K. GAMMEL.

DIE FOR FORMING EDIBLE PASTES.

APPLICATION FILED AUG. 19, 1911.

1,159,489. Patented Nov. 9, 1915.

Fig. 1.

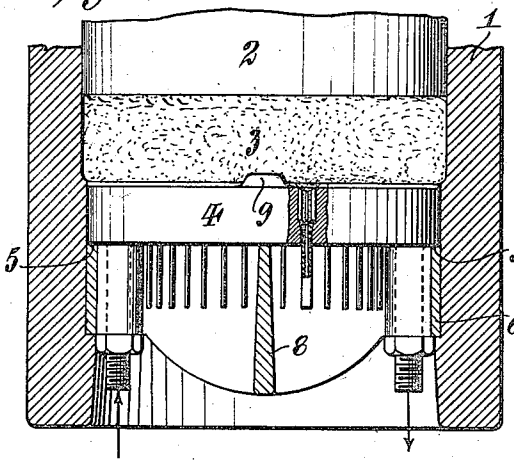


Fig. 2.

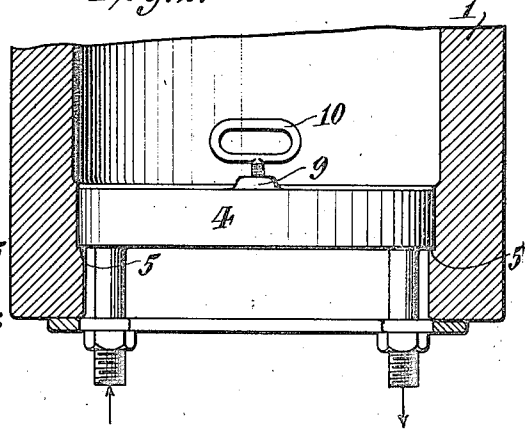


Fig. 3.

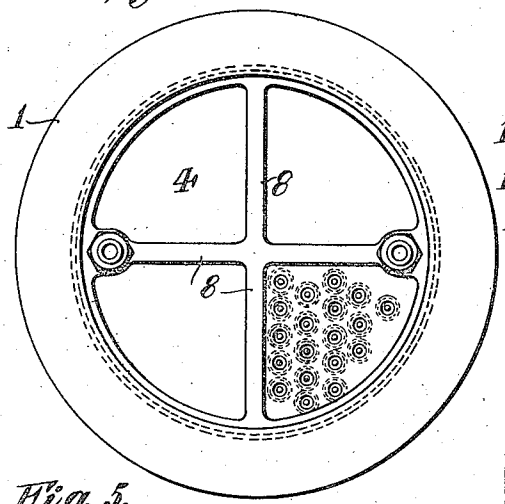


Fig. 4.

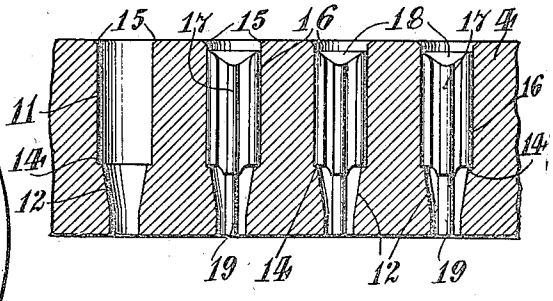


Fig. 9.

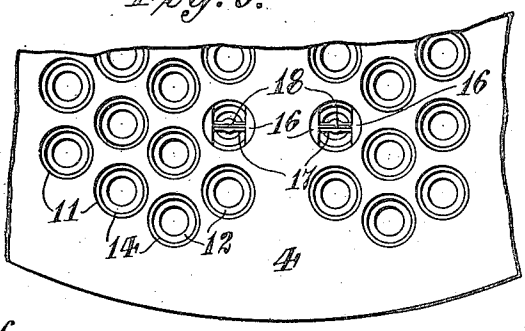


Fig. 5.

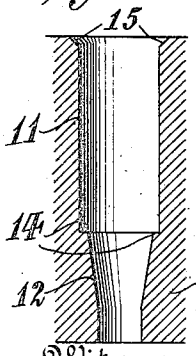


Fig. 6.

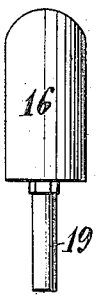


Fig. 7.

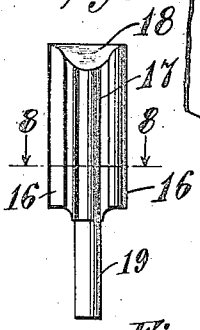
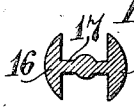


Fig. 8.



Witnesses:
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Inventor
Karl Gammel
By his Attorneys
Reading, Hurley & Austin.

UNITED STATES PATENT OFFICE.

KARL GAMMEL, OF CLEVELAND, OHIO, ASSIGNOR TO THE CLEVELAND MACARONI COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

DIE FOR FORMING EDIBLE PASTES.

1,159,489. Specification of Letters Patent. Patented Nov. 9, 1915.

Application filed August 19, 1911. Serial No. 645,024.

To all whom it may concern:

Be it known that I, KARL GAMMEL, a subject of the Emperor of Germany, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Dies for Forming Edible Pastes, of which the following is a specification.

In the manufacture of edible pastes, such as macaroni, it is necessary to form the product with a hollow interior. This is accomplished by forcing the paste through a form provided with openings having pins therein under very heavy pressure. These pins must be elastic, so that they will not readily break under pressure, but they must be sufficiently strong so that they will not bend, and they must be fastened securely so that they cannot be pushed to one side or work loose. Heretofore great difficulty has been experienced in securing these pins in place so that they will operate effectively, and at the same time permit the form to be properly cleaned. Among the various constructions heretofore employed the simplest form has been to bend a piece of wire in U-shape over the passage, and fasten the same to holes drilled in the form. It has also been customary to solder the pin to the form.

The primary object of my invention is to provide a construction whereby the pin shall be securely held against displacement and at the same time will always remain properly centered.

A further object of my invention is to provide a construction which will permit the pin to be readily removed so that both the pin itself and the form can be thoroughly cleaned.

A further object of my invention is to provide a construction which will permit the largest possible number of passages to be provided in a form of given area, so that the maximum quantity of goods may be produced from a single press.

The various other objects of the invention will be more fully set forth in the following description of apparatus embodying my invention, which consists in the new and novel features of construction and combinations of parts hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a vertical section of a press provided with my improved die. Fig. 2 is a vertical section of the same showing different means for securing the die in place, and also the means for removing the same from the press when desired. Fig. 3 is a bottom view of the press shown in Fig. 1. Fig. 4 is a cross-sectional view through a portion of the die showing the position of the pins. Fig. 5 is an enlarged detail sectional view showing one of the passages in the die and the seat formed therein for the pin. Figs. 6 and 7 are front and side elevations respectively of the pin. Fig. 8 represents a cross-section of the pin on the line 8—8 of Fig. 7. Fig. 9 is an enlarged plan view of a portion of the die showing the pins in place.

Referring to the drawings the press 1 which may be of any well known construction, is provided with a plunger 2 which forces the paste, such as macaroni paste 3 through the die 4. The die is supported in the press preferably upon a shoulder 5 either formed integral with the press as shown in Fig. 2 or formed by a separate sleeve of bushing 6 as shown in Fig. 1. The die is supported in any suitable manner as by the brace or braces 8. The die is also provided with a threaded socket 9 which permits the insertion of a suitable handle 10 so that it can be removed from the press if desired. The die is provided with a plurality of passages for the paste. Said passages are preferably cylindrical in section throughout a portion of their length as at 11 and gradually taper, and are approximately conical in section as at 12 throughout the remainder of their length. A shoulder 14 is formed in the die at the point where the tapered portion of the passage begins.

