

No. 666,120.

Patented Jan. 15, 1901.

W. VÖLKER.

APPARATUS FOR FILLING BOTTLES.

(Application filed Sept. 5, 1900.)

(No Model.)

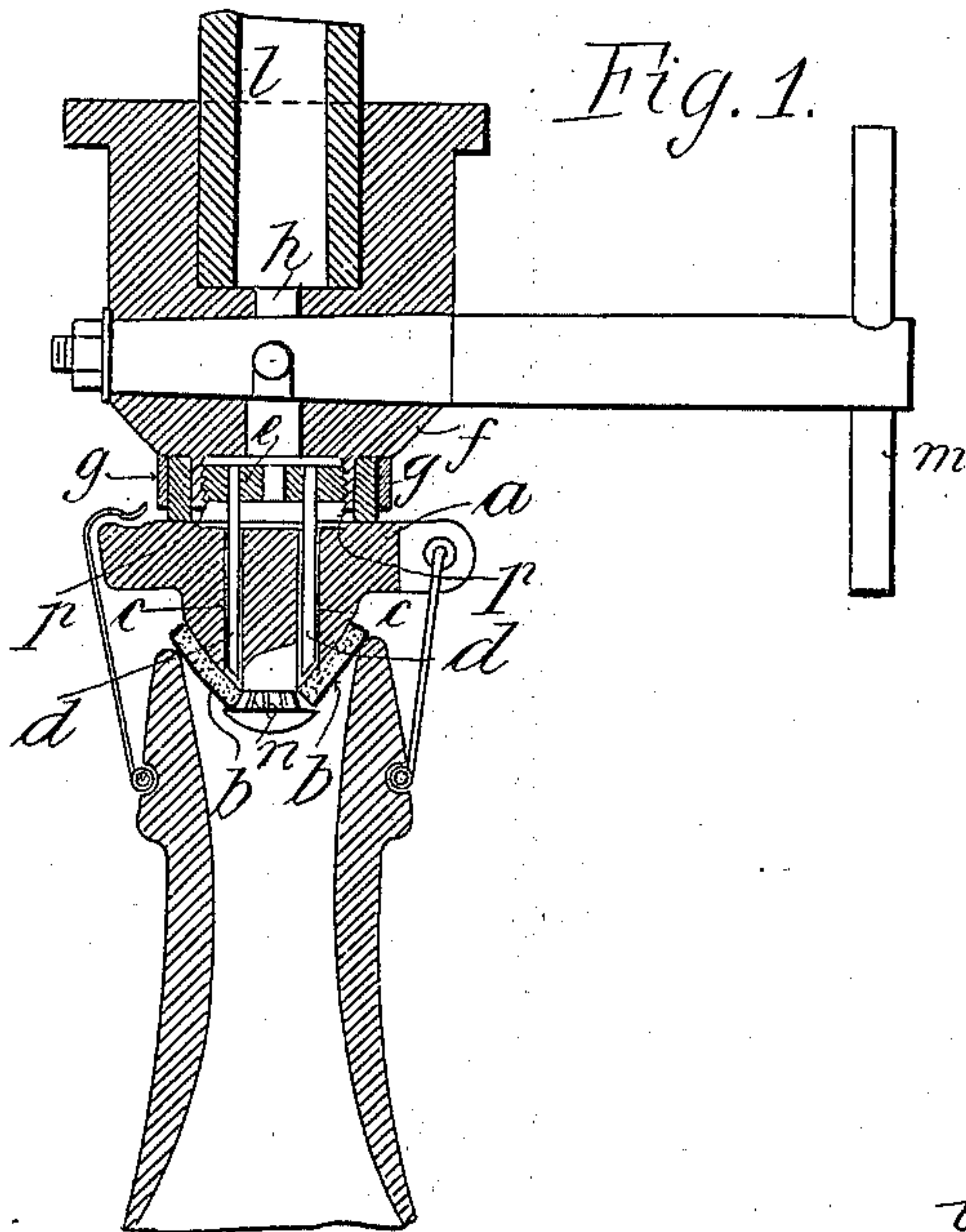


Fig. 1.

Fig. 2.

