H. D. PERKY, DEC'D.

L. SPARKS, ADMINISTRATOR.

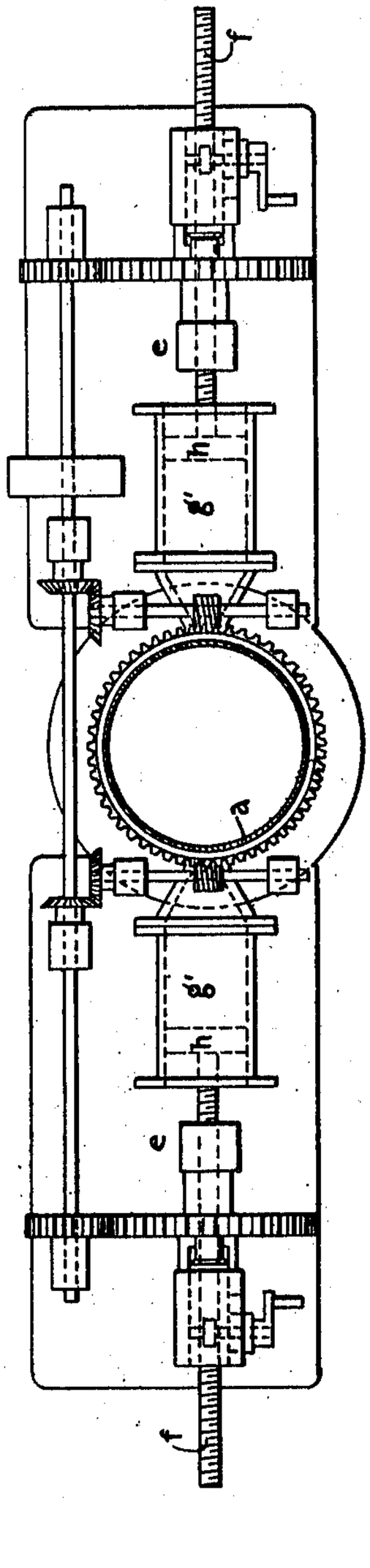
MACHINE FOR MANUFACTURING GRAIN INTO FORM FOR FOOD.

APPLICATION FILED MAR. 14, 1906.

**989,999.** **Patented Apr. 18, 1911.**

2 SHEETS—SHEET 1.

*Fig. 1.*




*WITNESSES:*

George M. Anderson.

Stuart Hilder.

