

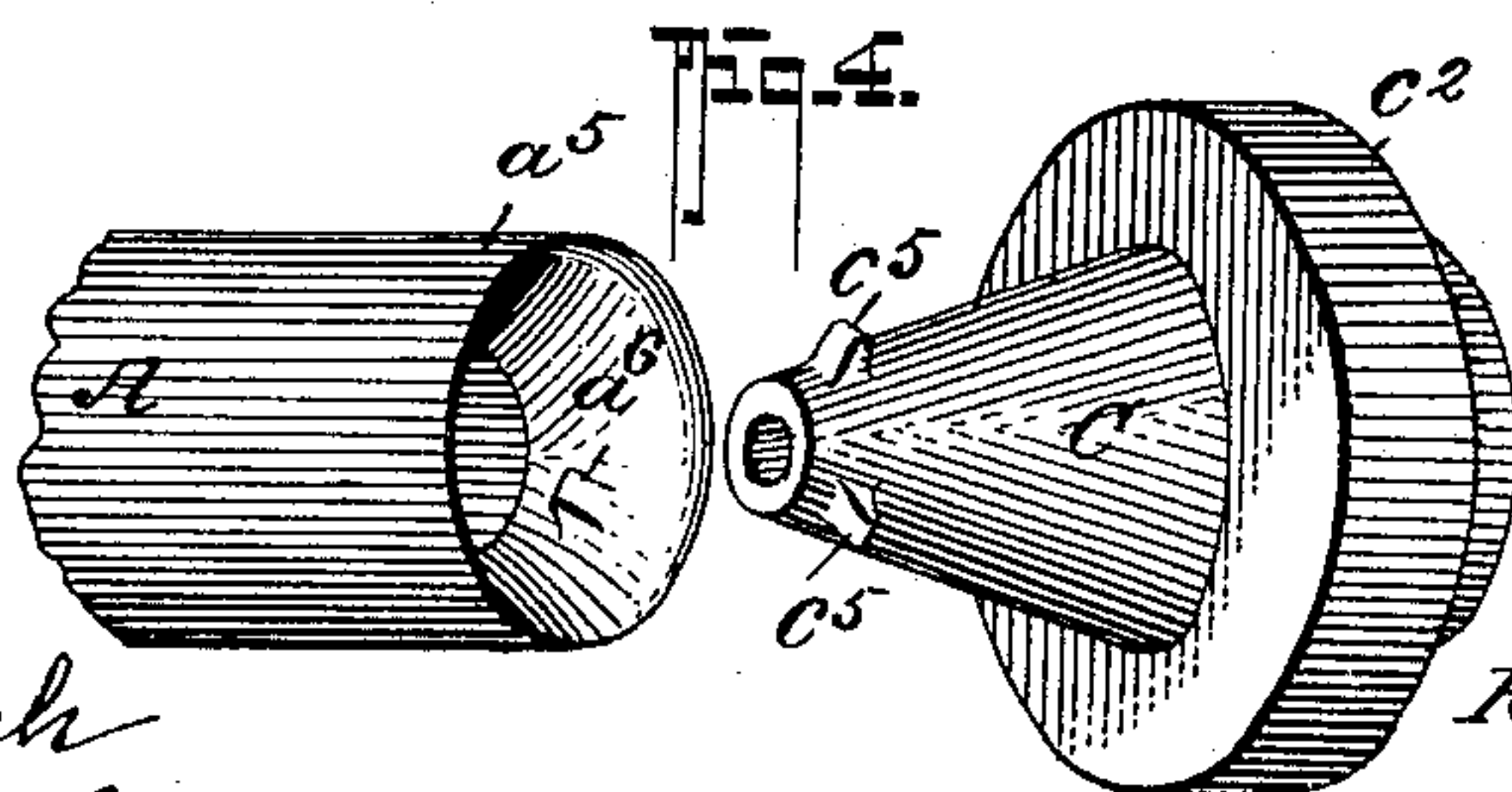
