

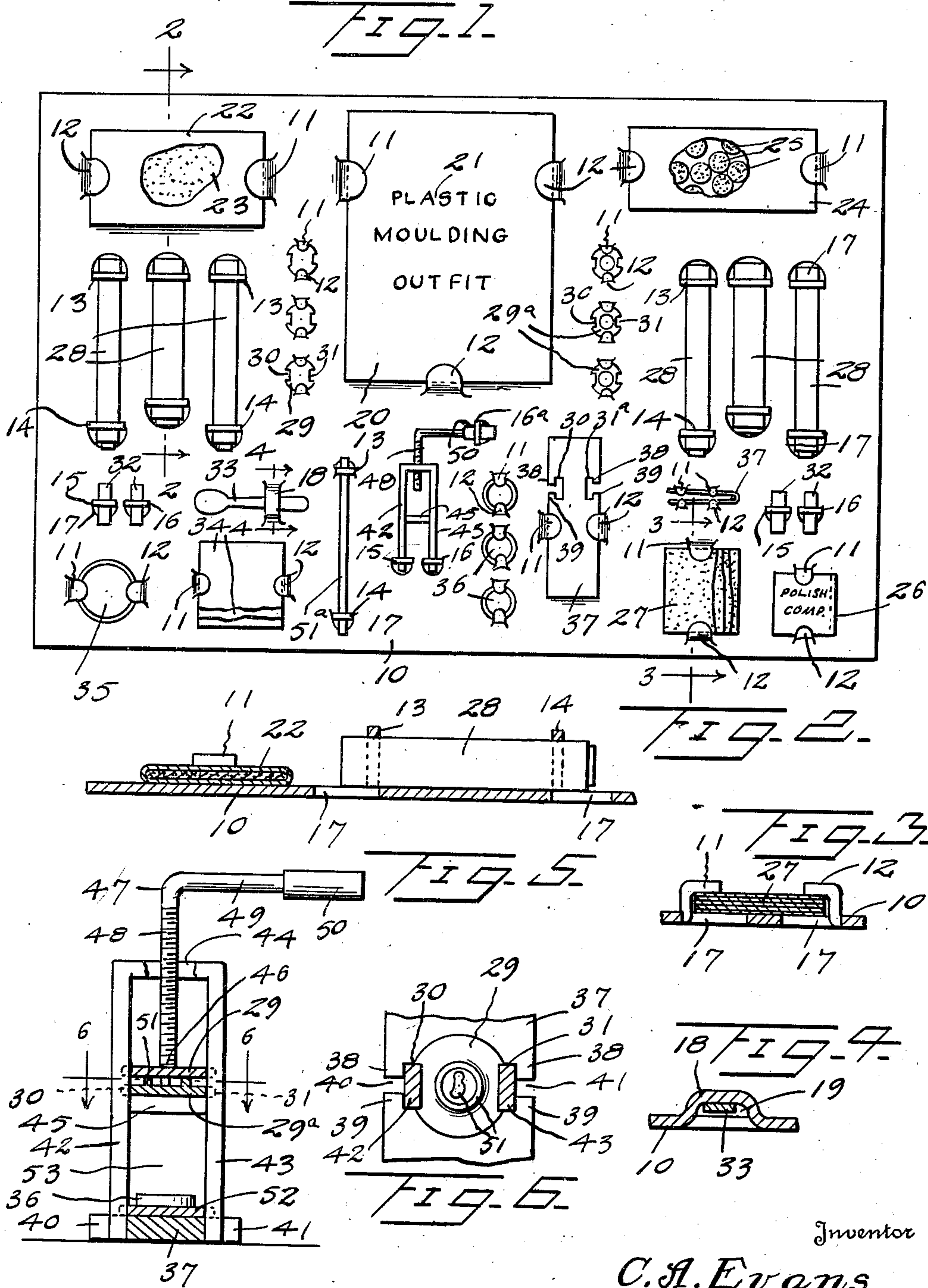
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EDUCATIONAL PLASTIC SET

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EDUCATIONAL PLASTIC SET

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2 Claims. (Cl. 46—46)

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The present invention relates to improvements in educational devices and more particularly to an educational plastic set.