*INVENTOR.*

Henry D. Perky

*BY*

E. W. Anderson

his *ATTORNEY.*

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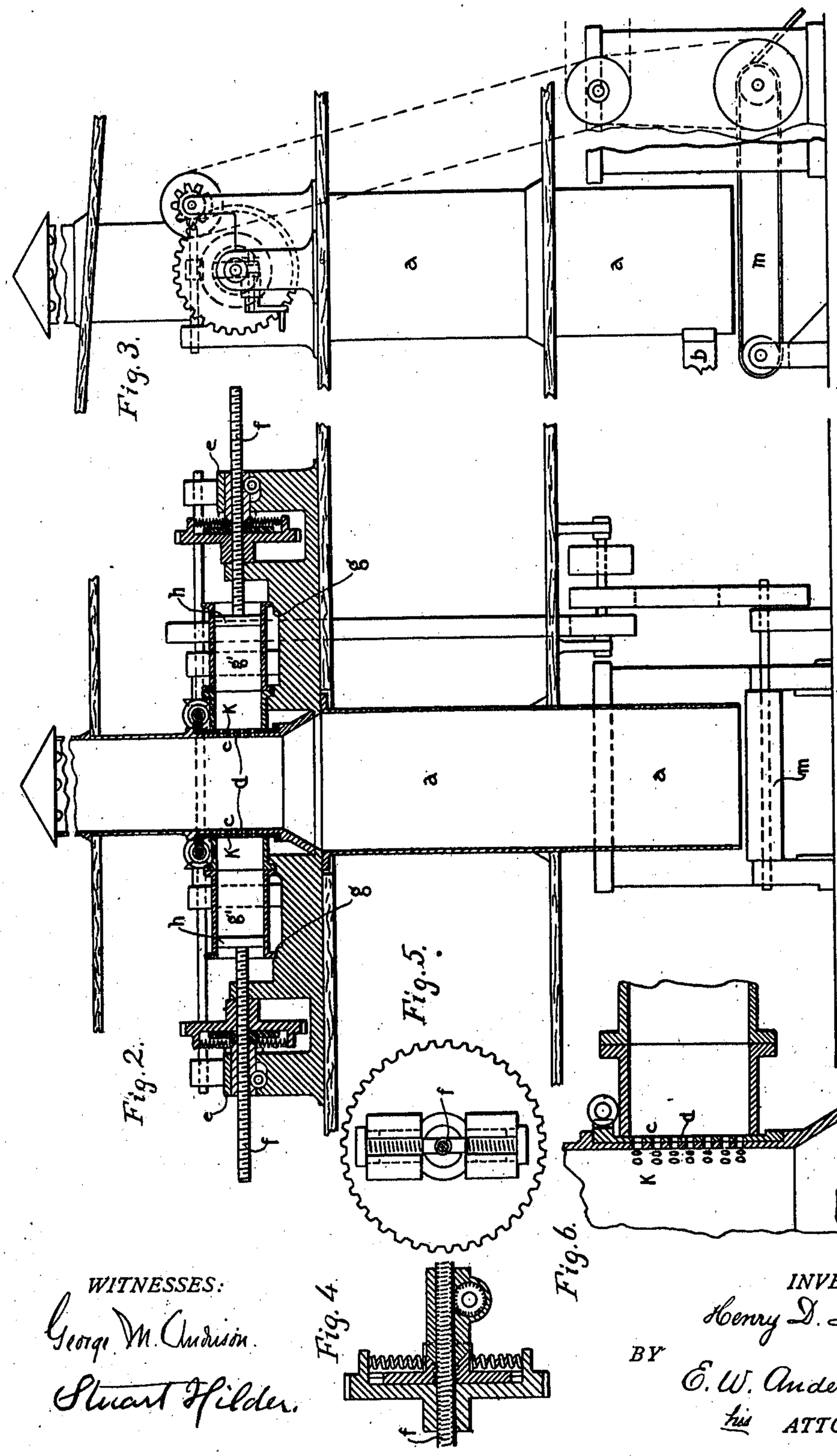


Fig. 3.

Fig. 2.

Fig. 5.

Fig. 6.

Fig. 4.

WITNESSES:
George M. Anderson.
Stuart Hilder.

INVENTOR.
Henry D. Perky
BY
E. W. Anderson
his ATTORNEY.

# UNITED STATES PATENT OFFICE.

HENRY D. PERKY, OF GLENCOE, MARYLAND; LABAN SPARKS ADMINISTRATOR OF SAID HENRY D. PERKY, DECEASED.

## MACHINE FOR MANUFACTURING GRAIN INTO FORM FOR FOOD.

989,999. Specification of Letters Patent. Patented Apr. 18, 1911.

Application filed March 14, 1906. Serial No. 306,051.

*To all whom it may concern:*

Be it known that I, HENRY D. PERKY, a citizen of the United States, resident of Glencoe, in the county of Baltimore and State of Maryland, have made a certain new and useful Invention in Machines for Manufacturing Grain into Form for Food; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a plan view. Fig. 2 is a vertical central section. Fig. 3 is a side view. Figs. 4, 5 and 6 are detail views.

The invention relates to means for reducing cereal material to thin elongated or filament form, and it consists in the novel construction and combination of devices, as hereinafter set forth.

The object of the invention is to provide means whereby the reduction of the material to thin elongated forms of the character desired can be effected in a continuous manner, and, being formed in the drier and discharged therefrom as the finished product, also continuously, these forms are designed to be produced in quantity, in an economical manner, so as to provide an inexpensive food ready for use.

