May 10, 1932. D. MALDARI 1,857,313

MACARONI DIE

Filed Sept. 13, 1930

FIG. 1

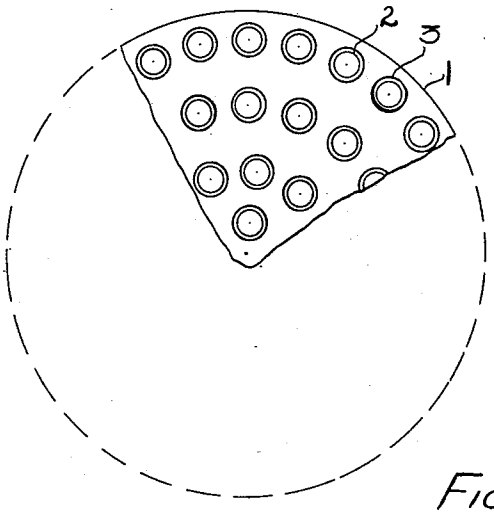


FIG. 2

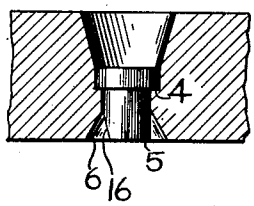


FIG. 3

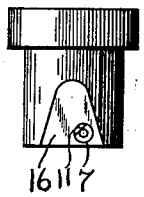


FIG 8

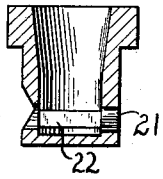


FIG. 4

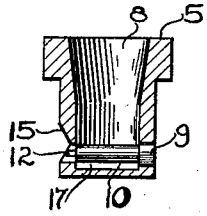


FIG. 9

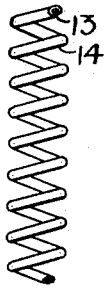


FIG. 6

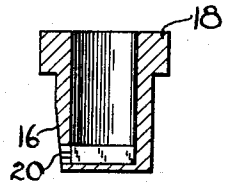


FIG. 5

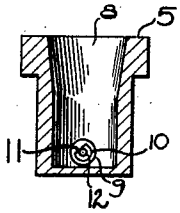
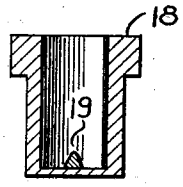


FIG. 7



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Patented May 10, 1932 1,857,313

UNITED STATES PATENT OFFICE

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MACARONI DIE

Application filed September 13, 1930. Serial No. 481,680.

The die, the subject of this invention, is intended for the production of Fusilli macaroni, and the name "Fusilli" is in the trade applied to a twisted macaroni, or a macaroni produced in a spiral form.

The object of this invention is to produce a die of simple construction; one that is far cheaper to construct than any of the present known Fusilli dies, and one wherein repairs can be made with little difficulty, as it is found that semi-complicated dies require repair at surprisingly frequent intervals.

Another object of the invention is to produce a die wherein the form producing part is a separate unit, removable or replaceable without disturbing the other units of the die, and another object of the invention is to produce a die wherein the form producing part is in itself produced as a die casting, thus not only simplifying the construction, but also cheapening it.

The following is what I consider the best means of carrying out this invention, and the accompanying drawings should be referred to for a complete understanding of the specification which follows.

In the drawings:—

Fig. 1 shows a top plan view of a fractured portion of a die.

Fig. 2 is a sectional view through the die plate, showing one of the elements in plates.

Fig. 3 is a side elevation of the element shown in Fig. 2, but on an enlarged scale.

Fig. 4 is a sectional view thereof.

Fig. 5 is a sectional view taken at right angles to the view shown in Fig. 4.

Fig. 6 is a sectional view of a die-cast element.

Fig. 7 is a view taken at right angles thereof.

Fig. 8 is a sectional view of an element of modified construction, and

Fig. 9 shows in elevation, the product of the die.

Similar reference numerals indicate like parts in all the figures where they appear.

At 1, I show a die plate. These die plates are usually made circular, and are provided with a great number of perforations, as shown at 2 and 3, the number of perforations being determined by the size of the die and the desired product therefrom.

As shown in Fig. 2, each perforation is provided with two diameters, which result in the formation of the shoulder 4, upon which the removable element 5 is received, and it will be noted that the perforation at the underside of the die is chamfered or counter-sunk, as indicated at 6, so as to provide a space from which dough may exude in the operation of the die.

The importance of this counter-bore portion will be appreciated when it is noted that the discharge opening of the element 5 is at the side of the element, as shown at 7 in all the remaining figures. The counter-bore, then, makes it possible to arrange the removable units 5 in such position that their lower surfaces are on the plane of the underside, or underface of the die plate 1.

Referring to Figs. 4, 5, 6, 7 and 8, it will be noted that the removable members are provided with a large central well 8 the sides of which may be tapered.

Entering through one side wall of the member 5, and extending through the other side wall, is a perforation, which is adapted to receive a pin. The pin is provided with a head 9 and an extended portion 10, one side of which is flattened, as shown at 11, and this pin terminates in a short pin 12, which serves to produce the hole which is shown at 13 in the spiral 14, which is the product of this unit 5.

In Fig. 4, a slot 15 is produced adjacent to the perforation wherein the pin 12 is arranged. This slot is to give clearance for the exuding paste. In the structure shown in Figs. 2, 3 and 6, the side of the removable

member is cut away at an angle, as shown at 16.

Fig. 5, shows the arrangement of the removable member 5, and the pin arranged therein, and it will be noted in this construction, that a limited space 17 is provided under the body portion of the pin 10.

In the construction shown in Figs. 6 and 7, the pin 9—10—12, which as in the earlier figures, has been described as a separately formed member, is formed integral with the body portion, and in these figures, the body portion is shown at 18, and formed at the bottom thereof, is a pyramidal member 19 having a projecting pin 20. This is the construction of the die-cast member, which works quite satisfactorily, and which is much cheaper.

If it is desired that the spiral member be not provided with a central hole, the hole forming portion of the pin will be omitted, and the device will take the appearance of that shown in Fig. 8, where the removable member is shown at 21, and the short pin is shown at 22.

The cut-away portion 11 of the body portion 10 of the pin previously referred to is provided so that the paste passing this cut-away portion will travel at a higher speed than the paste passing the noncut-away portion. This freer delivery of paste is what causes the exuding paste to twist one portion of the paste traveling through the die faster than the next adjacent portion will cause this portion to assume a path of greater length than the restricted portion, thus resulting in a curl or twist in the final product.

Of course I understand that modifications may be made within the scope of the appended claims; that changes may be made in the proportion of all parts, and in the relation of one to the other, so long as the general principle of this device is maintained.

Having carefully and fully described my invention, what I claim and desire to secure by Letters Patent is:—

1. A macaroni die comprising a die plate having a plurality of perforations therein and shoulders formed in said die plate and in the perforations therein, removable members receivable one in each said perforation and being supported upon the shoulder therein, each said removable member being provided with a discharge port, and a forming means arranged in each said removable member and adjacent the discharge port, said forming means being arranged at right angles to the longitudinal axis of its removable member.

2. Means for producing spiral macaroni, a die having a plurality of units, each said unit being provided with a discharge port at the side thereof, and each said unit being provided with a cut-away portion adjacent the discharge port, and forming means in each said unit and adjacent and co-operating with the discharge port thereof, each said forming means having a cut-away portion extending the full length thereof.

3. Means for producing spiral macaroni, a die having a plurality of removable units therein, each said unit being provided with a centrally disposed well, a discharge port at the side thereof, and each said unit being provided with a cut-away portion adjacent the discharge port, and removable forming means in each said well and at right angles to the longitudinal axis thereof and adjacent and co-operating with the discharge port thereof, each said forming means having a cut-away portion at one side thereof to expedite the dough passing adjacent thereto.

DANIEL MALDARI.