

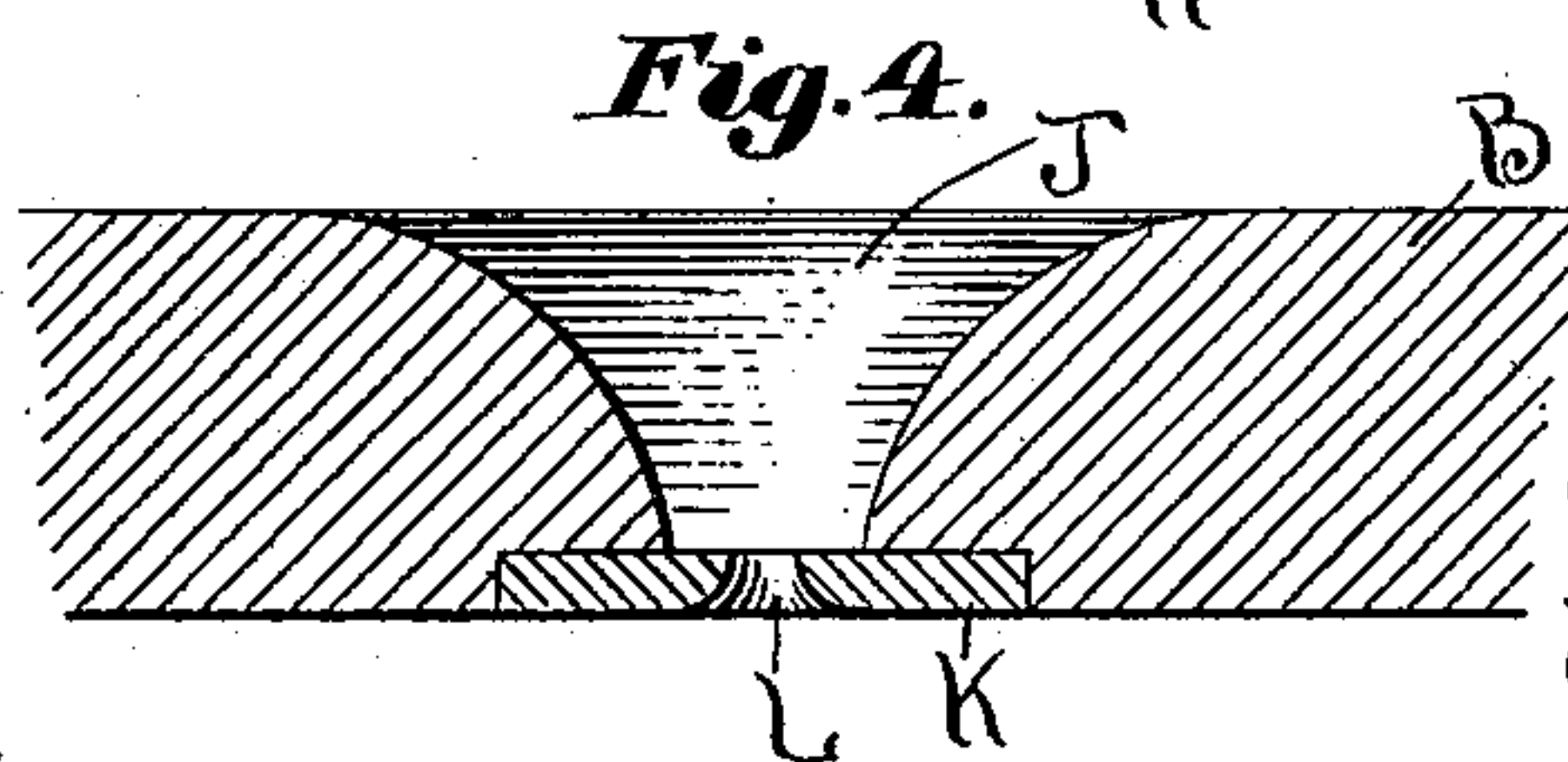
