

No. 669,260.

Patented Mar. 5, 1901.

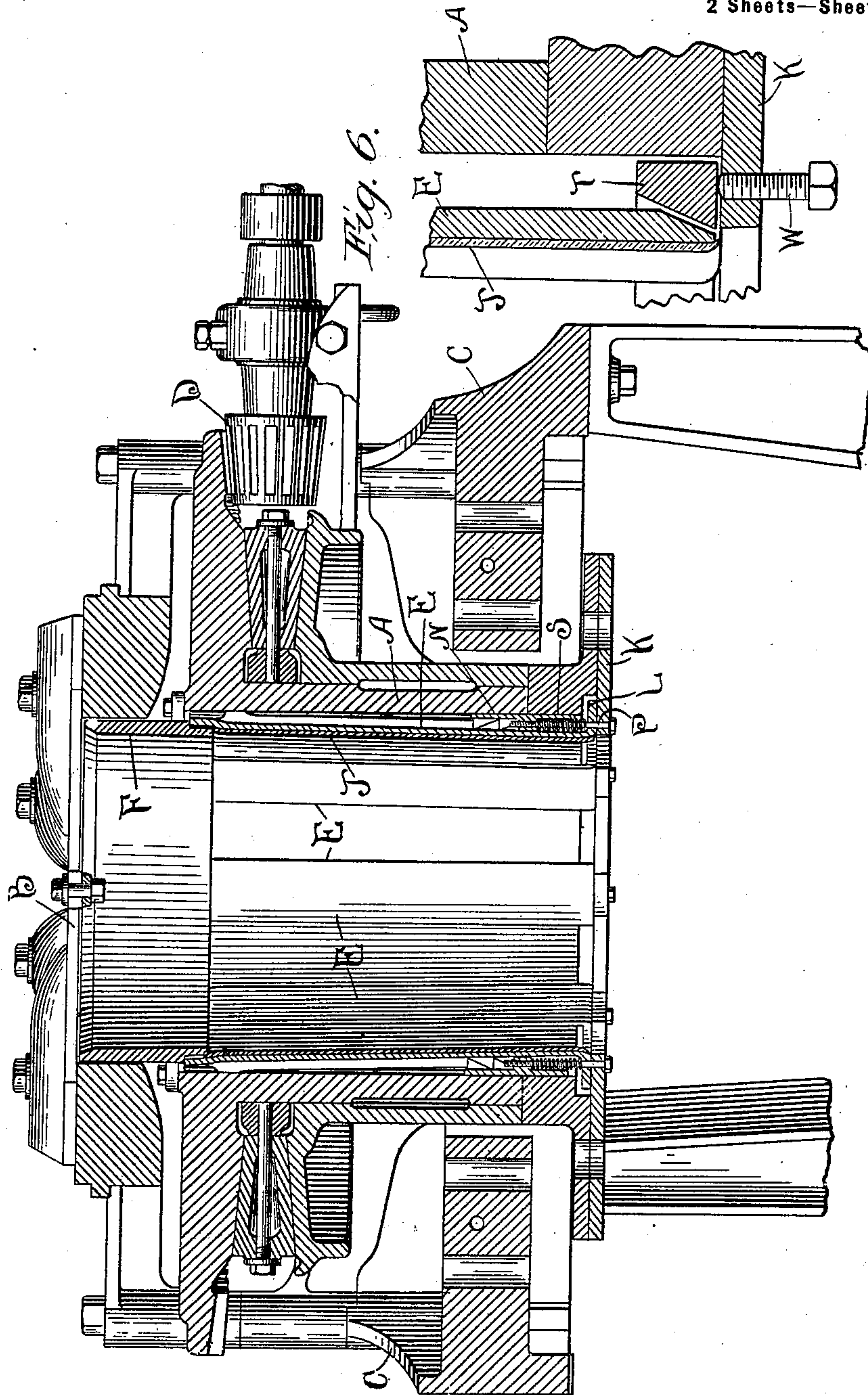
G. A. LOWRY & W. M. HOLMES.  
APPARATUS FOR COMPRESSING COTTON, WOOL, &c.

