

No. 864,152.

PATENTED AUG. 27, 1907.

F. BOHN & F. BÜNDGENS.

MEANS FOR REMOVING POWDER GASES FROM GUN BARRELS.

APPLICATION FILED OCT. 30, 1905.

3 SHEETS—SHEET 1.

Fig. 1.

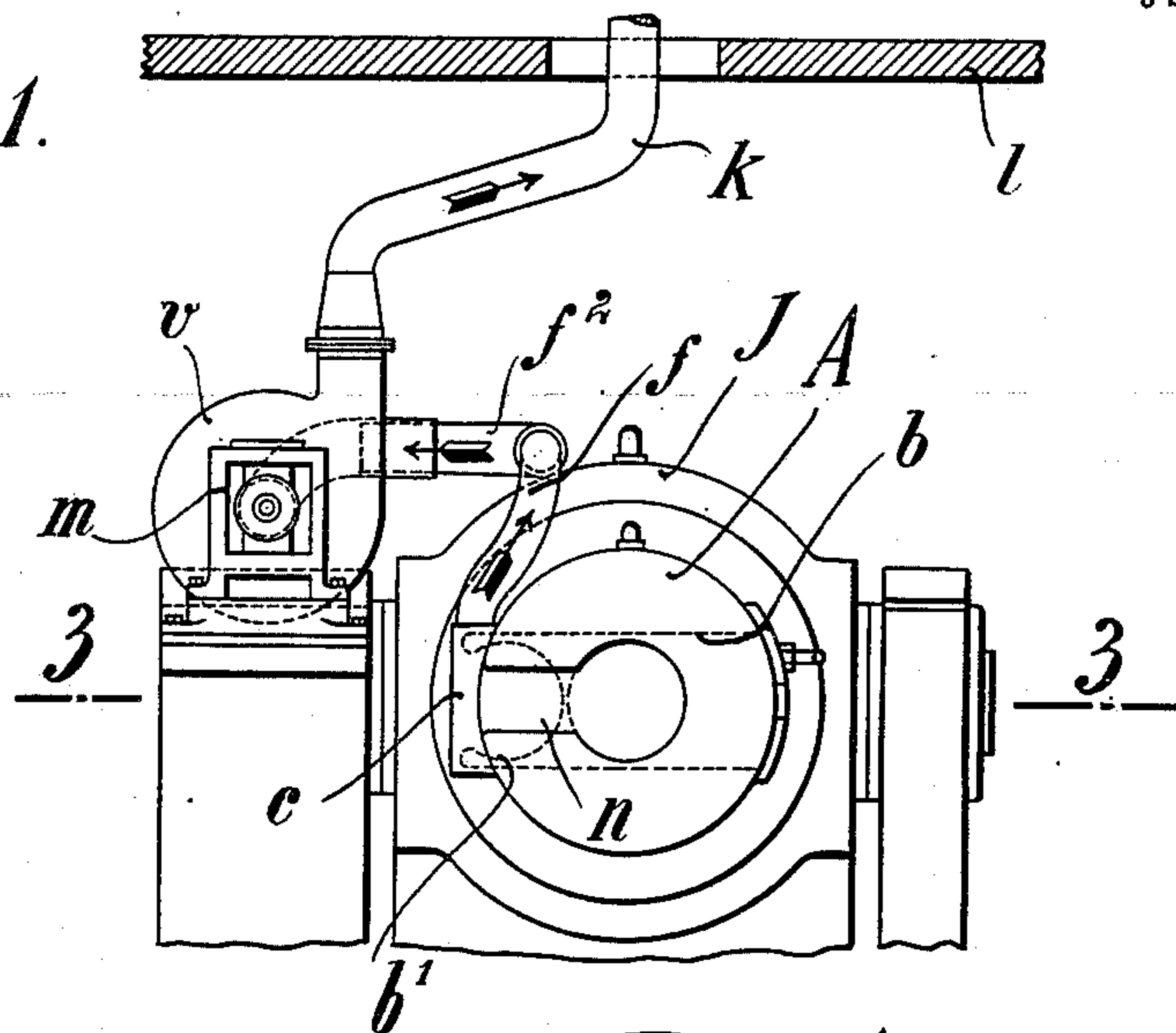


Fig. 2.

