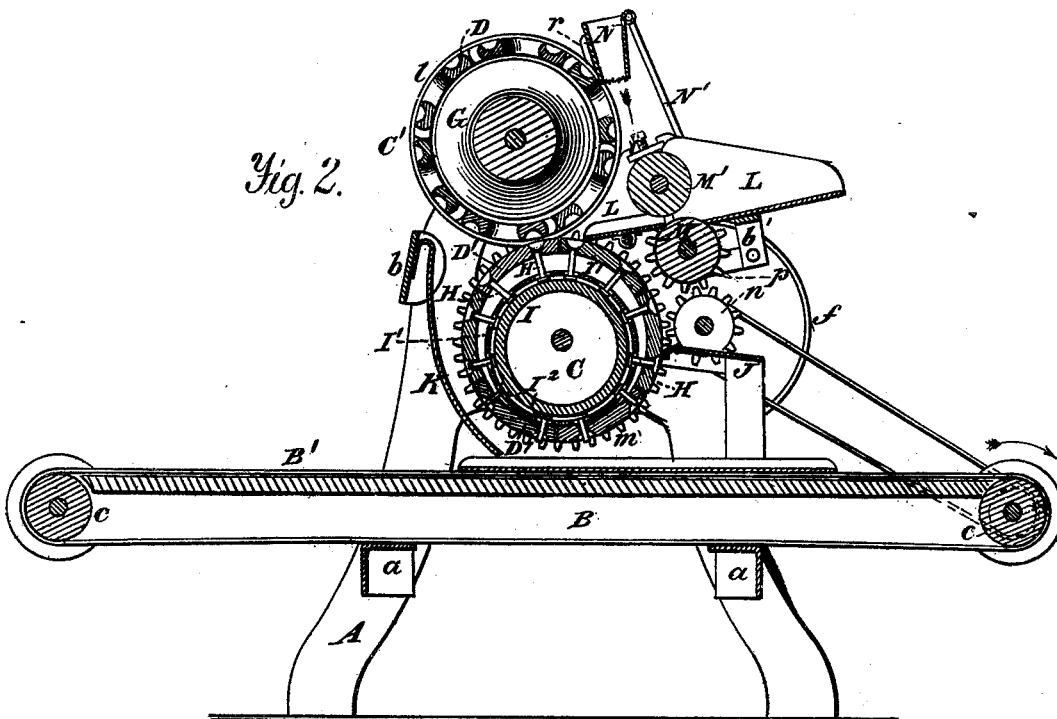
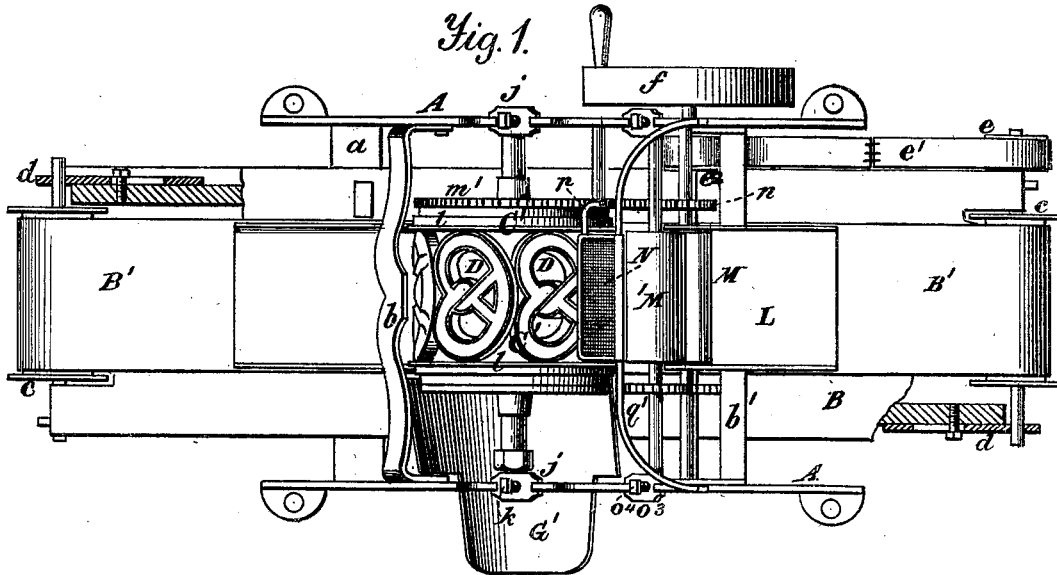


W. LAMPERT & H. HUBER.
Bretzel-Machine.

No. 215,006.

