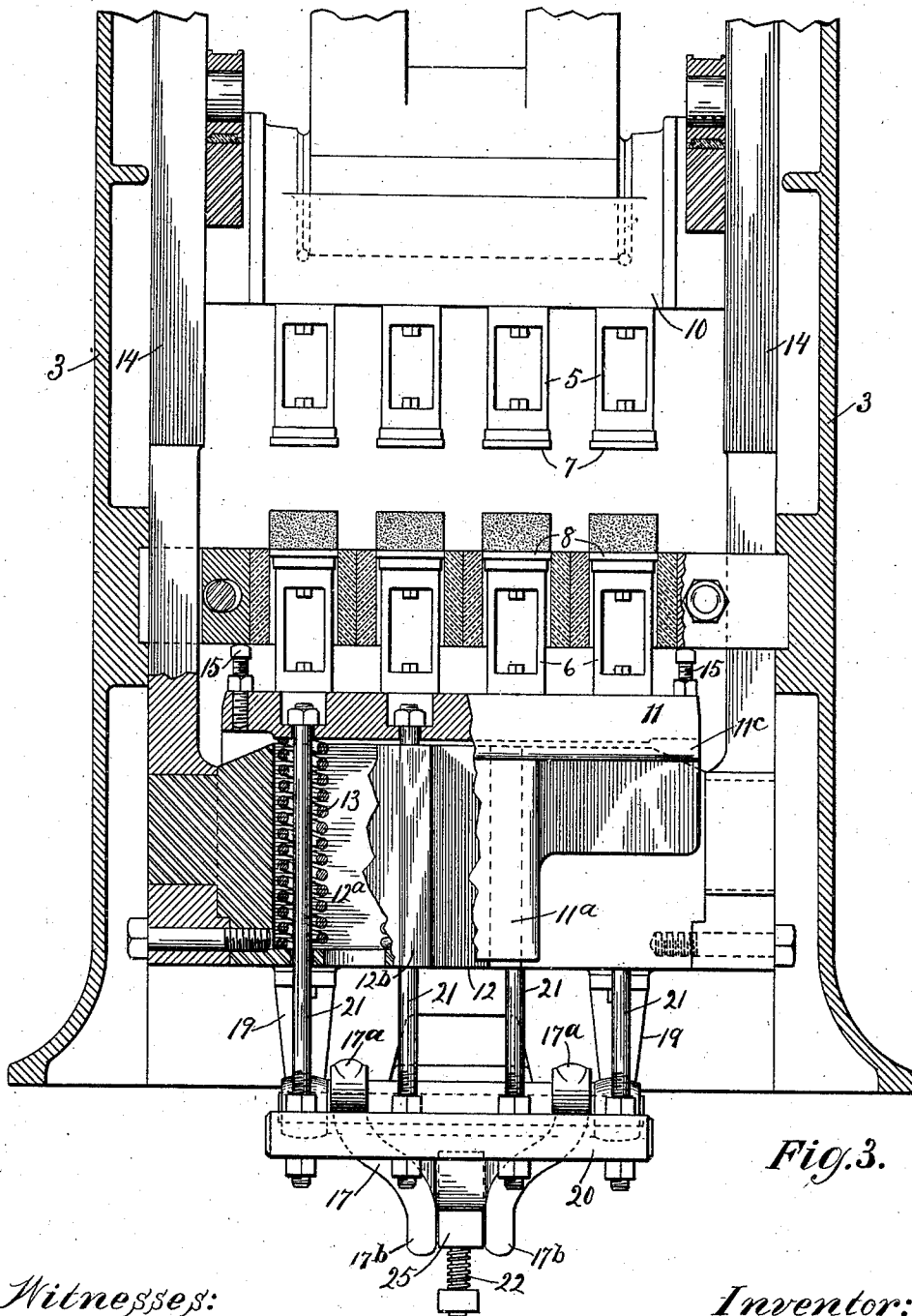


Fig. 3.

Witnesses:
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4 SHEETS—SHEET 4.