(No Model.)

(Application filed June 2, 1899.)

2 Sheets—Sheet 1.

*Fig. 1.*



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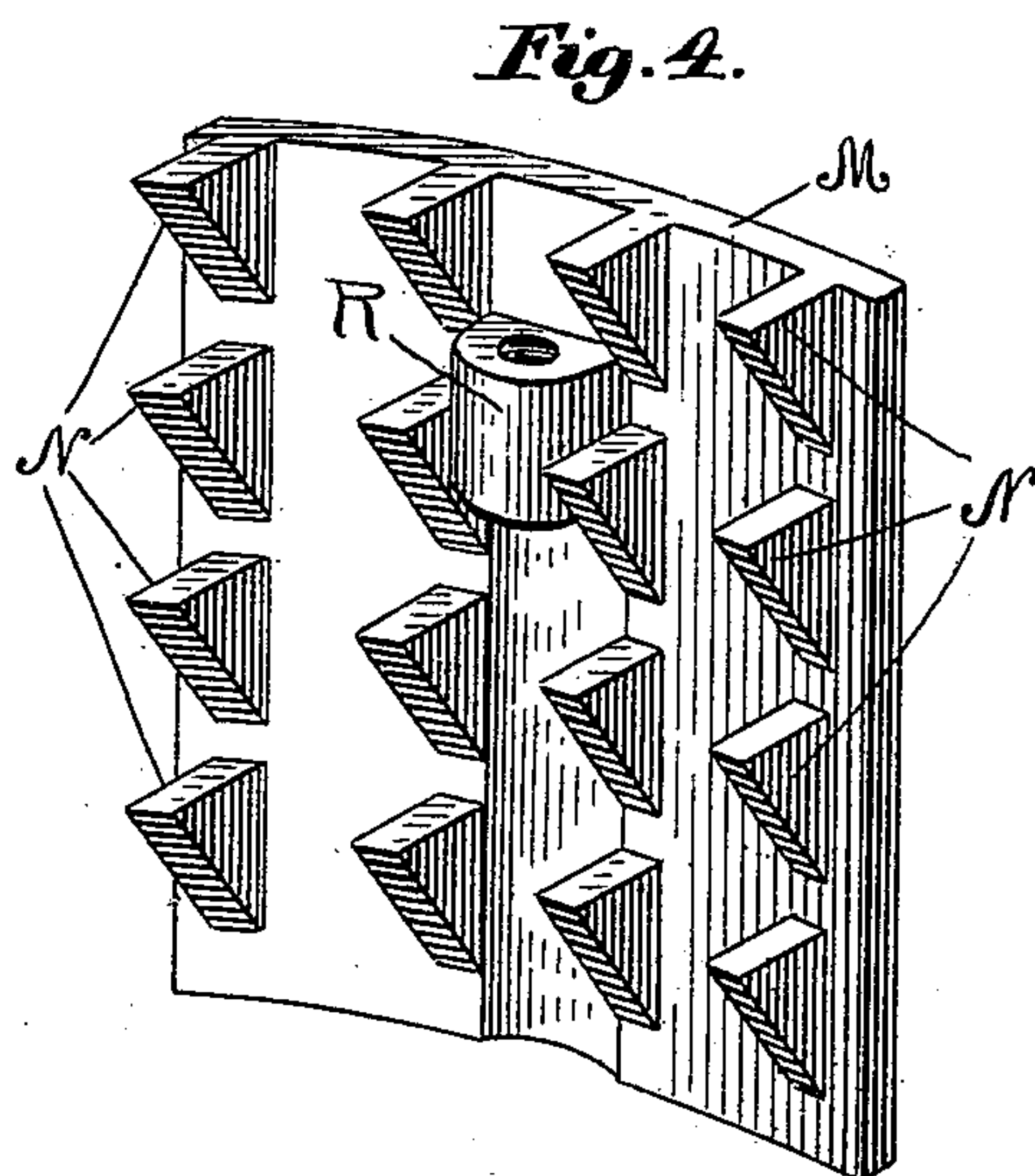
