No. 872,231. PATENTED NOV. 26, 1907.

H. F. HAMBRUCH.

SAUSAGE STUFFER.

APPLICATION FILED AUG. 27, 1906.

2 SHEETS—SHEET 1.

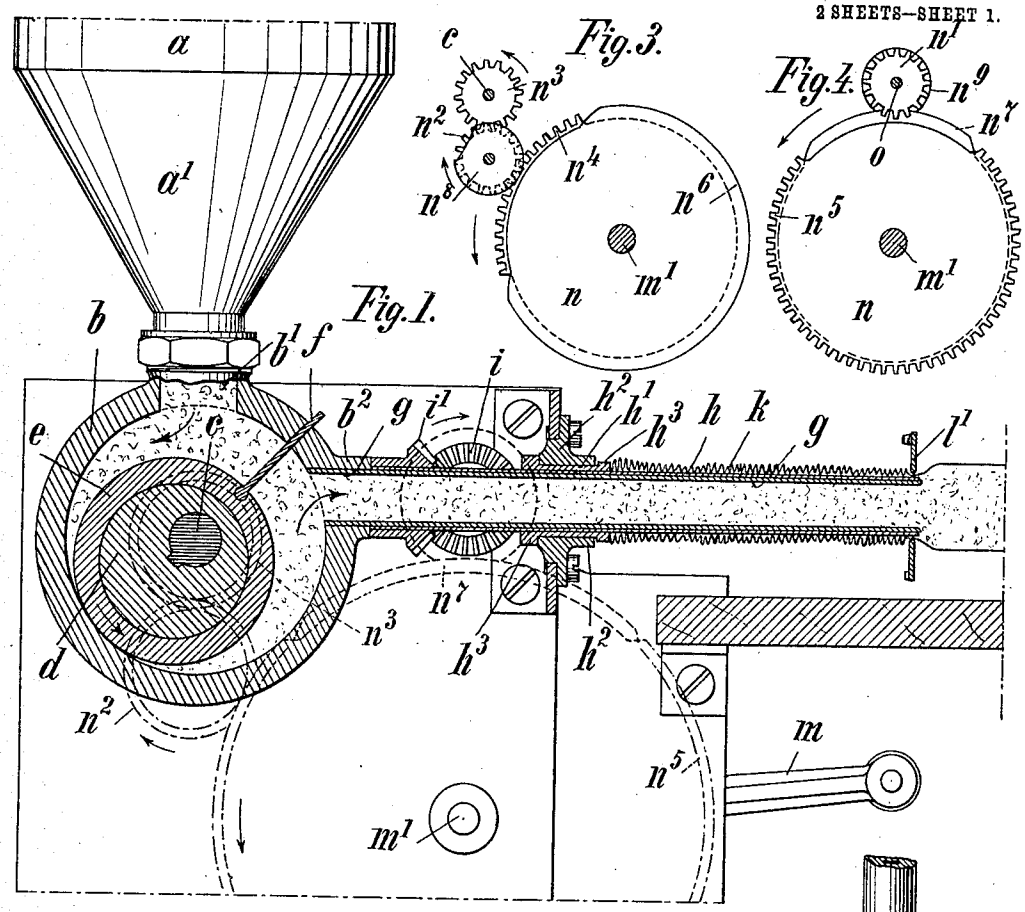


Fig. 1.

Fig. 3.

Fig. 4.