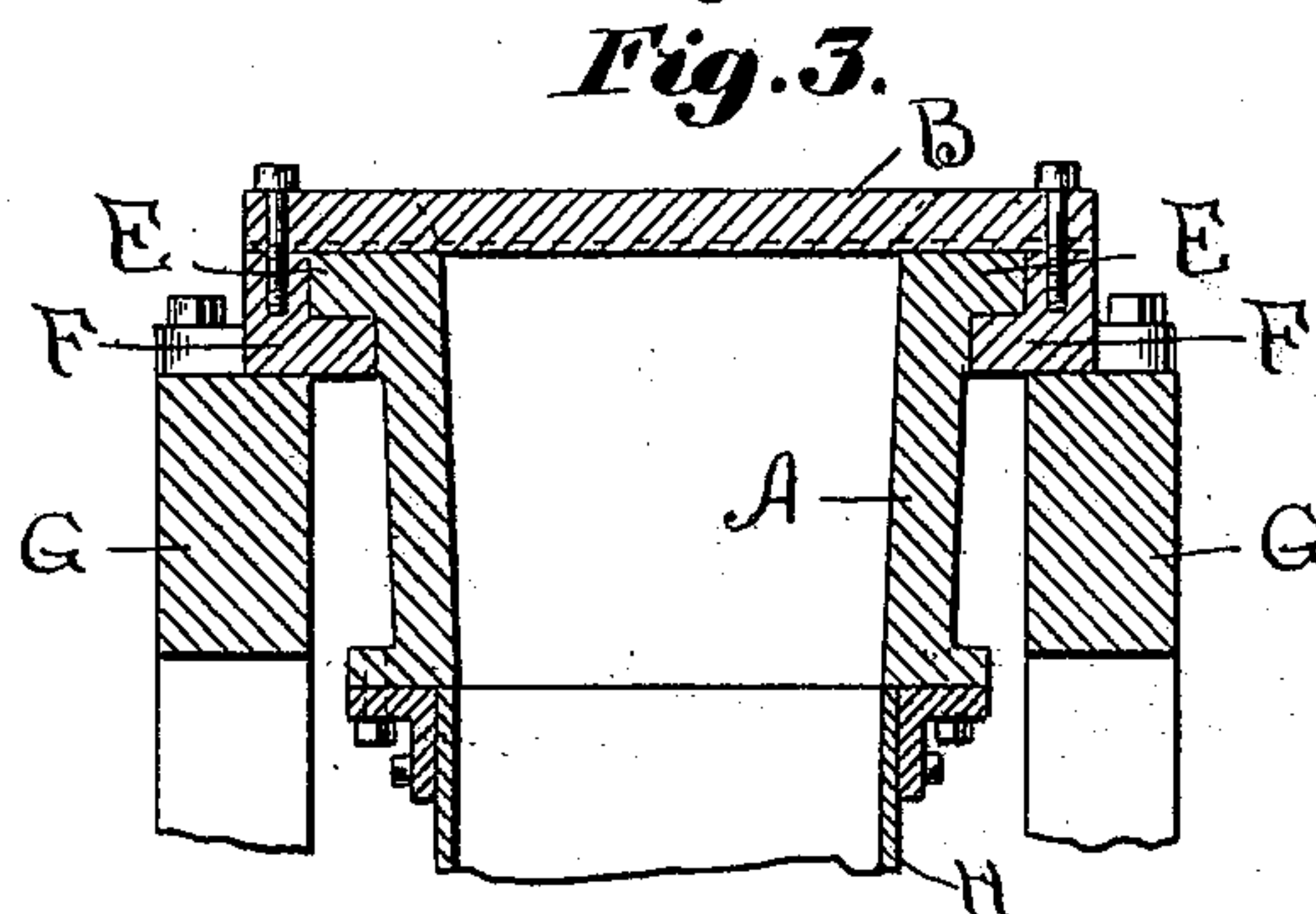
