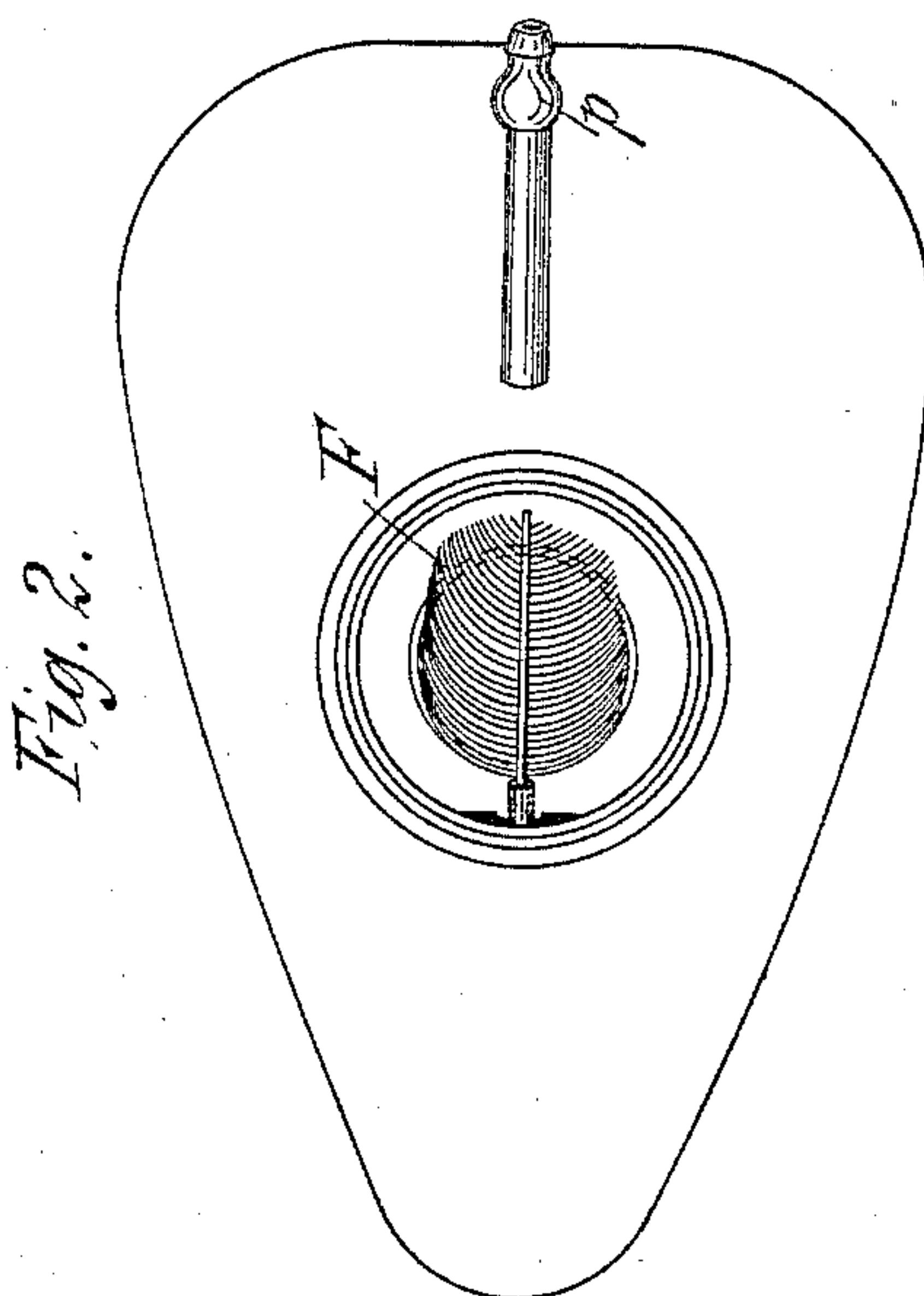
