

(No Model.)

2 Sheets—Sheet 1.

E. E. ANGELL & C. B. KENDALL.

CAN HEADING MECHANISM.

No. 371,912.

Patented Oct. 25, 1887.

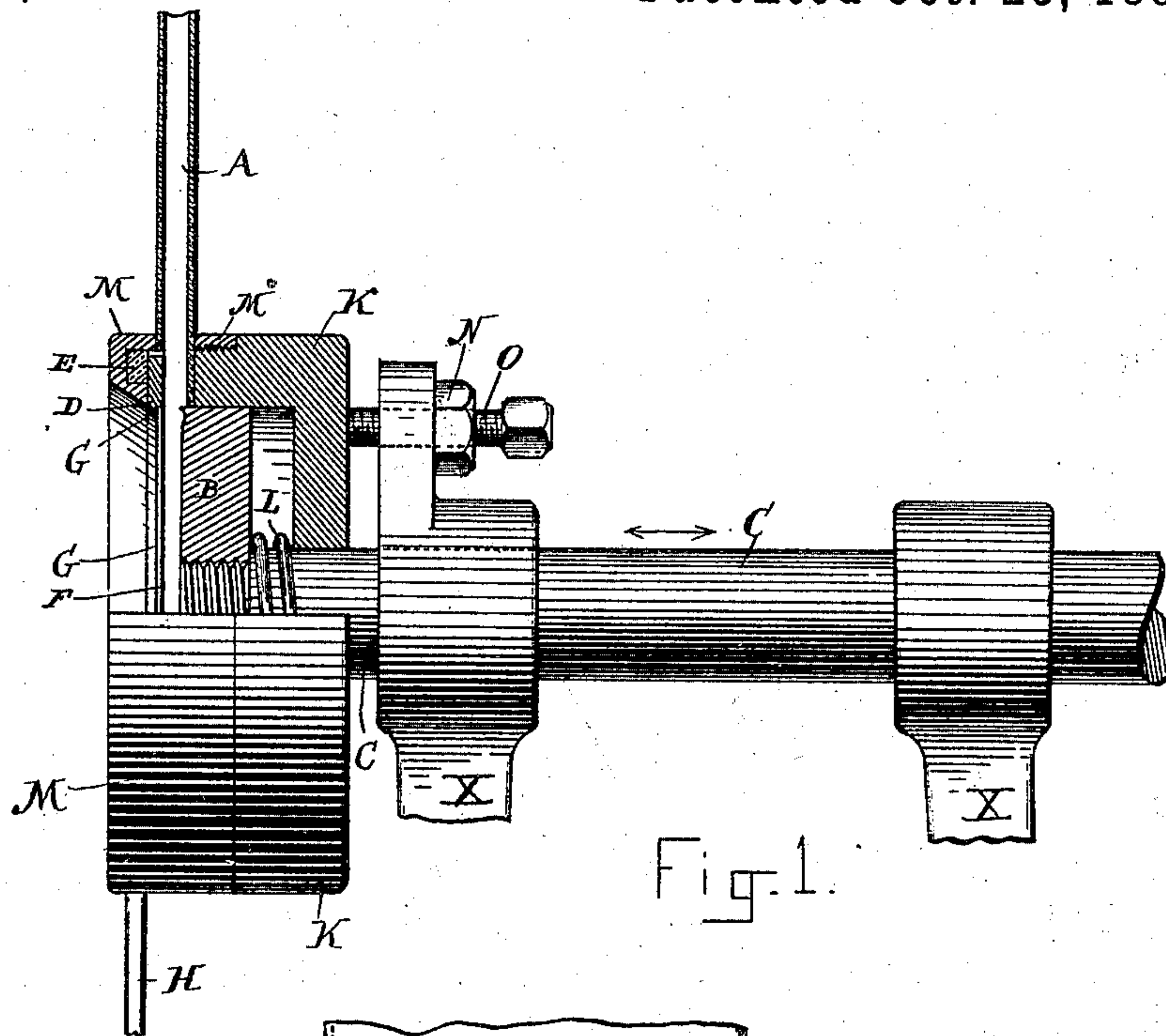


Fig. 1.