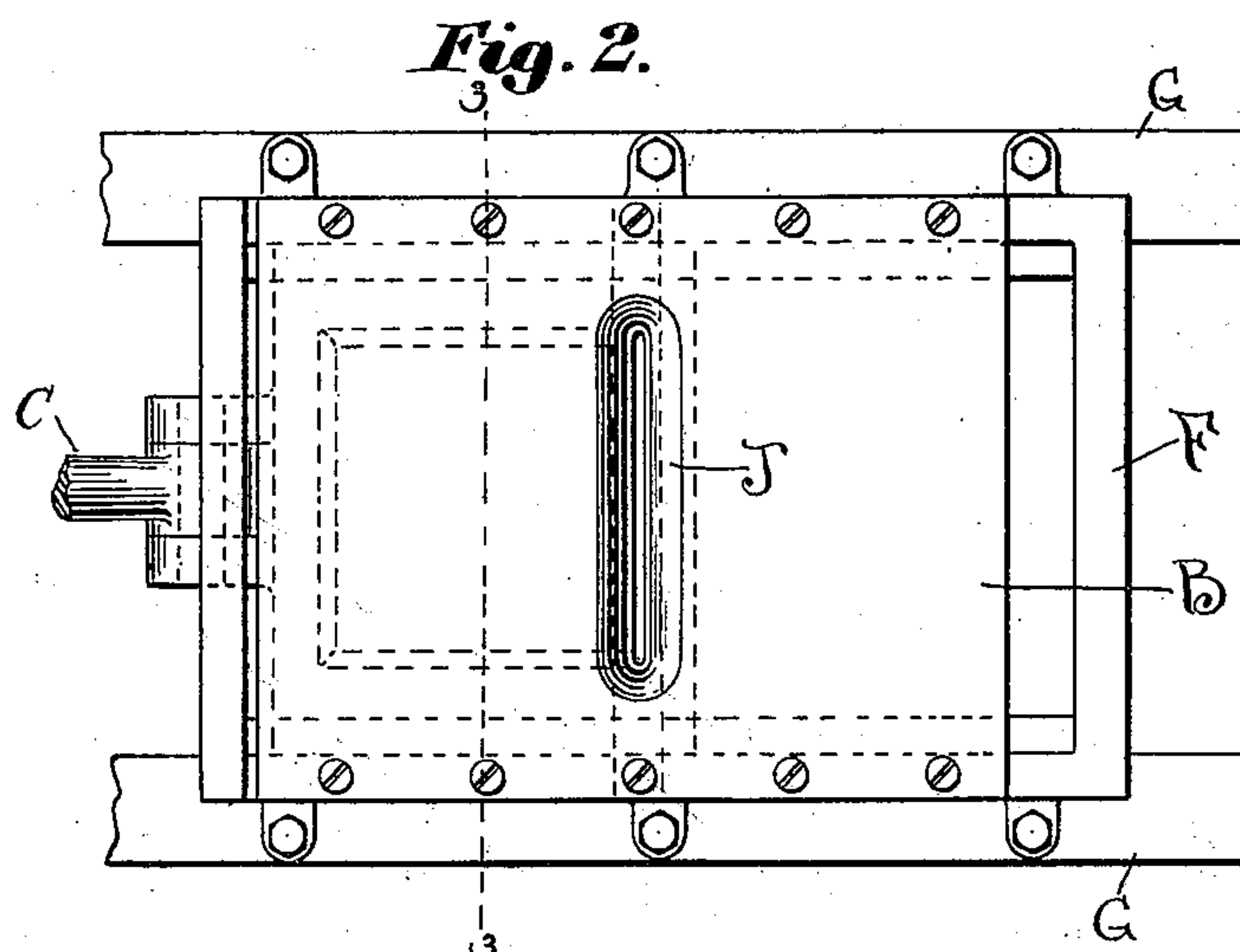