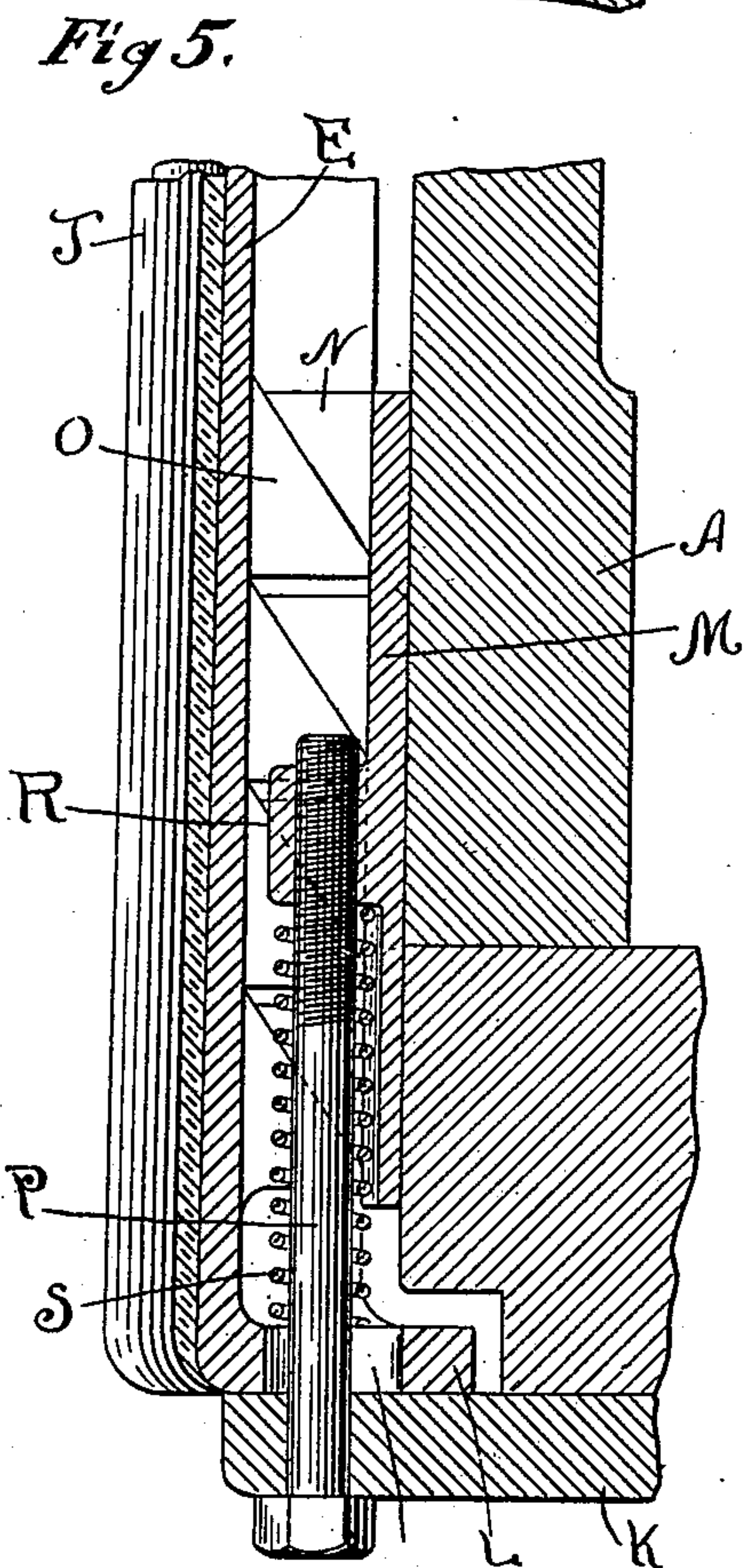
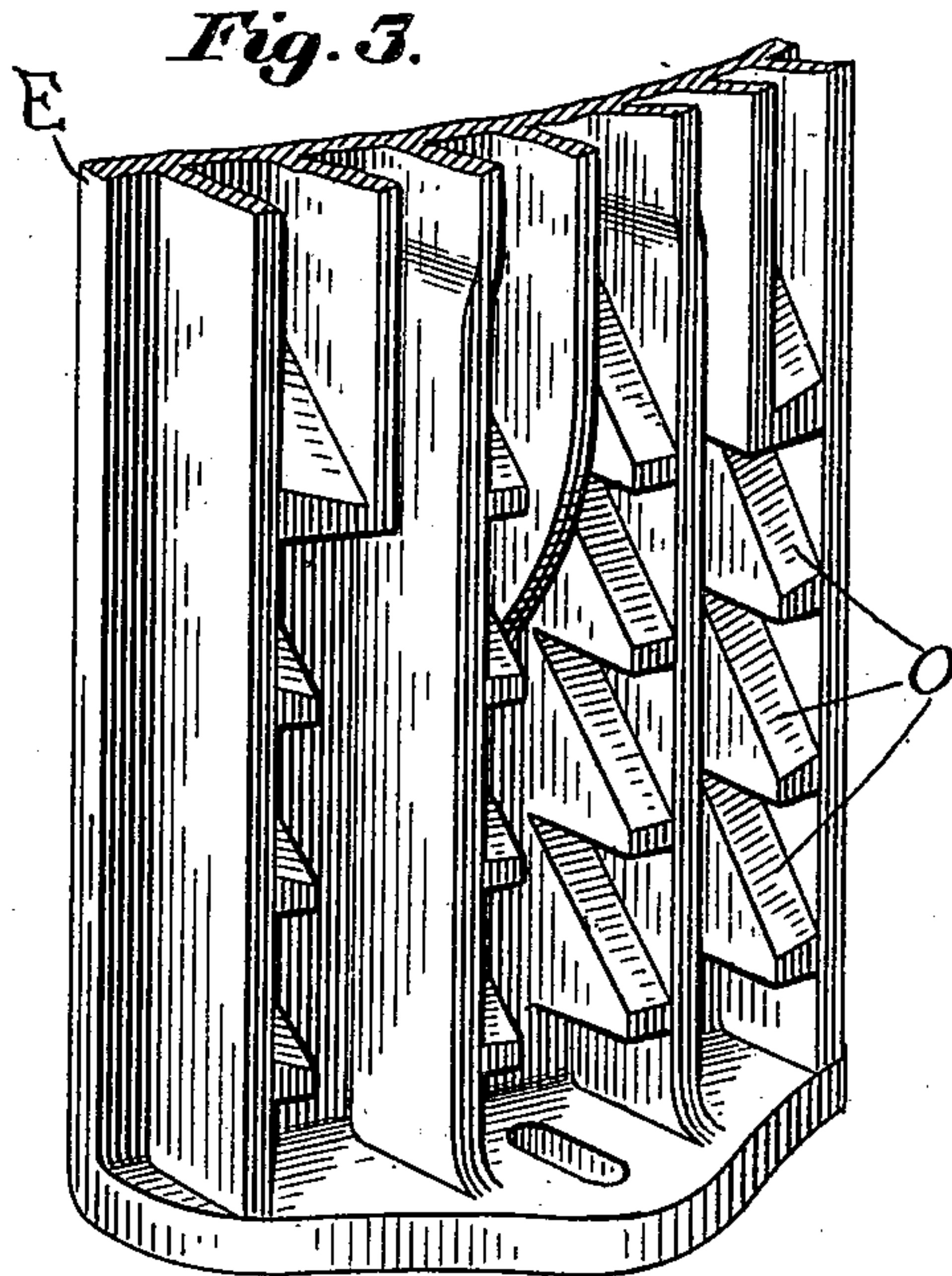
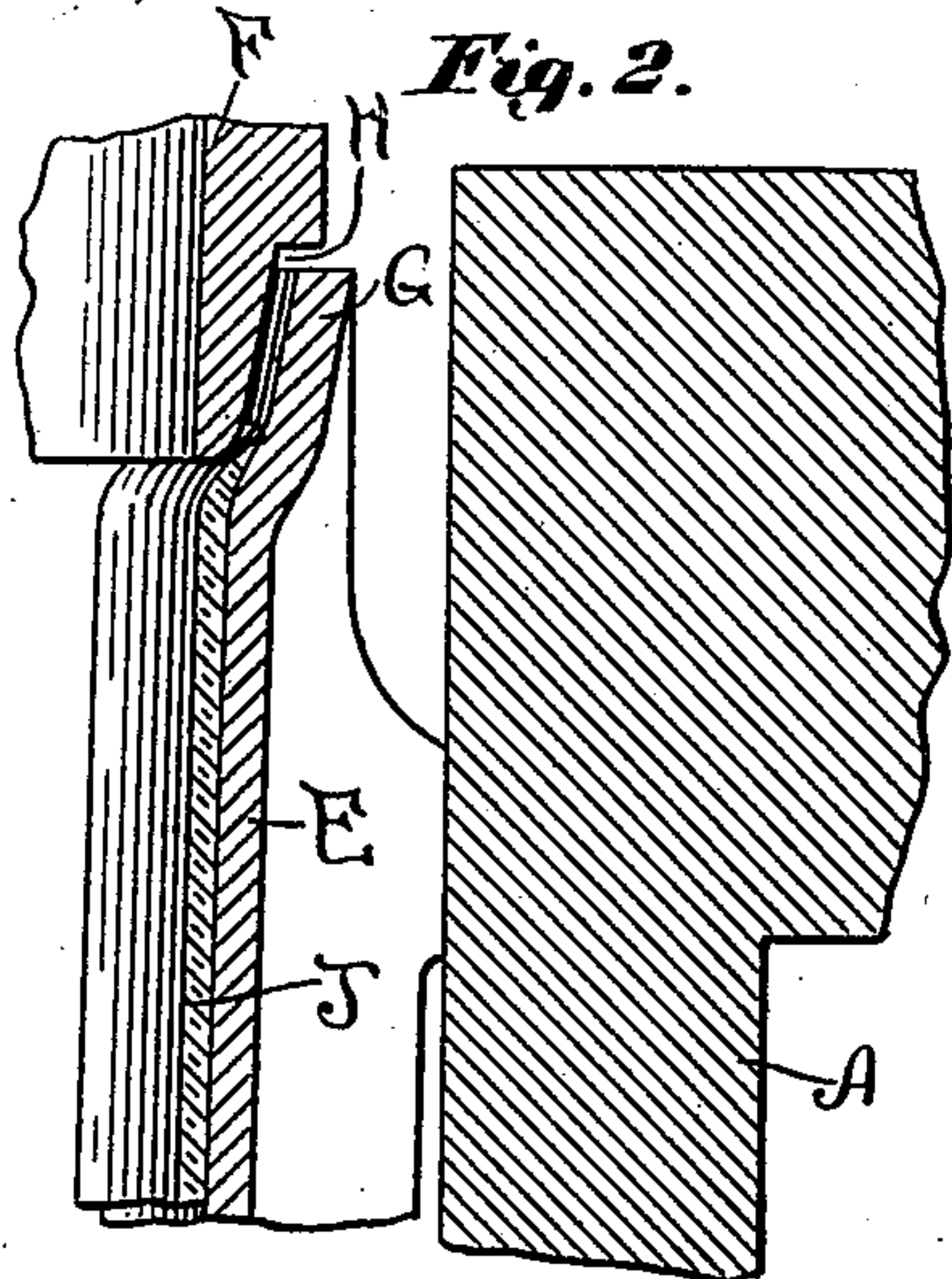
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2 Sheets—Sheet 2.



