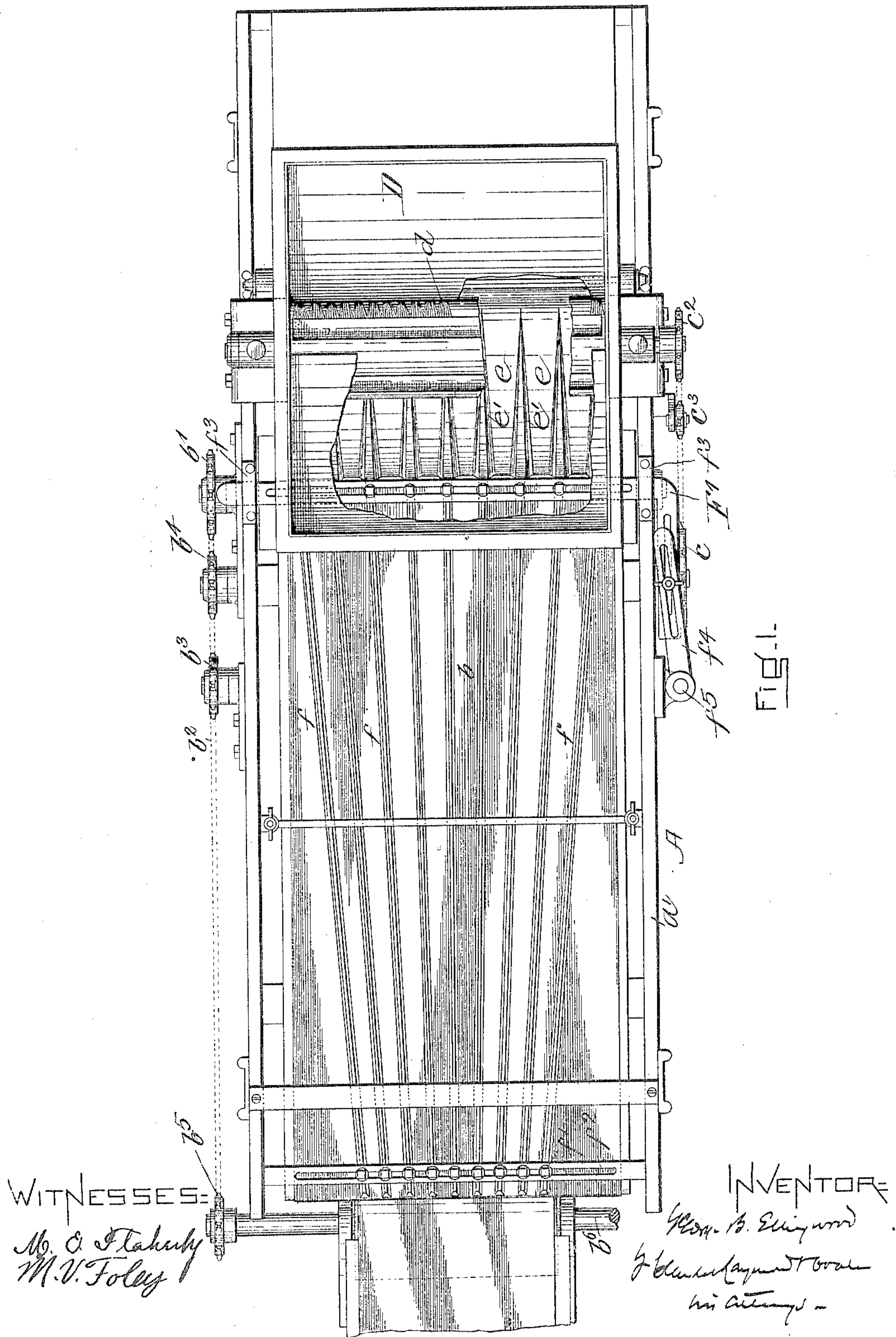


No. 804,459.

PATENTED NOV. 14, 1905.

