

No. 668,651.

Patented Feb. 26, 1901.

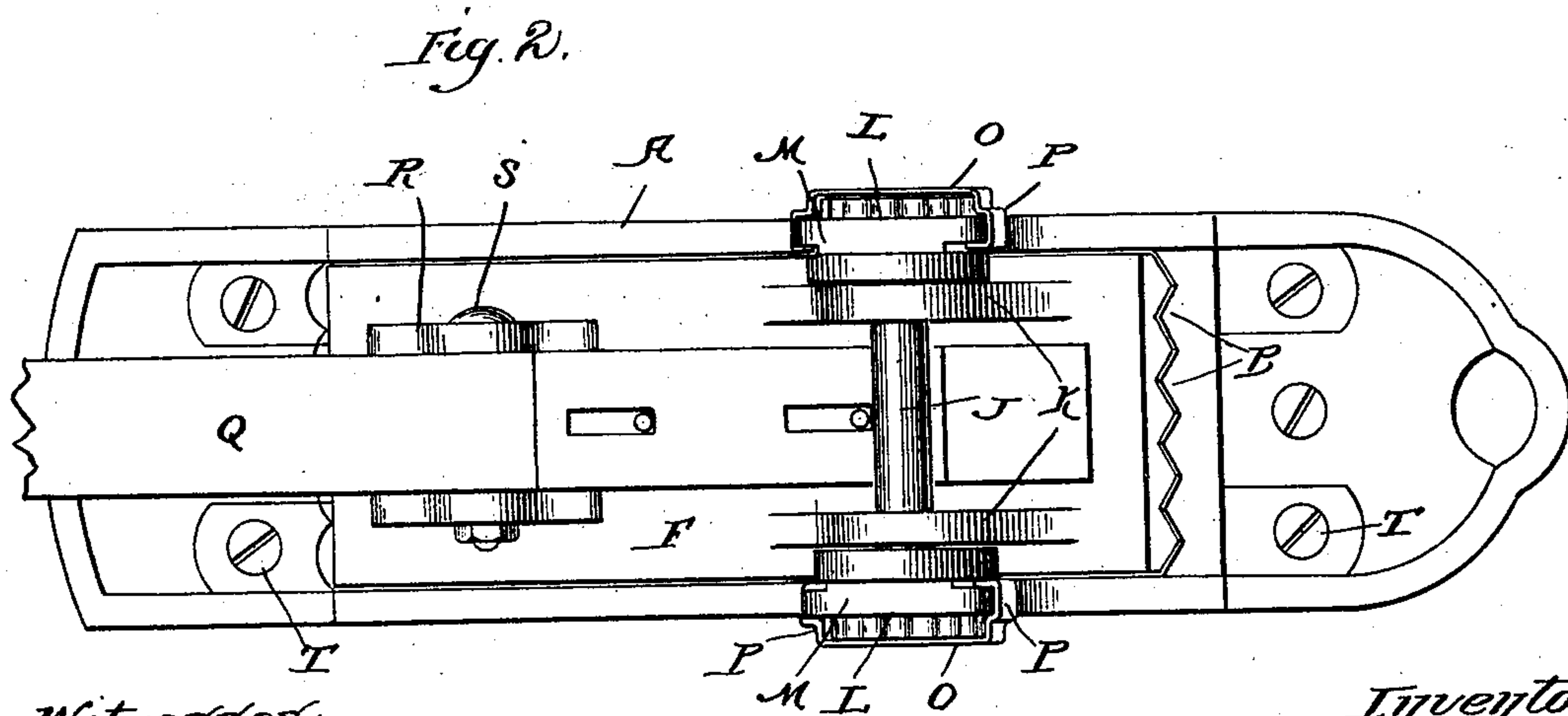