*Witnesses:*  
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# UNITED STATES PATENT OFFICE.

GEORGE A. LOWRY, OF CHICAGO, ILLINOIS, AND WATSON M. HOLMES, OF  
HOOSICK FALLS, NEW YORK, ASSIGNORS TO THE PLANTERS COMPRESS  
COMPANY, OF BOSTON, MASSACHUSETTS.

## APPARATUS FOR COMPRESSING COTTON, WOOL, &c.

SPECIFICATION forming part of Letters Patent No. 669,260, dated March 5, 1901.

Application filed June 2, 1899. Serial No. 719,061. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE A. LOWRY, residing at Chicago, in the county of Cook and State of Illinois, and WATSON M. HOLMES, residing at Hoosick Falls, in the county of Rensselaer and State of New York, citizens of the United States, have invented a new and useful Apparatus for Compressing Cotton, Wool, or other Material, of which the following is a specification.

This invention relates to apparatus for compressing cotton, wool, or other material.

The object of the invention is to improve the construction of apparatus of this class and to provide means for varying the compressing effect thereof to suit different kinds and conditions of material to be compressed and to vary the density to which such material may be compressed.

The invention consists, substantially, in the organization and the combinations, arrangements, and constructions, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views appearing thereon illustrating operative embodiments of the principles of the invention, Figure 1 is a view in central section of an apparatus embodying features of construction embraced within the scope of our invention. Fig. 2 is a broken detail sectional view showing a manner of mounting the ends of the taper or choke adjusting plates or slats. Fig. 3 is a broken detached detail view, partly in perspective, of the opposite end of a taper or choke adjusting plate or slat. Fig. 4 is a similar view of a form of adjusting-slide embodying the principles of our invention. Fig. 5 is a broken detail sectional view showing a form of adjusting means assembled for operation. Fig. 6 is a similar view of another arrangement included within the scope of our invention and illustrative of its generic character.

The same part is designated by the same

reference-sign wherever it occurs throughout the several views.

In Patents Nos. 581,600 and 581,601, granted April 29, 1897, and in pending application, Serial No. 682,947, filed June 8, 1898, is described and claimed an apparatus for compressing cotton or other material in which are employed a chamber or holder open at both ends and a slotted cap or head for one end of said chamber, these parts being mounted for relative rotation. In the operation of a baling apparatus embodying these generic features the chamber is preliminarily filled, by hand or otherwise, with the material to be condensed or compressed or some other suitable material sufficient to form a body in the chamber. Then by imparting a relative rotation to the chamber and cap and supplying the material to be compressed or condensed to or adjacent to the slot or slots in the cap such material is caught or engaged by the body of material preliminarily introduced into the chamber and is drawn into the chamber and compressed and formed into condensed spirallayers, the body of material contained in the chamber being augmented endwise by each spiral layer thus added thereto and correspondingly advanced through the chamber, finally emerging from the chamber in the form of a column in a condensed or compressed state. It is described in said patents and application that the relative rotation of the chamber and cap may be secured by rotating either one of these parts or by rotating both in opposite directions.

It is the special purpose of the present invention to provide a construction and arrangement in an apparatus embodying the generic principles above set forth whereby the machine may be efficiently adapted to the compression and condensation of material of different qualities or conditions of fiber, moisture, and the like and to different kinds of material—such, for instance, as cotton, wool, hair, grass, hay, sisal grass, hemp, alfalfa, rags, excelsior, and other material—and



whereby the degree of compression or condensation which takes place may also be varied to suit varying conditions or kinds of material. These purposes we accomplish by

5 providing means for adjusting the choke or internal taper of the chamber. This idea may be embodied in a wide variety of mechanical constructions and arrangements. While, therefore, we have shown and will

10 now describe various arrangements of operative apparatus for securing the desired result, we desire it to be understood that the invention is not limited or restricted in its scope to these constructions.

15 Referring to the accompanying drawings, reference-sign A designates the holder or chamber, open at both ends, and B the slotted cap or head for one end of said chamber or holder. These parts may be mounted for

20 relative rotation, as above explained. For instance and as illustrative of the idea, the chamber or holder A is journaled to rotate, while the cap is held stationary. To this end suitable bearings for said chamber or holder

25 are provided in a suitable framework C, and rotation may be imparted to said chamber through gear D from any suitable source of power. Arranged within the chamber or holder and extending longitudinally thereof

30 are a series of slats or plates E, said slats or plates being arranged at suitable intervals or spaced as close together as may be desired on the inner surface of the chamber or holder and constituting, in effect, a chamber or basket