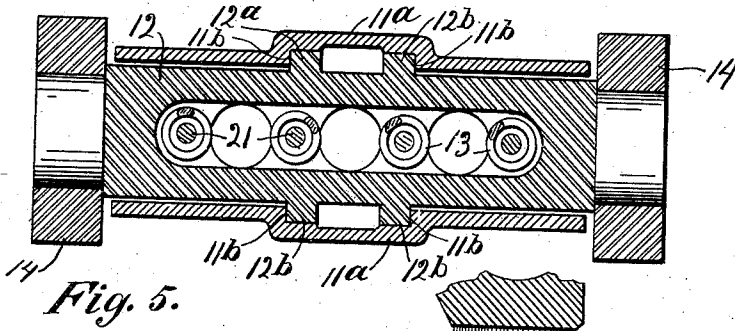


Fig. 5.

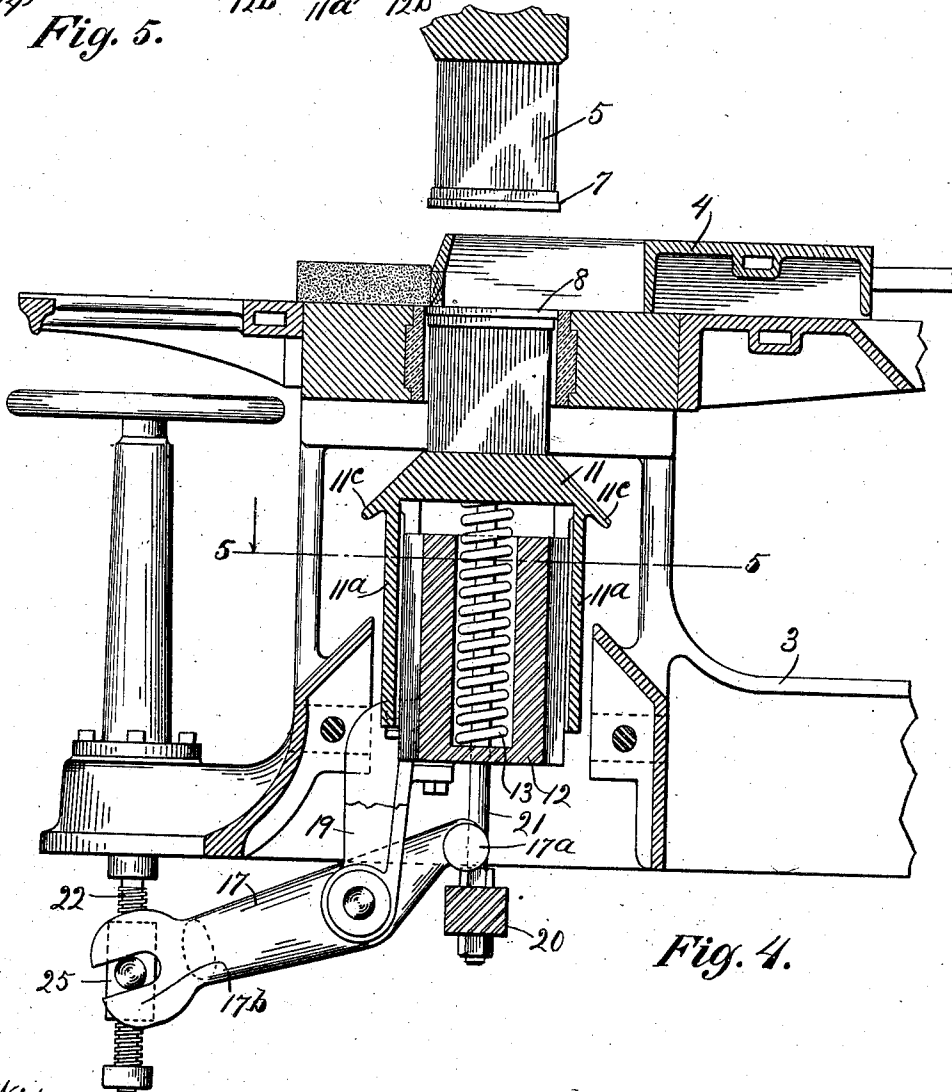


Fig. 4.