G. B. ELLINGWOOD.
 KERNEL FEEDING MACHINE.
 APPLICATION FILED DEC. 2, 1904.

4 SHEETS--SHEET 1.

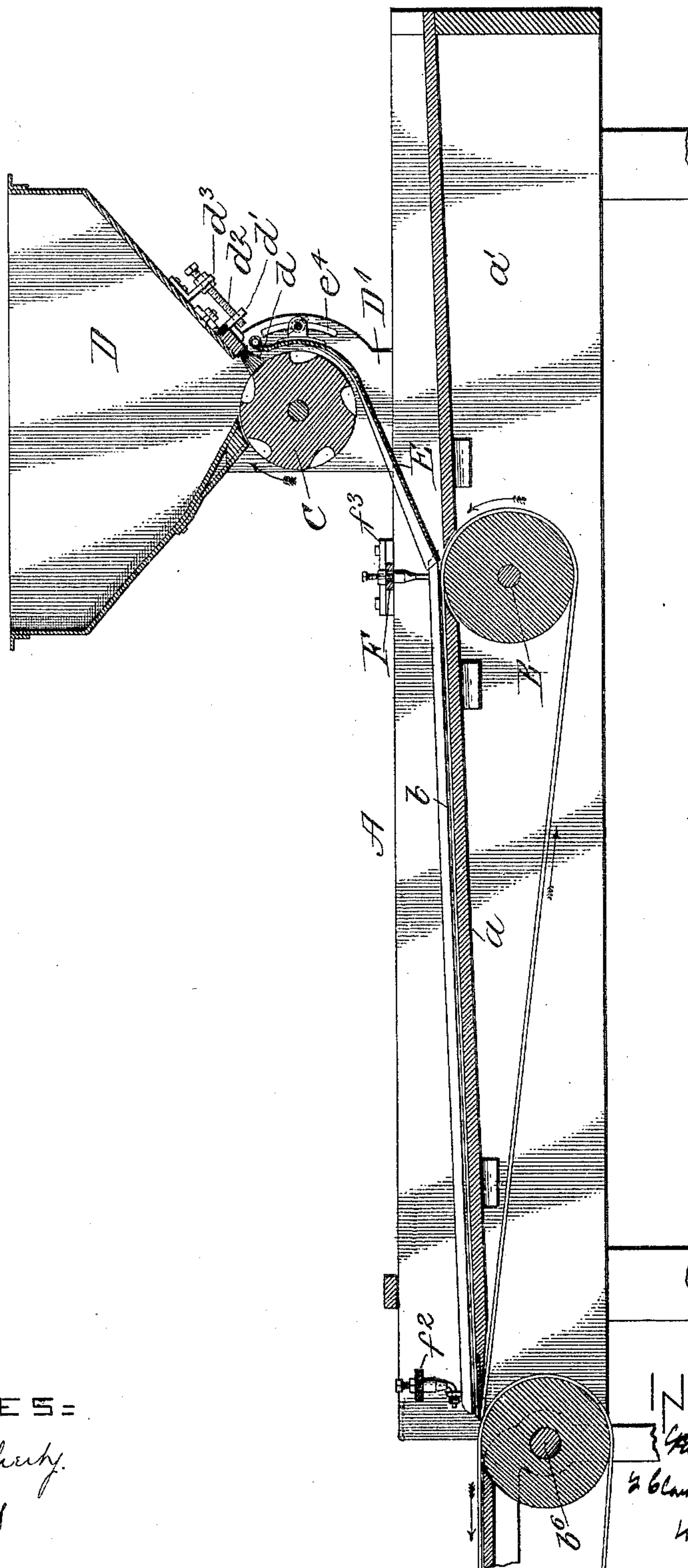


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