35 within chamber or holder A, such inner chamber or basket built up of independent plates or slats. With this arrangement, in order to secure the objects in view, the plates or slats E are adjustably mounted, so as to be moved

40 at the ends thereof farthest from the cap or head toward or from the axial center of the chamber or holder A, thus varying the degree of taper of the passage through the chamber or holder and through which the

45 material passes from the receiving to the discharging end of the chamber, and hence regulating the choke of the chamber. A convenient arrangement is shown wherein the ends of the plates or slats E which are nearest the

50 receiving end of the chamber are loosely mounted to permit the other ends to be moved, so as to contract the diameter of the passage through the chamber more or less from the receiving end thereof to the delivery end. In

55 the construction shown in Figs. 1 and 2 the ends of the plates or slats nearest the receiving end of the chamber are loosely stepped or received in seats formed between the sleeve F and the adjacent surface of chamber or

60 holder A, and in order that the inner surface of the plates or slats may form a continuation of the inner surface of the receiving-sleeve F the ends of the plates or slats may be offset or bent, as shown at G, Fig. 2, and the sleeve

F may be formed with a rabbet, as at H, on 65 the outer periphery thereof, thus not only forming a loose mount for the ends of the plates or slats, but also bringing the inner surface of said slats or plates into substantial continuation of the inner surface of 70 sleeve F. Of course it is evident that the sleeve F may be omitted and the ends of the plates or slats loosely mounted in any other suitable manner. If desired and in order to 75 reduce the friction of contact of the material with the inner surface of the plates or slats during the advancement of the material through the chamber, a lagging J, presenting a polished surface to the material, may be applied to the inner surface of the plates 80 or slats, or, if desired, the inner surface of the slats or plates may be suitably polished and the lagging omitted. The plates or slats E may be suitably curved in the transverse 85 section thereof to conform to the cylindrical contour of the chamber, or they may be of such narrow dimension as to render such curving unnecessary, as will be obvious.

At the delivery end of the chamber the plates or slats may be supported upon a suitable ledge or plate or other support K. A convenient arrangement is to provide the ends of the plates or slats with flanges, as indicated at L. Various means may be employed for effecting the desired adjustment of the plates 95 or slats to vary or regulate the taper or choke of the chamber. As illustrative of operative means for accomplishing this result we may provide suitable slides M, (see Figs. 1, 4, and 5,) having lugs or projections N, with inclined 100 surfaces arranged to engage cooperating lugs or projections O, formed on or secured to the plates or slats E, threaded bolts P operating to move said slides, said bolts passing through the supporting-plate K and, if desired, passing 105 through slots Q in the flanges L of the plates or slats, as clearly shown, and tapped through a lug or projection R on the slides M. From this construction it will be seen that when the bolts P are suitably turned the 110 slides M are moved so as to cause the inclined surface of the lugs or projections N thereon to engage the inclined surface of the cooperating lugs or projections O on the plates or slats E, thereby crowding the ends of said 115 plates or slats at the delivery end of the chamber toward the axis of rotation of the chamber, and hence adjusting the taper or choke of the bore of the passage through the chamber. A suitable spring S may be provided 120 for imposing a desirable tension on the parts and taking up lost motion.

Instead of the form of adjusting means above described many other specifically-different forms of mechanical constructions may 125 be employed and are included within the spirit and scope of our invention. For instance, we may employ a ring T, having an



inclined surface arranged to operate against a cooperating inclined surface on the plates or slats, as shown in Fig. 6, the said ring being arranged to encircle the plates or slats.

5 By suitably adjusting the ring T, as by means of set-screws W, the desired adjustment of the plates or slats E may be secured.

While we have described the taper or choke adjusting plates or slats as being arranged within the chamber or holder, it is obvious that our invention includes the arrangement wherein the plates or slats form the chamber or holder.