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UNITED STATES PATENT OFFICE.

HARRY J. FLOOD, OF CHICAGO, ILLINOIS.

BRICK-PRESS.

985,153.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed September 11, 1909. Serial No. 517,285.

To all whom it may concern:

Be it known that I, HARRY J. FLOOD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Brick-Presses, of which the following is a specification.

My invention relates to brick presses, and comprises a number of improvements over the construction shown in Patent No. 734,531 granted to me July 28, 1903.

One of the objects of the present invention is to provide a construction in which the parts are simpler, stronger, fewer in number and more readily accessible than in the construction shown in said patent.

It is also an object to provide a construction such that the parts may be assembled and disassembled with greater facility; also to improve the means for guiding the lower plungers, and to exclude dust from the lower cross head and associated parts in a simple and efficient manner.

Another object is to improve the means for regulating the depth of mold.

I accomplish my objects by the mechanism illustrated in the accompanying drawings, in which—

Figures 1 and 2 are side elevations of the machine showing part of the mechanism in section. In Fig. 1 the saddle, which supports the lower plungers, is shown resting upon the springs carried by the lower cross head. In Fig. 2, which shows the machine in the act of pressing the clay, the springs are compressed and the saddle is shown seated upon the lower cross head. Fig. 3 is a rear view of the machine partly in section. Fig. 4 is a sectional elevation similar to Figs. 1 and 2 but showing the saddle and lower plungers in highest position. Fig. 5 is a plan section taken on the line 5—5, Fig. 4.

Similar numerals refer to similar parts throughout the several views.

The general type of machine herein illustrated is well known, and it is sufficient to say that a mold 1 is formed in the mold table 2 supported in the main frame 3, said mold being fed and the brick delivered by a horizontally reciprocating charger 4. The upper plungers 5 and lower plungers 6 are provided with plunger plates 7 and 8 respectively, which fit the mold and act upon the clay therein.

In the preferred construction, liners 9, 9 are placed at the sides and ends of the molds

and are composed of hardened steel or other suitable wear-resisting material. The upper plungers are secured to the vertically reciprocating upper cross head 10 and the lower plungers are secured to a saddle which is carried by the vertically reciprocating lower cross head 12 and constitutes one of the novel features of my construction. Said saddle does not rest at all times directly upon the lower cross head but during part of the cycle of operation rests upon springs 13, which are located in a pocket or chamber 12^a formed for them in the lower cross head. Thus the saddle not only has a movement derived from the lower cross head but has an additional movement due to the presence of the springs, and consequently there is vertical movement of the saddle relatively to the lower cross head.

In the preferred construction the saddle consists of an upper horizontal portion 11, which carries the lower plungers and depending flanges 11^a, which in the preferred construction have shoulders 11^b adapted to engage the edges of the vertical guides 12^b formed on the lower cross head. A plan of these parts is clearly shown in Fig. 5. As the guides 12^b are engaged on the front and rear and on both edges, lateral play of the saddle in any direction upon the cross head is effectually prevented.

In the preferred construction the entire saddle consists of a single casting and the flanges 11^a are of a depth approximately equal to that of the cross head itself. The advantages are two fold: in the first place dust and dirt are effectually excluded from the guides 12^b, and, second, a long bearing surface is afforded which holds the saddle very firmly in position. In my construction the tilting of the plunger plates 8 in the mold is impossible because there is guiding action at two remote points, to-wit, at the plunger plate and at the flanges on the saddle. In the operation of machines of this type there is considerable danger of the plunger plates becoming tilted as a result of unequal consistency or distribution of the clay and from other causes, and if the plunger plates become tilted they are apt to stick in the mold and in any event they produce excessive and unequal wear upon the mold liners. In my machine the plunger plates are held horizontal at all times in spite of any inequality of pressure upon them. In the machine herein shown, the

lower crosshead is reciprocated by the side bars 14 and the lower plungers are prevented from rising above the surface of the mold table by adjustable stops 15 which screw into the saddle 11 in position to contact the under side of the mold table.