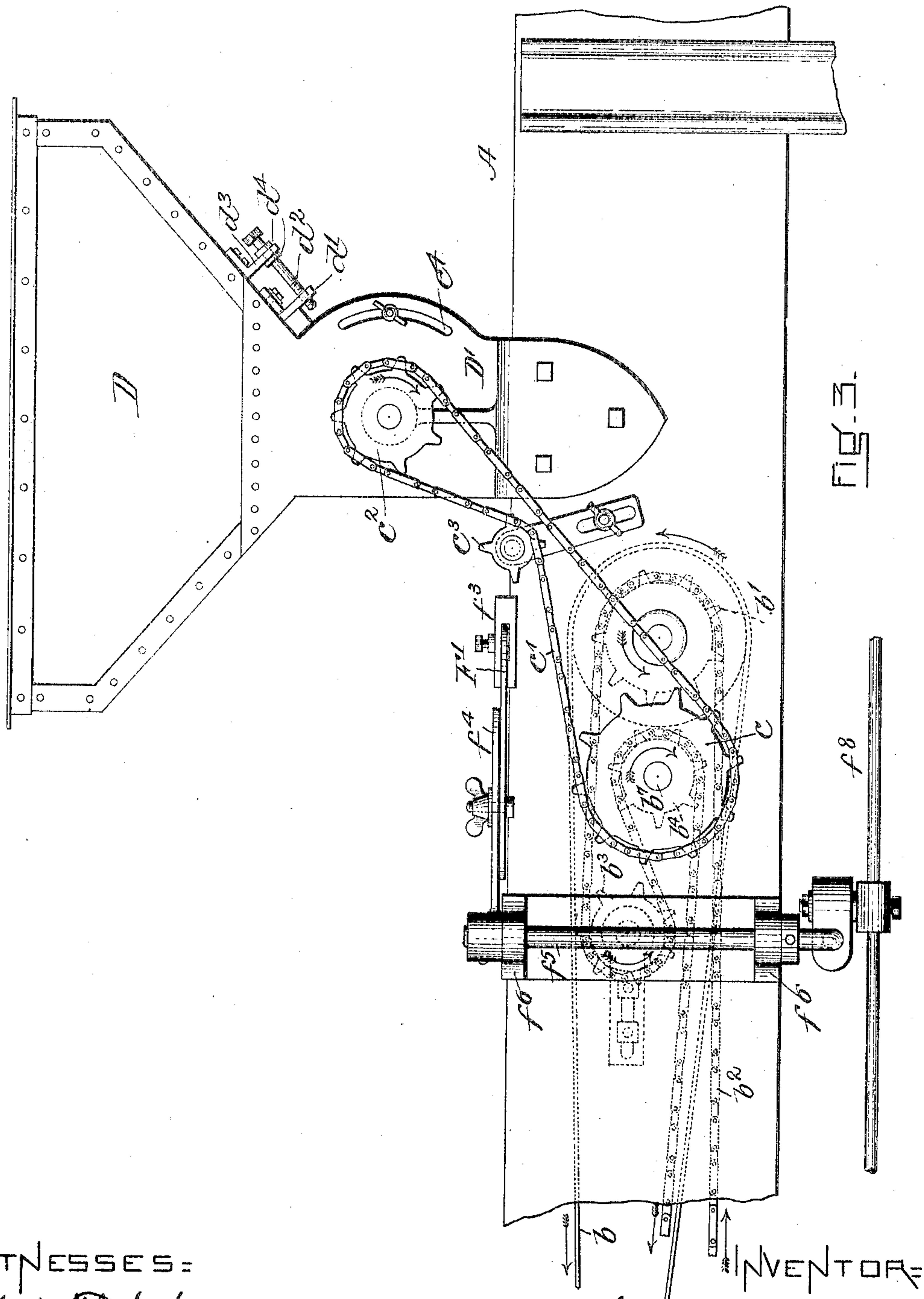
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G. B. ELLINGWOOD.
KERNEL FEEDING MACHINE.

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4 SHEETS—SHEET 4.