Patented May 6, 1879.



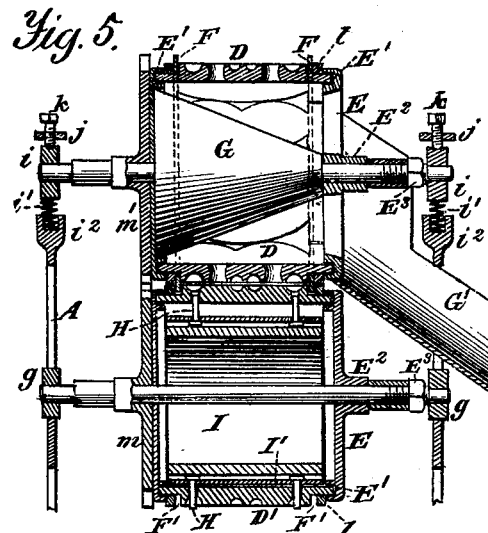
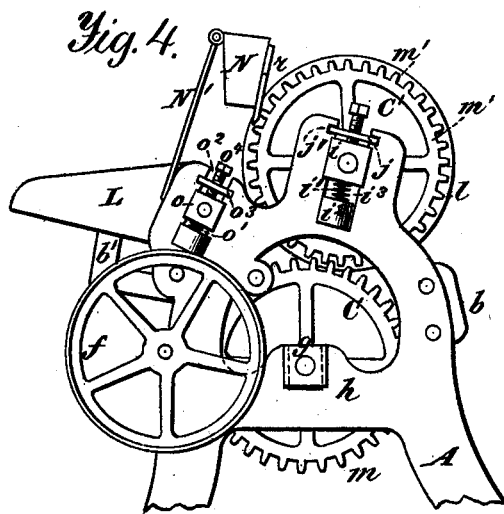
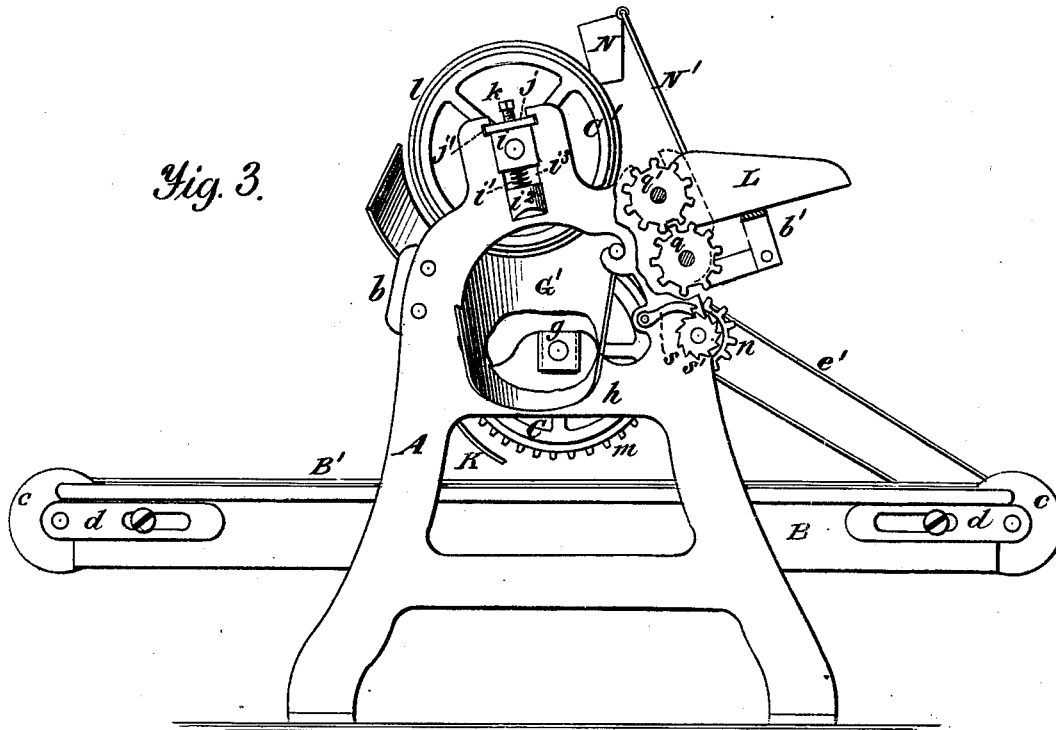
Witnesses.
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William Lampert,
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UNITED STATES PATENT OFFICE.

