

No. 645,681.

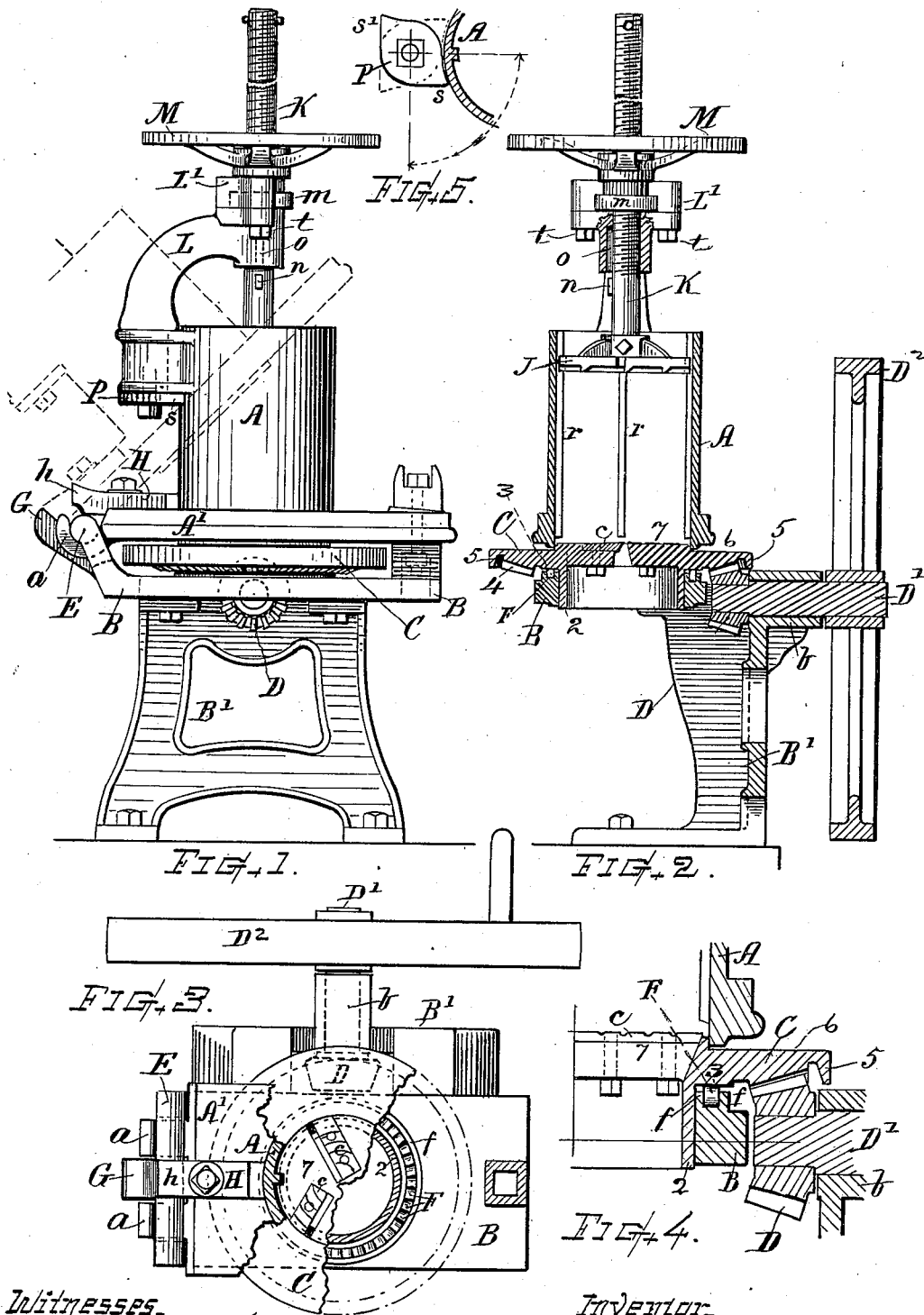
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A. H. CHAPMAN.

MACHINE FOR CUTTING BONES FOR POULTRY FOOD.

(Application filed May 17, 1899.)

(No Model.)



Witnesses.
W. E. Suck
Charles H. Bacon

Inventor.
Albert H. Chapman
By Charles H. Burleigh Attorney

UNITED STATES PATENT OFFICE.

ALBERT H. CHAPMAN, OF UPTON, MASSACHUSETTS, ASSIGNOR TO THE
CHAPMAN MANUFACTURING COMPANY, OF SAME PLACE.

MACHINE FOR CUTTING BONES FOR POULTRY-FOOD.

SPECIFICATION forming part of Letters Patent No. 645,681, dated March 20, 1900.