One of the objects thereof is to provide a simple, efficient and inexpensive holder for various items needed to simulate in a completely miniature form the actual casting operations involved in molding plastic materials.

Another object thereof is to provide in a compact, convenient form for use by young folks an educational set of plastic media with which to mold simple, highly instructive plastic shapes and objects.

A further object thereof is to provide a complete outfit all the parts of which admit of lying in flat contact upon and against a flat backing board, as far as possible, and wherein use is made not only of plastic powders used for molding purposes but also of special equipment for carrying out the plastic molding operations easily and steadily.

A still further object thereof is to provide a practical miniature set of materials and equipment, together with a suitable book of instructions, for enabling youngsters to become acquainted in a simple way with the rudimentary principles of plastic molding so that they may apply same immediately to the casting of simple forms and bodies in a manner indicative of actual practice followed by industrial concerns.

With the above and further objects in view my invention consists in the combination, arrangement, and details of construction disclosed in the drawings, and specifications and then more particularly pointed out in the appended claims.

In the drawings, wherein similar reference characters designate similar parts throughout the respective views,

Figure 1 is a plan view of a backing board upon which is mounted an array of materials and parts of equipment needed to carry out a plastic molding operation,

Figure 2 is a fragmental sectional view taken on line 2—2 of Figure 1,

Figure 3 is a section taken on line 3—3 of Figure 1,

Figure 4 is a section taken on line 4—4 of Figure 1,

Figure 5 is a side elevation, partly in section, of the device used to cast an object in a mold, and

Figure 6 is a cross section taken on line 6—6 of Figure 5.

In the drawings, wherein the parts used are merely illustrative of my present invention, I

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disclose a complete set of materials and equipment in miniature form for molding objects from plastic materials.

On a stiff backing board of suitable strength designated 10, I effectively secure all the parts composing the plastic educational set. They have been selected with a view to facilitating mastery of the art of casting plastic articles by pressure methods. An array of the things needed is placed in easily accessible form upon the backing board 10, in such a manner that the effective area of the board may be utilized to hold and support the various things provided for repeated use.

The backing board 10 is punched out and indented in as many places as is necessary to provide integral ears or lugs for frictionally receiving and holding these things. In general 11 and 12 designate these indented lugs where they are arranged in horizontal alignment upon the board 10. Sometimes these oppositely arranged lugs 11 and 12 are arranged in vertical alignment. In either case they are used largely to hold sheet like materials with flat surfaces. As shown in Figure 3 these lugs are pressed out from slots 17 formed in a backing board 10, and they take on the form of right angularly shaped hooks to act as guides into and out of which the sheets or sheet like materials may be slid.

The ears or lugs 13 and 14 are also oppositely arranged and may be disposed in vertical alignment, being pieces struck out right angularly with respect to the face of the backing board 10. These pieces 13 and 14 are formed with openings for the slidable frictional reception of tubular or rod-like bodies. In some instances these simple right angular lugs are arranged in horizontal alignment as indicated at 15 and 16. They are also formed with openings to hold slender rod-like bodies.

Instead of lugs being pressed out from the backing board having free ends, a slot forming integral projection may be punched out in indented relation to the board as is designated 18 and such as is shown in Figure 4. This is a loop shaped cleat which is extended outwardly from the board 10, and disposed either in a vertical or horizontal direction on the board, in such a manner as to provide a guiding slot 19 for receiving and holding frictionally an object used in casting.

The foregoing means of removably holding or supporting the various items provided for molding plastic compositions may be varied but are found inexpensive expedients because punched out from the same backing display board 10.

The set contains, besides the things needed for molding, a book of instructions 20, entitled



that he will dovetail the same into the legs 42, 43 of the press to seat this plate upon the cross beam 45 thereof. This he effects by fitting the recessed portions 30, 31 of the plate against the legs. Having done this, he similarly dovetails the recessed portions 30, 31 of a cover plate 29 upon the legs of the press and places this cover plate in surmounted relation with respect to the mold plate 29.