I will now describe the mechanism for regulating the depth of mold. An adjusting lever 17 is fulcrumed upon a pin 18 carried by brackets 19 which are rigidly secured to the lower crosshead. The inner end of said lever overlies a crossbar 20 which is suspended from the saddle 11 by rods 21. By preference the lever is bifurcated, as best shown in Fig. 3, and provided with cylindrical portions 17^a at its inner end. This gives practical line contact of the lever upon the cross bar for all positions of adjustment of said lever. The outer end of the lever 17 is controlled by an adjusting screw 22 mounted in the frame or standard 23 and rotated by the hand wheel 24. On said screw is a nut 25 which has parallel sides adapted to fit between the bifurcated outer end of the lever 17. The nut is thus prevented from rotating when the screw is rotated, with the result that the rotation of the screw causes a raising or lowering of the nut. Extending laterally from the nut are pins 26 which enter the jaws 17^b formed at the outer end of lever 17. The raising or lowering of the nut thus causes the raising or lowering of the outer end of the lever and an opposite movement of the inner end of said lever. It will be seen, particularly by reference to Fig. 1, that if the outer end of the lever is raised it will cause the springs 13 to be compressed to a greater extent and will lower the lower plungers in the mold, thus giving greater depth to the mold. It will be noted that the regulating mechanism is practically free from bolts, screws and other fastening means and that most of the parts act upon each other without being actually fastened together. Furthermore the parts are simple in form and may be readily taken apart and assembled.

In the operation of the machine, the lower cross head reciprocates vertically but does not remain at its highest position long enough to permit delivery of the brick onto the front of the mold table, and the springs 13 serve to hold the plunger plates 8 flush with the top of the mold table for a certain period after the lower cross head has commenced to descend. It is also true that the lower cross head descends to a point which would ordinarily produce too great a depth of mold, and said springs serve to hold the plunger plates as high above the cross head as the particular adjustment of the lever 18 will permit. This determines the depth of

mold. Thus, in Fig. 1, it will be seen that the depth of mold may be increased or decreased by raising or lowering the nut 23 and outer end of the lever 18. As the lever 18 merely overlies the cross bar 20 the two parts may readily separate as shown in Figs. 2 and 4, the engagement of said parts occurring only temporarily when the lower plunger is at or near its lowest position.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent is:—

1. In a brick press, the combination with the mold and upper and lower plungers of a reciprocating lower cross head, springs carried by said cross head and a saddle resting upon said springs, and supporting the lower plungers, and extending completely over the lower cross head said saddle consisting of a substantially horizontal portion arranged above said cross head and flanges depending from said horizontal portion and engaging the outside of the lower cross head to prevent lateral movement, said saddle engaging the outside of the cross head in several planes.

2. In a brick press, the combination with the mold and upper and lower flanges, of a vertically reciprocating lower cross head having vertical guides on the sides thereof, springs upon said cross head and a saddle upon said springs adapted to support said lower plungers, said saddle having a portion extending over the top of the cross head and completely covering the same and having integral depending flanges adapted to engage the guides on the cross head on four sides and thereby prevent relative lateral movement.

3. In a brick press, the combination of a main frame, a mold arranged therein, upper and lower plungers adapted to cooperate with said mold, vertically reciprocating upper and lower cross heads, means for operating the same, springs upon the lower cross head, a saddle upon said springs adapted to support the lower plungers, said saddle fitting over the lower cross head and housing the same, and means for guiding the saddle in a vertical direction relatively to the lower cross head, said guiding means consisting of vertical guides on the outside of the lower cross head and means on said saddle for engaging said vertical guides in several planes.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

HARRY J. FLOOD.

Witnesses:

HOWARD M. COX,
MARGARET D. ROBB.