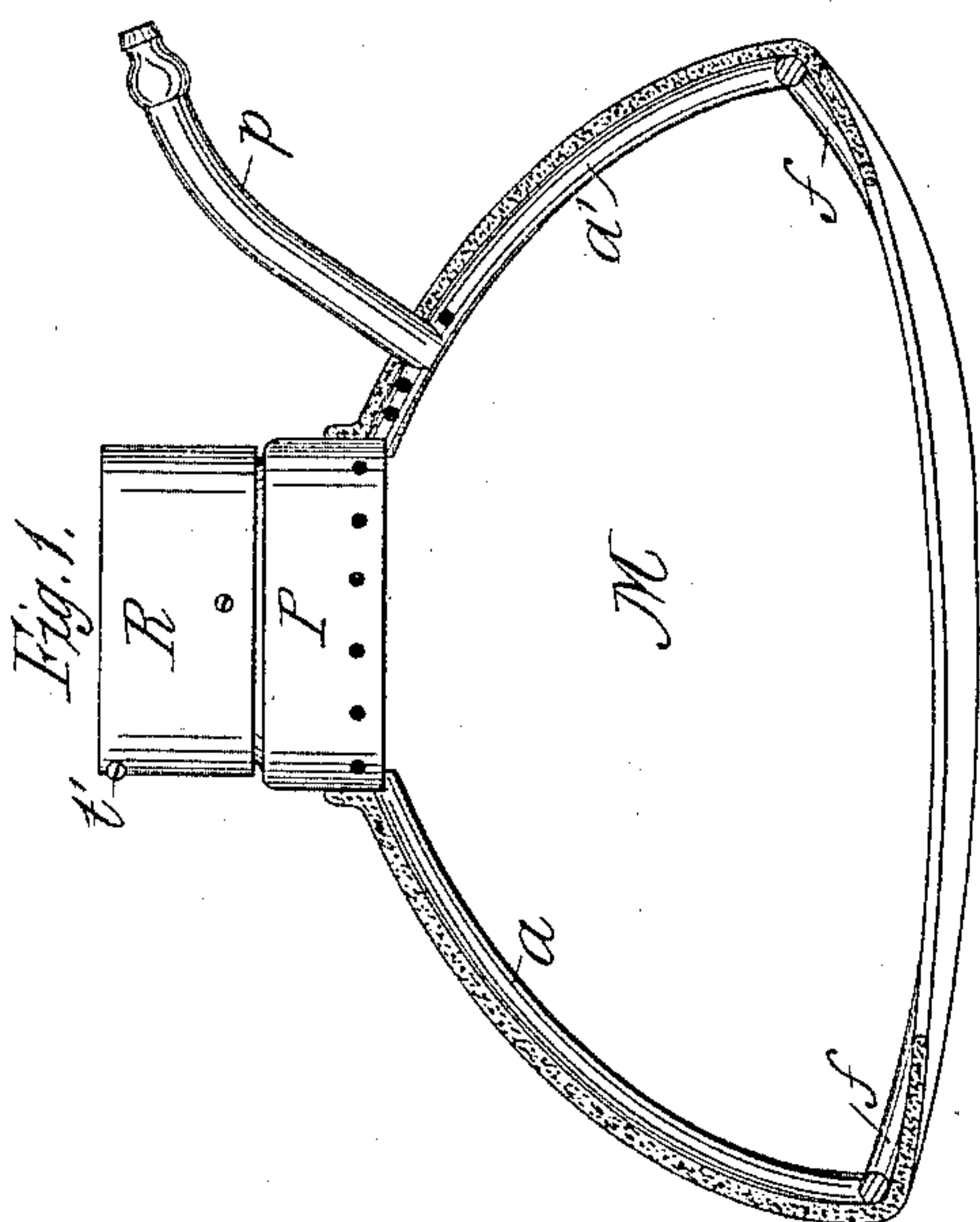