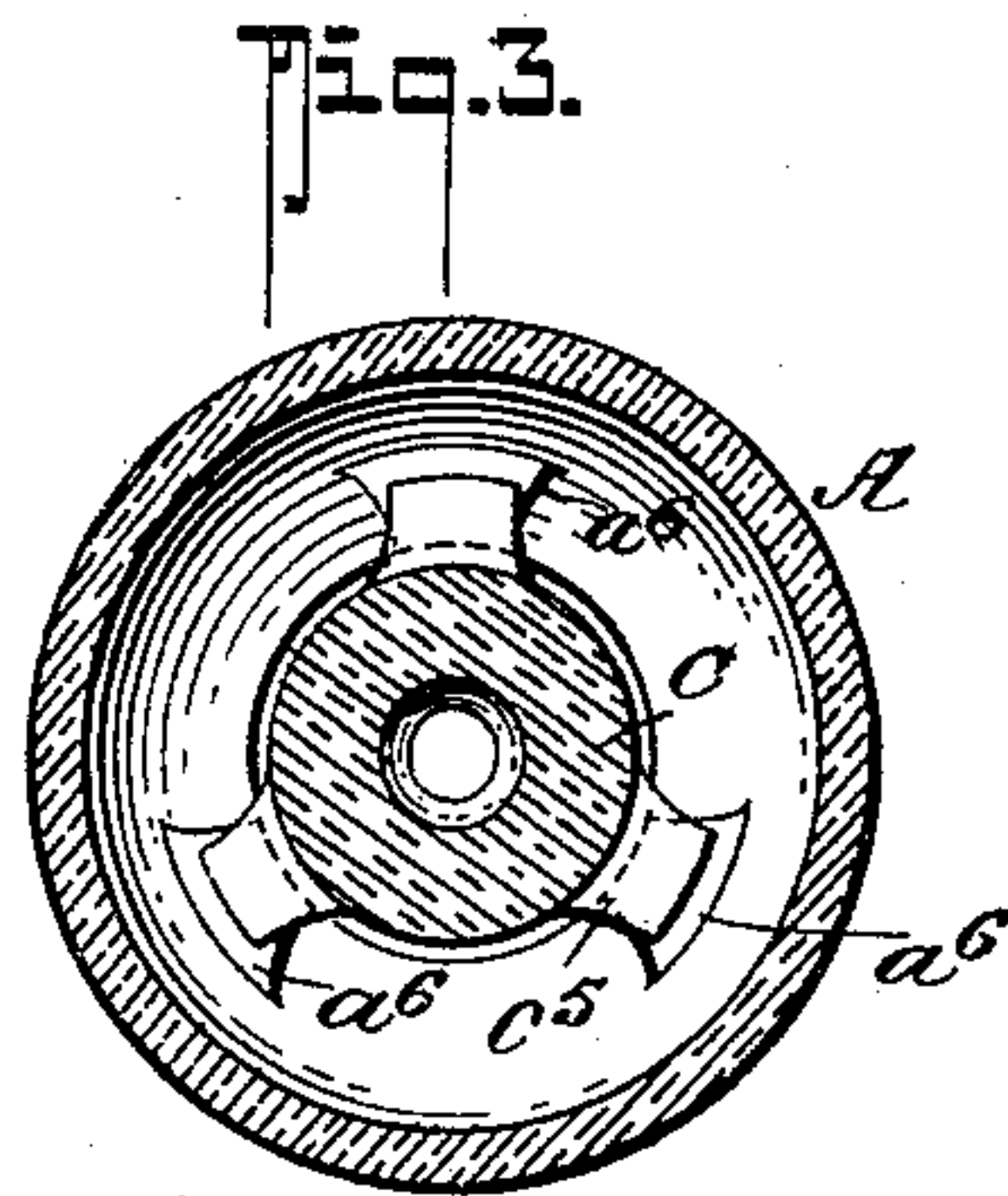