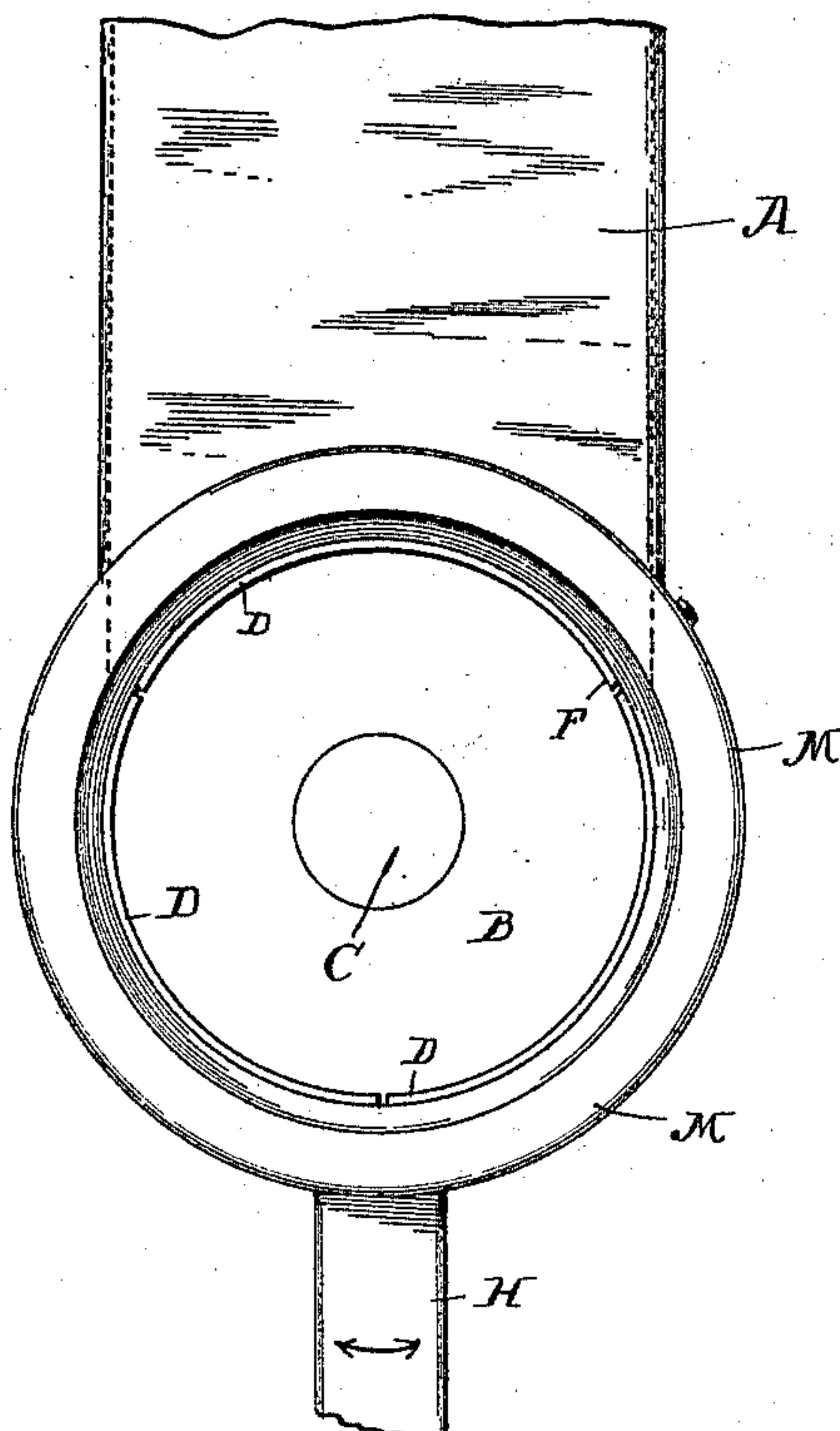


Fig. 2.