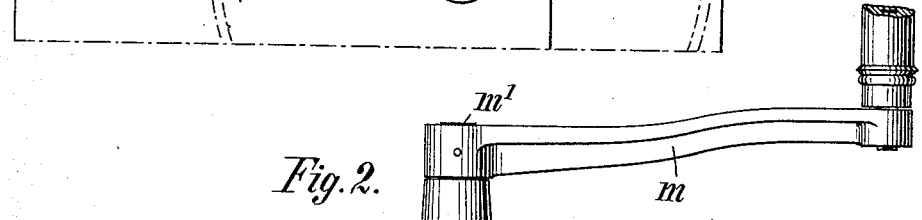
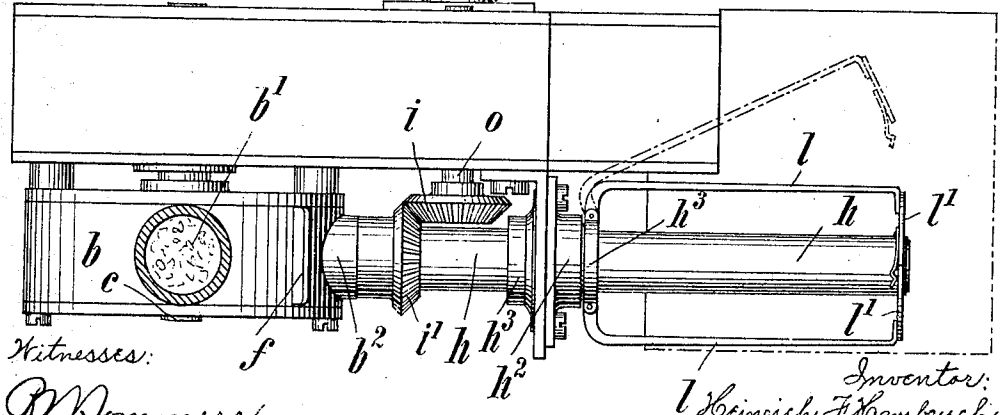


Fig. 2.



Witnesses:

B. Sommers

Jesse K. Sutton

Inventor:

Heinrich F. Hambruch,

by Henry Orth & Co.

Atty.

THE NORRIS PETERS CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 5.

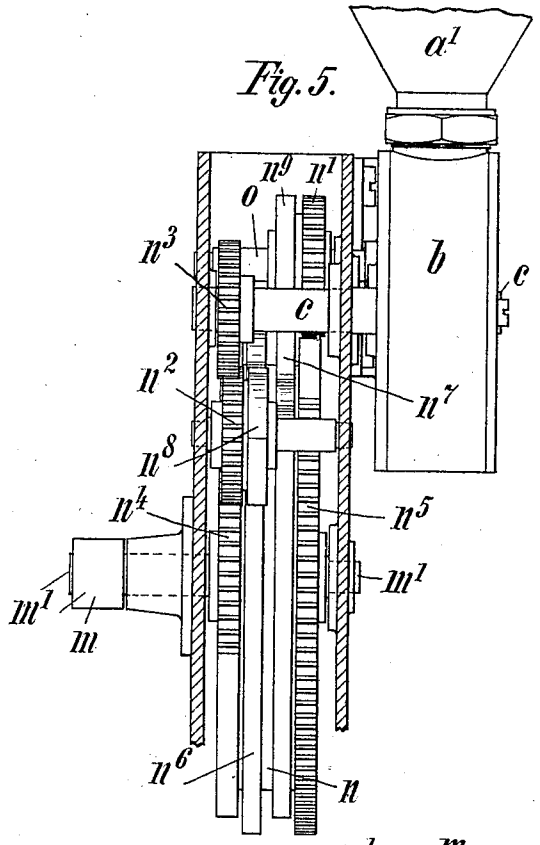
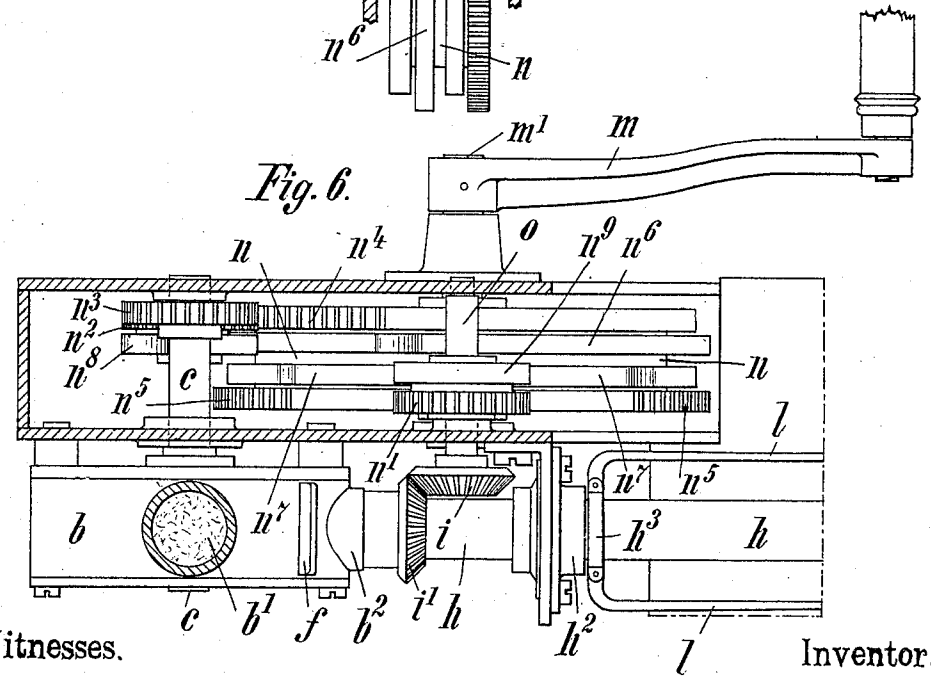


