

(No Model.)

2 Sheets—Sheet 1.

C. A. MILLER.
MACHINE FOR MAKING EGG CASE FILLER.

No. 414,427.

Patented Nov. 5, 1889.

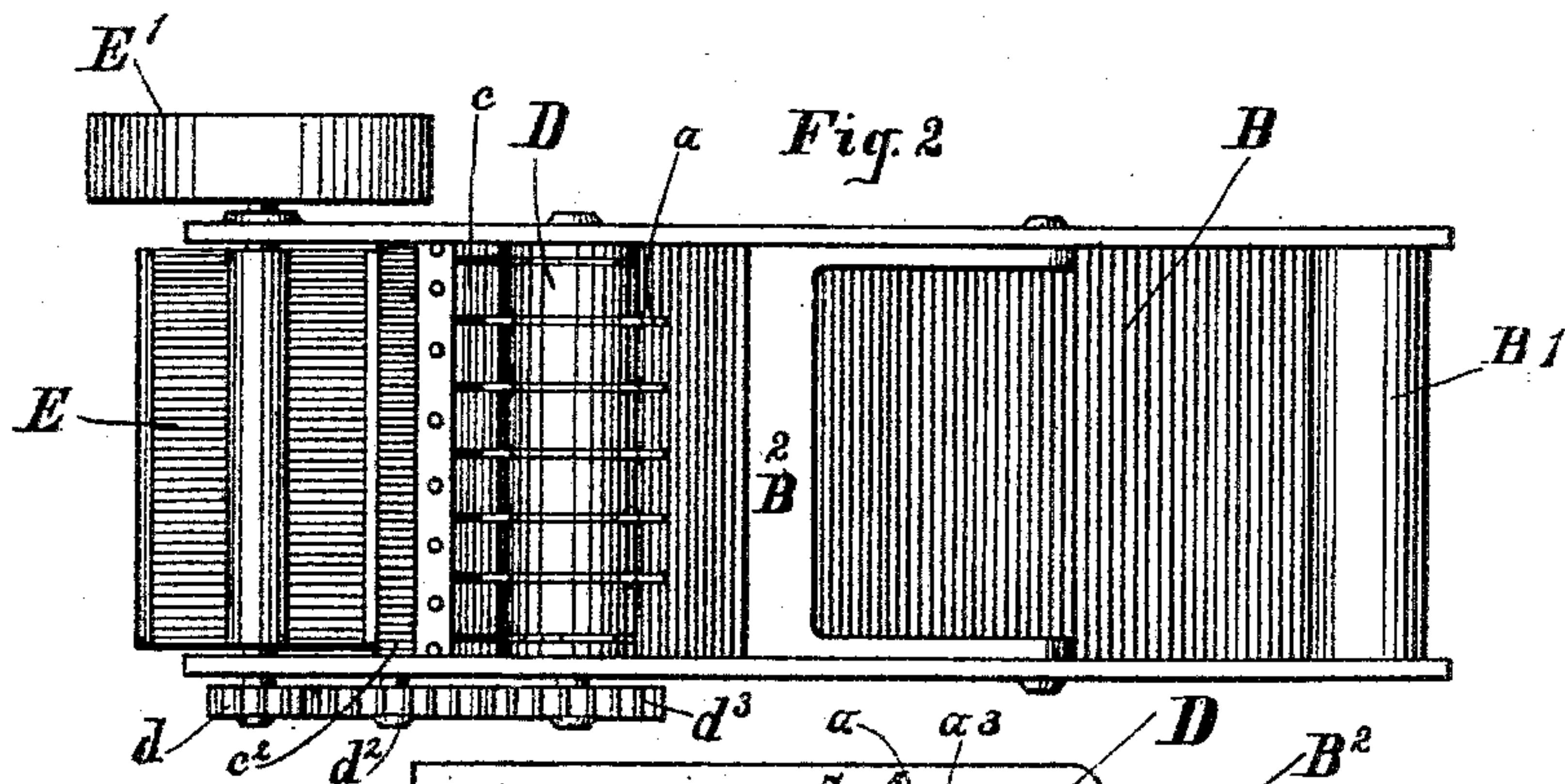