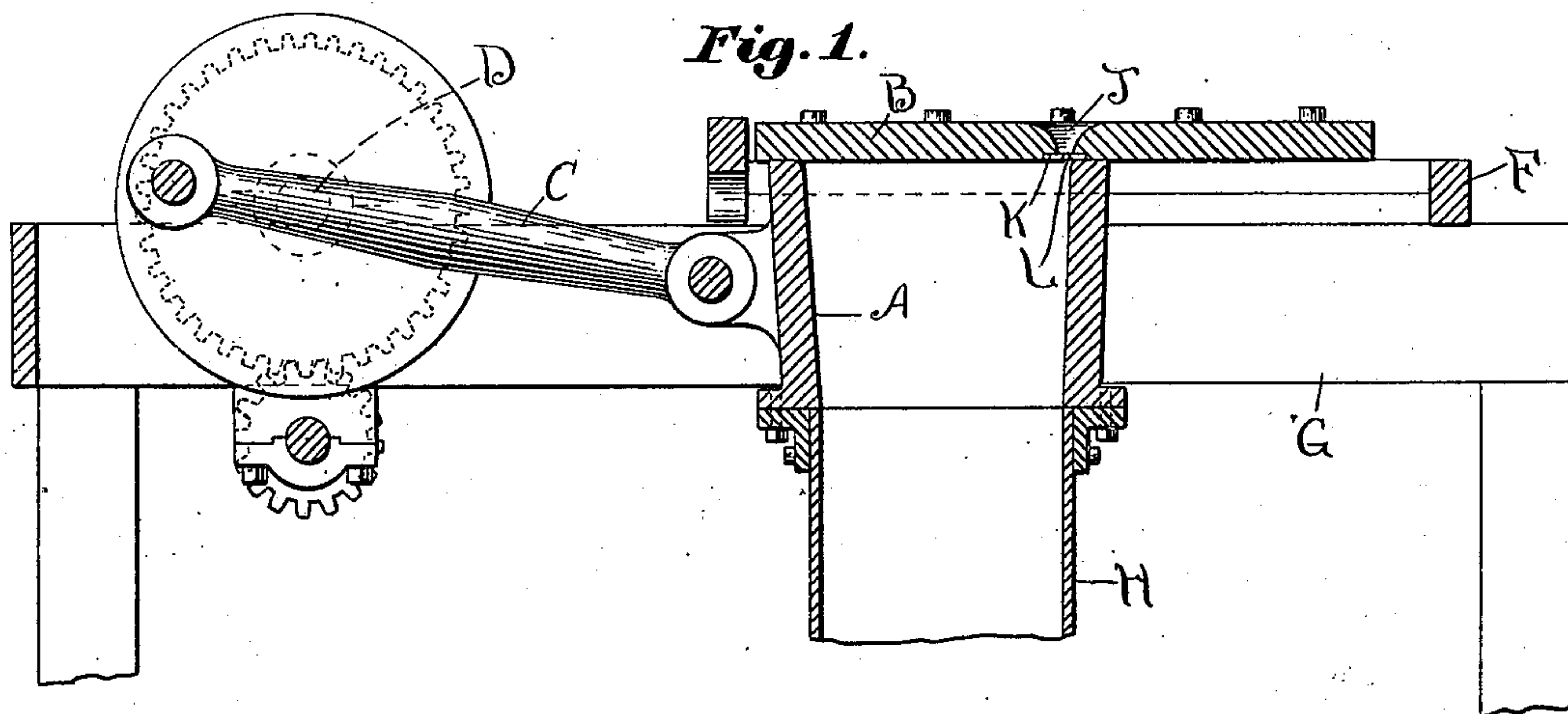
No. 645,725.

Patented Mar. 20, 1900.

G. A. LOWRY.
PRESS FOR COTTON, WOOL, HAIR, &c.

(Application filed June 2, 1899.)

(No Model.)



Witnesses:
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Attys

UNITED STATES PATENT OFFICE.

GEORGE A. LOWRY, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PLANTERS COMPRESS COMPANY, OF BOSTON, MASSACHUSETTS.

PRESS FOR COTTON, WOOL, HAIR, &c.

SPECIFICATION forming part of Letters Patent No. 645,725, dated March 20, 1900.

Application filed June 2, 1899. Serial No. 719,074. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. LOWRY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Press for Cotton, Wool, Hair, or other Material, of which the following is a specification.

This invention relates to presses for cotton, wool, hair, and other material.

10 The object of the invention is to provide a press of novel construction and arrangement for compressing fibrous or other material, wherein such material is condensed or compressed into bale form.

15 The invention consists, substantially, in the construction, combination, location, and arrangement, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the 20 appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in central longitudinal section of a press embodying the principles of my invention. Fig. 2 is a top plan view of the same, the operating mechanism being broken off. Fig. 3 is a sectional view on the line 3 3, Fig. 2. Fig. 4 is a broken detail view in section across the 30 feed slot or opening in the cap plate or head.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

In my Patents Nos. 581,600 and 581,601, 35 granted April 29, 1897, and in my pending application, Serial No. 682,947, filed June 8, 1898, I have described and claimed, broadly, an apparatus for compressing cotton or other material, in which is 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 movement, whereby when the chamber is filled preliminarily by hand or otherwise and the material 45 to be compressed is supplied adjacent to the slot or slots in the cap and a relative movement is imparted to the chamber and cap such material is engaged or caught by the material contained in the chamber and is 50 drawn thereby through the slot or slots and into the chamber and compressed and formed

into condensed spiral layers, the body of the material contained in the chamber being augmented endwise by each spiral layer thus added thereto and correspondingly advanced 55 through the chamber, finally emerging from the chamber in the form of a column in a highly condensed or compressed state. In the specific constructions shown in said patents and application as illustrative embodiments of these generic principles the relative movement of the chamber and cap is a rotative movement and is secured by rotating either the chamber or cap or by rotating both of these parts in opposite directions. I 65 have found by experiment that the same generic principles may be embodied in a construction wherein the relative movement of the chamber and cap may be a relatively-reciprocatory movement and may be secured 70 by reciprocating either the chamber or the cap or both of these parts relatively to each other, and it is the purpose of the present invention to provide a construction embodying this species of the genus set forth in said 75 prior patents and application.

Referring to the drawings, reference-sign A designates the press-chamber, and B the cap or head. These parts are mounted for relative reciprocation. For instance, in the 80 particular construction shown the cap plate or head is stationarily mounted, while the chamber is mounted to reciprocate. The relative reciprocation of the chamber and cap may be secured through any suitable or convenient 85 arrangement of driving mechanism—for instance, through a pitman C, actuated through a crank or wrist pin connection with a shaft D, driven from any suitable source. The particular manner of mounting the chamber and 90 cap may be varied through a wide range of constructions. I have shown a simple construction and arrangement wherein the press-chamber is provided with suitable flanges E, arranged to operate in guides F, secured to 95 the frame-pieces G. The chamber A is open at both ends and, if desired, may be contracting or tapering in internal diameter from the receiving toward the delivery end thereof. If desired, a sleeve or extension H may be formed 100 with or otherwise suitably connected to the delivery end of the chamber, and the length

of such extension plays an important part in determining the degree of compression to which the material is subjected. The chamber may be of any suitable size. In practice, and as shown, I have found that a chamber which is rectangular in cross-section answers the desired purposes. In a machine of this construction the bale produced will also be rectangular in cross-section.

A feed-slot J is formed through the cap or head and is arranged at right angles to the line of relative reciprocation of the head or cap and chamber. In order that loose material supplied to the cap adjacent to the slot or slots may be brought into such close proximity to the end surface of the mass or body of material contained in the chamber, the surface of the cap or head on each side of the slot or slots may be rounded or beveled off, so as to form a flaring or funnel-shaped slot in cross-section, as clearly shown. In order that the loose material may be efficiently caught or engaged by the material in the chamber and thereby drawn through the slot, such slot is made of considerable width in transverse section, and a thin plate K is countersunk in the under surface of the cap or head, so as to close the delivery end of the slot J. In this plate K is formed a supplemental slot L of smaller transverse sectional area than that of slot J, said supplemental slot flaring inwardly, as shown. Thus the loose material is brought into close proximity to the surface of the material in the chamber, enabling the fibers of the loose material to become entangled with or engaged by those of the material in the chamber, whereby when the chamber and cap are relatively reciprocated the loose material is drawn into the chamber through slot L and is condensed into a thin flat sheet or layer, each relative reciprocation adding as an increment to the mass of material in the chamber a condensed and compressed layer, such layer being compressed upon the end of such mass, the cap serving as an abutment, and the mass of material being correspondingly advanced through the chamber, finally emerging from the delivery end thereof in the form of a compressed column, from which bales of suitable length may be detached.

The advance of the compressed material may be opposed by any suitable or desirable counter-abutment. In the particular form shown the resistance of the inner walls or surface of the chamber and of its extension or the contracting internal diameter of the chamber may serve the purpose of a counter-abutment.

In practice the parts are so relatively arranged that a complete excursion of the reciprocating part will cause a relative movement of the slot from one side to the other of the receiving end of the chamber and back again, such relative movement thereby enabling the slot to command, substantially, the dimension in one direction of the receiving

end of the chamber, and the slot should be of a length enabling it to command, substantially, the dimension of such receiving end in the other direction—that is, in a direction at right angles to the line of such relative reciprocation.