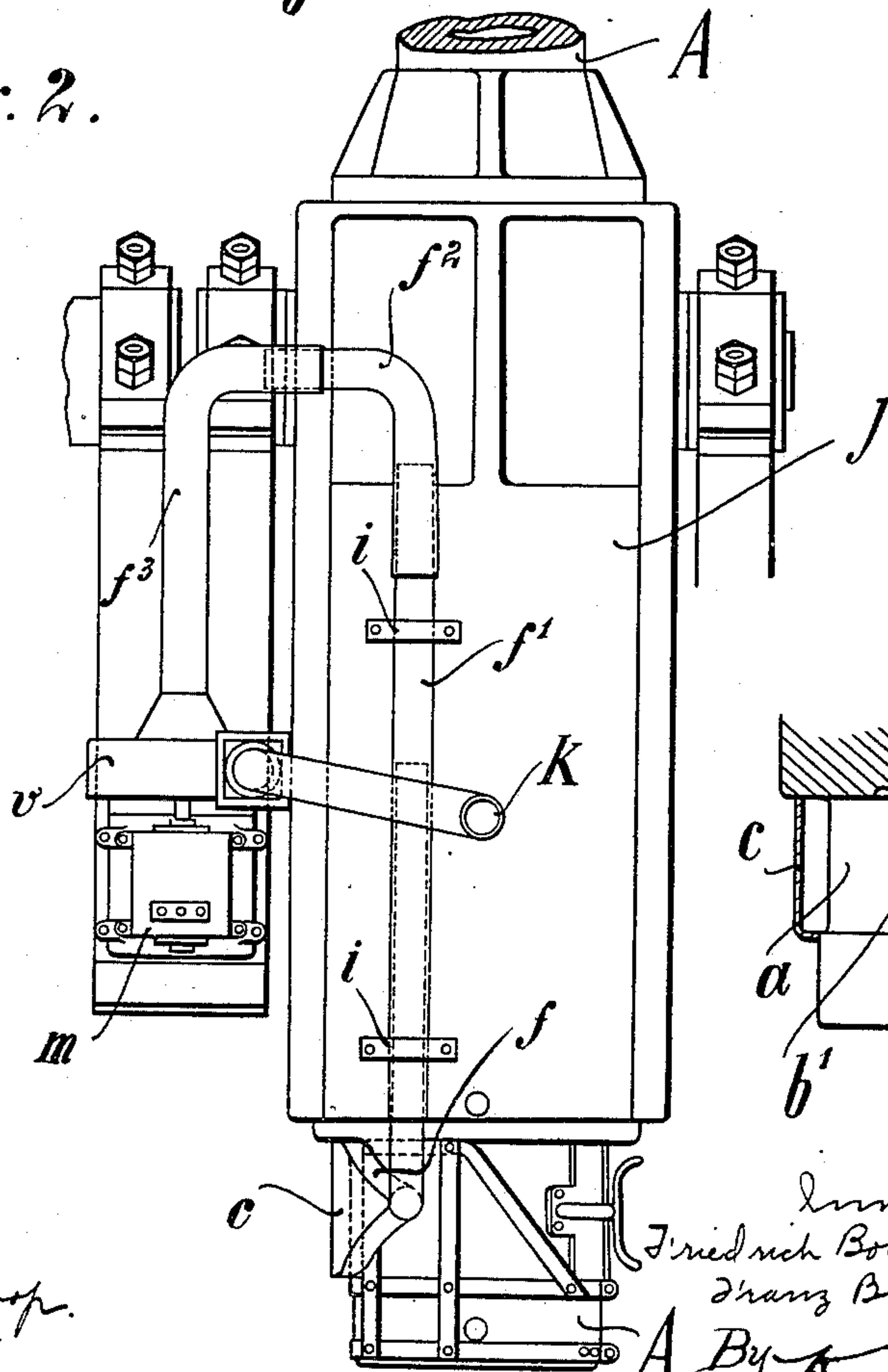