The next step in the procedure is to raise the tip end 46 of the screw rod 48 in the press high enough to enable the cover plate 29 to be raised with one hand above the mold plate 29a to permit molding plastic powder to be poured into the mold plate. For this purpose one of the tubes 28 will be removed from the board and its contents emptied into the recesses delineating the form of the object it is desired to cast. If it is desired to color this powder before pouring same into the mold plate the boy will remove dish 35 from the board and empty some of the contents of tube 32 into this dish, after removing the tube from the board. Then having poured powder from tube 28 into this dish 35, he takes the spoon 33 from the board and stirs up well the coloring matter and the powder by means of this spoon until he gets the proper consistency desired.

Before pouring the powder into the mold plate 29a the boy will take some wax from envelope 22 and coat the impression-making surface of plate 29a therewith as well as the covering surface of the cover plate 29. He takes one of the dishes 36 and sets it down upon the plate 52 which rests upon the base board 37, removes a heating pellet or tablet 25 from envelope 24 on the board and places the tablet in this dish. He turns the crank 49 of screw rod 48 and advances the screw downwardly until its top end 46 engages the cover plate 29. He then lights the heating tablet in the dish 36 to set it aflame. This is denoted at 53. He presses the cover plate 29 against the mold plate 29a which contains the plastic powder.

He allows the flame 53 to play upon the under surface of the mold plate 29a for a short period of time to heat the powder in it. At the right temperature the powder begins to cake and solidify in the mold plate 29a, with a tendency to bloat itself out of the mold. By imparting the right degree of pressure of the cover plate 29 upon the mold plate 29a no surplus material can leave the mold plate 29a, and the mass to be shaped therein will be confined between the two plates.

At the proper time the crank 49 will again be turned to retract the tip 46 of screw rod 48 from engagement with cover plate 29. The boy then removes the tweezers 37a from the board and by means of same can grasp hold of the cover plate and remove it from the press. Due to the wax glazed surface of the cover plate which covered the plastic mass in the mold plate the cover plate should not stick to this mass. Similarly due to the fact that the boy has wax glazed the surface of the impression making part 51 of the mold plate, he should be able to quickly remove as by dropping the shaped mass out of the mold plate without difficulty.

He can now take the polishing rag or cloth 34 in one hand after applying some of the polishing composition contained in envelope 26 on the board upon the surface of the object just cast. He will then rub and burnish the object until it takes on a polished glaze.

In carrying out the steps of the procedure outlined hereinbefore the same practical effects are produced on a miniature scale as are obtained by following more elaborate industrial applications. The student is enabled to learn the rudiments of this art of plastic molding and how to bestow particular attention by restoring to minor details of finishing the object shaped out from the plastic composition. He learns in an orderly way how to become proficient in the use and application of the different media employed in plastic molding.

I do not mean to confine myself to the exact details of construction set forth herein save as pointed out in the appended claims.

What I desire to claim is:

1. In combination a base board having oppositely arranged marginally disposed rectangular slots provided with confronting cheek members to provide relatively small side apertures, an upright frame including posts rectangular in cross section which are fitted with their lower ends in said rectangular slots, a top cross bar integral with said posts, an intermediate cross bar between said posts, and a mold and a cover disk each having diametrically opposite rectangular recesses and a diameter larger than the distance apart of said posts, each of said disks adapted to be diagonally positioned between said posts for engaging the recessed portions thereof in dovetailed relationship with said posts to horizontally dispose said disks for seating upon said intermediate cross bar, and a crank-carrying screw rod threaded adjustably into the top cross bar of the posts and having its free end adapted to press one disk against the other disk.

2. In an educational plastic set comprising miniature molding apparatus, an inverted U-shaped press frame comprising a pair of spaced apart parallel side posts on said frame and an integral upper cross bar on said frame between said posts, an intermediate cross bar between said posts below said upper bar, a base, said base formed with slots therethrough along the marginal edges thereof, the lower ends of said posts slidably and frictionally engaging in said slots, a bolt threadably engaging through said upper cross bar, a substantially circular upper mold disk slidably supported on said posts, a lower mold disk seated on said intermediate cross bar, each of said disks formed with marginal recesses on opposite side edges thereof for engagement about said posts and a removable dish adapted for the reception of a heating tablet seated on said base between said side posts.

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