In the accompanying drawings, illustrating the invention, the letter *a*, designates a heating or drying flue, through which passes hot air from a furnace through a pipe *b*, connected to the flue at one end, the air escaping from the flue at its other end. In the wall of the flue at its upper portion is made an opening *c*, which is covered with a movable perforated, or wire cloth, forming or reducing plate *d*. The perforations of the plate are designed to have thin margins, usually about the thickness of sheet tin, and they should be so stamped or formed that these margins shall have slightly projecting or rasp-like edges on the outside. Over the reducing plate and opening is a feeding press *e*, for the material, such press having its follower screw *f*, extending at right angles, or nearly so, to the surface of the reducing plate. The press is provided with a chamber or seat *g*, for the reception of the material, said seat being open toward the reducing plate. Usually, the material, which consists of ground grain which has been cooked, with the proper amount of water for absorption, in a water-tight vessel until it is of semi-solid form, is contained in a cylinder *g'*, or jacket open at both ends, which is placed in the press seat. When in operation, the follower *h*, of the press, moved by means of suitable gearing in engagement with the follower screw, is designed to press the material through the perforations of the reducing plate. During such operation the reducing plate is moved across the end of the cake of material in a more or less rapid manner, according to the hardness of the cake, and the lightness of the product desired to be formed in the drying flue. For the same pressure the filaments cut from the cake of material will be lighter and more delicate as the motion of the reducing plate is more rapid.

As the substance of the cake is neither brittle nor pliable, but is "set" so that its particles have a definitely fixed relative position, it is apparent that when filaments are cut from its surface and forcibly diverted through the perforations of the reducing plate, in a direction at right angles or nearly so to their fixed position in the cake, their "set" will be interrupted, and the particles loosened in their adhesion to each other. As the cut is a pressure cut, the particles constituting the product, passing through each individual perforation or opening, do not become disjoined, but are pressed through the perforations forming accretions or additions, so that the individual filaments or forms lengthen within the drier, until they fall off from the reducing plate or are removed therefrom by means of a loosening device, or detacher.

The filaments may be rendered more delicate by positively cutting the material into sections, as it passes into the drier, and causing the sections to adhere endwise to form the filaments. To accomplish this, the material is designed to be fed from the cylinder through a perforated cut-off plate *k*, against which the perforated reducing plate moves.

The filaments detached from the plate fall into the drier and being of loose and light character their moisture is quickly removed, and they are taken from the drier by means of the conveyer *m*, and discharged ready for packing in cartons.

The operation of the machine is designed to be continuous, so that the filaments will be formed and dried and discharged ready for use as long as the machine is in operation and the feeding of the material attended to.

Motion is designed to be communicated to the reducing plate by suitable gearing which, preferably, has an adjustable relation to that of the press follower. The driving motion should be communicated through frictional contact.

Having described the invention, what I claim and desire to secure by Letters Patent is—

1. In a machine for reducing cereal material to form, the combination with a drying flue and means for passing a current of hot air through said flue, of a press device at one end of the flue, an opening at the top of the flue communicating with said press device, a movable perforated reducing plate covering said opening, a conveyer at the bottom of the flue, and means for operating the reducing plate, press device and conveyer.

2. In a machine for reducing cereal material to form, the combination with a drying flue and means for passing a current of hot air through said flue, of a pressure feed for the material at one end of the flue, an opening of the flue communicating with said pressure feed, a movable perforated reducing plate between said opening and said pressure feed, a cut-off device, a conveyer at the bottom of the flue, and means for operating said pressure feed, reducing plate and conveyer.

3. In a machine for reducing cereal material to form, the combination with a drying flue, having an opening at its top portion, and a pressure feed device for the material opposite said opening, of a movable perforated reducing plate between said opening and said pressure feed device and means for simultaneously operating the pressure feed device and reducing plate.

4. In a machine for reducing material to filamentous form, the combination with a drying flue, and means for passing a current of hot air through said flue, of a pressure feed device at the top of the flue, an opening in the flue communicating with said pressure feed device, a perforated reducing plate covering said opening, a cut-off device in connection with said reducing plate, and a conveyer at the bottom of the flue.

In testimony whereof I affix my signature, in presence of two witnesses.

HENRY D. PERKY.

Witnesses:
L. S. BURBANK,
WM. C. BREED.