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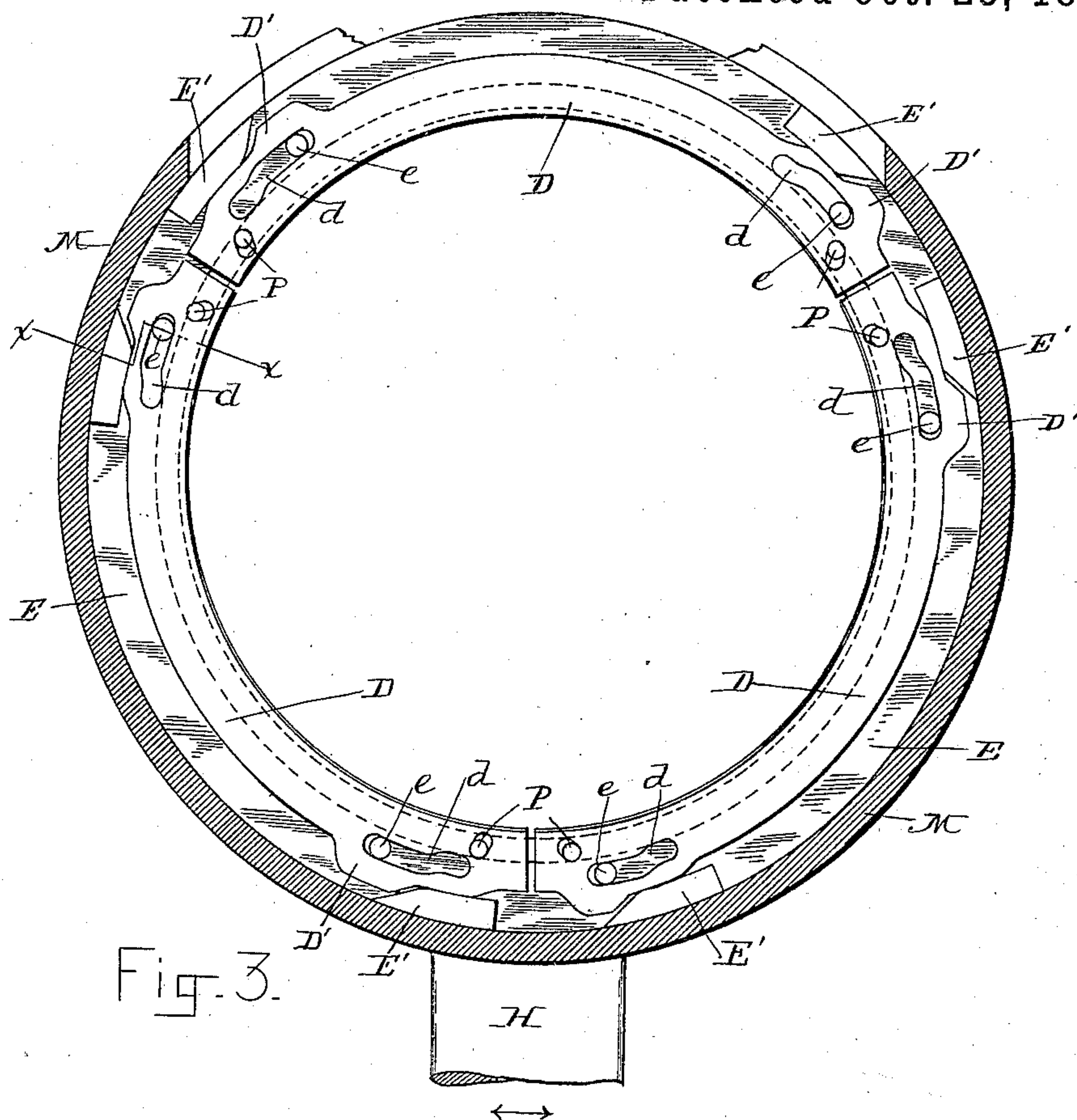


Fig. 3.