WILLIAM LAMPERT AND HENRY HUBER, OF CRESTLINE, OHIO.

IMPROVEMENT IN BRETZEL-MACHINES.

Specification forming part of Letters Patent No. **215,006**, dated May 6, 1879; application filed January 17, 1879.

To all whom it may concern:

Be it known that we, WILLIAM LAMPERT and HENRY HUBER, of Crestline, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Machines for Making Bretzels; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is a plan view of our improved bretzel-machine. Fig. 2 is a longitudinal section of the same, and Figs. 3 and 4 are side views thereof. Fig. 5 is a section of the rolls.

The same part in the several figures is denoted by the same letter.

This invention relates to certain improvements upon our machine for making bretzels, patented November 28, 1876, and numbered 184,786, its object being to feed and reduce the dough to the required thickness, dust or sprinkle the dough, stamp it into shape, and expel it upon a delivering-apron or into pans placed upon the latter, all in one continuous operation, and simultaneously therewith, to remove and discharge from the stamping-cylinder scraps, and scrape or clean the expelling-cylinder.

To these ends our invention consists of the devices composing the same, as hereinafter described and claimed.

In the accompanying drawings, A A refer to two side supporting-frames connected together at their lower ends by cross-pieces *a a* and at their upper ends by the cross-pieces *b b'*. B is a table or board fastened upon the cross-pieces *a* of the frames A, and provided at its ends with rollers or cylinders *c c*, whose shafts are hung in adjustable bearings or plates *d d*. One of the shafts of said rollers is provided with a driving-pulley, *e*, around which passes a belt, *e'*, also passing around a pulley, *e''*, on the shaft of the driving or band wheel *f*, driven either by hand or other motor. This latter shaft is journaled in one of the upright frames A. B' is a delivering-apron embracing the rollers *c c*, and extending along the table or board B. C C' refer to two

cylinders hung preferably one above the other, the shaft of one bearing in movable blocks *g*, fitting in slots in cross-pieces *h*, between the two uprights of each of the side supporting-frames A, as clearly seen in the two side views marked Figs. 3 and 4. The shaft of the other or upper cylinder, C', is hung in similar blocks, *i*, bearing upon springs *i'*, seated in sockets *i*, formed in the upper ends of the upright frames A, at the bottoms of slots *i''*, holding the blocks *i*. The blocks *i* are held in place by plates *j*, fitted in the slots *i''*, with their ends let into recesses *j'*, and set-screws *k* passing down through the plates *j* and bearing against or upon the blocks *i*. This manner of adjusting the shaft of the cylinder C' in position provides a yielding surface of contact between the two cylinders for the passage of the dough. The screws *k* enable the bringing of the cylinders closer together, or the increasing or diminishing of the pressure between them. The upper cylinder, C', is provided with a number of dies or cutters, D D, either in the shape of a bretzel or jumble, or they may be made to conform to any other shape desired. Each of these dies or cutters is removable for convenience in replacing the same by dies or cutters of any other configuration. To this end the ends or heads of the cylinders are constructed of spoked rings E, with annular grooves or chambers E' to receive the ends of the dies or cutters D D', and fitted upon the shafts of said cylinders by hollow sleeves or hubs E². Only one of these heads or ends of each cylinder is removable, however, that being sufficient for the removal of any one, or all of the dies, which removable ends or heads are secured in position upon the cylinder-shafts by nuts or burrs E³. Upon each side of the dies or cutters is placed a thin ring, E, which penetrates a greater or less extent a groove, E', in each side of the lower cylinder, C. The object of this is to prevent the dough projecting from the sides of the dies or cylinders. In between the heads or rings E and the rings or flanges F are interposed packing-rings *l*.

G is a cone or tapering device arranged within the cylinder C', with its tapering or smaller end terminating at the open side of the said cylinder, from which side of said cylinder extends a discharging-spout, G'. By

this arrangement it will be seen that the scraps, falling through the interstices between the dies or cutters of the cylinder C' as they cut the dough, will come into contact with the inclined surface of the cone, and thus be conducted to the open side of the said cylinder and allowed to fall upon and be carried off by the spout G'.

m m' are cog-wheels engaging with each other, and supplied to the opposite ends of the cylinders C C' for causing their simultaneous operation or rotation, the lower one, *m*, gearing with a similar wheel, *n*, on the shaft of the band or driving wheel *f*.

Arranged within the cylinder C is a number of studs, H, say, about six, (though only four are shown,) supplied to each bretzel or jumble, they being fitted to project through apertures in the cylinder when acted upon as presently described, and provided with heads upon their inner ends to prevent their falling out when projected.