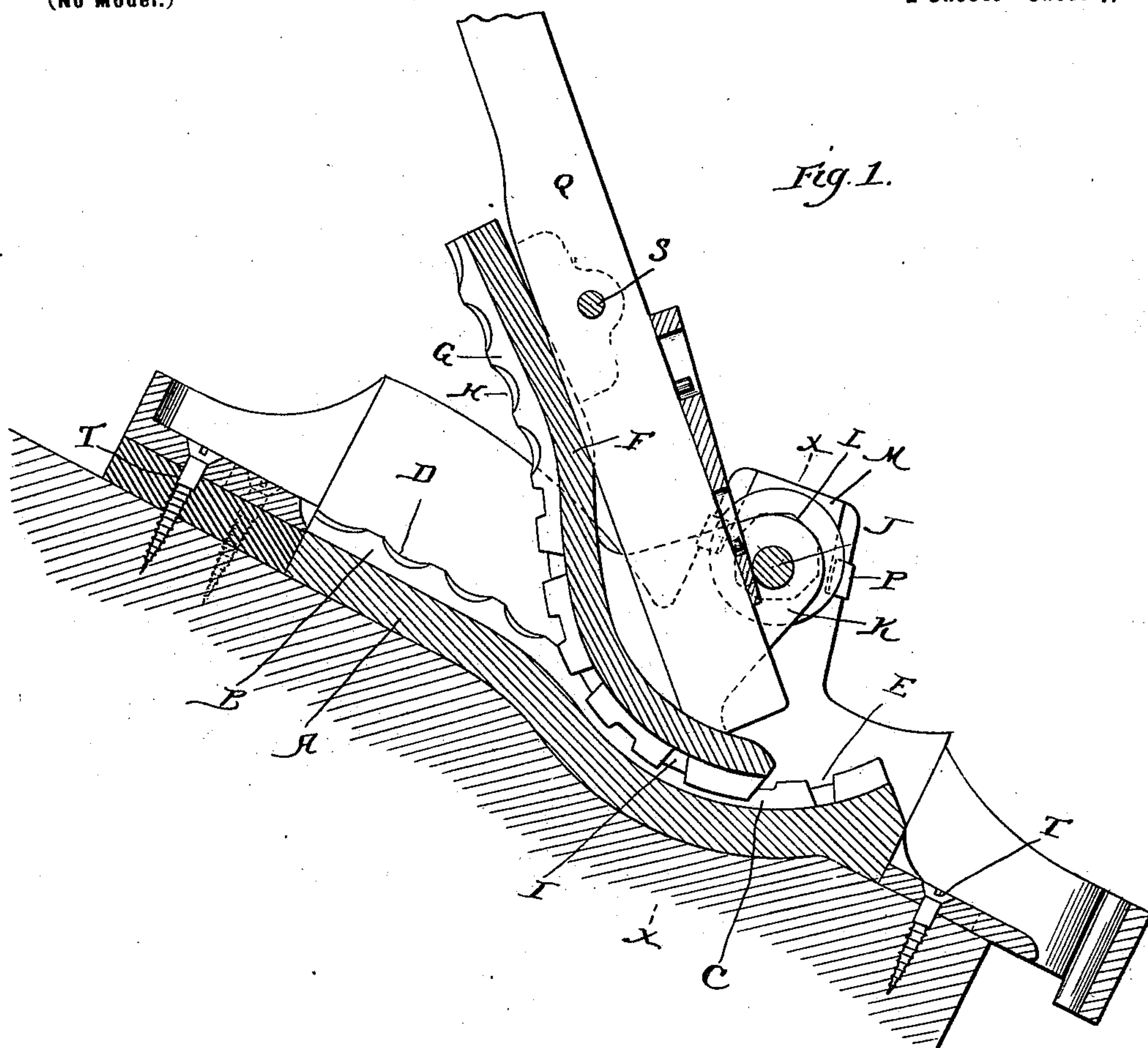
W. H. LINGO.