Fig. 6.



Witnesses.

Jesse N. Sutton.

[illegible]

Inventor.

Heinrich F. Hambruch.

by Henry Orth Jr. Atty.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HEINRICH F. HAMBRUCH, OF HAMBURG, GERMANY, ASSIGNOR OF THREE-FOURTHS TO THE FIRM OF BIBERFELD & CO., OF HAMBURG, GERMANY.

SAUSAGE-STUFFER.

No. 872,231. Specification of Letters Patent. Patented Nov. 26, 1907.

Application filed August 27, 1906. Serial No. 332,223.

To all whom it may concern:

Be it known that I, HEINRICH F. HAMBRUCH, a citizen of Hamburg, and resident of Hamburg, in the German Empire, have invented certain new and useful Improvements in Sausage-Stuffers, of which the following is a specification.

The present invention relates to improvements in sausage-stuffers for forcing the sausage-meat into the gut and subdividing the filled gut into portions or sections.

The improvements refer especially to that class of stuffers shown, described and claimed in my copending application filed December 8, 1906, Serial Number 346,900, in which the gut is placed over a separate socket put on the spout-tube and adapted to be intermittingly rotated, in order to make in the gut at the exit opening of the spout-tube, as the filled part of the gut does not participate in the rotation of the socket or gut-carrier, a few turns which close and separate the several sausage-sections.

The object of the improvements is to produce such a stuffer of the said class which is simple in construction, efficient in use and reliable in working, and affords the possibly highest results.

With this end in view my invention consists in certain novel features of construction and combinations of parts, as will be hereinafter fully described, and pointed out in the claims, with reference to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of a sausage-stuffer made in accordance with and embodying my invention; Fig. 2 is a plan of the improved sausage-stuffer; Figs. 3 and 4 are detailed diagrammatic views drawn on a somewhat smaller scale and illustrating the means for imparting intermittent or periodic motion to the rotary pump forcing the meat from the hopper into the spout-tube, and to the rotary socket or gut-carrier. Fig. 5 is a vertical and Fig. 6 a horizontal section through the frame inclosing the gearing.

Similar letters of reference refer to similar parts throughout the several views.

The sausage-meat is placed in a cylindrical compartment a connected with the inlet b^1 of the casing b of a rotary pump by means of a hopper a^1, and is forced into the interior of the said casing b by the weight of a piston-like block (not shown) resting upon the top of the sausage-meat. The shaft c mounted in the circular casing b carries an eccentric or cam d upon which is loosely mounted a ring or socket e moving or rolling always in contact with the inner wall of the casing. To the ring e is movably attached a slide f fitting in a slot of the casing b and adapted to interrupt at this place the connection between the inlet b^1 and the spout-tube g fixed in the outlet b^2 of the pump casing. In the example shown the movable connection between the ring e and the slide f is effected by putting or sliding the bulb-shaped edge of the slide f endwise into a suitable longitudinal groove of the ring e.