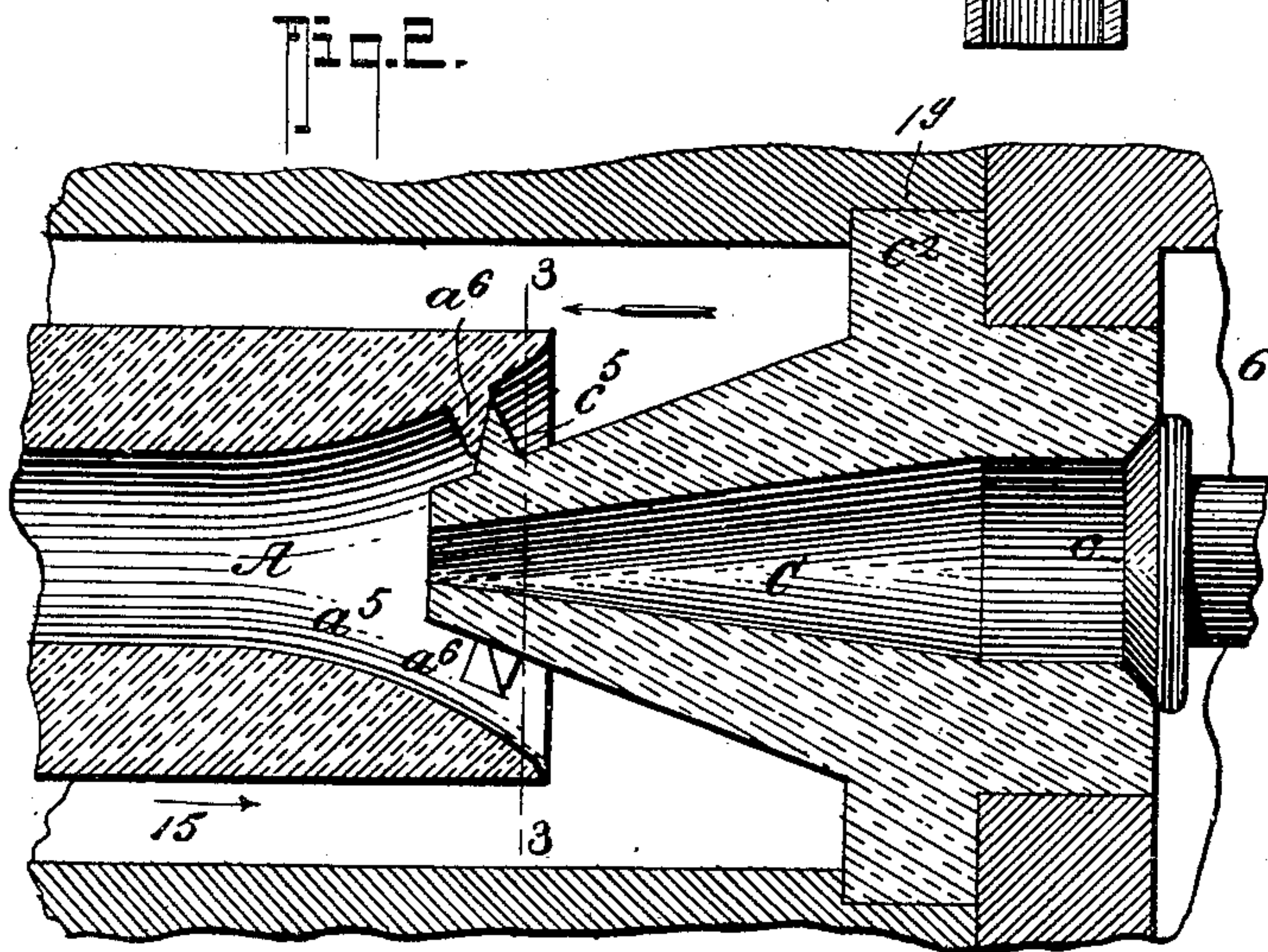