Application filed May 17, 1899. Serial No. 717,144. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. CHAPMAN, a citizen of the United States, residing at Upton, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Machines for Cutting Bones for Poultry-Food, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

My present invention relates to certain features of improvement in the construction and organization of the mechanism of the character named, the objects being to provide a practically-efficient and desirable machine; also, to render the machine simple and comparatively inexpensive to manufacture, easy of operation, durable in service, and convenient for the cleaning and care thereof. These objects I attain by a mechanism having the parts constructed and combined in the peculiar and improved manner hereinafter explained and particularly defined in the summary and as illustrated in the drawings, wherein—

Figure 1 is a side view; Fig. 2, a transverse vertical section; Fig. 3, a horizontal sectional view; Fig. 4, a half-section showing the support of the cutter or gear plate, and Fig. 5 a plan diagram of the gooseneck-adjusting stop.

In the drawings, A denotes the hopper-cylinder of well-known form; B, the stationary bed or table, having the circular opening therein, which serves as a centering-bearing for the horizontally-rotatable cutter-plate gear C, and B' the supporting-standard, preferably disposed beneath one side of the table and having a sidewise-projecting foot, whereby the machine can be secured to a suitable bench, with the body of the machine overhanging the foot in such manner that a pan can be placed beneath the central opening for receiving the cut material. The operating-shaft D' is arranged to turn in a bearing b at the top of the standard, and said shaft is provided with a fly-wheel D², to which power can be applied by a belt on its periphery or by a hand-crank attached to said wheel. A

bevel-pinion D is fixed on the inner end of the shaft and meshes with gear-teeth on the under side of the cutter-plate C for rotating the same. The plate C is formed with a downwardly-projecting circle 2, that fits into the opening in the table, an annular rollway 3, and a row of gear-teeth 4, surrounding said circle on the under side, while the top of the plate is made with a flat and smooth marginal surface 6 and an integral raised central disk portion 7, that fits into the lower end of the hopper-cylinder and through which the slots for the discharge of cut material are formed. The cutting-blades c are seated upon the disk portion and secured by bolts from underneath. The outer edge of the plate C at its periphery I extend beyond the ends of the gear-teeth and provide thereon an integral downward lip or flange 5, that protects and guards the gearing and prevents any crumbs or material falling upon the plate from getting into the gearing and also facilitates wiping off of the plate-surfaces, so that the machine can easily be kept clean.

Upon the top of the table and surrounding the central opening I provide an annular-rimmed race or grooved way f, having arranged therein a series of free-rolling balls F, which balls can be made either spherical or as short round section-rollers, as desired. Said balls in suitable number are disposed to nearly fill the race-groove and are confined in circle by the upright edges of the groove, but are free to roll around the circle. Upon the top of said circular series of balls or rollers the cutter-plate gear C is supported against the downward pressure of the feed-forcing devices, the annular under surface 3 resting or riding on the balls, as indicated, so that the machine can be easily operated under great pressure of the feed-screw and rapid cutting of the bone material can be easily effected. The rear end of the table is provided with an upward extension, having its top formed as a transverse roll E, and with a projecting back stop G, both cast integral with the table-plate, while the rear end of the cylinder-base A' is provided with two-invertedly-curved semicircular tongues a a, that lock under the roll E, as shown, for forming the hinge, and a removable stay and stop

piece H is attached to the base A', with its projecting end resting on the roll E. Said piece H retains the parts securely in connection with each other, while permitting the hinging action for tipping up the hopper-cylinder. The rear *h* of the stay-piece H also serves as a front stop or rest against the back stop G to support the parts when tipped up, as per dotted lines, Fig. 1. By removing the piece H, which is held by a screw-bolt, the cylinder can be swung backward and the lugs *a* unlocked from the roll E or reengaged therewith in taking apart and putting together the machine.

When the cylinder is tipped up against the stops G, the cutter-plate gear C can be lifted out of its bearing, it being retained therein only by gravity and by the cylinder end when the latter is down in working position.

The presser-plate J of the feed-forcing devices is carried by a screw-threaded rod K. This screw I arrange to work vertically through a horizontally-rotatable hand-wheel nut M, having a grooved and flanged hub *m*, that is confined to the head of the gooseneck-arm L by an attaching-jaw L', secured by bolts *t*, as indicated, so that the hand-wheel is always at the same level, the screw K and plate J moving up or down as the hand-wheel is turned. The gooseneck-arm L is supported in a bearing formed on the side of the cylinder, as heretofore practiced, to swing the feed-forcing devices to one side for convenience of charging the hopper.