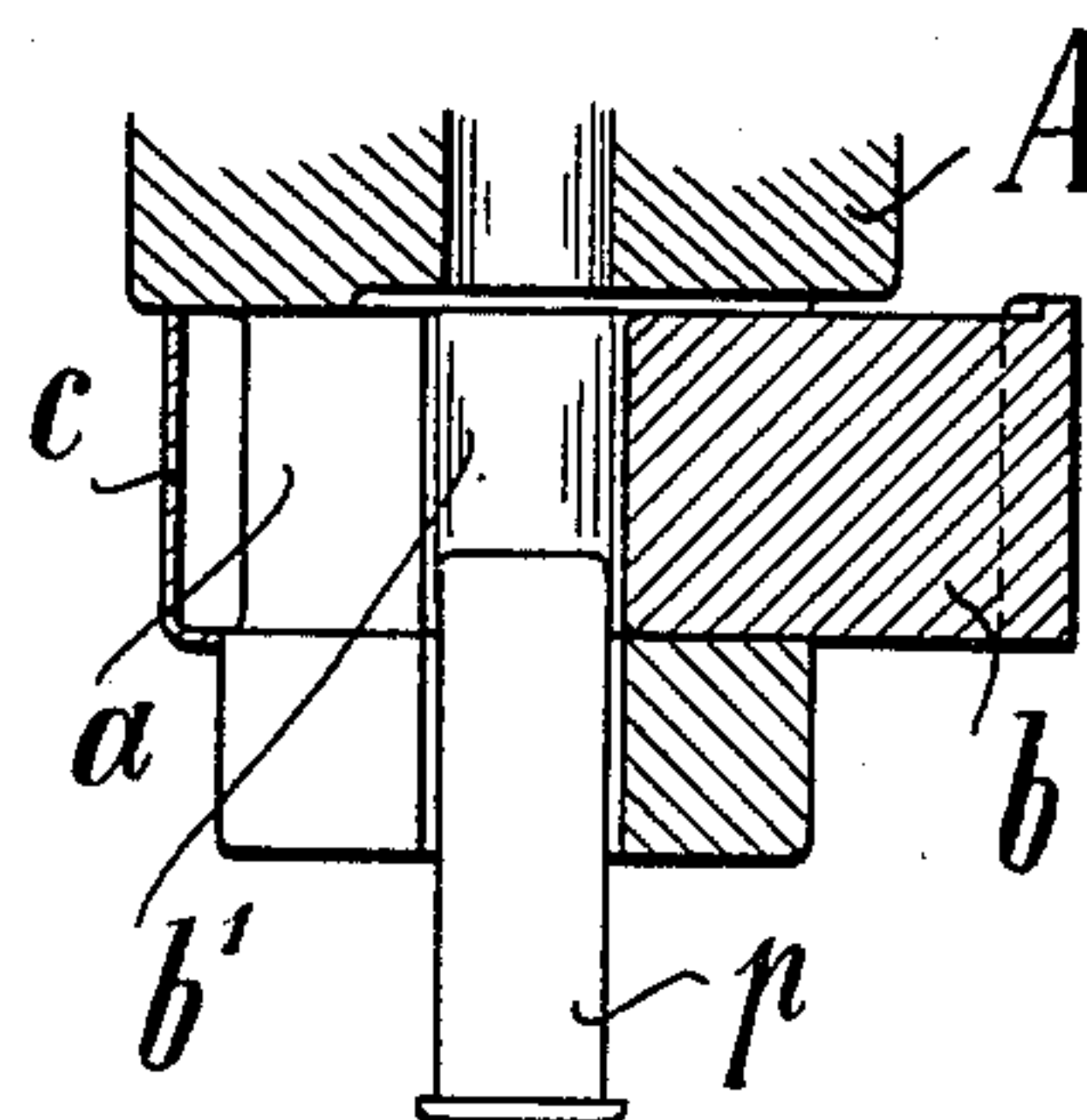