Preferably the top of the cylindrical portion of the passage is slightly flaring as indicated at 15. The pin comprises two segments 16 connected by a transverse web 17 which is beveled at its top to form an edge 18. The stem or pin proper 19 is formed integral with the web and extends below the retaining segments. Preferably the contour of the stem is continued substantially throughout the length of the web. The top portion of the segments are also beveled to a thin edge.

In operation the bottoms of the segments, which are squared, seat upon the shoulder 14 and hold the pin against downward displacement. The paste is forced into the openings in the die and into contact with

the sharp edge of the connecting web 17, which is preferably arranged below the flaring mouth of the cylindrical portion of the opening. This edge separates the portion of the paste, and the continued pressure forces the two parts through the passages which are formed on both sides of the web between the wall of the die and the portion of the pin which is cut away between the two segments. As the paste is forced through the conical portion of the die opening, the two edges are forced together around the depending stem forming the central opening or passage in the macaroni.

By means of this construction the pins are secured to the die in such a way that they cannot become displaced or get off center, and at the same time the pins can be readily removed for the purpose of cleaning the die. This construction permits a relatively large number of openings to be made in a given die area as the adjacent rows of openings can be staggered. This construction also permits a much greater pressure to be put upon the press than the various other form of pins heretofore employed and thus increases considerably the capacity of the die. It will be noted, also, that the pins can be cut out of drawn rods, thus reducing the cost of manufacture.

It is obvious that various other changes and modifications within the skill of the mechanic may be made in the details of the construction herein shown and described without departing from the spirit of the invention, provided the means set forth in the following claims be employed.

I claim as my invention:—

1. A die for forming edible pastes, provided with a plurality of openings having their upper portions approximately cylindrical in section and their lower portions conical in section, and a shoulder between said cylindrical and conical portions, of a pin supported in said openings comprising segments seating upon said shoulder and extending part way around said openings, a web connecting said segments intermediate the ends thereof and a stem formed integral with said web.

2. A die for forming edible pastes having openings therein comprising an approximately cylindrical portion and an approximately conical portion, of a pin comprising segments engaging in and extending part way around said cylindrical portion, a web connecting said segments intermediate the ends thereof and a stem formed integral with said web and projecting into the conical portion and arranged axially thereof.

3. A die for forming edible pastes having openings therethrough, and having a shoulder formed in the wall of said openings, of a pin supported on said shoulder and comprising a web beveled at its upper end to form a cutting edge and having a cylindrical stem formed integral therewith and depending below said shoulder, and means secured to said web and extending part way around said openings for centering said stem, said means having their greatest cross section of material disposed adjacent their connections with the web.

4. A die for forming edible pastes, provided with an opening therethrough, and having a shoulder formed in the wall of said opening, of a pin supported in said opening comprising a web extending diametrically across said opening, segments formed integral with said web seating upon said shoulder, and engaging part of the wall of the opening, leaving the other part of the wall open for the free passage of the paste through the opening, and a stem formed integral with the web and extending below the shoulder and being of substantially the same diameter throughout the length of the web.

5. A die pin for use with an edible paste die plate, comprising a stem, a pair of webs extending diametrically from opposite sides of said stem, the outer edge of each web being enlarged to form a pair of spaced apart seating members for the pin.

6. A die for forming edible pastes provided with an opening therethrough, a die pin removably positioned in said opening below the top thereof, the portion of the opening above said pin being substantially cylindrical and having a flaring mouth above the top of the pin, said pin including a stem, a transverse web and laterally extending centering members at opposite ends of said web, the upper end of said stem, web and centering members being beveled whereby the paste is fed easily through the opening and about the stem without meeting intercepting shoulders.

7. A die pin for use with an edible paste die plate comprising a stem, a pair of webs extending diametrically from said stem beveled at their top to form a cutting edge and centering segments forming the outer end of each of said webs having their top portions beveled.

This specification signed and witnessed this 4th day of August A. D., 1911.

KARL GAMMEL.

Witnesses:
T. P. CADLE,
WM. G. BENEDICT.