CRUSHER.

(Application filed May 2, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

H. B. Hallock.
L. H. Morrison

Inventor:

William H. Lingo

By *W. H. Lingo* Atty.

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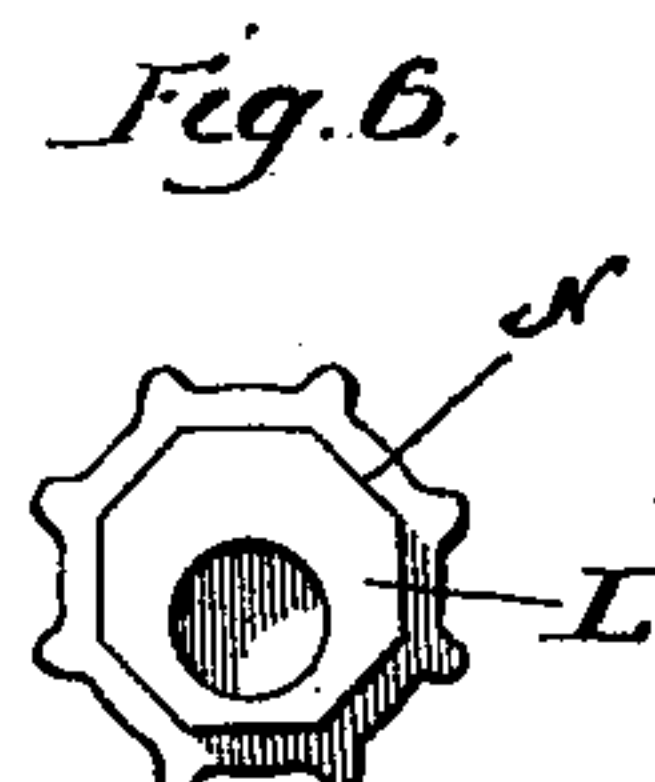
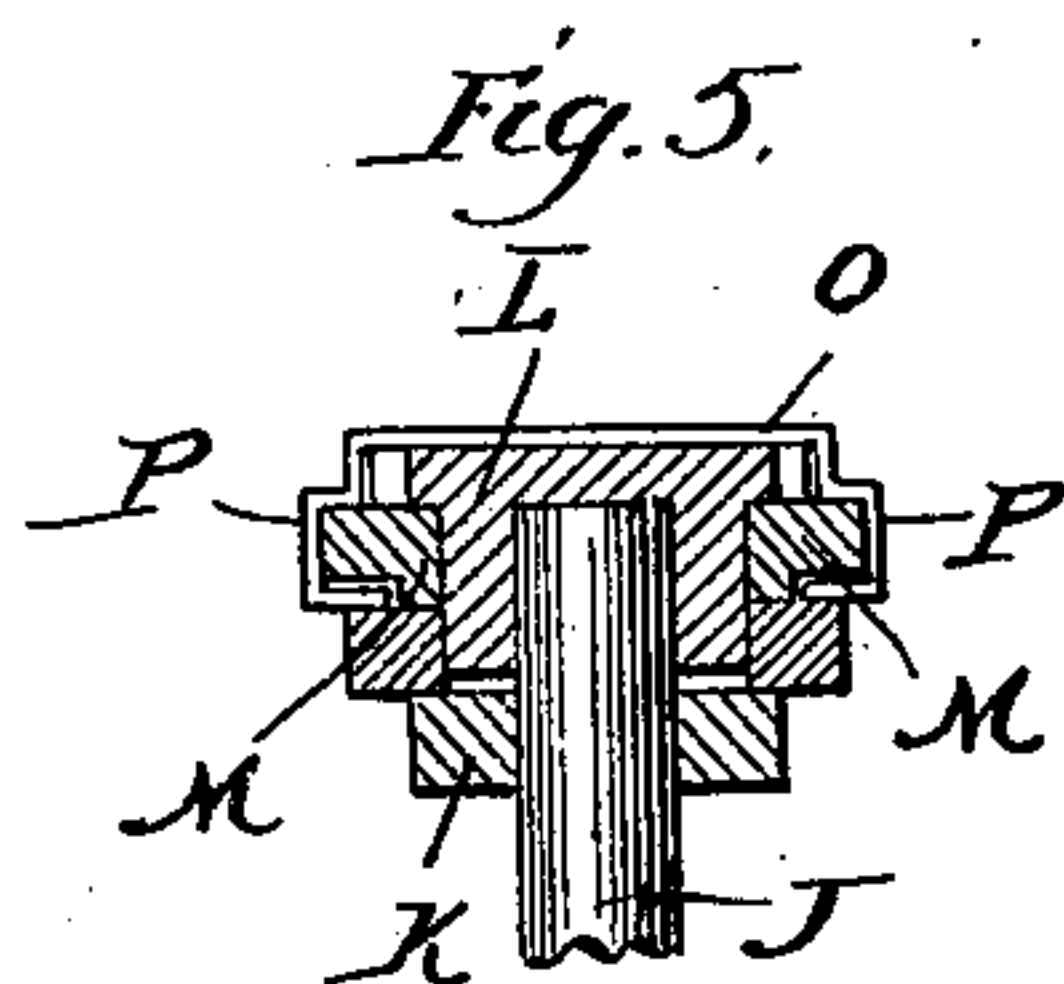