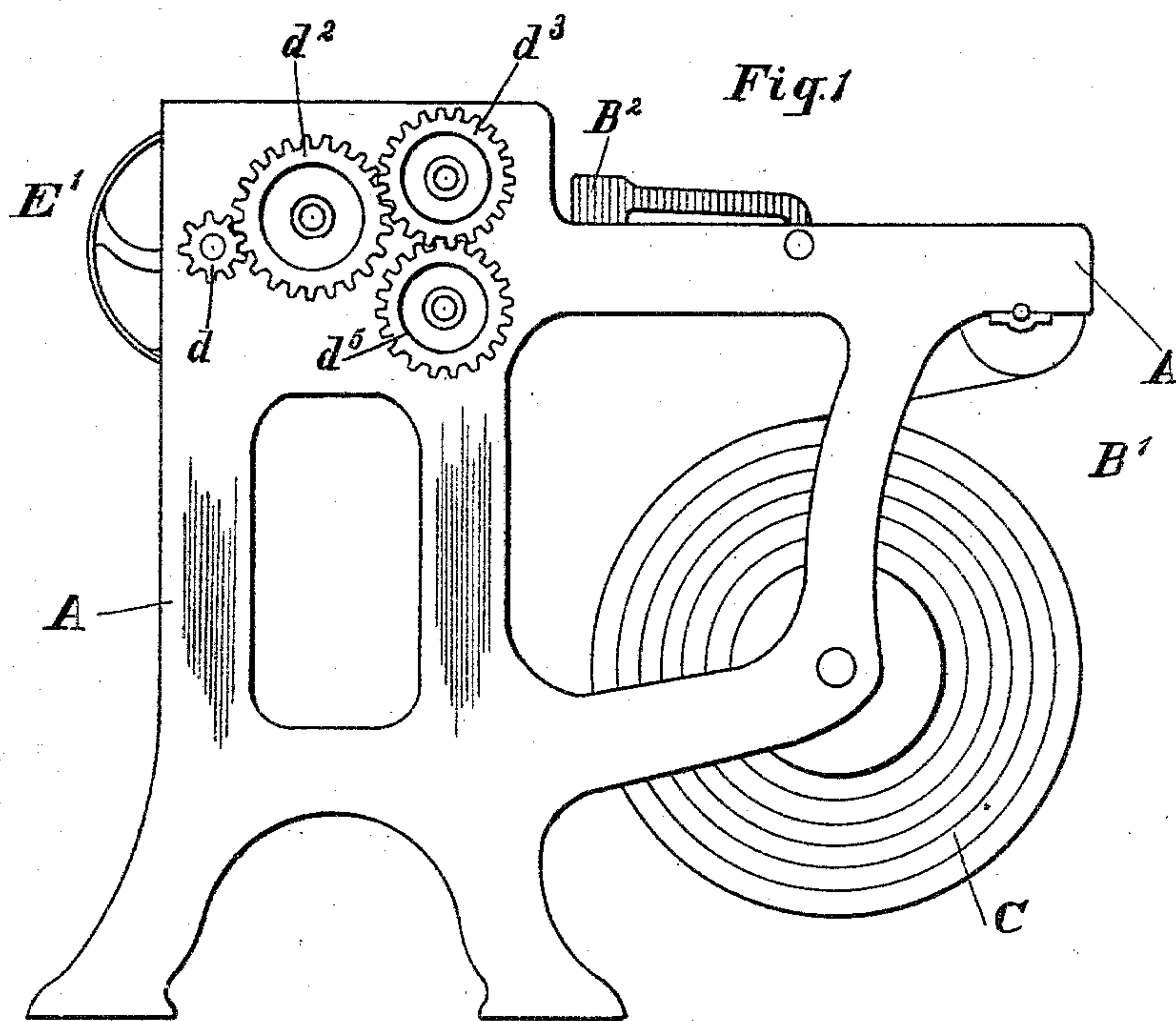
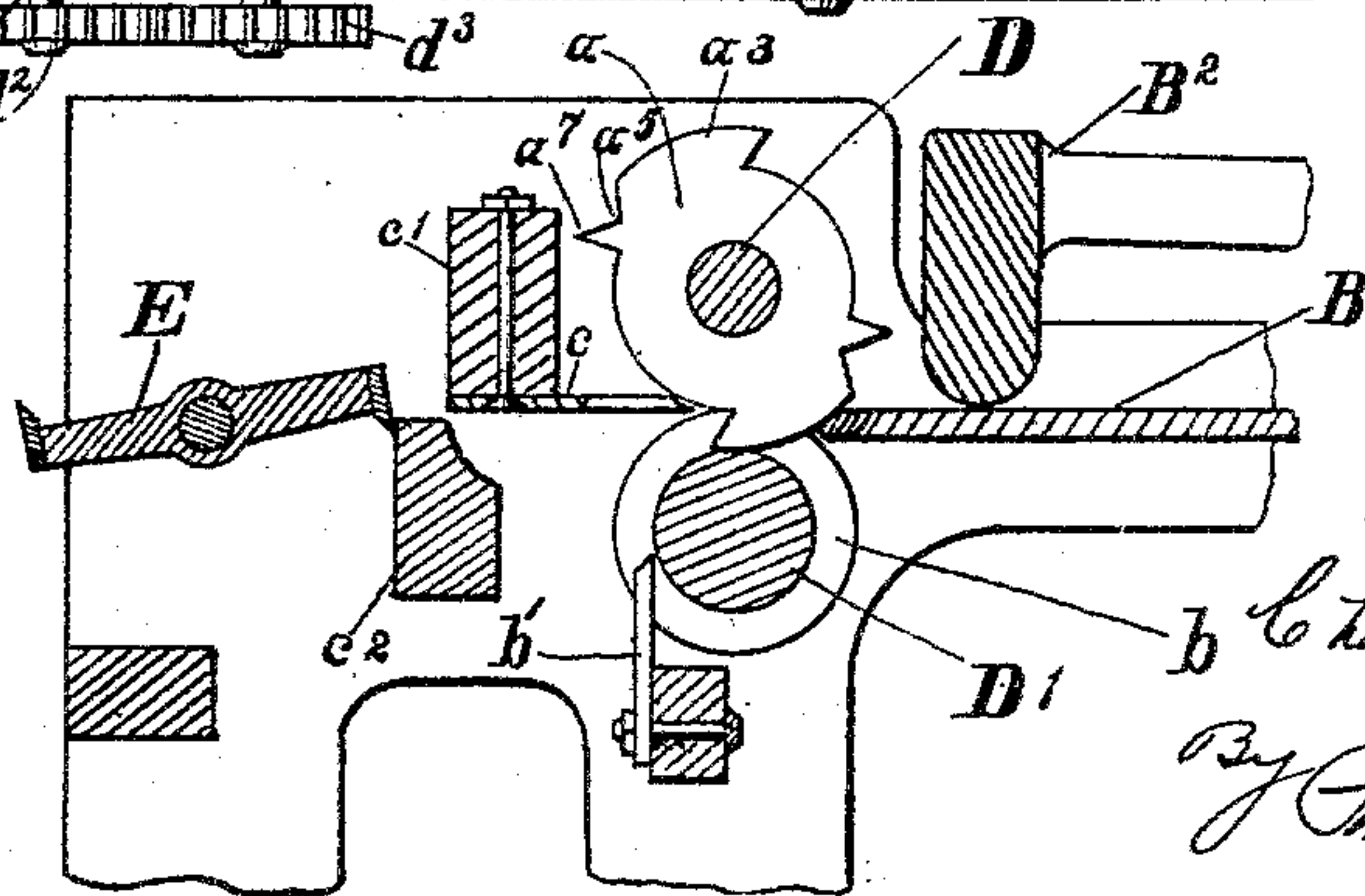


Fig. 3



Witnesses
Chas. J. Brewster
W. D. Grove

Inventor

C. A. Miller
By *Paul J. Miller*

(No Model.)

2 Sheets—Sheet 2.

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MACHINE FOR MAKING EGG CASE FILLER.

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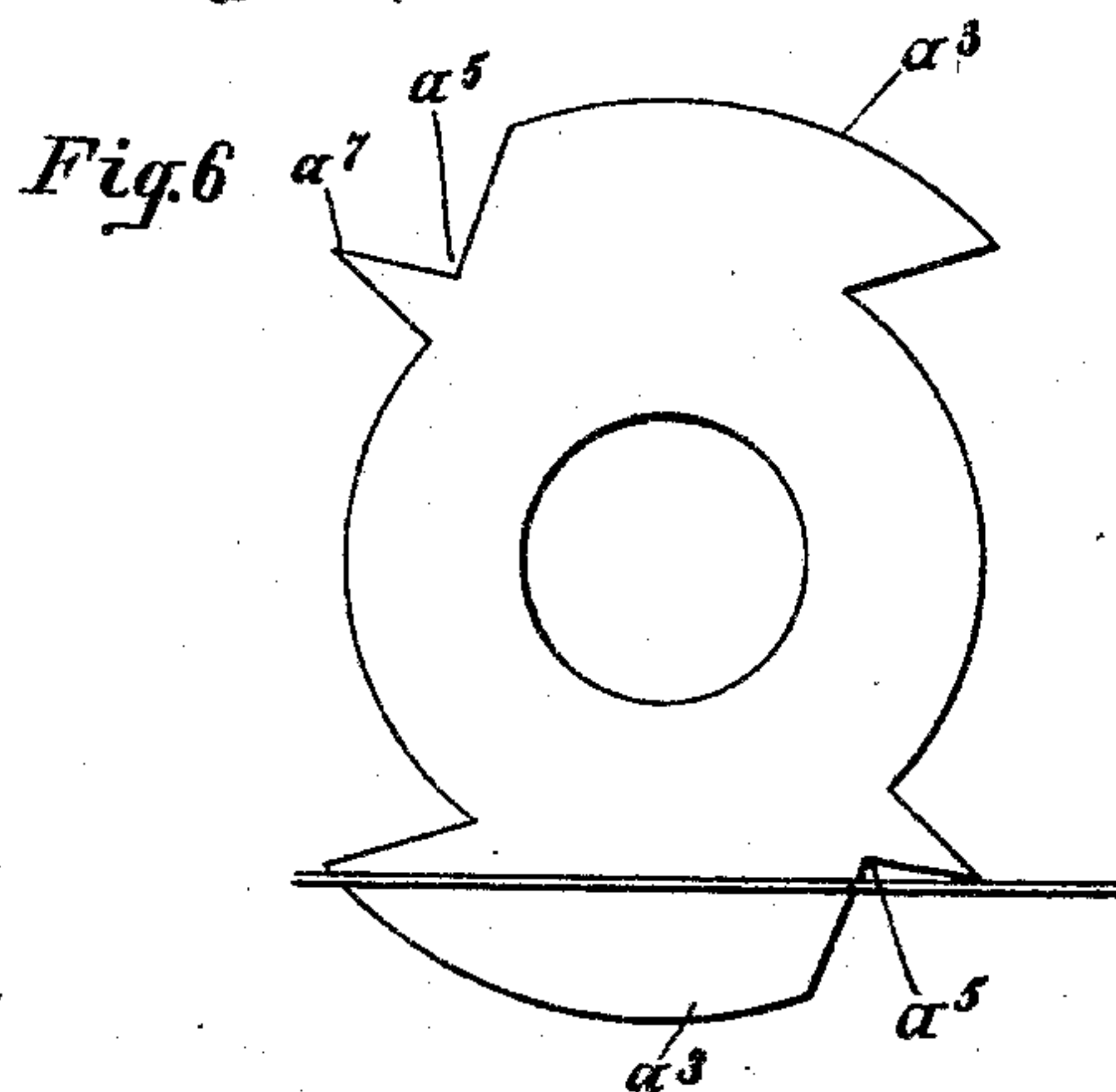
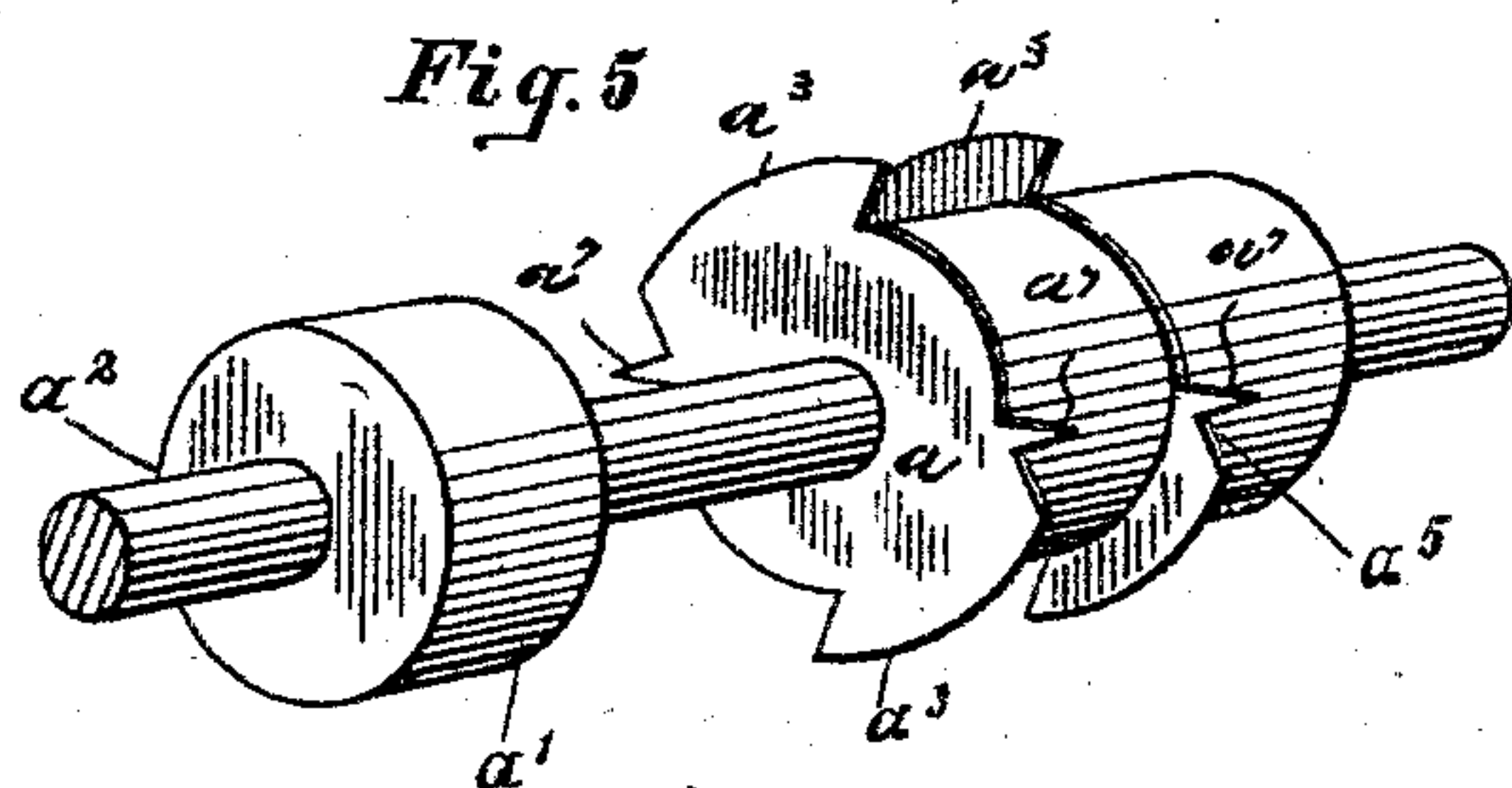
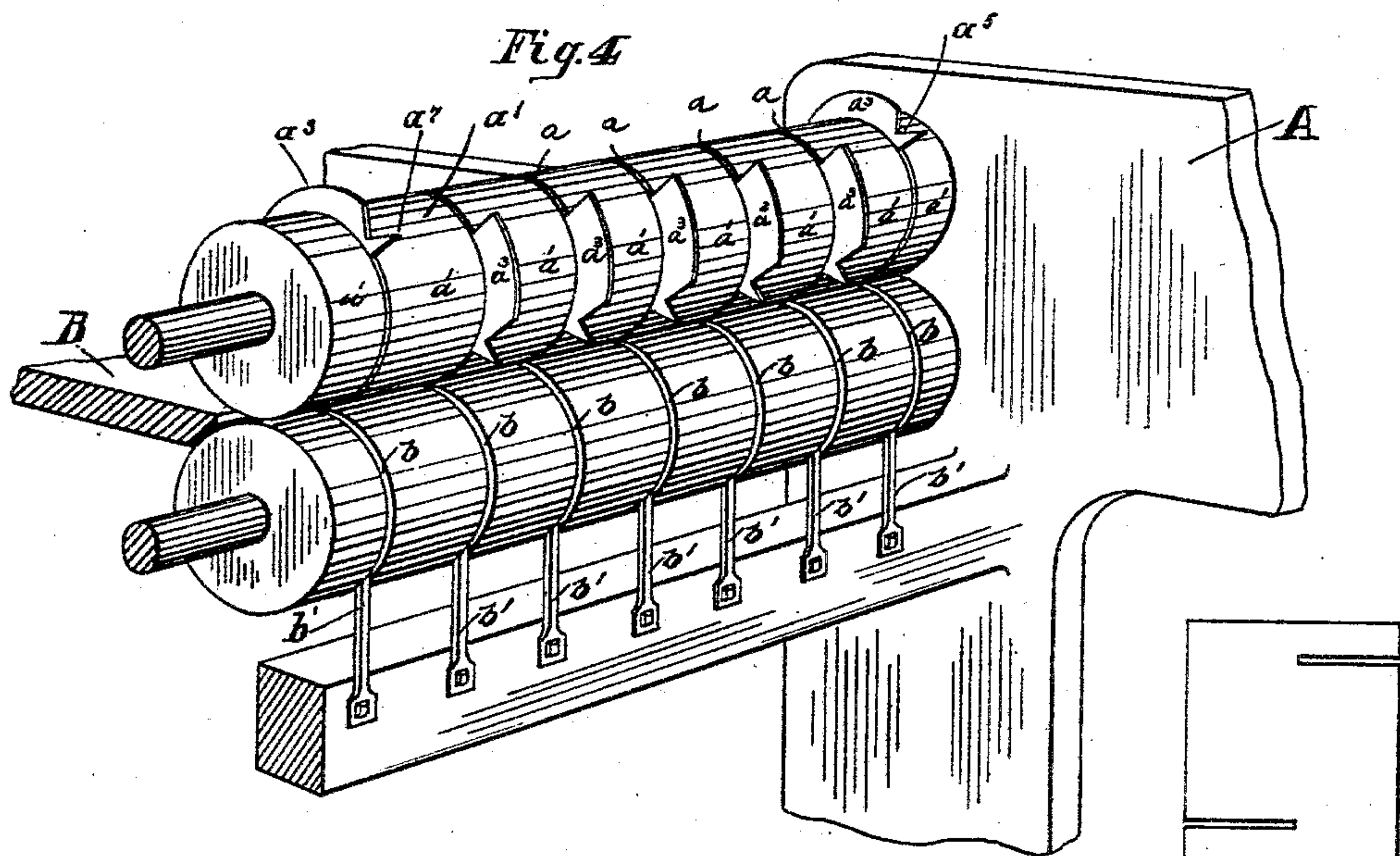
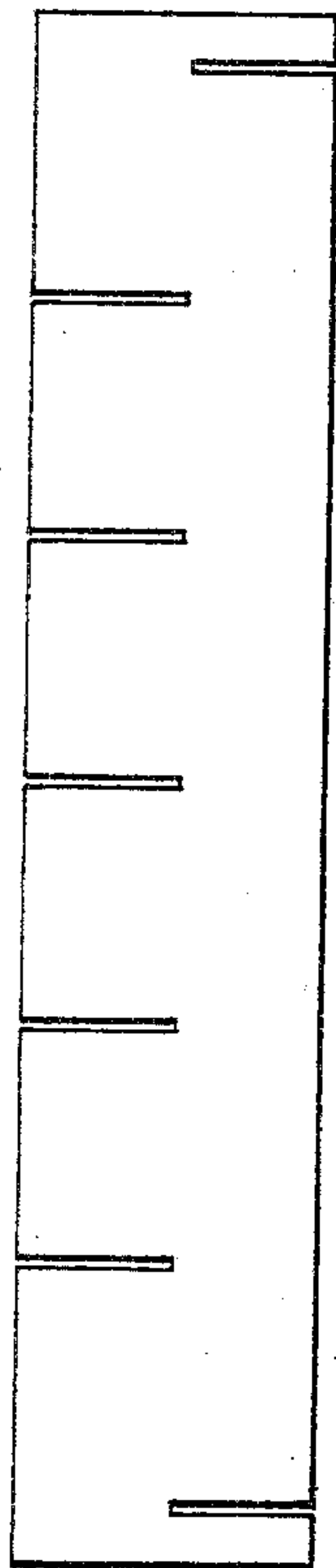


Fig. 7



Witnesses
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W. J. Grove

Inventor
Charles A. Miller
By J. M. S. H. H. H.

UNITED STATES PATENT OFFICE.

CHARLES A. MILLER, OF URBANA, OHIO, ASSIGNOR TO WILSON M. BAKER, OF
SAME PLACE.

MACHINE FOR MAKING EGG-CASE FILLERS.

SPECIFICATION forming part of Letters Patent No. 414,427, dated November 5, 1889.

Application filed April 2, 1888. Serial No. 269,297. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. MILLER, a citizen of the United States, residing at Urbana, in the county of Champaign and State of Ohio, have invented certain new and useful Improvements in Machines for Making Egg-Case Fillers, of which the following is a specification.

My invention relates to a machine for making the paper strips of which the fillers for egg-cases are composed.

The object of my invention is to provide a machine of simple construction which shall require but a slight amount of power to drive the same and shall perform its operations rapidly and accurately.

My invention consists in the various constructions and combinations of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation view of a machine embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a sectional view showing the arrangement of the cutters for forming the slots in the filler-strips and a ledger-knife for severing the strips from the roll or sheet from which they are formed. Fig. 4 is a perspective view of the cutting-rolls and their cutting-disks, showing the cleaners for discharging the cuttings from the lower or die rolls. Fig. 5 is a perspective view in detail showing the method of constructing the upper or cutting roll. Fig. 6 is a detail view of one of the disk-cutters, showing the manner of operating upon the strip for producing the slots therein. Fig. 7 is a plan view of one of the filler-strips completed.

Like parts are indicated by similar letters of reference throughout the several views.

The working parts of my device are all supported upon a main frame A A, which may be of any suitable form and material best adapted to support the working mechanism, so that the different parts will perform their functions easily and accurately. In the top of the frame A A is a table B, provided at one end with a roller B'. Located under the table and journaled in suitable bearings in the main frame A is a spool or roll C, on which the straw-board or other material forming the filler-strips is placed. At the forward end of

the table B are two rolls D D', one of which is provided with a series of cutting-disks a and the other with a series of endless grooves b . The cutting-roll D is preferably provided with a series of collars a' between the disks a , which are located alternately upon a shaft a^2 and held firmly together in any suitable well-known mechanical manner. The disks a are each provided with projecting cutting-surfaces a^3 , adapted to project into the corresponding grooves b in the lower roller D.

The paper or straw board from which the strips are adapted to be made passes from the roll C around the roller B', thence under a presser-foot B², over the table B, and enters between the rolls D D'. The disks a are located on the upper roll D in such a manner as to form the slots in the filler-strips of the desired number and position. The rolls are revolved and the cutting projections a^3 of the disks a are forced through the paper or straw board into the grooves b , a shearing action being produced between the said cutters and grooved rollers, the material cut from the slot being forced into said grooves and discharged therefrom by the cleaners b' , which project into said grooves. As the paper passes through the rolls it is stripped from the cutters a^3 by the strippers c , secured to the cross-piece c' of the frame A. These strippers c consist, preferably, of small plates of steel having grooves or spaces therein, through which the cutting-disks are adapted to pass. From the rolls D D' the paper or board passes under the strippers c and over a cross-piece c^2 , close to the edges of which the ledger-knife E is adapted to pass. The knife E is journaled at each end in suitable bearings in the frame A A, and is provided at one end with a driving-pulley E' and at the other with a pinion d , which meshes with the intermediate gear d^2 , which in turn meshes with the spur-gear d^3 on the cutting-roll D, the gear d^3 meshing with the gear d^5 on the roll D'. The cutting-disks on the roll D are made of sufficient size and shape so that the slots of two filler-strips are produced by each cutter. Two sets of cutters are supplied on each roll, so that at each revolution two filler-strips are produced. The ledger-knife is provided with two cutting-edges, and is adapted to revolve

so as to come in contact with the sheet in the middle of the length of the slots after it leaves the cutting-rolls. The strips are thus cut off from the sheet of an equal length, and two
5 filler-strips are produced at each revolution of the cutting-rolls.

In order to prevent the slots from tearing at the rear end, I provide the cutters a^3 with a notch a^5 and an independent projecting
10 point a^7 , which is adapted to perforate the paper or board, as shown, at the extreme end of the slot prior to the time that the main portion a^3 of the cutter has reached that point, as shown in Fig. 6. As the cylinder or roll
15 continues to revolve the cutting is accomplished in both directions on either side of the notch a^5 , thus leaving the end of the slot in the paper perfectly square.

It is obvious that, if desired, any number of
20 cutting-disks may be used and any form or size of cutters may be employed to produce slots or openings in the board or paper of such size and shape as may be desired for producing filler-strips of different sizes and
25 shapes. If desired, the cylinders or rolls may be increased in size and the number of cutters or cutting projections thereon be so increased that a greater or less number of strips may be produced at one revolution of the cylinder, the ledger-knife being correspondingly
30 modified to cut the strips at the desired point and produce uniformity in size.

By the use of the cutters of the peculiar shape described in connection with the endless grooved rollers I am enabled to produce
35 a clean-cut slot in the filler-strip with a very slight expense for power, and by means of the cleaners in said endless grooves readily discharge the cuttings therefrom.

It is obvious that the machine above described admits of various modifications in the construction and operation, which will readily suggest themselves to the mind of an ordinary mechanic. I do not, therefore, limit
40 myself to the constructions herein shown and described; but

I claim, broadly, as my invention—

1. In an egg-case-filler machine, the combination of intermeshing rolls, one of said rolls

being provided with endless grooves and the
50 other with cutter projections to enter said grooves, said cutters each having a notched periphery and an independent projecting cutting-point, substantially as specified.

2. The combination, in an egg-case-filler
55 machine, of intermeshing rolls, one of which is provided with cutting projections, each having a notched periphery and an independent cutting-point, the other roll being provided with endless grooves and cleaning pro-
60 jections in the said endless grooves, substantially as specified.

3. The combination, with an endless grooved roll and an intermeshing cutting-roll, said cutting-roll being provided with cutting pro-
65 jections, each having a notched periphery and an independent cutting-point, of the cleaners in the said endless grooves and the strippers between said cutting projections, substantially as specified.
70

4. The combination, with a cutting-roll having cutting projections, each having a notched periphery and an independent projecting cutting-point, of an intermeshing roll with end-
75 less grooves, in which the said cutting projections are adapted to enter, and a knife moving synchronously with said rolls to sever the grooved strips from the sheet which passes through said rolls, substantially as specified.

5. The combination, in an egg-case-filler
80 machine, with a roll having endless grooves and an intermeshing cutting-roll, said cutting-roll being provided with cutter projections having a notched periphery and an independent cutting-point, of cleaning projections in
85 said grooved roll, strippers between said cutting projections, and a revolving knife moving synchronously with said cutting-roll to sever the grooved strips passing through said rolls from the sheet in which they are formed, sub-
90 stantially as specified.

In testimony whereof I have hereunto set my hand this 28th day of March, A. D. 1888.

CHARLES A. MILLER.

Witnesses:

W. M. RHODES,
C. R. HAZARD.