(No Model.)

2 Sheets—Sheet 1.

E. THOMAS.

MACHINE FOR MAKING MOLDS FOR CASTINGS.

No. 293,541. Patented Feb. 12, 1884.

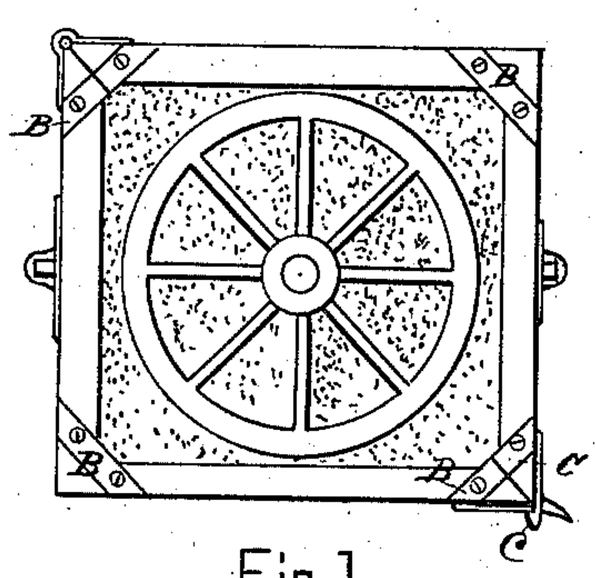


Fig. 1.

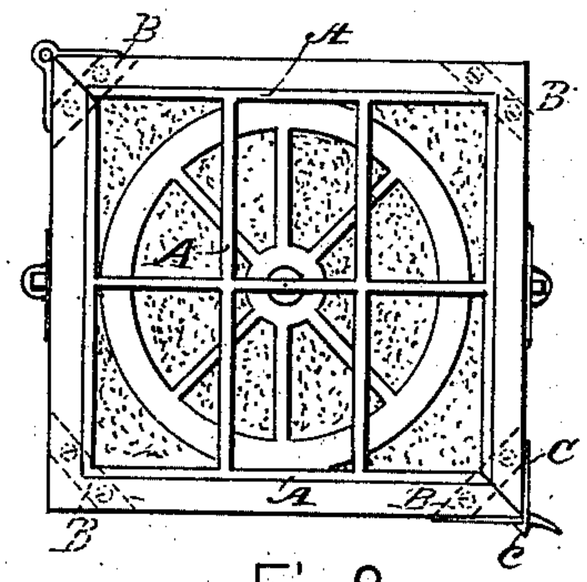


Fig. 2.

Fig. 3.

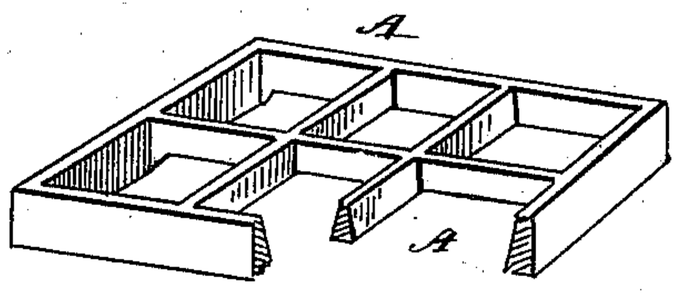
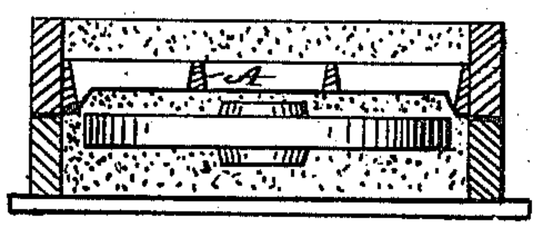


Fig. 4.