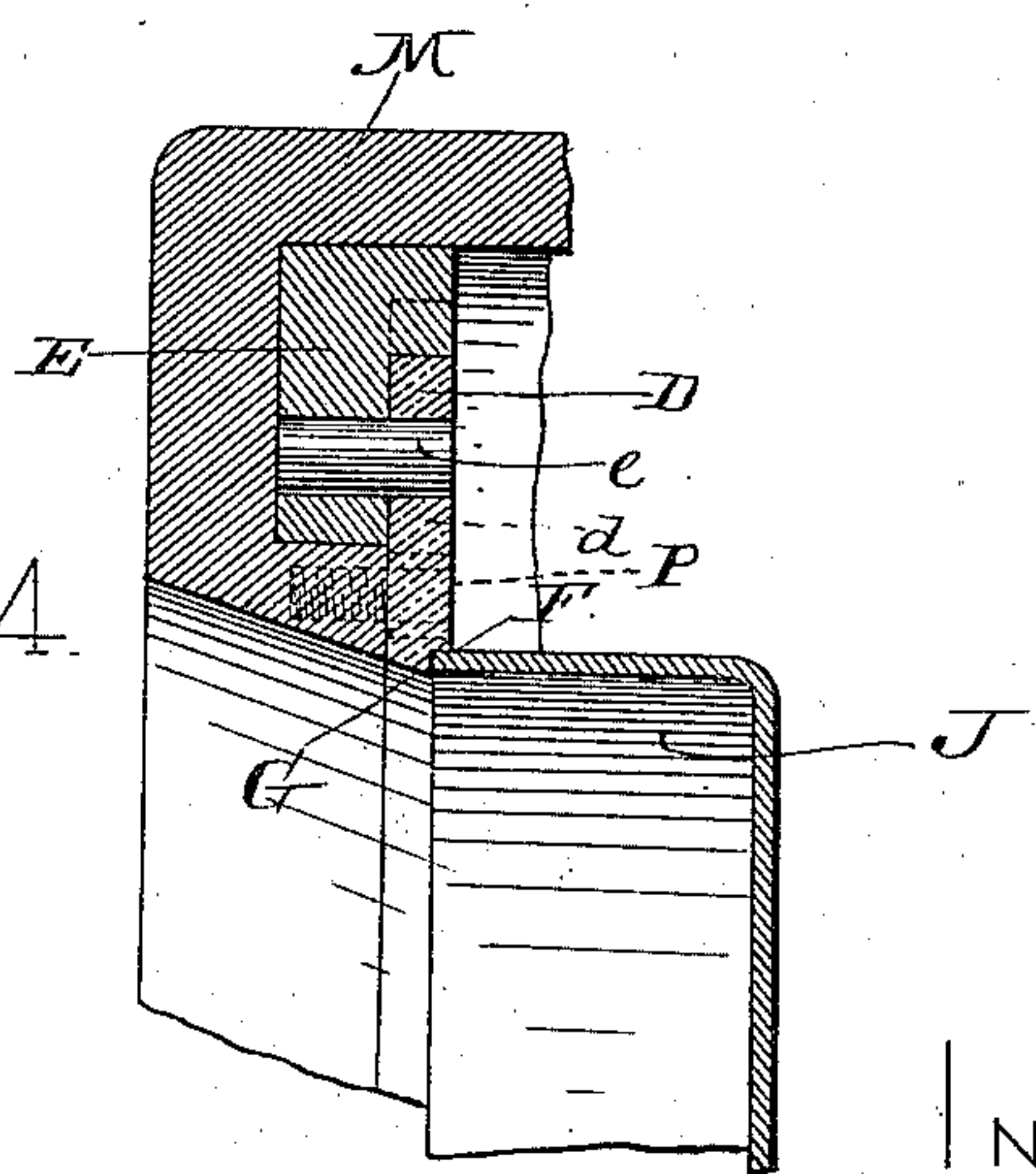


Fig. 4.