In the bearing of the gooseneck-head I form a groove *o* and provide on the screw-rod K a projection, spline, or lug *n*, disposed in such manner that said spline or lug will enter said groove *o* just before the presser-plate J leaves the top of the cylinder. The lug *n* and groove *o* register in alinement with the notches in the plate J and the splines *r* within the cylinder and by coming together as described serve to preserve the relative position of the presser-plate J and screw K when the gooseneck L is swung to one side, so that when brought back to its central position the notches in the edges of the presser will register with the splines *r* on the interior of the hopper-cylinder.

For limiting the swing of the gooseneck L out and in, I provide a stop device which consists of a hub or plate P, (see Figs. 1 and 5,) rigidly secured to the lower end of its bearing, said plate being formed, as shown in Fig. 5, with horns *s* and *s'*, one of which contacts with the side of the cylinder A and arrests the lateral swing movement of the gooseneck-head carrying the presser devices when it is central over the cylinder, while the other horn *s'* contacts with the cylinder when the gooseneck and feed devices are swung off to one side at a right angle, more or less, from their normal working position. (See dotted lines, Fig. 5.)

The general combination of a cylindrical feed-hopper and a horizontally-rotatable cut-

ter-carrying plate having been heretofore employed in machines of this class it will be understood that I do not broadly claim such means irrespective of construction, but my invention relates to the improved construction and features specifically defined.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. In a bone-cutting machine, the cutter-carrying plate having an integral raised circular center forming the cutter-space, and a flat annular top surface extending outwardly therefrom, and terminating with a downward peripheral ring, a downward cylindrical flange surrounding the cutter-space on its under side, an annular bearing-surface about said flange and the surrounding downward beveled gear-teeth, said cutter-carrying plate adapted for fitting into the end of the cylindrical feed-hopper and for overlying the bearing and drive-gear, substantially as shown and for the purpose set forth.

2. In a bone-cutting machine, the horizontal rotatable cutter-carrying plate having a raised circular center on which the cutters are disposed, and a flat annular top surface around said center, and provided on its under side with a downward-projecting circular flange and annular bearing-face, whereby said plate is centered and supported upon the bed, and having the row of downward bevel-gear teeth surrounding said bearing, said cutter-plate being provided with a rim-flange extending beyond the ends of the gear-teeth and encircled with an integral downward-projecting lip around the peripheral edge thereof; in combination, with the supporting-bed beneath said plate, the drive-pinion and its shaft, and the non-rotatable tiltable feed-hopper fitting around said raised circular center above the annular top surface of said cutter-carrying plate, substantially as shown and described.

3. A bone-cutting machine, comprising a supporting-frame and bed-plate having a central opening surrounded by a raised raceway having an annular groove cut therein, a continuous series of roller-balls filling said groove, a drive shaft and pinion mounted in a bearing on said frame at the side of said bed-plate, a cylindrical feed-hopper supported centrally over said opening by an integrally-attached base-flange hinged to said bed-plate, feed-forcing appliances carried on said hopper, and a rotatable under-gearred cutter-carrying plate having an integral raised circular center portion fitting into the hopper-cylinder, with seats and slots for the cutting blades thereon, its under side provided with an annular surface, and an integral downward ring-bearing fitting within the opening of the bed-plate, through which the cut material is discharged, said cutter-carrying plate extending beyond the hopper and bed-plate, and its teeth engaging the pinion, as shown; said cutter-gear plate being vertically removable when the hopper is tilted up.

4. In a bone-cutting machine comprising the frame or table, the rotating cutter-plate and a tiltable hopper-cylinder; the hinging connection consisting of the transverse roll E
5 and the backwardly-projecting stop G formed integral with the table or frame, in combination with the inverted semicircular tongues a formed upon the cylinder base-plate, and the removable front stop or stay piece H at-
10 tached to said cylinder-base and projecting over said roll, substantially as set forth.

5. In a bone-cutting machine comprising a cutting mechanism, a hopper-cylinder provided with internal splines, a feed presser-
15 plate notched to said splines, and a laterally-movable supporting-head carrying the feed-screw nut above said cylinder; the combination, of the supporting-head provided with an internal groove o, and a feed-screw pro-

vided with a projecting spline-lug n adapted 20
and disposed for entering said groove when the notched presser-plate is raised out of the cylinder, for the purposes set forth.

6. In a cutting-machine of the class specified, the combination with the hopper-cylinder, the feed-forcing devices and the later- 25
ally-swinging gooseneck carrying said feed-forcing devices mounted in a bearing upon the side of said cylinder; of the stop-plate P secured to the gooseneck-journal, and having 30
the horns or projections that contact with the cylinder for arresting the swing of said gooseneck, substantially as set forth.

Witness my hand this 9th day of May, 1899.

ALBERT H. CHAPMAN.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENUS.