

July 12, 1927.

1,635,261

C. E. DANIELS

PENCIL MOLD

Filed Nov. 13, 1926

Fig. 1.

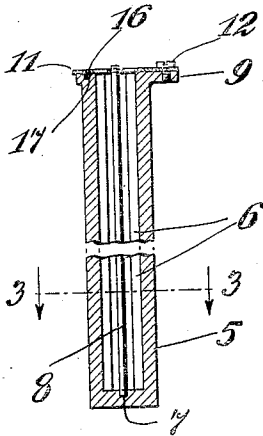


Fig. 2.

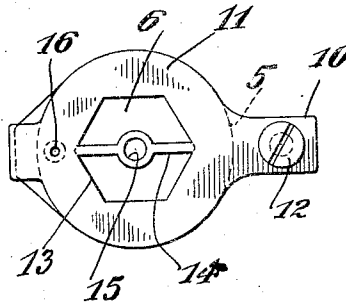


Fig. 3.

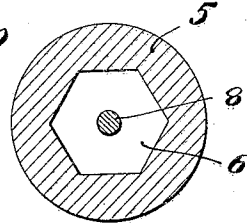


Fig. 4.

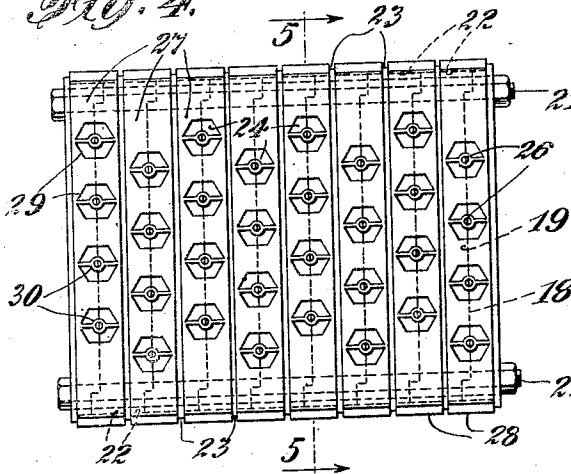


Fig. 6.

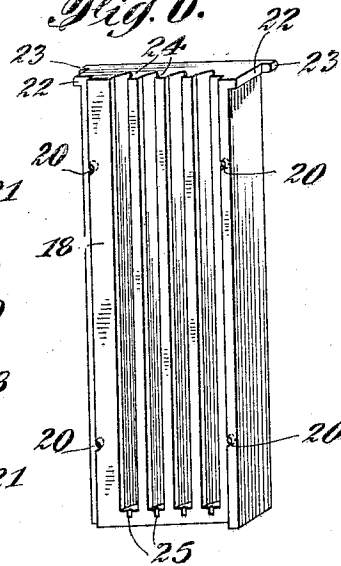


Fig. 5.

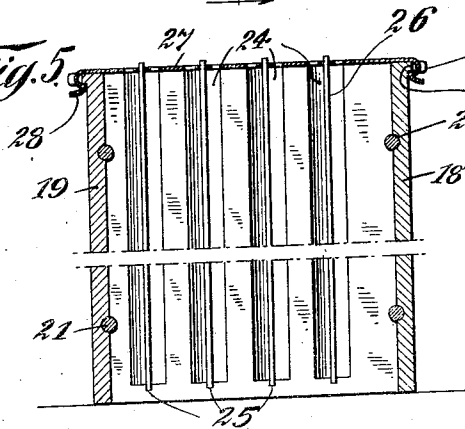
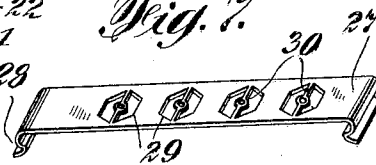


Fig. 7.



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UNITED STATES PATENT OFFICE.

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PENCIL MOLD.

Application filed November 13, 1926. Serial No. 148,155.

This invention relates to pencil molds, and has for its primary object to provide a simply constructed device whereby a plastic mass of wood or paper pulp may be molded under pressure around a centrally positioned lead core.

It is another object of the invention to provide a pencil mold which may be inexpensively produced in single or multiple units and which is provided with a simply formed and easily adjustable means for accurately holding the lead core in a central position in the mold cavity against possible displacement under the pressure of the plastic material as it is filled into the mold.

With the above and other objects in view, the invention consists in the improved pencil mold, and in the form, construction and relative arrangement of its several parts as will be hereinafter more fully described, illustrated in the accompanying drawings, and subsequently incorporated in the subjoined claims.

In the drawings, wherein I have disclosed several simple and practical embodiments of the invention and in which similar reference characters designate corresponding parts throughout the several views,—

Figure 1 is a longitudinal sectional view through a single unit mold showing one practical form of the invention;

Fig. 2 is an end elevation thereof;

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1;

Fig. 4 is an end elevation illustrating a multiple type mold;

Fig. 5 is a longitudinal sectional view taken on the line 5—5 of Fig. 4;

Fig. 6 is a detail perspective view of one of the mold sections, and

Fig. 7 is a perspective view of the lead holding plate.