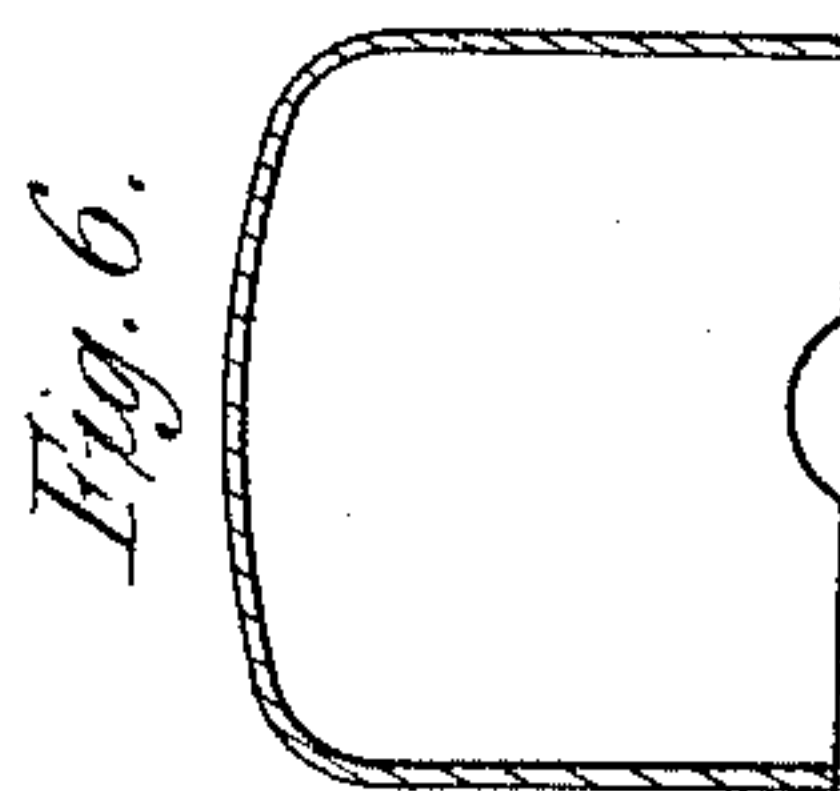
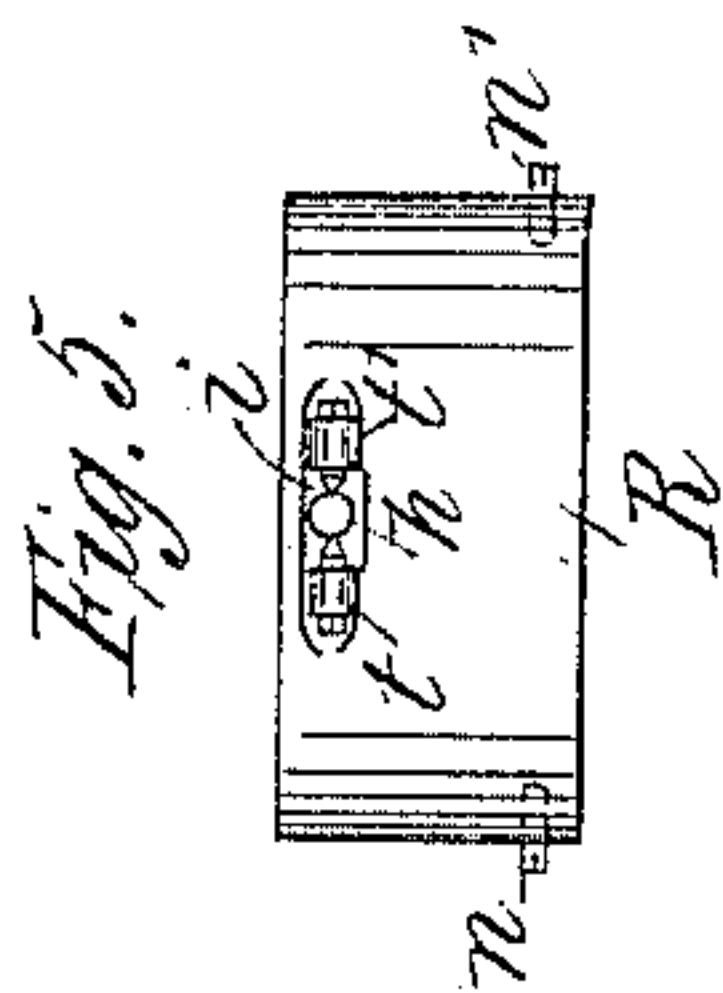