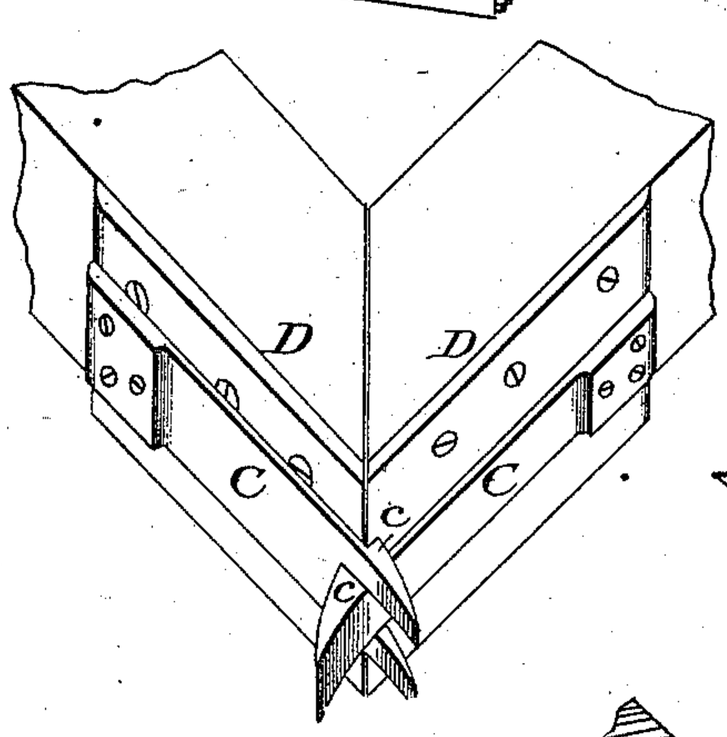
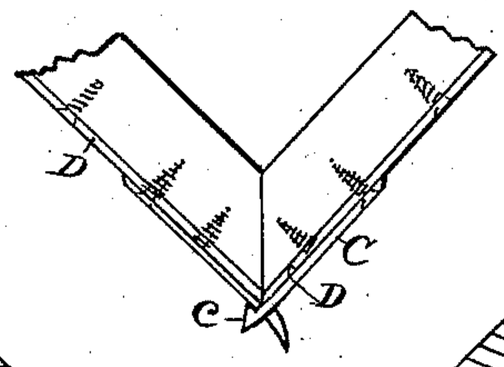


Fig. 9.



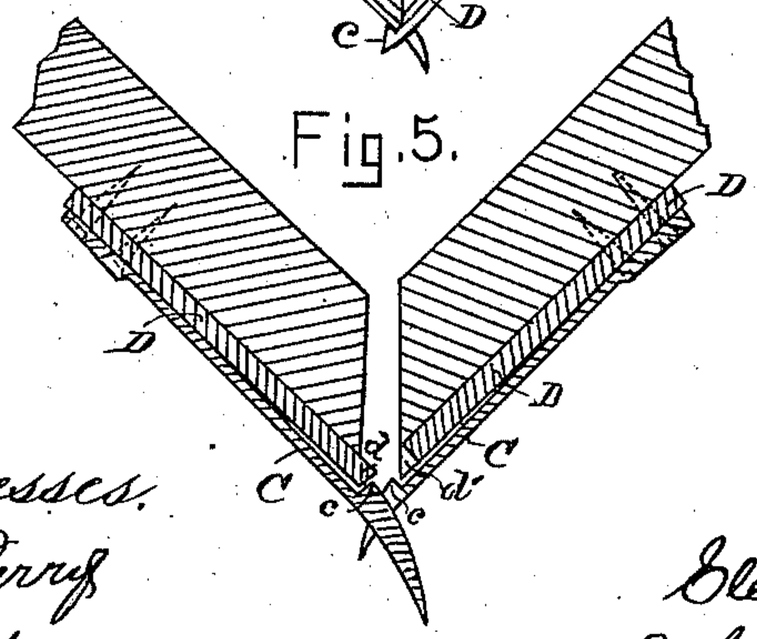


Fig. 5.

Witnesses.
A. B. Perry
Julia Stedman

Inventor.
Eleazer Thomas
By his Atty. J. G. Perry.

(No Model.) 2 Sheets—Sheet 2.

E. THOMAS.

MACHINE FOR MAKING MOLDS FOR CASTINGS.

No. 293,541. Patented Feb. 12, 1884.