Referring in detail to the drawings, and more particularly to Figs. 1, 2 and 3 thereof, the mold body 5 may consist of a metal casting having a chamber or cavity 6 of predetermined cross sectional form and extending substantially the entire length of the mold. At the base of this cavity, the wall of the mold is centrally provided with a cylindrical recess or socket 7 which is adapted to receive one end of the pencil lead indicated at 8.

The other end of the mold body 5 is formed with a radially projecting arm 9 to

which the arm 10 of a metal disc or plate 11 is pivotally connected by a suitable screw or bolt 12. This disc 11 is provided with an opening 13 therein conforming in area and shape to the cross sectional form of the mold chamber 6, said opening being bisected by a narrow web 14 extending in the plane of the disc and centrally provided with the opening 15. The metal disc 11 is further provided with an indentation forming a protuberance 16 adapted to seat in a shallow recess 17 formed in the end face of the mold body 5.

In the use of the molding device above described, the pencil lead 8 is arranged axially within the mold chamber with one of its ends seated in the socket 7 and the other end of said lead positioned in the opening 15 of the plate 11. The wood or paper pulp is then forced under pressure through the opening 13 in the disc 11 and into the mold chamber so that the fibers thereof become closely compacted in a homogeneous mass around the central lead core 8. The mold is then subjected to heat by any suitable means so that the moisture content of the compressed pulp mass will be evaporated and driven off whereby the pulp mass is rendered hard or rigid. The edge of the disc 11 opposite the pivot 12 is then slightly lifted to disengage the protuberance 16 from the recess 17 and to disengage the projecting end of the lead 8 from the opening 15. This disc or plate is then swung laterally on the pivot 12, thus permitting the formed pencil to be removed from the mold chamber.

In Figs. 4 to 7 inclusive, I have illustrated a multiple type mold, in which each mold unit consists of the two sections 18 and 19, respectively, the meeting faces of which along the longitudinal edges of the mold sections, are provided with suitably formed tongues and grooves, respectively, to prevent relative transverse shifting movement of the mold sections. These mold sections are also provided with registering openings indicated at 20, said openings in a plurality of the mold units aligning with each other to receive the tie bolts 21. One end of each mold section is further provided with flanges 22 and spaced lugs 23. The meeting faces of the mold sections of each unit are provided with mating longitudinally extending mold cavities 24 opening upon the latter ends of the mold sections. At the other ends

of these cavities and centrally thereof a semi-circular socket or seat indicated at 25 is formed in the wall of each mold section. Thus, when a series of mold units are assembled and secured together by means of the tie rods 21, a plurality of series of mold chambers are provided and within each chamber a lead indicated at 26 is adapted to be centrally positioned.

10 A lead holding plate 27 as shown in Fig. 7 of the drawings, is adapted to be associated with each mold unit. The ends of this plate are provided with the resiliently yieldable clamping flanges 23 which are adapted to
15 clamp over the flanges 22 on the mold sections, thus holding the plate closely against the ends of said mold sections. This plate has a series of spaced openings 29 therein similar to the openings 13 previously referred to and which are adapted to exactly
20 register with the mold cavities. These openings 29 are similarly bisected by webs 30 having the central openings to receive one end of the leads 26. Thus, when the leads
25 are inserted, they will be supported at one of their ends by these webs 30 while the other ends are supported in the sockets 25, thus securely holding said leads in line with the exact axial center of the respective mold
30 chambers when the plastic pulp mass is forced into said chambers. After the mold chambers have been filled with the pulp mass, the several mold units are then subjected to the application of heat as above
35 referred to in order to render the pulp hard and rigid. The several plates 27 are then removed and the formed pencils removed from the mold chambers.

40 From the foregoing description considered in connection with the accompanying drawings, the construction and manner of use of my invention as herein disclosed will be clearly understood. It will be seen that by means of such a mold pencils produced
45 from a plastic mass of wood pulp or paper can be very rapidly made. Likewise the pencil body will be accurately formed to the desired shape and size. Since the mold

structure in the several embodiments herein shown is of very simple form, it will be
50 apparent that the manufacturing cost thereof will be relatively small. While I have disclosed several practical instructions, it is nevertheless to be understood that the essential features of my present improvements
55 may also be embodied in various other alternative structures, and I accordingly reserve the privilege of resorting to all such legitimate changes therein as may be fairly embodied within the spirit and scope of the
60 invention as claimed.

I claim:

1. A pencil mold comprising a plurality of mold units, each having a series of chambers open at one of their ends to receive a
65 plastic mass and provided with a central recess at the other end of each mold chamber to receive one end of a pencil lead, means for rigidly securing a plurality of the mold units in connected relation, and
70 means adapted to be removably connected with each mold unit and extending over the open ends of the mold chambers to support the other ends of the pencil leads.

2. A pencil mold comprising a plurality
75 of mold units, each having a series of chambers open at one of their ends to receive a plastic mass and provided with a central recess at the other end of each mold chamber to receive one end of a pencil lead, means
80 for rigidly securing a plurality of the mold units in connected relation, said mold units at the open ends of the chambers being provided with flanges, and a plate adapted for detachable connection with each mold unit
85 having yieldable flanges at its ends to engage the flanges of the mold units, and said plate provided with spaced openings to register with the open ends of the mold chamber, and having means associated with
90 each of said openings for supporting the other ends of the pencil leads.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

CHARLES E. DANIELS.