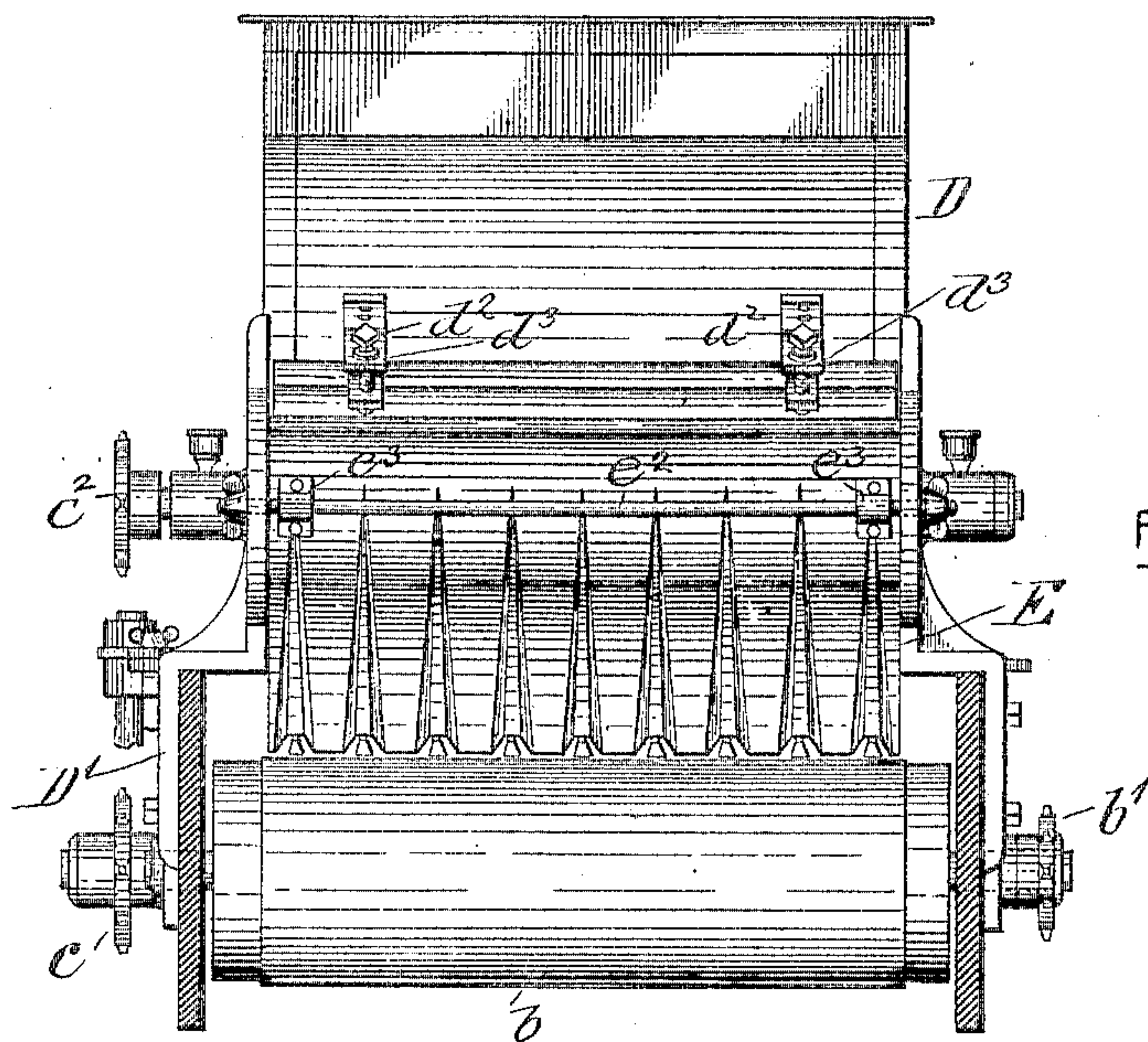


Fig. 4.