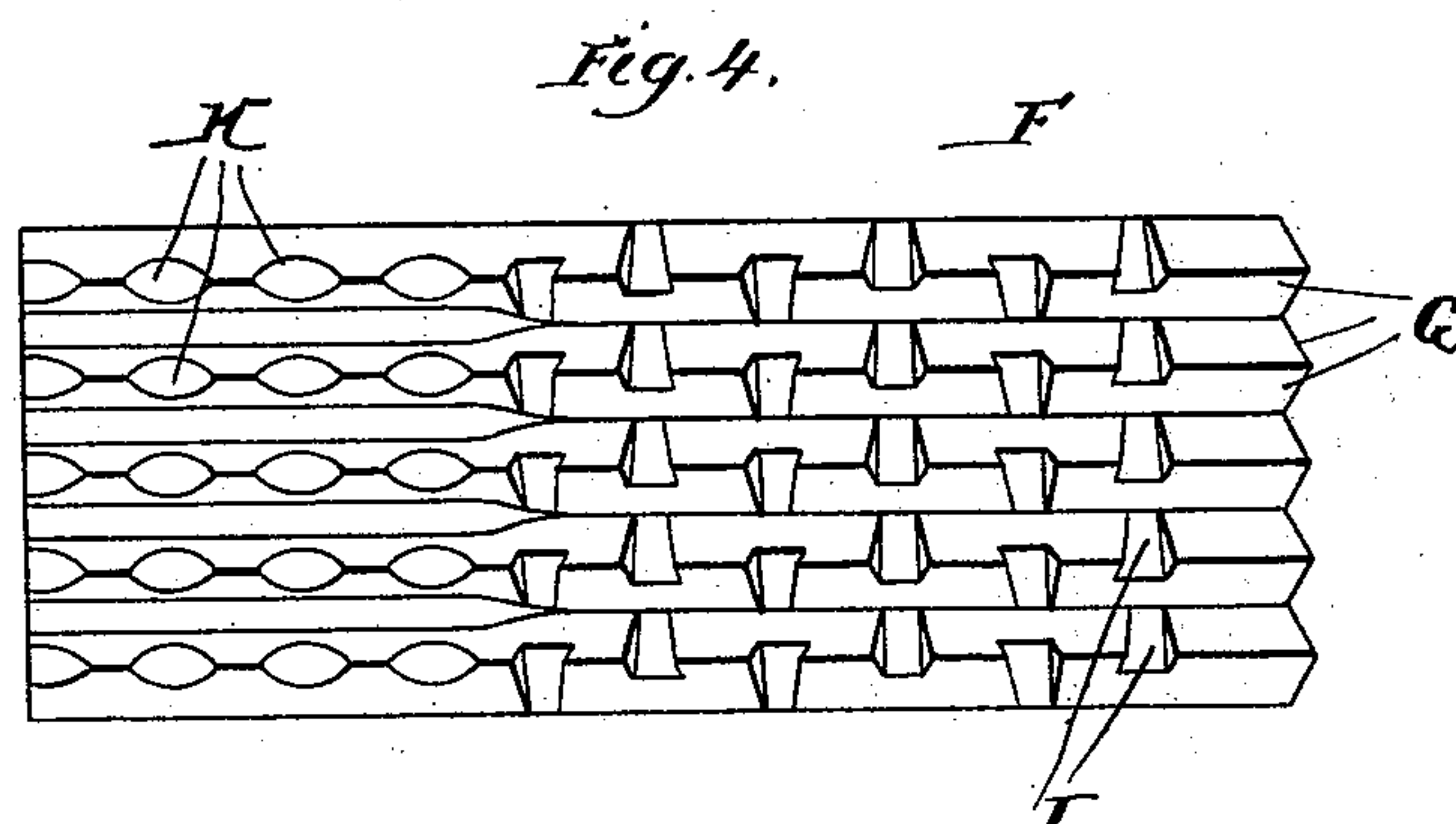
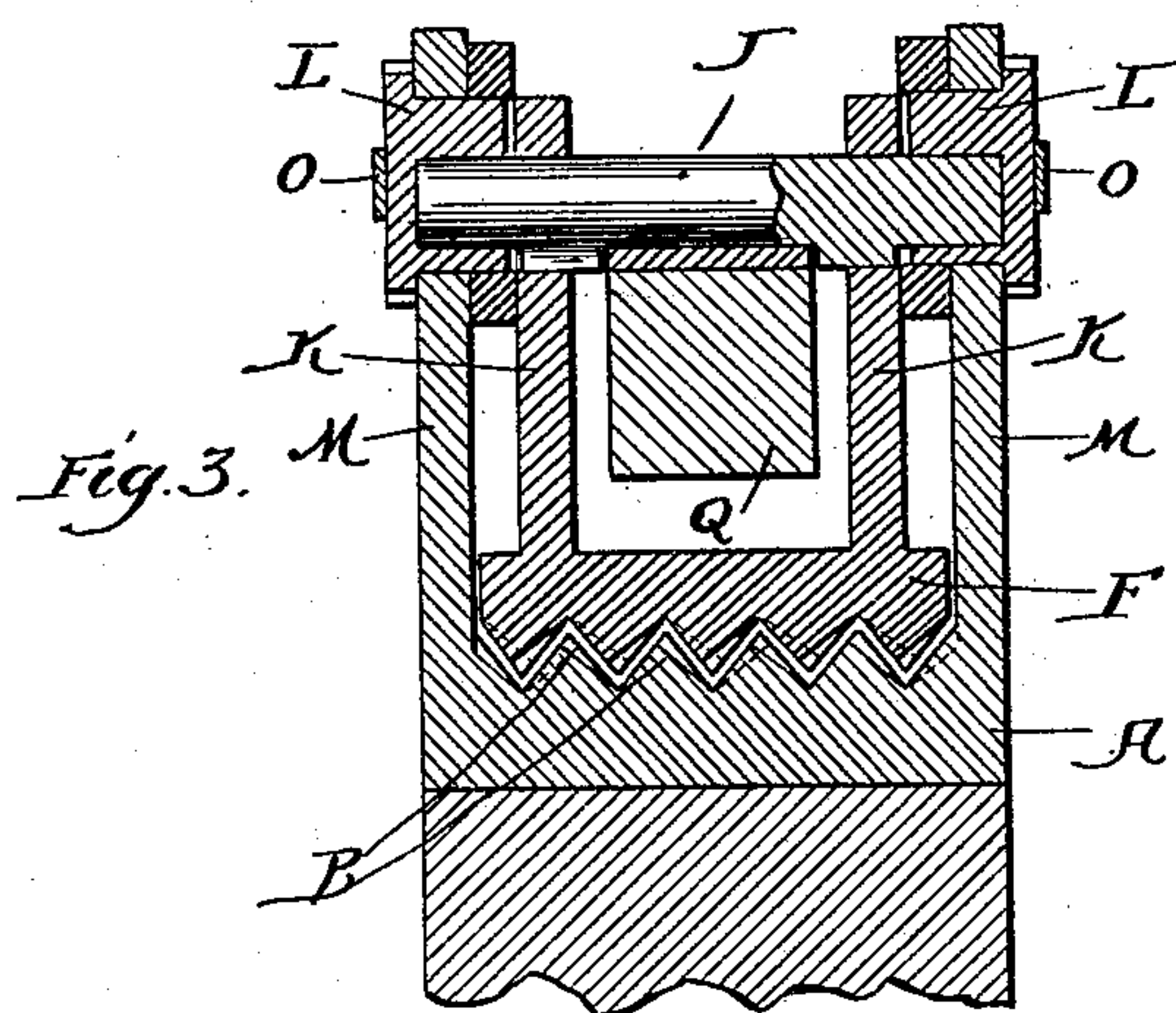
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(Application filed May 2, 1900.)

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2 Sheets—Sheet 2.



Witnesses:
H. B. Hallock.
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Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM H. LINGO, OF HOLLYVILLE, DELAWARE.

CRUSHER.

SPECIFICATION forming part of Letters Patent No. 668,651, dated February 26, 1901.

Application filed May 2, 1900. Serial No. 15,190. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. LINGO, a citizen of the United States, residing at Holly-ville, county of Sussex, and State of Delaware, have invented a certain new and useful Im-
5 improvement in Crushers, of which the follow-
ing is a specification.

My invention relates to a new and useful
10 improvement in crushers for pulverizing ore
or like material or grinding corn and the like,
and has for one object to provide an exceed-
ingly simple and effective device of this de-
scription capable of being operated by hand
by a simple reciprocating movement.

15 A further object of my invention is to pro-
vide means for adjusting the movable mem-
ber relative to the stationary member, so as
to determine the degree to which the mate-
rial is crushed or ground.

20 With these ends in view this invention con-
sists in the details of construction and com-
bination of elements hereinafter set forth
and then specifically designated by the claims.

In order that those skilled in the art to
25 which this invention appertains may under-
stand how to make and use the same, the
construction and operation will now be de-
scribed in detail, referring to the accompany-
ing drawings, forming a part of this specifi-
30 cation, in which—

Figure 1 is a central section of my improved
crusher, showing it secured to a beam or other
suitable surface; Fig. 2, a plan view of the
device; Fig. 3, a section at the line $x x$ of
35 Fig. 1; Fig. 4, a bottom plan of the crushing-
jaw; Fig. 5, a detail section of one of the ec-
centric bushings and the means for holding
it in adjustment, and Fig. 6 an elevation of
one of these bushings.

40 In carrying out my invention as here em-
bodied, A represents the body of the device,
which is made in the shape of a trough, hav-
ing formed in the bottom thereof rows of
teeth B, which are concaved, as indicated at
45 C, each row of teeth being notched, as shown
at D, these notches varying, as shown at
E. In this box is fitted the crushing-jaw
F, which is pivoted, as will be hereinafter set
forth, so as to be oscillated to and fro there-
50 in. This jaw is curved to correspond with

the curvature in the bottom of the body and
has formed thereon the rows of teeth G, which
are also notched, as indicated at H and I, to
correspond with the notches formed in the
rows of teeth B. The rows of teeth upon the
55 jaw match into the spaces between the rows
of teeth in the body, so that when they are
oscillated the notches in each set of teeth will
bring about a crushing and grinding action,
as well as a gradual feeding downward of the
60 material, until it is finally ejected from the
lower end of the device in the state of disin-
tegration desired. The upper portion of the
jaw is formed upon a straight line and
matches the straight portion of the bottom of
65 the body, as clearly shown in Fig. 1, and
thereby acts in conjunction with the body as
a hopper or receptacle, as will be readily un-
derstood. The shape of the teeth is clearly
shown in Fig. 4, and they readily act to draw
70 the material in during the oscillations of the
jaws, first roughly crushing the same, and then
gradually crushing and grinding it finer and
finer until the desired limit is reached.