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UNITED STATES PATENT OFFICE.

EDWIN E. ANGELL, OF MALDEN, AND CHARLES B. KENDALL, OF NEWTON,
MASSACHUSETTS, ASSIGNORS TO THE AUTOMATIC CAN MACHINE COM-
PANY, OF SACO, MAINE.

CAN-HEADING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 371,912, dated October 25, 1887.

Application filed August 15, 1887. Serial No. 246,925. (No model.)

To all whom it may concern:

Be it known that we, EDWIN E. ANGELL, of Malden, Massachusetts, and CHARLES B. KENDALL, of Newton, Massachusetts, have invented, jointly, new and useful Improvements in Can-Heading Mechanism, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to a can-heading mechanism adapted to be used in that class of can-making machines such as is shown by our application, No. 247,149, filed August 17, 1887, in which the can-bodies are carried by an intermittingly-rotating carrier, and the heads are placed on the can-bodies by two headers arranged in line with each other and reciprocating toward and from the can-bodies and the carrier which feeds the latter forward.

Reference may be had to our said application for the general features of our machine and for description and illustration of the mechanism for operating our improved header.

Our invention is embodied in the apparatus described and shown, as particularly set forth in the appended claims.

In the drawings, Figure 1 is a sectional elevation of part of our machine, showing one of the guide-channels and the relation of the jaws and the plunger thereto. Fig. 2 shows the series of jaws, the ring which operates them, and the guide-channel. Fig. 3 is a transverse section showing the outer face of the jaws, with the cam-slots through them and the actuating-pins therein. Fig. 4 is an enlarged detail in section illustrating the relation of the clamp-jaws to the can-head.

We have herein shown an apparatus for setting a head on one end of a can; but it will be understood that a similar apparatus is employed for the other end of the can, as shown in our application, No. 247,149, hereinbefore referred to. The plunger B is carried by a shaft, C, which reciprocates endwise in bearings afforded by the supports X. The can-body (not here shown) is held in suitable position ready to receive upon it the heads J, which are introduced edgewise through the guiding-chute A. When a head is to be introduced through the chute A, the plunger B

is drawn back, so as to leave a free passage for the said head into the head-casting K. At the moment of introduction of the can-head the jaws D are closed in such a manner as to protect the flange of the can-head while the latter is being applied to the end of the can-body. The forward movement of the shaft C first moves the plunger B forward, so as to force the flange of the can-head into the annular groove F, formed in the jaws D, the said jaws being at this moment closed. As the plunger continues its forward movement, pushing against the can-head, the latter forces the head-casting K forward over the can-body, the beveled guide G centering the latter, so that the can-head is forced thereon. The jaws D are then released by the mechanism to be hereinafter described, so that they will slide loosely over the can-head, and the backward movement of the shaft G withdraws the head-casting from the can, leaving the head on the latter. When the cap M of the head-casting K has cleared the end of the can, the jaws D are again closed for the next operation, the backward movement of the head-casting K being limited by the adjustable set-screw O in the support X, and the spring L yielding somewhat to permit the plunger B to be withdrawn into the head-casting far enough to leave a free passage for the next can-head into the said head-casting through the chute A.