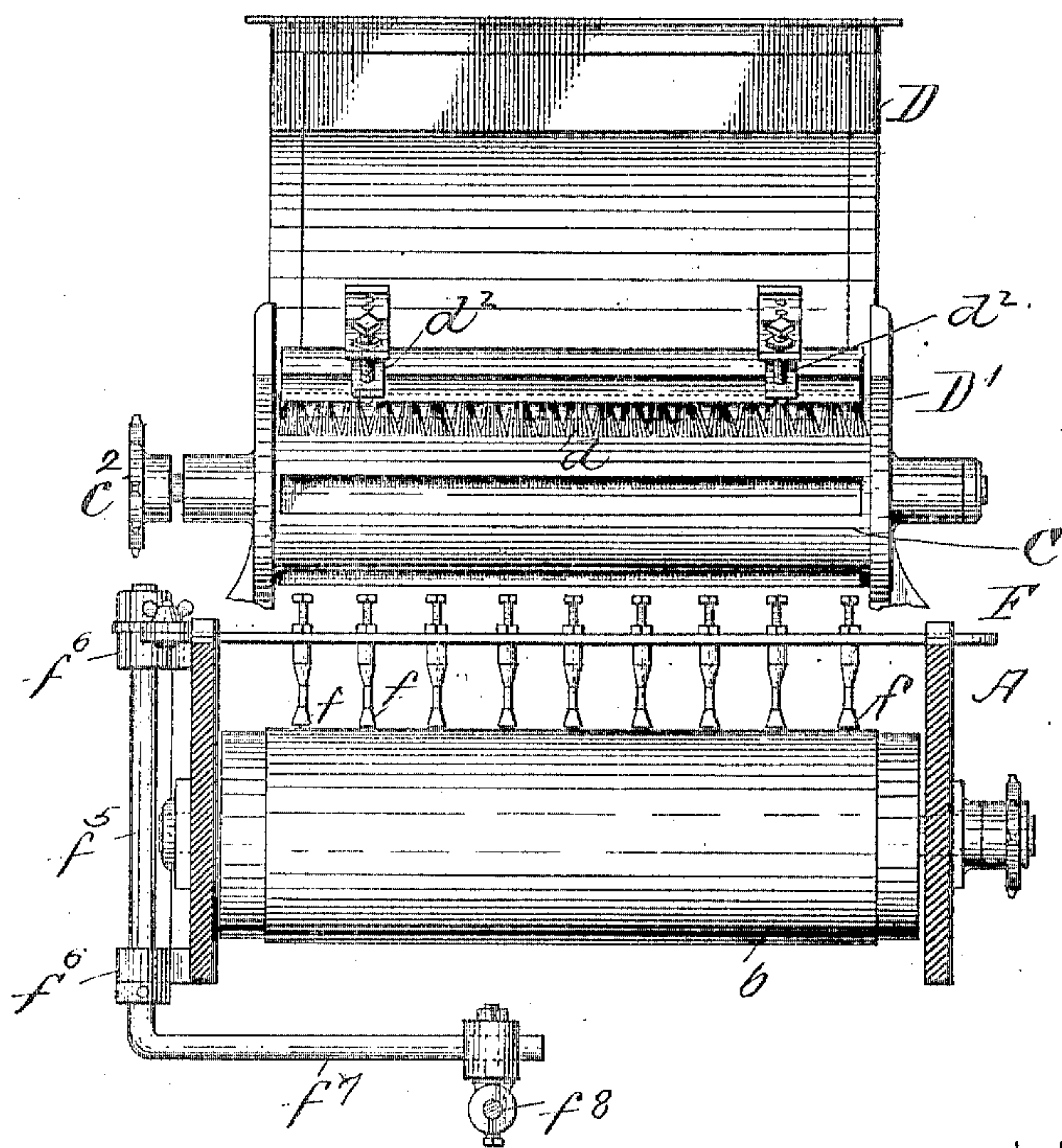


Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE B. ELLINGWOOD, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO
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KERNEL-FEEDING MACHINE.

No. 804,459.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed December 2, 1904. Serial No. 235,227.

To all whom it may concern:

Be it known that I, GEORGE B. ELLINGWOOD, a citizen of the United States, residing at Malden, in the county of Middlesex and State of Massachusetts, have invented a new and useful Kernel-Feeding Machine, of which the following is a specification.

Machines have heretofore been made by which a kernel—for example, a nut or sugar filling—has been automatically covered with chocolate or the like. Such a machine is shown in Letters Patent of the United States to E. P. F. Magniez, No. 680,489, dated August 13, 1901. Heretofore, so far as I am aware, the kernels have been placed upon a conveyer by hand and by it carried to the coating-machine.

The purpose of my present invention is to enable the kernels to be fed automatically to the coating-machine at a proper distance apart, so that when reaching the coating-machine they will be in such position with relation to each other as to be properly coated with chocolate. For this purpose I have provided a hopper in which the kernels may be put, a feeding-shaft or other means whereby the kernels may be taken in proper quantities therefrom, and means to guide the kernels so taken down into position upon a conveyer or the like, by means of which they will be fed automatically to the coating-machine.

My invention will be understood by reference to the drawings, in which—

Figure 1 is a plan, a portion of the mechanisms being broken away to make the construction more clear. Fig. 2 is a longitudinal section on line 2 2 of Fig. 1. Fig. 3 is a side elevation of the hopper, &c., upon a larger scale than Figs. 1 and 2. Fig. 4 is an end elevation; and Fig. 5 is a similar view, differing therefrom mainly in the removal of the guides.