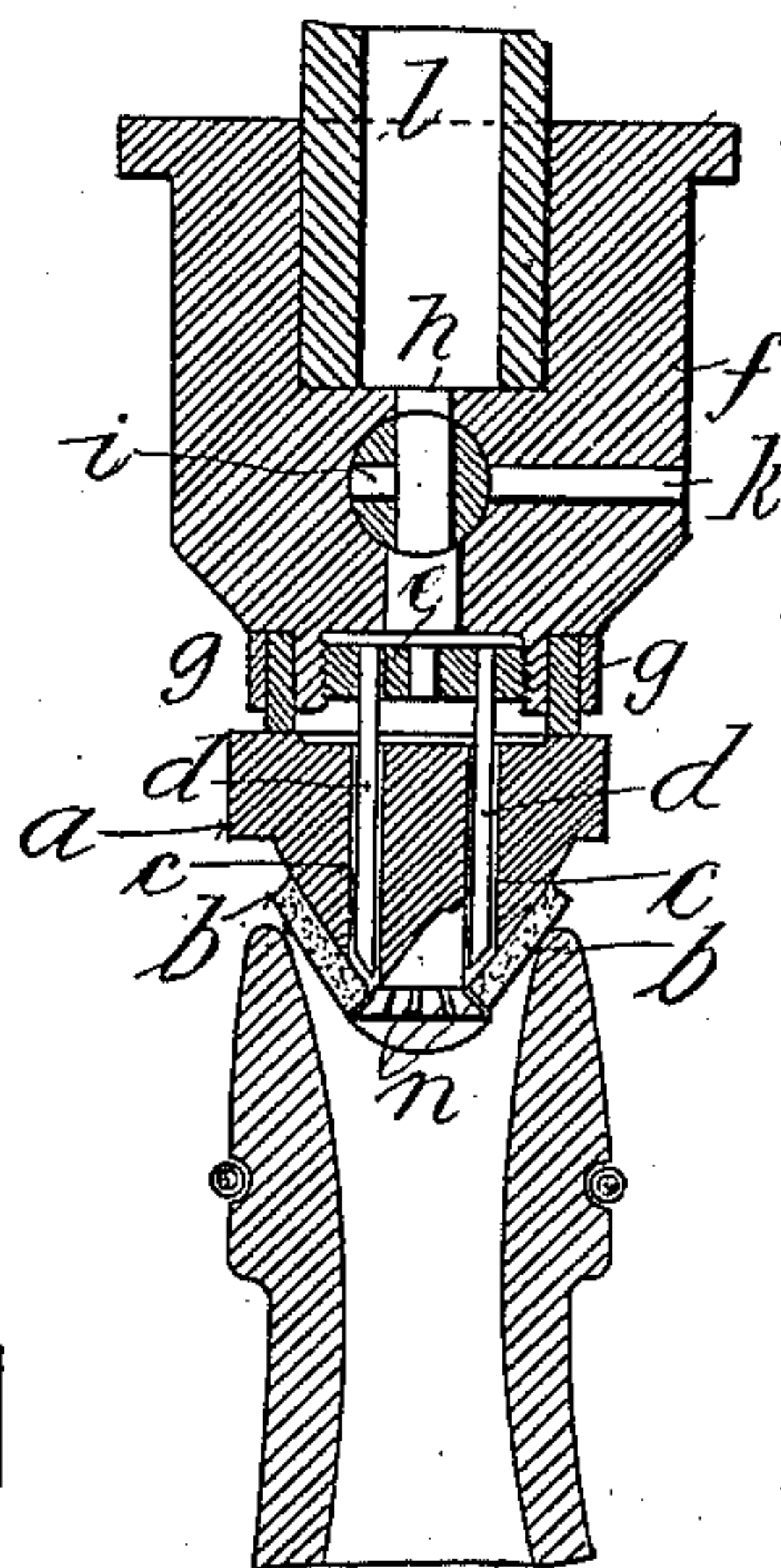


Fig. 3.