The jaw is pivoted within the body in the
75 following manner: J is a rod or shaft which
is passed through the lugs K, formed upon
the jaw and into the bushing L, set in the
posts M, projecting upward from the body.
The bearings in these bushings are formed
80 eccentric relative to the peripheries thereof,
so that by revolving the bushings the shaft
will be raised or lowered, as the case may be.
The periphery of each of these bushings is
polygonal, as indicated at N, and is fitted in
85 a corresponding hole formed in the standards
M, which will lock the bushings in any ad-
justment—that is to say, when the bushings
are turned upon their axis for the raising or
lowering of the shaft and again set within the
90 polygonal-shaped holes they will be prevent-
ed from turning upon their axis until with-
drawn therefrom, and in order that they may
not be accidentally displaced a strap O is pro-
vided for each bushing and is adapted to fit
95 over the edges of the standards, as indicated
at P. When these straps are in place, the
bushings cannot be withdrawn from their
bearings, but when it is desired to adjust the
bushings the straps are removed, the bush- 100

ings withdrawn from their bearings, turned to the proper degree, and reinserted in the holes and the straps replaced, thus providing a positive adjustment for the shaft, which cannot be displaced.

A handle Q is provided for the oscillation of the jaw and may be made of wood or any other suitable material and is fitted between the ears R and the posts K and held in place by a pin S being passed through said ears and the handle, while the shaft J serves to hold the lower end of the handle in place. This permits the handle to be moved when occasion requires, thus facilitating the shipping or storing of the device.

Suitable screws T are utilized for securing the crusher to a beam or other suitable surface at the proper angle to perform the work, this angle being illustrated in Fig. 1. In practice the material is placed in the upper end of the crusher and the handle Q oscillated to and fro, which will cause the curved portion of the jaw to ride in the concentric concaved portion of the body, while the straight portion of said jaw will be caused to move back and forth relative to the body, thus roughly crushing the material, after which it will be gradually fed downward and reduced, as before set forth.

A tapering plate Q' is slidable on the lever Q and is slotted to receive the studs q, by which the movement of said plate is limited. The plate is provided to engage the pivot of the jaw to prevent wear on the lever when wedged thereagainst and swung.

One of the principal advantages of my improvement is its exceeding simplicity and the fact that there is but one moving part therein which may be easily removed for repair or substitution, if occasion requires, and as the device may be almost wholly made from castings with little or no finish the cost of manufacture is relatively small.

Having thus fully described my invention, what I claim as new and useful is—

1. In a device of the character described, a body having teeth, a jaw working in conjunction with the body and means for pivoting the jaw, an operating-lever pivoted to the jaw and a plate slidable on the lever and engaging the pivot of the jaw, substantially as described.

2. In a device of the character described, a trough-shaped body, rows of teeth formed on the bottom thereof, said teeth being concaved and notched, a jaw curved to the contour of the bottom of the trough, rows of notched teeth formed on the jaw matching into the space between the rows of teeth in the body, the upper end of the jaw being straight to match a straight portion of the trough, lugs formed on the jaw, bushings set in posts of the body, eccentric bearings for the bushings, the periphery of each bushing being polygonal and fitting in corresponding holes in the standards, a strip for each bushing fitting over the edges of the standards, an operating-lever pivoted to the jaw, a tapering plate slidable on the jaw and wedged under the pivot of the jaw substantially as described.

3. In combination, a trough, a jaw acting in conjunction therewith and means for pivoting the jaw comprising lugs formed on the jaw, bushings set in posts of the body, eccentric bearings for the bushings, the periphery of each bushing being polygonal and fitting the corresponding holes in the standards, and a strip for each bushing fitting over the edges of the standard substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

WILLIAM H. LINGO.

Witnesses:

GEORGE W. BENNUM,
JESSE W. OBIER.