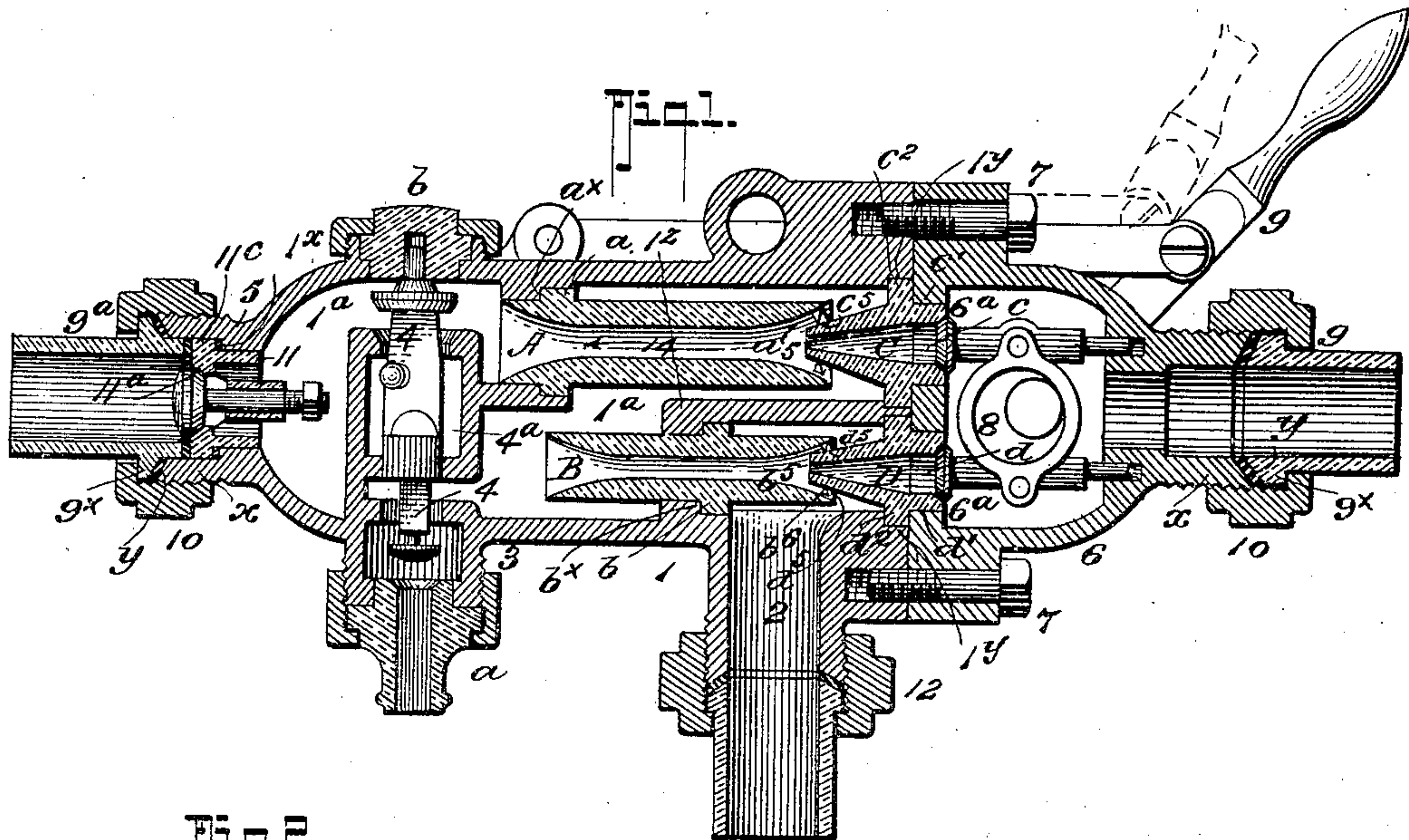
No. 683,005.