A is the frame of the machine, which is suitably supported and comprises a slanting bed *a* and suitable side beams *a'*, wherein the various shafts, &c., are mounted. Upon the bed *a* runs a conveyer *b*, passing around a drum on a shaft B and also passing over the end of the bed *a*. This conveyer is of substantially the width of the bed *a*. It is moved by power applied to the shaft B by means of the sprocket *b'*, upon which runs a chain belt *b''*, which also passes around the sprocket *b''*,

carried by a stud projecting from the side frame *a'* and sprocket *b''* on the shaft *b'* and also the sprocket *b''* at the farther end of the bed *a*. This sprocket *b''* is upon the power-shaft *b''*, which also carries a second conveyer forming part of the chocolate-coating machine. The shaft *b'* runs across the machine and has at its farther end a sprocket *c*, around which passes a chain belt *c'* to the sprocket *c''* on the end of the feed-roll C, an idler *c''*, adjustable, as shown in Fig. 3, being used as a belt-tightener.

The feed-roll C is preferably made of wood and has a series of grooves in its periphery running lengthwise of the roll deeper at their rear than at their front ends, as shown in Fig. 2, so that the kernels which are fed into the hopper D will fall into the grooves as they pass under the bottom of the hopper and will be held therein and at the proper time will slide out therefrom onto the apron or guide provided for the purpose and to be described below. The hopper D is located above the feed-roll C and has an opening at its bottom, which opening is closed by the feed-roll C. A brush *d* forms one edge of the opening in the hopper. This brush is preferably made fairly stiff and strong and runs the length of the hopper. The holder for the bristles or other flexible portion of the brush is preferably a pair of metal bars bolted together, the ends of the flexible portion of the brush being held between them, one of these bars having an ear *d'* near each end extending out therefrom at right angles thereto, each ear having a threaded hole therethrough in which turns a screw *d''*, which first passes through an ear *d''*, riveted or otherwise attached to the wall of the hopper. Each screw is provided with a suitable head and set-nuts *d''*, whereby when once adjusted it will remain in place. It will be noted that the brush *d* is so located that the feed-roll C will turn toward it, and it is so adjusted that it will nearly or quite touch the surface of the roll, its purpose being to keep the roll from carrying out from the hopper any kernels except those located within the feed-grooves in the feed-roll. It is partly for this purpose that each groove has its rearward side made substantially radial of the feed-roll, as otherwise the kernels might be brushed out from the grooves as the grooves pass under the brush.

Below the feed-roll is located an inclined apron E, made preferably of sheet metal, provided with ways e , separated by ribs e' , which guide the kernels received therefrom down to the conveyer b . It is also to be noted that the ribs are so located that the ways formed between them are contracted in the direction toward the conveyer, which acts to confine the kernels toward the ends of the ways, with a tendency to make them pass onto the conveyer individually or in single line. This apron is supported from a cross-bar e^2 by means of straps $e^3 e^3$, attached to the underside thereof, the ends of the cross-bar e^2 passing through slots e^4 in the hopper-support D', whereby the bar, and hence the upper end of the apron, may be adjusted with relation to the roll and clamped in place. By this mode of adjustment the inclination of the apron may be changed, which controls, of course, the rapidity with which the kernels may slide or gravitate along onto the conveyer. The apron is sufficiently long to deliver its contents upon one end of the conveyer b . By this means the supply of kernels is controlled.

In order to insure the kernels being arranged more or less symmetrically, so that they will be properly presented to the chocolate-covering machine, there are shown shaker-bars f , the lower ends of which are pivoted at f' to a stationary cross-bar f^2 , their upper ends reaching to meet the ribs e' in the apron E. They are pivoted at their upper ends to a jigger-bar F, which is given a slight vibratory movement, such as to move the shaker-bars f slightly about their pivots f' . The jigger-bar F is supported upon the side beams a' of the frame A, being held in place by straps f^3 and being vibrated by means of a rocker-arm f^4 , attached to a rock-shaft f^5 , supported in bearings f^6 , attached to the side a' of the frame A, the lower end of this rock-shaft carrying a rocker-arm f^7 , the end of which is given the necessary short rocking movement from the rod f^8 , running the length of the machine and operated by a crank-shaft (not shown) lying beneath, parallel with, and operated from the shaft b' .

The connection between the jigger-bar F and the rocker-arm f^4 , as shown in Fig. 1, is by means of a bolt passing through slots in the rocker-arm and an arm F', carried by said jigger-bar in order that the length of throw of the parts f may be adjusted according to the character of the kernels to be fed.