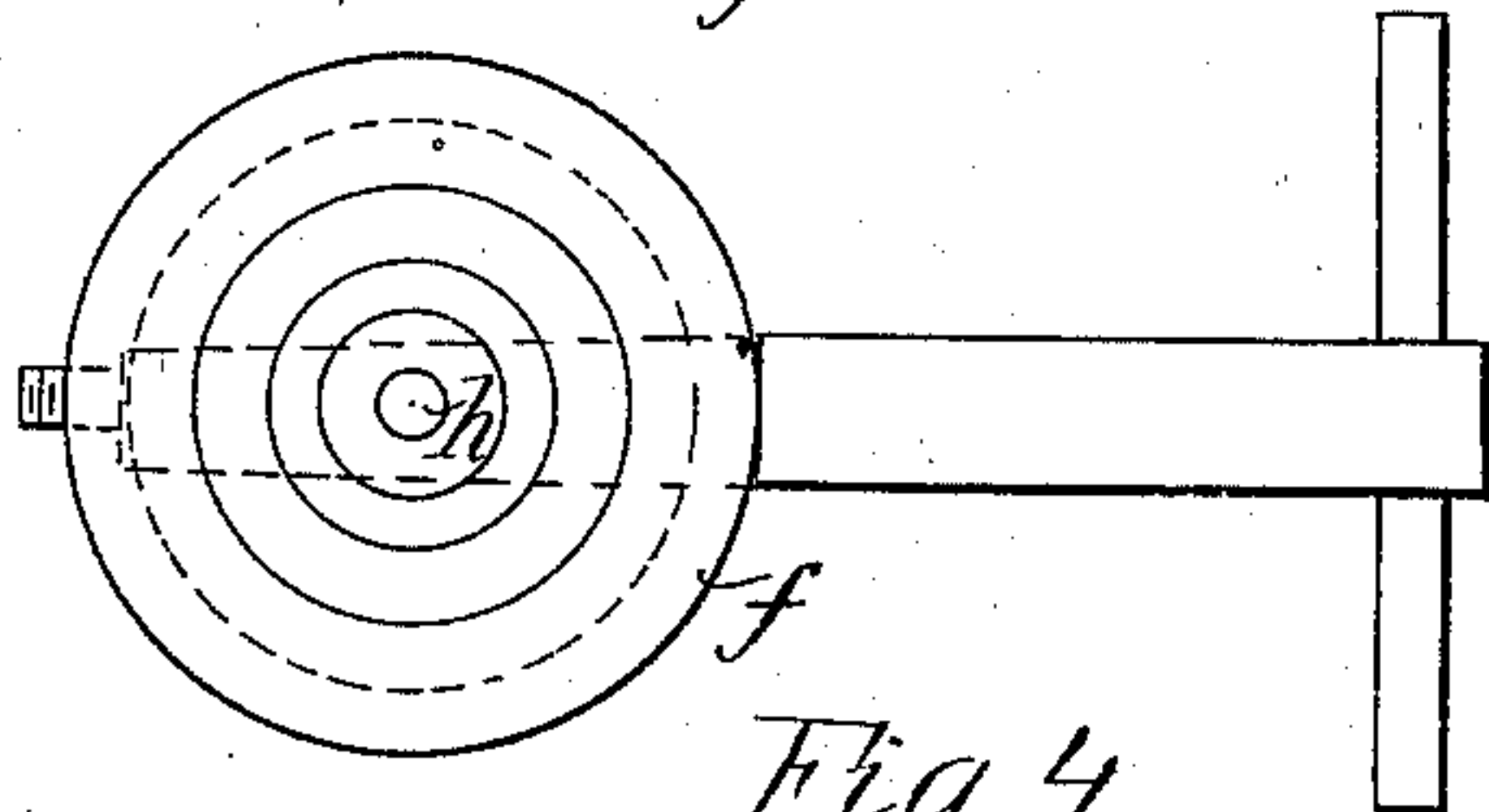
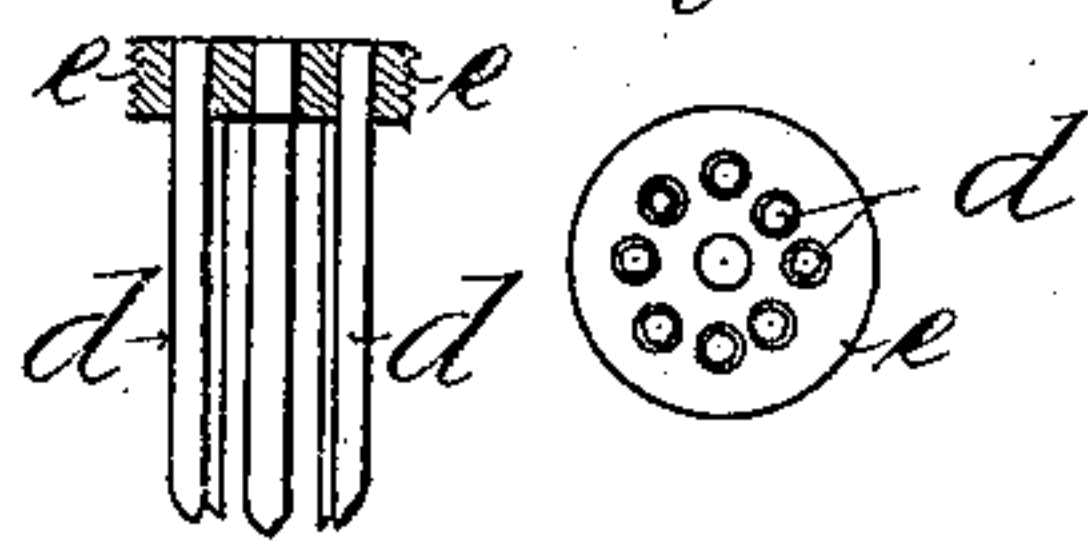


Fig. 4.



Witnesses
S. Brashears
R. Latzel.