Patented Sept. 17, 1901.

R. H. F. SEWALL.  
STEAM FEEDING MECHANISM.

(Application filed Dec. 31, 1900.)

(No Model.)



WITNESSES:  
*Louis Dieterich*  
*John E. Burch.*

INVENTOR  
*R. H. F. Sewall*  
BY  
*Fred J. Dieterich & Co.*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

ROBERT H. F. SEWALL, OF NEW ORLEANS, LOUISIANA, ASSIGNOR OF ONE-HALF TO CHAS. F. DE GANAHL, OF TAMPICO, MEXICO.

## STEAM FEEDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 683,005, dated September 17, 1901.

Application filed December 31, 1900. Serial No. 41,669. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT H. F. SEWALL, of New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Steam Feeding Mechanisms, of which the following is a specification.

My invention in its generic nature refers to injectors, inspirators, steam-siphons, and the like devices, and particularly to the funnels or other fittings thereof for the openings through which steam and water pass and concentrate during the operation of the said devices.

Injectors and like mechanisms as ordinarily constructed usually have brass fittings at the points through which the fluid passes and concentrates, which are so set in position as to be readily replaced by new fittings when worn. From practical observation I have found that fittings formed of any kind of metal at the points where close joints are necessary are soon worn out or cut away by the action of sand and gravel, and such action not only impairs the utility of the appliance, but necessitates costly repairs and loss of time by reason of their inoperation, as well as causing great inconvenience.

My invention primarily seeks to provide mechanisms of the character noted having the fittings, usually termed, "combining-tubes" and "funnels" made of glass or other vitreous material not susceptible of being readily worn or cut away by action of sand and gravel thereon, and in its more subordinate features my invention comprehends, in a fluid-feed for boilers and the like, an improved funnel-like fitting and means for practically applying the same in an operative position, said means including certain mechanical combinations and novel arrangement of parts, all of which will hereinafter be fully explained, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of an injector equipped with my improvement. Fig. 2 is an enlarged section of a portion thereof hereinafter referred to. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 is a detail per-

spective view of one of the funnels or fittings detached.

In carrying out my invention I use as a substitute for the ordinary brass fittings a fitting formed of a glass or other vitreous material and having its casing-engaging portions entirely freed of external threadways or other unnecessary offsets that present a surface capable of being quickly worn out by action of sand and gravel or other gritty deposits in the passing fluid.

In applying my improvements to the ordinary types of injectors, inspirators, and the like the fittings are shaped to suit the particular character of casing to which they are to be applied, but in every instance said fittings are so constructed as to be placed in position without the necessity of forming them with external or internal roughened or irregular surfaces, such as screw-threads and the like.

In the drawings I have illustrated a simple form of a double injector and in a general way shown how the fittings may be securely held in position without changing the internal or external construction of the casing; but I desire it understood that the detailed manner in which the several fittings are cooperatively held within the casing, as shown, may be readily modified to suit the character of the casings to which they are to be applied without departing from the scope of the appended claims.

Referring now to the accompanying drawings, in which like characters indicate like parts in all the figures, 1 designates the injector-casing, which in the present type comprises a body part 1<sup>a</sup>, having the laterally-extending water-inlet 2, the overflow 3, and overflow and controlling valve 4, valve-chamber 4<sup>a</sup>, and the outlet to boiler 5.

6 designates the cap end of the casing, secured to the body by the screw-bolts 7 and having the two discharges 6<sup>a</sup> 6<sup>b</sup>, that communicate with the interior of the body 1<sup>a</sup>, and formed with the usual steam-inlet 6<sup>b</sup>, said cap portion in the construction shown also having a duplex valve mechanism 8 for controlling the discharges 6<sup>a</sup> and adapted for proper adjustment by the shifting lever 9,



the several parts above described being of a well-known construction and form *per se* no part of my invention.

9' 9<sup>a</sup> designate the fittings for the steam inlet and exit openings of the casing, provided with annular flanges 9<sup>x</sup> 9<sup>x</sup>, with which the clamp-caps 10 10, which may be of metal, engage, and which have a threaded engagement with the neck *x* of the casing, suitable packing-strips *y y* being interposed between the glass fitting, the neck, and the caps 10 10 to prevent breaking in tightening up the members 9' 9<sup>a</sup>.