Upon the spout-tube g is loosely mounted a socket h journaled in a bearing h^2 by means of a sleeve or bush h^1 being firmly connected with the socket and having collars h^3 at both its ends in order to obviate longitudinal displacement of the socket h. Periodic rotation is imparted to the socket h by the aid of bevel wheels i, i^1, the bevel wheel i^1 being fast on the socket h. The gut k is forced over the socket h and is held thereon by arc-shaped jaws or plates l^1 which embrace the gut at or near the front end of the socket h. The jaws l^1 are carried each by a suitable spring bar l hinged or pivoted to the front collar h^3 of the bush h^1.

On the driving shaft m^1 journaled in a suitable frame and provided with a crank m is keyed a wheel n having two sets of intermittent teeth n^4 and n^5. The teeth n^5 are gearing with a pinion n^1 fixed on the shaft o carrying the bevel wheel i, and the teeth n^4 with a pinion n^2 meshing with a pinion n^3 on the pump-shaft c. The wheel n has also on its circumferential surface two intermittent ribs n^6 and n^7; the rib n^6 being at the side of the gear n^4 and coöperating with a notched disk n^8 arranged at the side of the pinion n^2 and firmly connected therewith, whereas the rib n^7 is at the side of the gear n^5 and coöperates with a notched disk n^9 firmly connected with the pinion n^1.

The spur-gears n^4 and n^5 and the ribs n^6 and n^7 are made of such length and placed in such alternation to one another that on rotating the crank m in the direction of the arrow, first, the ring e is moved in the direction of the arrow (Fig. 1), whereby the sausage-meat in front of the ring e is pressed through the outlet b^2 into the spout-tube g, while at the same time fresh meat is forced through the inlet b^1 into the space at the

other side of the casing b, as it is cleared by the moving cam d and ring e. The slide f moving to-and-fro radially in its guide slot of the casing b during the motion of the ring e, forms always a partition between the entering meat and the portion of meat being forced out.

The revolution of the crank or the operation of the meat supply pump is a few times repeated, until the spout-tube g is entirely filled with meat, whereupon the gut is forced over the socket h and clamped thereon with a sufficient pressure, by means of the jaws l^1, and after the free end of the gut has been tied together, the apparatus is then ready for the stuffing operation. The next rotation of the crank or the meat supply pump forces so much meat through the spout-tube into the gut that the latter is stuffed for a length which corresponds to the supplying capacity of the pump, whereby the gut is at the same time successively drawn off from the socket underneath the jaws l^1. For producing such a sausage-portion or sausage-length a full rotation of the eccentric d is therefore necessary. During such rotation only the gear n^4 of the wheel n gears into the pinion n^2, whereas the pinion n^1 which transmits rotation to the gut-socket h, is out of gear with the gear n^5. As soon as the gear n^4 and the pinion n^2 disengage, the gear n^5 comes into engagement with the pinion n^1 and motion is imparted to the bevel gearing i, i^1, so that the gut-socket h and the gut k thereon are several times rotated on the axis of the spout-tube. By this rotation some turns, preferably three, are produced in the gut between the previously stuffed sausage portion which does not participate in the rotation, and the jaws l^1. These turns in the gut close the already stuffed sausage-portion and separate it in a reliable manner from the next sausage-portion to be stuffed. The alternate stuffing and turning of the gut takes place in continuous succession. When the gut is turned, the jaws l^1 embracing the gut with a yielding pressure, prevent in an efficient manner a back-forcing of the sausage-meat into that part of the gut which is on the gut-socket.

It is obvious, that the supplying capacity of the rotary pump and therefore the quantity of sausage-meat required for a certain length of the several sausage-portions, may easily be varied by exchanging the ring e and the cam d by corresponding parts of other dimensions. The eccentricity of the cam d must of course be changed corresponding to the diameter of the ring e, when it is desired, to produce sausages or sausage-portions of different size or length. Finally by exchanging the pinions and wheels n, n^1, n^2, n^4, n^5, and by thereby changing the transmitting ratio the number of the revolutions of the gut-socket and consequently the number of the turns in the gut may easily be varied. In most cases a good relation is established by arranging the parts in such a manner, that three rotations of the gut-socket correspond to one rotation of the meat supply pump, that is to say, to one sausage-stuffing operation.

I claim:

1. In a machine of the character described, a filling tube, a cylindrical meat receptacle communicating therewith having an inlet for the meat, an eccentric rotatable in the receptacle, a ring loosely mounted on the eccentric movable in constant contact with the entire wall of the receptacle by said eccentric, and a slide journaled in the ring and guided in the wall of the receptacle between the inlet and filling tube.