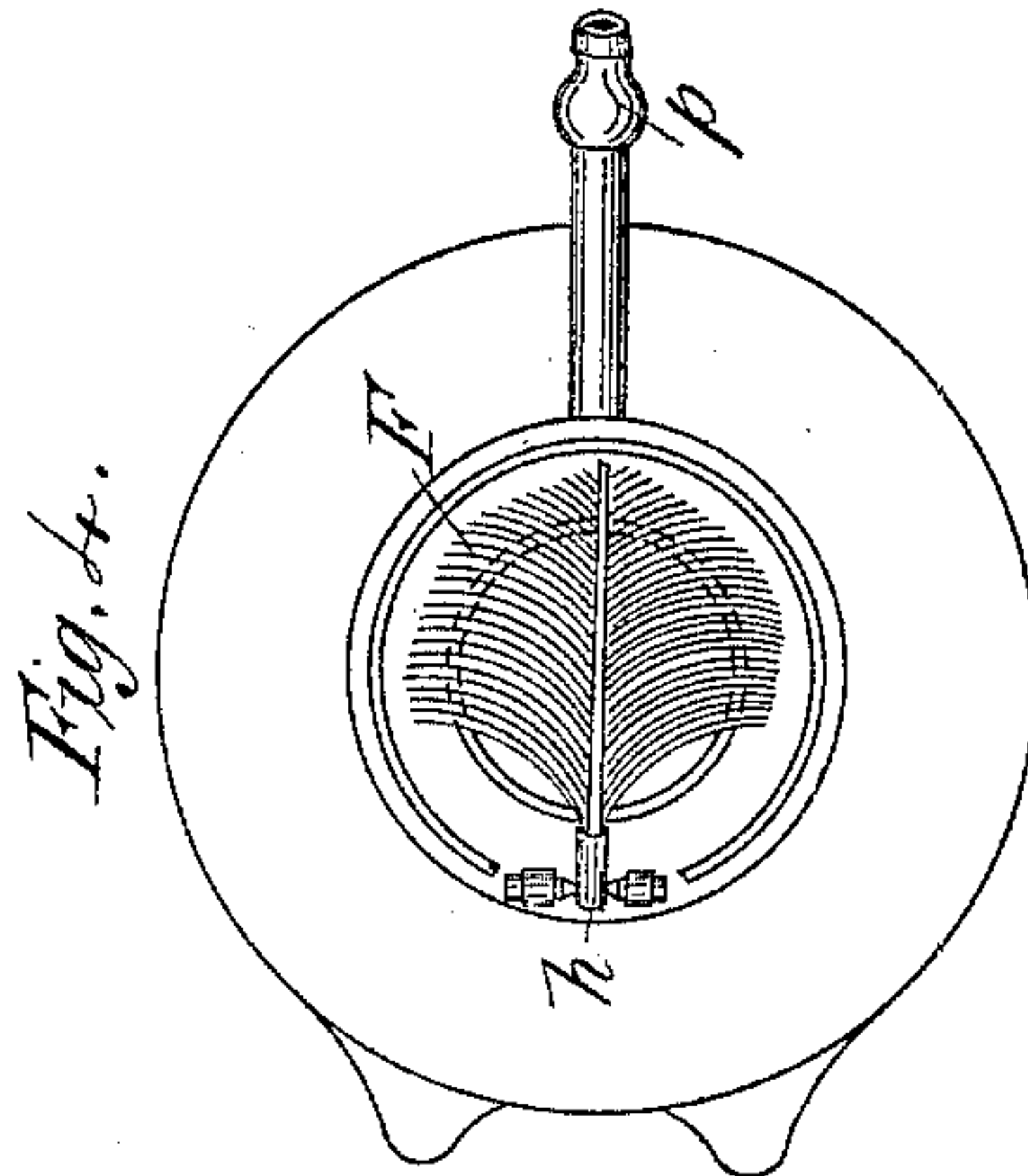