Inventor
Wilhelm Völker
per G. Litman
Attorney

UNITED STATES PATENT OFFICE.

WILHELM VÖLKER, OF CHARLOTTENBURG, GERMANY.

APPARATUS FOR FILLING BOTTLES.

SPECIFICATION forming part of Letters Patent No. 666,120, dated January 15, 1901.

Application filed September 5, 1900. Serial No. 29,054. (No model.)

To all whom it may concern:

Be it known that I, WILHELM VÖLKER, engineer, a subject of the Emperor of Germany, residing at Charlottenburg, Germany, have invented certain new and useful Improvements in Apparatus for Filling Bottles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an apparatus for filling bottles furnished with stoppers, by means of which the bottle can be filled without the necessity of "airing" the pressing-lever frequently, as must be done in the case of the stoppers usually employed.

The invention is carried out by inserting between the head of the bottle and the supply-pipe a special three-way valve the outlets of which project into the interior of the bottle-stopper in the form of a number of small tubes standing in a circle, so that when a bottle is pressed home they press against the india-rubber disk forming the valve and open the same to allow the gas and air to enter the bottle and whereby with suitable adjustment of the three-way cock the gases which are above the liquid contents can escape.

The accompanying drawings illustrate the novel filling apparatus.

Figure 1 is a longitudinal section; Fig. 2, a section on a vertical plane at right angles to that of Fig. 1; Fig. 3, a plan view; Fig. 4, a section and plan of the details of the filling-tubes.

The stopper consists, as is well known, of the top *a*, an india-rubber disk *b*, and a number of holes *c*, which extend to the india-rubber disk that serves as a clack-valve as well as a means for securing a tight joint. Into the holes *c* a similar number of fine tubes *d* are passed, which tubes extend as far as the india-rubber disk. The small tubes *d*, which are suitably rounded off at the bottom, are fixed in a metal disk *e*, Fig. 1, which is screwed into the plug or holder *f* by means of a junction-piece. The holder *f*, which is "packed" against the head *a* by means of an india-rubber washer *g*, has two perforations *h k*, Fig. 2, whereby the interior of the bottle

can be put in communication with the supply-pipe *l* or with the outer air by simply turning the three-way cock *m*. The escape of the gases or air in the bottle is rendered possible by small recesses *n*, which enable the gas or air to pass out through the hole formed in the middle of the disk *e*.

The action of the filling apparatus is as follows: The bottle in a closed condition is placed below or between the pressing-lever and the holder *f*, the small tubes *d* engaging in the holes *c*, as shown in Figs. 1 and 2, and the head *a* being made tight against the holder *f* by means of the washer *g* and the pressure-lever. If the three-way cock be now turned into the position shown in Fig. 2, the carbonic-acid gas flows through the valve and plug into the small tubes *d* and into the bottle, the india-rubber ring *b* being forced aside. If, in consequence of the gases under pressure collected in the bottle, no more liquid contents can flow into the bottle, the three-way cock *m* is so turned as to put the interior of the bottle in communication with the external air, with the opening *i* corresponding with the opening *k*, when the surplus gases escape. The handle is now turned again into the position shown in Fig. 1 and repeated as required, whereby the filling of the bottle is effected. The outflow of the gases from the interior of the bottle is possible, because the small tubes *d* are of such a length that upon the pressing-lever being pressed they open the valve-disk *b* somewhat, and sufficient space is created to allow the gases to pass out of the interior of the bottle through the slot *n*. If, on the other hand, the pressure ceases, as occurs when the bottle is removed, the closing action of the valve-disk comes into operation precisely as before.

I claim—

1. In a bottle-filling apparatus the combination with a holder *f* having a vertical bore, an intercepting horizontal valve-seat and a horizontal vent at right angles to the valve-seat leading to the outer air, of a supply-pipe in the vertical bore, the three-way valve in the valve-seat, a metal disk threaded into the inner end of the holder and perforated, and a series of small tubes leading from said perforations, substantially as described.

2. In a bottle-filling apparatus the combi-

5 nation with a holder *f* having a vertical bore,
an intercepting horizontal valve-seat and a
horizontal vent at right angles to the valve-
seat leading to the outer air, of a supply-pipe
10 in the vertical bore, a three-way valve in the
valve-seat, a metal disk threaded into the in-
ner end of the holder and perforated, a se-
ries of small tubes leading from said perfora-
tions, a packing-ring projecting beyond the
15 holder and disk, a stopper bored to receive
the small tubes, means for holding the stop-

per in the bottle, and a rubber disk between
the stopper and bottle provided with open-
ings *c* and *n*, substantially as described.

In testimony that I claim the foregoing as 15
my invention I have signed my name in pres-
ence of two subscribing witnesses.

WILHELM VÖLKER.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.