2. In a sausage filling and dividing machine, the combination with a filling tube, and a cylindrical meat receptacle communicating therewith, of an eccentric feed member mounted in the receptacle, a gut-carrying sleeve rotatably mounted on the filling tube, a driving member, means connecting the eccentric and the sleeve with the driving member, and means on the latter adapted to intermittently and alternately rotate the eccentric and sleeve.

3. In a sausage filling and dividing machine, the combination with a filling tube, and a cylindrical meat receptacle communicating therewith, of an eccentric feed member mounted in the receptacle, a gut-carrying sleeve rotatably mounted on the filling tube, a driving member, means connecting the eccentric and the sleeve with the driving member, means to rotate the eccentric and means to simultaneously lock the sleeve against rotation.

4. In a sausage filling and dividing machine, the combination with a filling tube, and a cylindrical meat receptacle communicating therewith, of an eccentric feed member mounted in the receptacle, a gut-carrying sleeve rotatably mounted on the filling tube, a driving member, means connecting the eccentric and the sleeve with the driving member, means to rotate the sleeve, and means to simultaneously lock the eccentric against rotation during the rotation of the sleeve.

5. In a sausage filling and dividing machine, the combination with a filling tube, a gut-carrying sleeve rotatable thereon, a cylindrical receptacle communicating with the filling tube, an eccentric rotatable in the receptacle, of a shaft carrying the eccentric, a pinion on the eccentric shaft, a drive wheel, a mutilated gear thereon adapted to mesh with said pinion, a second drive shaft, gearing connecting the latter with the carrying-sleeve, and a mutilated gear on said drive wheel adapted to operate said gearing.

6. In a sausage filling and dividing machine, the combination with a stationary filling tube, a gut-carrying sleeve rotatably

mounted thereon, a cylindrical receptacle communicating with the filling tube, an eccentric rotatable in the receptacle, a ring loosely mounted on the eccentric in contact with the wall of the latter, a slide journaled in the ring working in a slot in the wall of the receptacle, of a bevel pinion fixed on the gut-carrying sleeve, a pinion in mesh with the aforesaid pinion, a shaft carrying the last named pinion, a drive wheel having a mutilated gear adapted to engage the pinion of said shaft, a shaft for the eccentric, a pinion on the eccentric-shaft and a mutilated gear on the drive wheel adapted to engage the pinion on the eccentric-shaft.

7. In combination with a cylindrical meat receptacle, a concentric shaft therein, an eccentric fixed on the shaft in the receptacle, a drive wheel, means carried by the latter adapted to impart a complete revolution to the shaft during a portion of one revolution of the wheel, and means to lock the shaft against rotation during the remainder of said revolution of the wheel.

8. In combination with a cylindrical meat receptacle, a concentric shaft therein, a pinion on the shaft, an eccentric fixed on the latter in the receptacle, a drive wheel, an intermittent gear carried by the latter, a pin connecting the aforesaid pinion and gear adapted to impart a complete revolution to the shaft during a portion of one revolution of the wheel, a notched disk carried by the connecting pinion, and an intermittent rib carried by the drive wheel adapted to engage the notch disk and lock the shaft against rotation during a portion of the rotation of the drive wheel.

9. In combination with a cylindrical meat receptacle a concentric shaft therein, an eccentric feed member fixed on the shaft in the receptacle, a filling tube communicating with the receptacle, a gut-carrying sleeve rotatable on the filling tube, a drive wheel, means carried by the latter adapted to impart a complete revolution to the concentric shaft during a portion of a single revolution of the drive wheel, means to lock the shaft against rotation during the remainder of said revolution, a rotary shaft, gearing connecting the latter and gut-carrying sleeve, a pinion on the rotary shaft, an intermittent gear on the drive wheel adapted to impart a plurality of revolutions to the rotary shaft during a portion of a single revolution of the drive wheel, and means to lock the rotary shaft during the remainder of said revolution.

HEINRICH F. HAMBRUCH.

Witnesses:
MAX A. G. LEMCKE,
OTTO W. HELLMRICH.