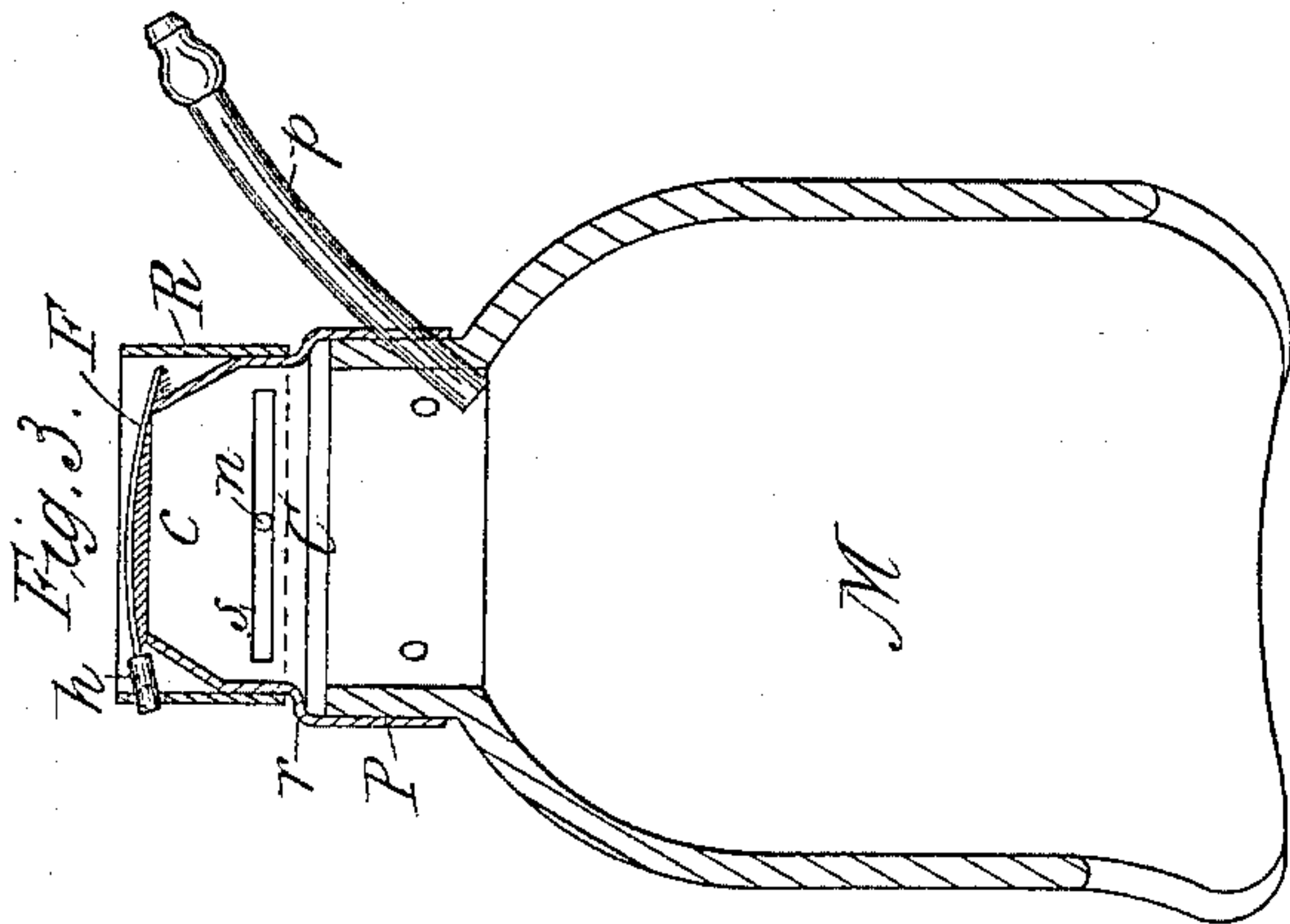