11 designates the glass sleeve for the end of the neck *x*, formed with a valve-seat 11<sup>a</sup> and tubular valve-stem shank 11<sup>b</sup>, it also having an annular flange 11<sup>c</sup> for engaging the shoulder 1<sup>x</sup> on the neck *x*, that holds the sleeve 11 from being forced inward, the sleeve being held from blowing outward by the inwardly-projecting end of the discharge-pipe section or sleeve 11 to boiler, as shown. The water-inlet-pipe member, which is also formed of glass or analogous material, is held secure by the gland cap or nut 12. The fittings *a b*, forming the overflow-nipple and the valve-stem seat, respectively, may also be secured by cap-screws, as shown.

The funnels in the construction shown and indicated by A, B, C, and D are of glass or like material. The members C and D form the ejector-nozzles for the outlets 6<sup>a</sup> 6<sup>a</sup> and each have a valve-seat *c d* for the duplex valves 8<sup>a</sup> 8<sup>a</sup>. Each of the members C and D has a smooth hub-like portion *c' d'*, that fit the smooth bores or openings 6<sup>a</sup> 6<sup>a</sup>, and the hubs *c' d'* terminate in annular flanges *c<sup>2</sup> d<sup>2</sup>*, adapted to fit annular seats 1<sup>y</sup> in the adjacent end of the casing-body 1, in which they are clamped by the cap 5 when the parts are assembled, such arrangement providing for holding the funnels C D firmly in position and also for permitting of their ready removal in case of breakage, &c.

A B designate main funnels or combining-tubes that receive the ejections from the members C D. The combining-tube A has an annular flange *a*, that fits a corresponding seat *a<sup>x</sup>* in the portion 1<sup>x</sup> of the casing, while the combining-tube B has a similar flange *b*, that fits the seat *b<sup>x</sup>* in the web portion 1<sup>z</sup> of the casing. The flanges *a* and *b* keep the funnels from moving in the direction indicated by the arrow 14 in Fig. 1, by reference to which it will also be seen the ends *a<sup>5</sup> b<sup>5</sup>* of the two combining-tubes A and B project over the ejected or nozzle ends of the members C D, and the said ends *a<sup>5</sup> b<sup>5</sup>* have pendant integral lugs *a<sup>6</sup> b<sup>6</sup>*, that engage stop-lugs *c<sup>5</sup> d<sup>5</sup>*, integrally formed on the nozzle ends of

the members C D, the said lugs on the opposing ends of the members A, B, C, and D serving to hold the members A and B from moving forward in the direction indicated by arrow 15.

From the foregoing, taken in connection with the accompanying drawings, it will be noticed that by constructing the fittings as set out I am enabled to substitute funnels and combining-tubes of glass or other like material for the usual brass funnels and combining-tubes without the necessity of cutting threads. This not only reduces the cost of constructing the complete appliance very materially, but also by reason of the smooth joints prolongs the life of the same. In case of a mechanism constructed on the plan shown the funnels A and B can be conveniently set in place when the cap-piece of the casing is removed and the members C and D likewise fitted in the cap-piece, and after being thus fitted by setting up the cap-piece on the body 1<sup>a</sup> and making the same fast the lugs on the members A, B, C, and D will engage, and thereby hold the members A and B secure and from leaving their seats at the discharge end.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device of the class specified, a casing having a portion interiorly thereof provided with an annular seat, a web in the casing having an annular seat, funnels in the casing provided with annular flanges snugly fitted in said seats, additional funnels projecting into the other funnels, provided with lugs to prevent motion of the first-mentioned funnels, in one direction, and a cap-piece removably secured to the casing, having seats to receive the outer ends of said additional funnels.

2. In a device of the class specified, a casing having an interior rigid portion, provided with an annular seat, a web inside the casing also having an annular seat, and the end of the casing having annular seats, funnels provided with annular flanges fitted snugly in the two first-mentioned seats, and having interior lugs at one end, additional funnels projecting into the other funnels having lugs to be engaged by the other lugs and also having flanges to fit the annular seats in the end of the casing, and a cap detachably connected to the casing, having seats to receive the additional funnels.

ROBERT H. F. SEWALL.

Witnesses:

W. W. GOLDSMITH,  
E. F. THOMAS.