Fig. 3.



Witnesses.
J. M. Sturges.
A. O. Knight.

Inventors
Friedrich Bohn &
Franz Bündgens.
By Knight & Beas Attys.

No. 864,152.

PATENTED AUG. 27, 1907.

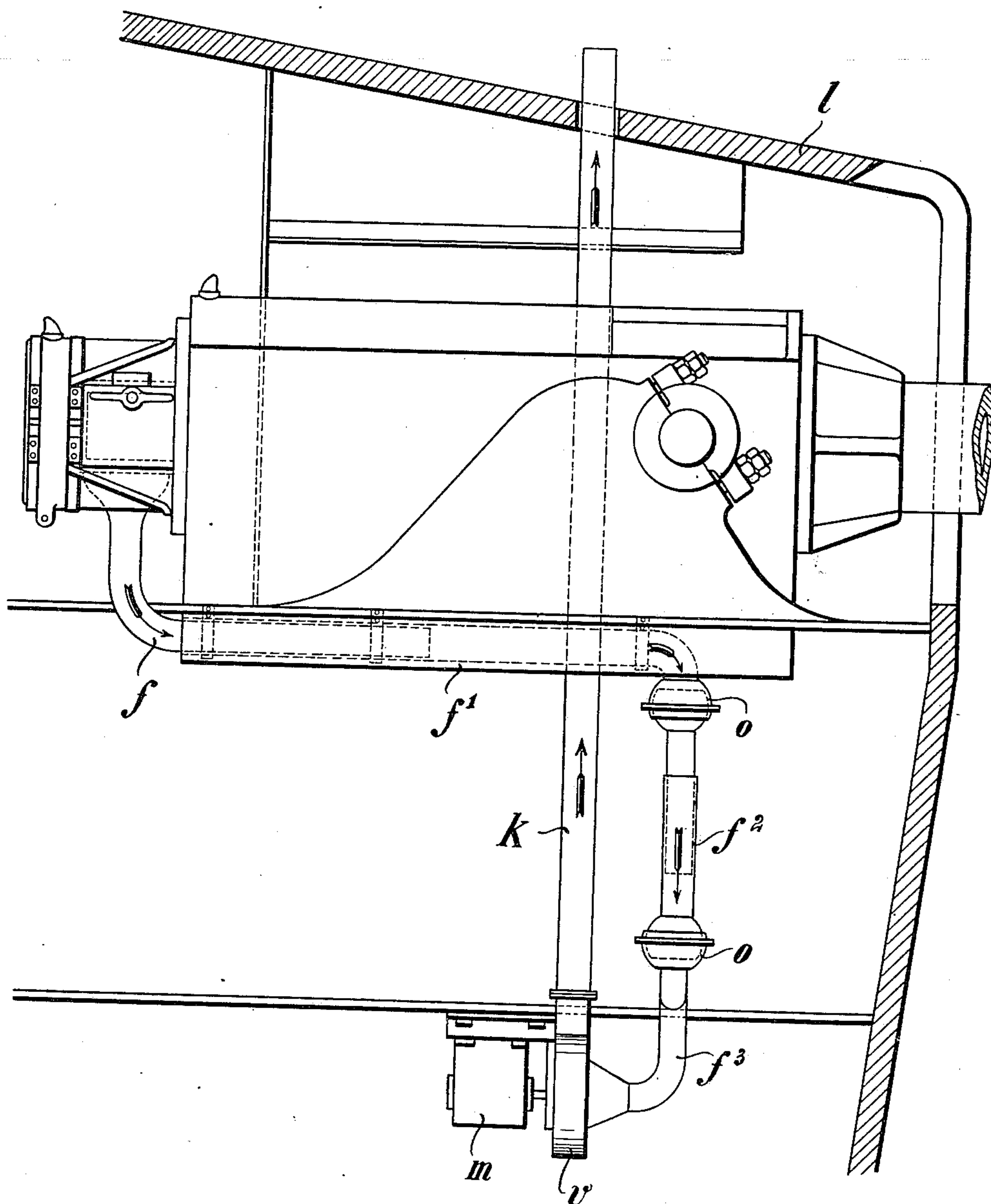
F. BOHN & F. BUNDGENS.

MEANS FOR REMOVING POWDER GASES FROM GUN BARRELS.

APPLICATION FILED OCT. 30, 1905.

3 SHEETS—SHEET 2.

Fig. 4.



Witnesses
J. M. O'Keefe
A. O. Knight.

Inventors
Friedrich Bohn and
Fritz Bündgens
By Knight Bros Attys

No. 864,152.

PATENTED AUG. 27, 1907.