The apparatus above described, while simple in construction, has proved efficient and economical, as it requires no attention other than that which can be given to it by the operative who runs the chocolate-coating machine, so that the coating can be done by one operative instead of two or more, as has heretofore been the custom. The shape of the feeding-roll and the general arrangement of the parts may be altered somewhat, according

to the size and shape of the kernels to be fed, the novelty of my invention lying not in the shape of the various parts, but in their general arrangement, whereby a line or series of kernels will be received from the hopper and delivered to the shaker-bars and the conveyer upon which the shaker-bars are caused to slide laterally by the jigger-bar in such manner that they are in substantially the proper relation to each other to pass to the coating-machine. It is apparent that as the kernels are not held positively they are liable to be fed more or less unevenly; but any such irregularity of feed is slight and can easily be corrected by the operative.

In using the term "kernel" I mean to be understood as including any substance which is or may be covered by melted chocolate or the like viscous substance.

The apron may be provided with a suitable cover, if thought best.

What I claim as my invention is—

1. A kernel-feeding machine having a hopper open at the bottom, a rotary feeder partially closing the bottom of said hopper and having grooves or recesses adapted to receive the kernels from said hopper, and to feed the same, and a member having a soft, flexible edge coöperating with said roll and located within the opening left between said roll and the bottom of said hopper for sweeping or holding back within said hopper the kernels not contained in the grooves or recesses of said roll.

2. In a kernel-feeding mechanism, a hopper having an opening in the bottom thereof, a feed-roll partially closing the bottom of said hopper and having a series of kernel-feeding slots extending lengthwise therein, and a brush located to coöperate with said roll and forming one of the lower edges of said hopper, as described.

3. In a kernel-feeding mechanism, a hopper having an opening in the bottom thereof, a feed-roll closing the bottom of said hopper and having a series of kernel-feeding slots extending lengthwise therein, and a brush located to coöperate with said roll and forming one of the lower edges of said hopper, said brush being adjustable toward and from said roll, as set forth.

4. A kernel-feeding machine having a hopper for holding kernels, a feeder for receiving and feeding the kernels from said hopper, an apron provided with ribs adapted to separate the kernels fed from said feeder and guide the same to pass on in lines to a conveyer, and said conveyer.

5. A kernel-feeding machine having a hopper, a feeder for receiving and feeding the kernels from said hopper, an apron having ribs adapted to separate the kernels fed from said feeder and which ribs also form ways between them along which said kernels may be guided to pass forward in lines onto a conveyer and

which ribs also are so located that the ways formed thereby may be relatively contracted in the direction toward the conveyer.

6. In a kernel-feeding machine, a hopper
5 for holding the kernels, a feeder for receiving and feeding the kernels from said hopper, an inclined apron arranged under said feeder and adapted to receive the kernels from the same, whereby they may gravitate along the in-
10 clined surface of said apron onto a conveyer, and means for adjusting said apron by which its inclination may be varied.

7. In a kernel-feeding machine, a hopper for holding the kernels, a feeder adapted to
15 receive the kernels for feeding the same from said hopper, an apron provided with ribs adapted to separate the kernels fed from said feeder and guide the same to pass forward in lines onto a conveyer, said conveyer, and rib-
20 forming means coöperating with said conveyer by which the kernels may continue to be fed in lines by the same.

8. A kernel-feeding machine having a hopper for holding kernels, a feeder for receiving

and feeding the kernels from said hopper, a
25 conveyer, means for receiving and feeding the kernels from said feeder onto said conveyer, a series of shaker-bars coöperating with said conveyer by which the kernels may be divided
30 to be fed along by said conveyer in separate ways, and means for shaking or vibrating said shaker-bars.

9. In a kernel-feeding mechanism, a hopper having an opening in the bottom, a feed-roll
35 adapted to close said opening, an apron located under said feed-roll, said apron being provided with ways to direct the course of the kernels, and ribs separating said ways, and a series of shaker-bars each adapted to register
40 substantially with one of said ribs, and means whereby said shaker-bars are vibrated, and a conveyer located beneath said shaker-bars, as and for the purposes described.

GEORGE B. ELLINGWOOD.

In presence of—

J. E. R. HAYES,
M. E. FLAHERTY.