(No Model.)

C. W. KROHNE & H. F. SESEMANN.
INHALER.

No. 440,713.

Patented Nov. 18, 1890.



Witnesses
Ernest William Brooke
Albert Edward Collins

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Sesemann
per Frederick George Cassell ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES WILLIAM KROHNE AND HENRY FREDERICK SESEMANN, OF
LONDON, ENGLAND.

INHALER.

SPECIFICATION forming part of Letters Patent No. 440,713, dated November 18, 1890.

Application filed September 8, 1890. Serial No. 364,368. (No model.)

To all whom it may concern:

Be it known that we, CHARLES WILLIAM KROHNE and HENRY FREDERICK SESEMANN, surgical-instrument manufacturers, of 8 Duke Street, Manchester Square, London, subjects of the Queen of Great Britain and Ireland, have invented Improvements in Inhalers for the Administration of Chloroform and other Anæsthetics, of which the following is a specification.

Our invention relates to improvements in inhalers for the administration of chloroform and other anæsthetics; and it consists, chiefly, of a device or respiration-indicator applicable to all kinds of inhalers, and capable of indicating the nature, frequency, and character of the respirations of persons or animals subjected to the influence of anæsthetics, so that, owing to the respiration being thus under constant observation, all danger of syncope, coma, or other failure of the heart's action, due to a prolonged influence of the drug administered, is removed, as immediately any abnormal sign is indicated by certain preliminary symptoms affecting the respiration, or by a slowing or entire stoppage of the latter, the apparatus can be forthwith withdrawn from the person's or animal's mouth and artificial respiration or other recuperative means resorted to in time to avoid accident. It is a well-known fact that physicians have for years endeavored to minimize by every conceivable appliance or process the danger arising from the use of anæsthetics and of chloroform in particular; but their efforts have hitherto proved fruitless, owing to their not having been able to keep the respiration of the patient under constant observation, so as to apply remedial measures in time—that is to say, before death supervenes; and in order that our invention may be more fully understood we have shown the same in the accompanying sheet of illustrative drawings, in which—

Figure 1 is a side view of an inhaler provided with our improved device, showing the mouth-piece in section. Fig. 2 is a plan of the same. Fig. 3 is a sectional elevation of our device applied to a special form of inhaler. Fig. 4 is a plan of the latter. Fig. 5 is a view of the upper part of the device. Fig. 6 is a

section of the cap or cover which is used to protect the device from injury.

Our improved device consists of a truncated cone C, the upper and conical part *c* of which is provided at its base with two symmetrical slots, one of which (the slot *s*) is only shown in the drawings. This conical part *c* terminates in the cylindrical part P, the upper end of which forms a rim *r*, projecting above the former. This cylindrical part P, which is inserted within the opening of the mouth-piece or bag M, carries a pipe *p*, passing through the latter, and through which the anæsthetic is inhaled, this pipe being fixed in the application shown in Fig. 1 to one of the side ribs *a* *a'* of the said mouth-piece, which is perforated at the top to allow for the entrance of the anæsthetic into the mouth-piece or bag M. These ribs are secured to the frame *f* of the mouth-piece, as clearly shown in Fig. 1. Fig. 3 shows the cylindrical part P fixed directly to the neck of an improved inhaler of peculiar shape, which we prefer to the ordinary form, as shown in Fig. 1.

Our improved device consists, further, of a ring R, fitting over the conical part *c* and resting upon the rim *r*. Two screws *n n'*, projecting through the slots *s s'*, enable the ring to be turned to and fro for the purpose of adjustment, as hereinafter more fully referred to. This ring is furnished with a slot *i*, in which moves a small holder *h*, carrying a feather F, and swiveled to the small tubes *t t'*, partly countersunk in the said ring. The cap shown in Fig. 6 serves to cover the device when not required for use. Instead of a feather, we may likewise use any other light substance, material, or fabric. The inhaling apparatus being placed over the patient's mouth and chloroform vapor, for instance, being admitted through the pipe *p*, the respiration and expirations of the said patient will cause the feather F to move to and fro and in a manner and speed corresponding to the way in which the respiration is carried on. As this feather which rests on the apex of the tapered part *c* is very sensitive, accurate indications will be constantly obtainable as to the nature, frequency, and character of such respiration. Should the head of the patient fall to one side, the ring R can be turned in the other direc-

tion, so that the feather may always remain straight in front of the operator administering the anæsthetic. The opening of the tapered part *c* allows of the admixture of a sufficient amount of air with the chloroform.

Our improved device can be likewise applied to a suitable bag for the purpose of administering anæsthetics to animals—such as horses, cattle, sheep, &c.—and will be found particularly useful to avoid pain in castrating and other operations. Our improved respiration-indicator may be made of any suitable material, such as metal, horn, ivory, celluloid, vulcanite, and the like.

What we claim, and desire to secure by Letters Patent of the United States, is—

In respiration-indicators used in connection with the administration of anæsthetics, the combination of a truncated cone *C*, with a ring *R* and a swiveled feather *F*, substantially as hereinbefore described in this specification, and illustrated by the accompanying drawings.

In witness whereof we have hereunto set our hands in presence of two witnesses.

Signed at London this 26th day of July, 1890.

CHARLES WILLIAM KROHNE.

HENRY FREDERICK SESEMANN.

In presence of—

ERNEST WILLIAM BROOKE,

ALBERT EDWARD ELLEN.