Many variations and changes in the details of construction and arrangement of parts would readily occur to persons skilled in the art and still fall within the spirit and scope of our invention. We do not desire, therefore, to be limited or restricted to the constructions, details, and arrangements shown and described as illustrative embodiments of our invention; but,

Having now set forth the object and nature of our invention and various embodiments of the principles thereof and having described such embodiments, their construction, function, and mode of operation, what we claim as new and useful and of our own invention, and desire to secure by Letters Patent, is—

1. In an apparatus for compressing or condensing fibrous or other material, a chamber or holder having a passage therethrough, in combination with means for delivering the material into said chamber or holder in superposed highly compressed and condensed layers and correspondingly advancing the same through such chamber or holder, and means for varying the taper of said passage to regulate the resistance to such advancement, as and for the purpose set forth.

2. In an apparatus for compressing or condensing fibrous or other material, an open-ended chamber having a tapering bore, and means for varying the taper of such bore, in combination with mechanism for forming the material into highly compressed and condensed layers and superposing the same upon each other within said chamber, thereby correspondingly advancing the compressed material through such chamber, as and for the purpose set forth.

3. In an apparatus for compressing or condensing fibrous or other material, a series of plates or slats arranged to form a passage for the material to be compressed, and means for adjustably tapering such passage, in combination with means for forming the material into thin, highly compressed and condensed layers, and superposing the same upon each other within such passage, whereby such material is correspondingly advanced through such passage, as and for the purpose set forth.

4. In an apparatus of the class described, a holder, including a series of slats or plates, arranged to form a tapering passage for the material, said slats or plates being loosely held at the receiving end of such passage, means for adjusting the opposite ends of said slats or plates, whereby the taper of said passage is varied, and means for advancing the material through such passage, as and for the purpose set forth.

5. In an apparatus of the class described, a holder, including a series of plates or slats, arranged to form a passage for the material, and loosely held at one end, a movable piece having an inclined surface arranged to engage a cooperating surface on the opposite ends of said plates or slats, whereby when said movable piece is adjusted the taper of said passage is varied, and means for advancing the material through such passage, as and for the purpose set forth.

6. In an apparatus of the class described, a series of plates or slats arranged to form a passage, and loosely mounted at one end, said plates or slats provided with an inclined surface at the opposite ends thereof, an adjustable slide having cooperating inclined surfaces, and means for advancing the material through such passage, as and for the purpose set forth.

7. In an apparatus of the class described, a holder or chamber, a series of slats or plates arranged longitudinally on the inner surface thereof to form a tapering passage, said slats or plates being loosely held at the receiving ends thereof, and means for adjusting the delivery ends thereof toward and from the axial center of said chamber, whereby the taper of the passage through such chamber is varied, and means for advancing the material to be compressed through such passage, as and for the purpose set forth.

8. In an apparatus of the class described, a chamber or holder, open at both ends, a sleeve arranged at the receiving end thereof, a series of slats or plates arranged in substantial continuation of the inner surface of said sleeve, means for adjusting the ends of said slats or plates at the delivery end of said chamber or holder, whereby the taper of the passage through said chamber or holder may be varied, and means for advancing the material through such passage, as and for the purpose set forth.

9. In an apparatus of the class described, an open-ended chamber or holder, and a slotted cap or head, and means for relatively moving these parts, in combination with means for varying the taper of the bore of said chamber, as and for the purpose set forth.

10. In an apparatus of the class described, a series of plates or slats arranged to form an open-ended passage, and a slotted cap for one end of said passage, and means for relatively



moving these parts, in combination with means for adjusting said slats or plates to vary the taper of said passage, as and for the purpose set forth.

- 5 11. In a cotton or other press, the combination with a series of slats arranged to form a chamber or holder, said slats being movable, whereby the taper of the bore of said chamber may be varied, of a slotted cap or head  
10 plate, and means for relatively rotating said chamber and cap or head plate, as and for the purpose set forth.

In witness whereof I have hereunto set my

hand, this 23d day of May, 1899, in the presence of the subscribing witnesses.

GEORGE A. LOWRY.

Witnesses:

J. H. WHALEN,

T. K. RIDDICK.

In witness whereof I have hereunto set my hand, this 26th day of May, 1899, in the presence of the subscribing witnesses.

WATSON M. HOLMES.

Witnesses:

ALBERT M. LYON,

JOHN J. BOSSEN.