I I' refer to two inner cylinders, one arranged within the other and both within the cylinder C. The cylinder I' has a series of peripheral apertures, I², through which the inner ends of the studs H are inserted, with their heads resting against the periphery of the cylinder I, as clearly seen in Fig. 2. The cylinders I I' are free to revolve with the rotation of the cylinder C.

From this arrangement it will be seen that the studs H, at the bottom of the cylinder C, will be projected so as to expel the bretzel or bretzels by the cylinder I, and that, as the said projected studs are carried up or elevated with the revolving cylinder C, they will be retracted by the cylinder I', and as the retracted studs again descend they will be again projected by the cylinder I. The expelled bretzel or bretzels will fall upon the delivering-apron, or rather into the pans placed thereon.

J is a scraper fastened in proximity to the cylinder C for cleaning the same, and K is a plate arranged upon the opposite side of the said cylinder for preventing the bretzel or jumble from accidentally leaving or falling off the cylinder just previous to delivery. L is the feeding-trough, secured upon the cross-piece *b'* of the supporting-frames A, about opposite the point of entrance between the cylinders C C'. M M' are two rollers arranged at the inner end of the trough L, and one above the other, the purpose of which is to reduce the dough as it leaves the trough to the required thickness. Their shafts are hung one in the side supporting-frames A, and the other in blocks or bearings *o o*, seated upon springs *o¹ o¹*, let into sockets at the bottom of slots *o²*, within which said blocks are placed. Disposed in the same slots are plates *o³*, with their ends let into recesses at the sides of said slots. *o⁴ o⁴* are set-screws passing through the plates *o³*, and bearing upon the blocks or bearings *o o*. This mechanism permits of the varying of the space between the rollers M M'

to regulate the thickness of the sheet of dough. The shaft of one of the rollers M M' is provided with a cog-wheel, *p*, gearing with the driving cog-wheel *n*, through which motion is imparted to the lower roller, M, whose shaft is further provided with a pinion, *q*, meshing with a similar pinion, *q'*, on the shaft of the upper roller, M'. The pinions *q q'* transmit motion to the upper roller, M'. The teeth of these pinions are somewhat lengthened to permit of their engagement as the rollers M M' are adjusted a greater or less distance apart in regulating the thickness of the feeding of the dough.

N is the duster or sprinkler, or a receptacle, with a perforated bottom, hung from a bow or rod, N', fastened to the frames A in any suitable way. It is hung or suspended directly above the feeding or reducing rollers M M' for the obvious purpose of dusting or sprinkling, either or both, the rollers and the passing dough with flour. To impart the desired vibratory motion to the sprinkler it is provided with an arm, *r*, which is struck by the teeth or cogs of the gear-wheel *m'* of the cylinder C'.

A pawl, *s*, hung to one side of one of the frames A, and engaging with a ratchet, *s'*, on one end of the shaft of the main driving-pulley *f*, prevents the reverse movement of the machine.

By means of this machine it will be observed that the feeding and reducing or regulating the thickness of the feeding of the dough, the dusting or sprinkling of the dough, the stamping of the same into shape, and expelling it upon either a delivering-apron or into pans placed thereon are all performed in one continuous operation, and the scraps removed and the expelling or lower cylinder cleaned simultaneously therewith.

Various other advantages are secured in the details of the adjustment of the parts.

We are aware that a roller for projecting plungers has been loosely arranged within a stamping-cylinder, and that a revolving disk having a groove and an eccentric for projecting and withdrawing plungers in a loaf or bread cutter is not new.

No claim is herein made, first, for a jumble or bretzel machine having one of its cylinders or dies provided with a cone for discharging to one side scraps of dough resulting from the formation of the bretzel, nor, secondly, the combination, with the cylinder of a bretzel or jumble machine, of the internal cone with its smaller end disposed at the open side or end of said cylinder.

Having thus fully described our invention, we claim and desire to secure by Letters Patent—

1. In a bretzel or jumble machine, a cylinder having two inner cylinders, one arranged within the other, the inner one acting as a weight to expel the dough, and the other one to guide and withdraw the studs, substantially as shown and described.

2. The combination of the cylinder C, perforated cylinder I', headed studs H, and cylinder I, substantially as shown and described.

3. The combination, with a die or mold carrying cylinder, C, of the inner cylinders, I I', and a series of studs or plungers to each die or mold through which they are projected and withdrawn, substantially as and for the purpose specified.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

WILLIAM LAMPERT.
HENRY HUBER.

Witnesses:

NOYES R. LUCE,
JESSE WILLIAMS.