The jaws are formed with a marginal lip or guide, G, beveled on the face which is toward the can-body to slightly crimp the ends of said body as the heads approach it when the header is being operated, as above described, and have an annular groove or recess, F, just outside of said lip, into which the projecting edge of the annular flange on the can-head J enters. The depth of this recess is but slightly greater than the thickness of the tin of which the can-head is made, so that the lip or guide G extends inwardly but a trifle beyond the edge of the flange of the can-head when the jaws are closed in. This distance is, however, sufficient to make of the lip G a guide to slightly crimp and to positively direct the ends of the can-body at all points within the annular flanges of the can-heads. This relative position of the

parts will be readily understood from the general section in Fig. 1 and from the enlarged detail, Fig. 4.

The drawings represent in Fig. 3 the jaws 5 D as three in number, and each jaw or section as formed with a cam-shaped enlargement, D', near each end, and with oblique slots, into which studs or pins *e* project from a ring, E, having projecting lips E', to act upon the 10 cams D'. The ring E may be oscillated in a very short arc by means of the arm H, extending rigidly from it. This movement alternately opens and closes the jaws to the extent required in applying the heads to the can— 15 that is, the lips E' move far enough over the cam-shaped enlargements D' to bring the jaws into close contact with the periphery of the can-head and to lock the jaws in their closed position. The beveled faces G of the jaws 20 then serve to guide the can-body within the flange of the head. The pins *e* in slots *d* carry the jaws outwardly on the reverse stroke.

Guide-pins P project from the cap M of the head-casting K through short parallel slots in 25 each jaw, to permit a bodily movement of the jaw toward the axis of the can-head J. (See Fig. 3.)

Suitable mechanism is provided, consisting, preferably, of grooved cams with studs engaging in such grooves, to move the shafts C, 30 carrying the head-castings, toward each other at the proper time; but this mechanism is more properly a part of the can-making apparatus, and need not be explained in detail 35 here.

The head-casting K is shown in Fig. 1 as a cup-shaped cylindrical shell, within which the shaft C and plunger B work. A spring, L, is introduced in rear of the plunger to keep the 40 latter pressed up closely against the outer face of the can-head, the parts being shaped to fit upon each other. The head-casting K has screwed upon it an annular portion or cap, M, which incloses the jaws D and the 45 ring and pins by which they are actuated. This cap M is slotted circumferentially, as in Figs. 1 and 3, to admit the can-heads from the guide-channels A, the walls of which project laterally therefrom, forming a guide-trough, 50 as in Fig. 1. An adjusting-screw, O, passing

through a portion of the frame X, with a check-nut, N, serves to regulate and fix the position of the head-casting K, so that the relation of all the parts borne upon it to the can-body and its supporting mechanism may 55 be readily adjusted.

We claim as our joint invention—

1. In a can-heading apparatus, the combination, with a suitable frame and means for holding the can-body, of a recessed annular 60 head provided with radially-moving sectional jaws D, formed with extensions D', and the actuating-ring E, provided with lips E', engaging therewith, substantially as and for the purpose set forth. 65

2. In a can-heading apparatus, the head-casting K, with its ring M, and the inclosed clamping-jaws D, having each a beveled guide-lip and groove adjacent thereto, and formed with oblique slots *d*, in combination with the 70 ring E, having pins *e* working in the slots of the jaws, substantially as and for the purpose set forth.

3. The head-casting K, having a lateral opening to admit the can-heads, and a guide- 75 channel, A, leading thereto, and cap M, in combination with radially-moving jaws having the annular recess F, to receive the flange of the can-head, and the projecting guide-lip G, to protect the edge of said flange and guide 80 the can-body, and means for operating the jaws, substantially as and for the purpose set forth.

4. The head-casting K, provided with the lateral guide-channel A, to admit the can- 85 heads, and the frame or support X, having an adjustable stop-screw, O, in combination with the plunger B and spring L, working within the casting K, substantially as and for the purpose set forth. 90

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, on this 13th day of August, A. D. 1887.

EDWIN E. ANGELL.
CHARLES B. KENDALL.

Witnesses:

A. H. SPENCER,
FRANK T. BENNER.