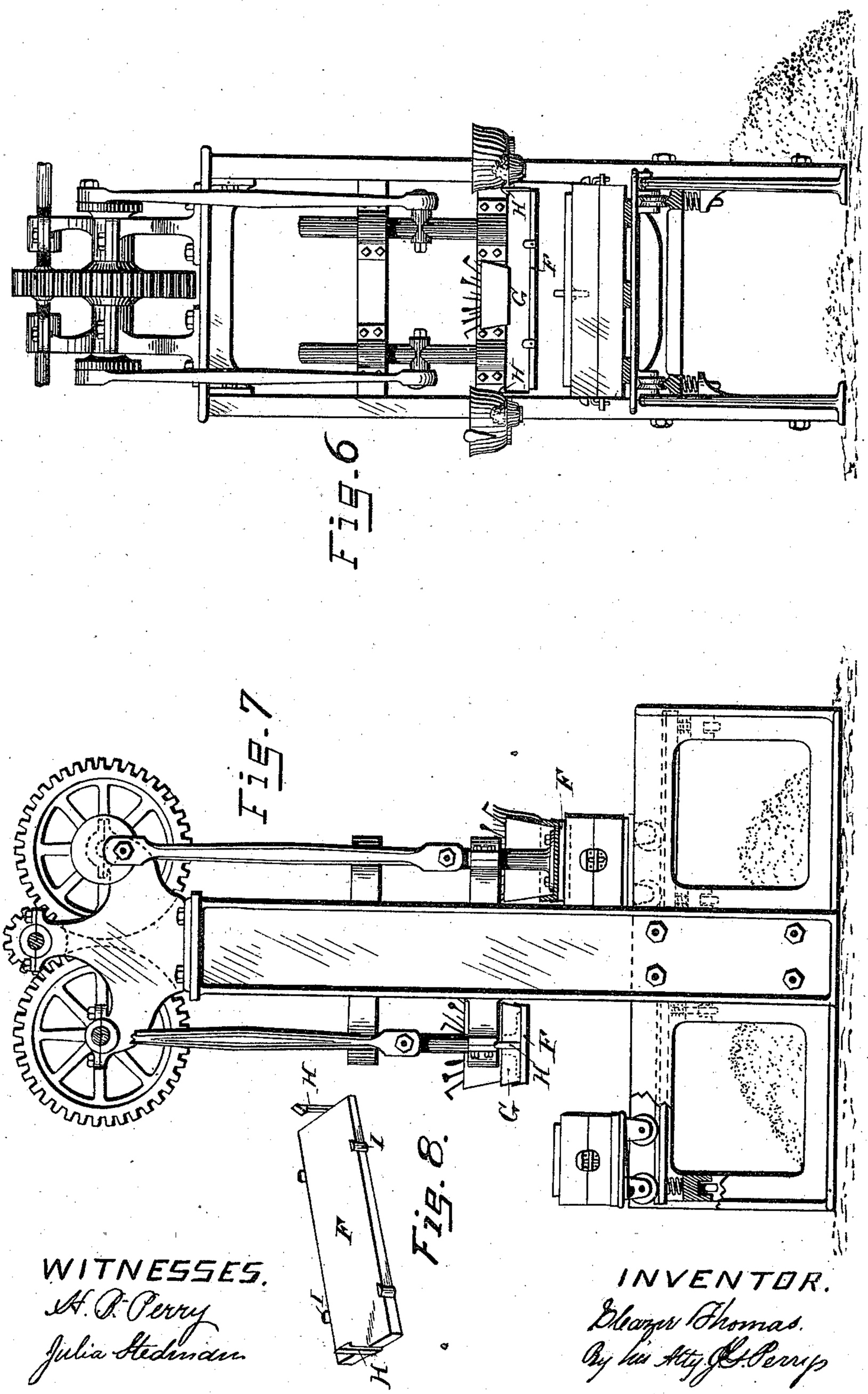


Fig. 6.

Fig. 7.

Fig. 8.

WITNESSES.
A. B. Perry
Julia Stedman

INVENTOR.
Eleazer Thomas.
By his Atty. A. B. Perry

UNITED STATES PATENT OFFICE.

ELEAZER THOMAS, OF PAWTUCKET, RHODE ISLAND.

MACHINE FOR MAKING MOLDS FOR CASTINGS.

SPECIFICATION forming part of Letters Patent No. 293,541, dated February 12, 1884.

Application filed March 22, 1883. (No model.)

To all whom it may concern:

Be it known that I, ELEAZER THOMAS, of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Machines and Flasks for Making Molds for Castings, of which the following is a specification, reference being had to the accompanying drawings, making part of the same.

My invention relates to snap-flasks for making molds for castings—that is, to such flasks as have a hinge at one corner and a catch at the opposite corner, so that they may be removed laterally when the mold is completed without disturbing the sand.

My invention consists in the improved catches or corner-fastenings, and also in grated supports employed in the mold to retain the sand in position in lifting the cope and afterwards when the flask has been removed.

My invention also embraces an adjustable follower-board interposed between the flasks and the follower or plunger of the molding-machine, so as to regulate the length of stroke to correspond to the thickness of the flask or the amount of pressure desired on the sand contained therein, as will be explained.

The drawings illustrate the several features of my invention.