The operation of baling is commenced by first preliminarily filling the chamber by hand or otherwise to a point such that the material thus preliminarily introduced to the chamber will exert a pressure against the under surface of the cap or head plate. This preliminarily-introduced material may be retained in the chamber in various ways. One way is shown wherein the chamber is tapering or contracting in internal diameter toward the delivery end thereof, thus affording a resistance or counter-abutment to the material. Now by reciprocating the chamber and supplying the material to be compressed to the cap or head plate and in proximity to the slot therein such material will be drawn into the chamber in the form of a thin condensed sheet or layer and imposed and compressed upon the end surface of the material previously introduced to the chamber, such previously-introduced material being advanced correspondingly through the chamber against the resistance afforded by the contracting area of the chamber or by other suitable counter-abutment.

Many different forms of apparatus may be devised to carry out the principles of the invention as above explained and still fall within the spirit and scope of my invention. I do not desire, therefore, to be limited or restricted to the exact construction, details, and arrangement shown and described; but,

Having now set forth the object and nature of my invention and a form of apparatus embodying the principles thereof and having described the construction, function, and mode of operation of such apparatus, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent of the United States, is—

1. In an apparatus of the class described, an open-ended chamber, contracting or tapering in internal diameter, a slotted cap-plate forming a closure for the larger end of said chamber, and means for relatively reciprocating said chamber and cap, as and for the purpose set forth.

2. In an apparatus of the class described, a chamber, open at both ends, said chamber contracting in internal diameter and a slotted cap-plate for one end of said chamber, and means for reciprocating said chamber relative to said cap, as and for the purpose set forth.

3. In an apparatus of the class described, an open-ended chamber, a slotted cap-plate or head for one end of said chamber, the slot in said cap extending substantially the dimension of the end of said chamber in one direction, and means for relatively reciprocating said chamber and cap to an extent corresponding to the dimension of the end of said

chamber in the other direction, the inner surface of the chamber forming a counter-abutment to oppose the advance of the material therethrough, as and for the purpose set forth.

5 4. In a press, an open-ended chamber, an extension therefor, said chamber and extension being rectangular in cross-section, a slotted cap for one end of said chamber, the slot in said cap extending across the end of said
10 chamber, and means for reciprocating these parts in a direction at right angles to the length of said slot, the inner surface of said chamber and extension forming a counter-abutment to oppose the advance of the material therethrough, as and for the purpose set
15 forth.

5. In a press, an open-ended chamber, tapering in internal diameter, and having an extension at the smaller end thereof, a slotted
20 cap for the larger end of said chamber, and means for relatively reciprocating these parts, as and for the purpose set forth.

6. In a press, an open-ended chamber, a cap for one end of said chamber, said cap provided with a slot, the walls of which are beveled or inclined outwardly or toward the outer
25 surface of the cap, means for relatively reciprocating said chamber and cap, transverse to the length of said slot, and means for resisting the advance of the material through said
30 chamber, as and for the purpose set forth.

7. In a press, an open-ended chamber, a cap for one end of said chamber, said cap provided with a slot flaring in cross-section, a

plate arranged to cover the inner end of such
35 slot, and provided with a supplemental slot of smaller dimensions, means for relatively reciprocating said chamber and cap, and means for resisting the advance of the material through said chamber, as and for the
40 purpose set forth.

8. In a press, an open-ended chamber, a cap for one end thereof, said cap provided with a slot of considerable area, and outwardly-flaring in cross-section, a thin plate arranged to
45 cover the inner end of said slot, said plate provided with a slot of smaller dimensions and flaring inwardly, means for relatively reciprocating said chamber and cap, and means for resisting the advance of the material through said chamber, as and for the
50 purpose set forth.

9. In a press, a framework, guides formed therein, a chamber, open at both ends, and contracting in internal diameter provided with
55 flanges arranged to operate in said guides, a stationary slotted cap-plate for one end of said chamber, and means for reciprocating said chamber in said guides, as and for the purpose set forth.
60

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:

JENNIE HILL,
W. A. PERCY.