Figures 1, 2, 3, 4, and 5 represent the flask-pattern and grated support in various positions, as hereinafter referred to, while Figs. 6 and 7 show, respectively, end and side elevations of the molding-machine, partly in section, with the follower-board in position for use; and Fig. 8 shows the board detached. Fig. 9 is an enlarged perspective view, showing the construction of the spring-catches.

In extensive establishments for molding castings a serious difficulty is the great accumulation of flasks required and the amount of space occupied by them. This has been remedied in some cases by the use of snap-flasks provided with sand-cleats, which consist of rectangular bands of metal fitting within the closed flask and forming a hoop around the mold, to retain the sand in place when the flask is removed. This device, while giving marginal protection, is not effective in large flasks to support the sand in the central part of the mold under the action of gravity. My improvement in this respect is as follows: I employ in the cope of the flasks single bars or grated support A, formed as shown in Fig. 3—that is, with intersecting cross-bars extending from side to side of the band or hoop, the hoop and bars being somewhat broadest at the bottom, so as the better to support the sand, and arched upward or cut away beneath when required, as denoted in Fig. 4, to give room for the pattern. The support A rests at its extreme corners on diagonal strips B, inserted flush with the surface of the edges of the ends of the flask, so that when the cope is in position it will surround the grated support, which fits snugly within it. When the sand has been compacted within the flask around and among the bars of the grate A, it will be firmly supported by these intersecting bars, the sides of which diverge downwardly, and the parts of the flask may be removed laterally by means of the hinges and catches, leaving the mold secure, surrounded and traversed by the grate A. The peculiarity of my improved catches or corner-fastenings will be clear from Fig. 5, which represents said fastenings in their closed and opened positions. The flask opens diagonally, as is usual with snap-flasks. At the corner opposite the hinge each member of the frame has a projecting spring-tongue, C, terminating in a beveled thumb-piece, with a shoulder, *c*, engaging with the opposite spring, or with a metallic plate, D, secured to the flask beneath the spring. One of the plates D has a central recess, *d'*, at its outer end, and the other is correspondingly prolonged centrally, as at *d*, so as to enter and fill the said recess, thus preventing any lateral play of the plates and of the parts of the flask to which they are secured. These plates also prevent wear on the flask by contact of the spring C or shoulders *c*. The shoulders *c* are disengaged and the flask opened by pressing back each spring by its projecting thumb-piece. One spring may occupy a central plane of the flask, while the other is cut away centrally to receive it between its two prongs, as indicated in the sectional view, Fig. 5; or the springs may be placed, respectively, on opposite sides of the

central plane, as the other view, Fig. 5, denotes. These flasks will ordinarily be used with molding-machines of approved construction.

Figs. 6 and 7 of the drawings show a desirable form of machine constructed to give a powerful pressure on the sand in the flask. The machine in general is such as is set forth in my pending application for patent on molding-machines, and therefore forms no part of my present invention, but is introduced to show the manner of applying the adjustable follower-board F between the flask and the plunger or follower G of the machine for the purpose of regulating the pressure by variations in the thickness of the boards F. Where the stroke of the plunger is uniform and the thickness of the flask or the degree of pressure desired varies, I employ between the flasks and the plunger follower-boards F, (shown detached in Fig. 8,) and of such thickness as will give the pressure required, so that, without any alteration in the stroke, the flask and follower-board together will take up the full amount of space between the bottom of the plunger and the top of the platform on which the flask rests. In this way variations as slight as the sixteenth part of an inch may be compensated for and a follower-board employed that will precisely fill the space. Each board is furnished with spring-hooks H to engage with the plunger, and with lateral guides I to enable it to be readily introduced to its place, as will be plain from Figs. 6, 7, and 8.

The usual tool-box, M, and sponge-cup N will be employed, as required in the molding.

Having thus described these improvements, I claim—

1. In a snap-flask, the grated support A, having its marginal band and cross-bars broadest at the lower edges, in combination with the corner-strips B, for the purposes herein set forth.

2. A snap-flask provided with a corner-hinge and with two spring-tongues, C C, with catches or shoulders *c* to bind the parts together or to release them, one of said fastenings being cut away centrally to permit the other to enter, substantially as and for the purpose set forth.

3. In a snap-flask, the spring-tongues C C, in combination with the metallic plates D D, formed, respectively, with the recess *d'* and the corresponding prolongation, *d*, serving to prevent independent lateral movement of the parts of the cope or nowel, substantially as and for the purposes herein set forth.

4. The adjustable follower-board F, provided with hooks H and guides I, substantially as and for the purposes herein set forth.

ELEAZER THOMAS.

Witnesses:
WM. R. SAYLES,
J. G. PERRY.