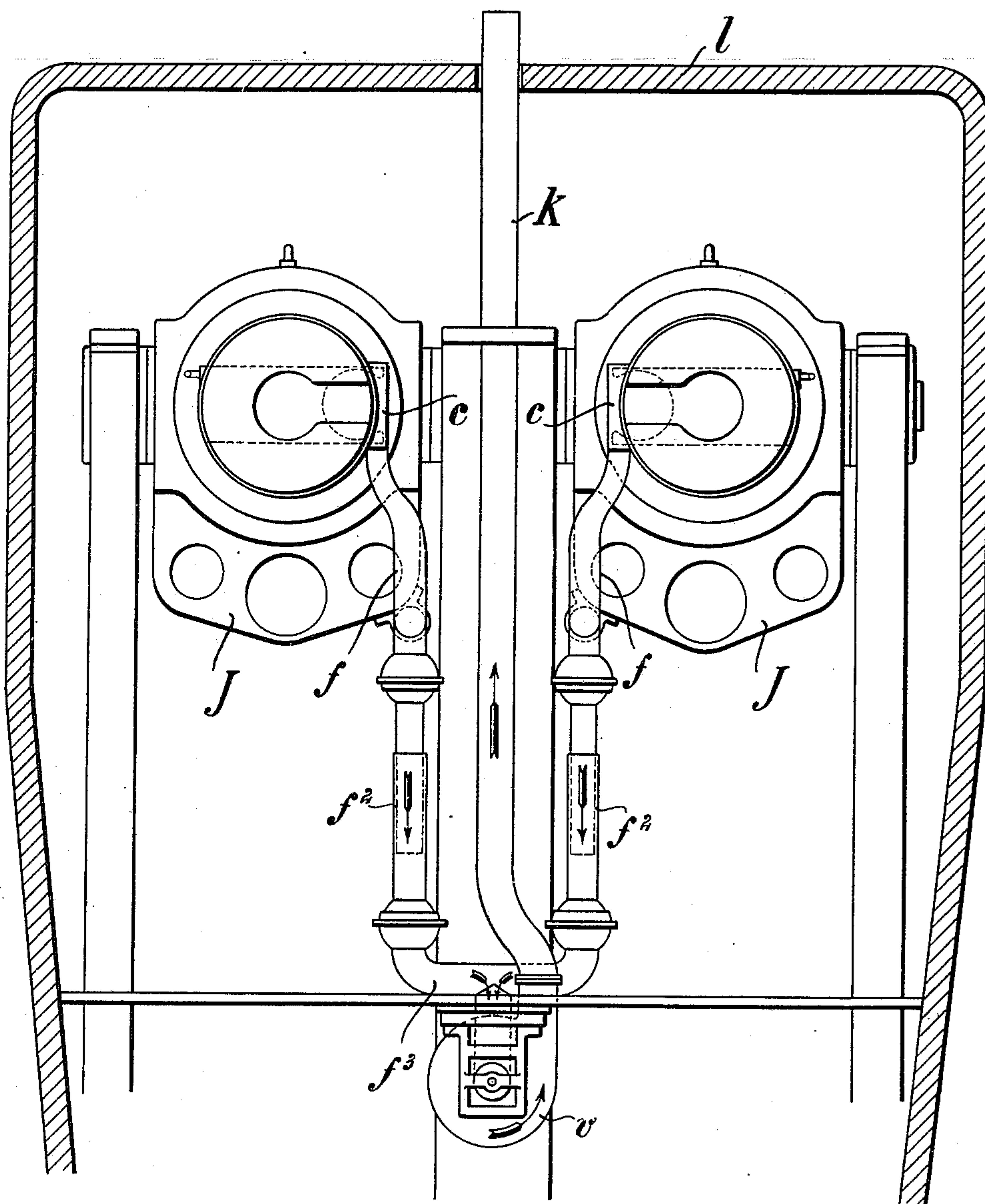
F. BOHN & F. BÜNDGENS.

MEANS FOR REMOVING POWDER GASES FROM GUN BARRELS.

APPLICATION FILED OCT. 30, 1906.

3 SHEETS—SHEET 3.

Fig. 5.



Witnesses
J. M. H. H. H.
A. O. Knight.

Inventors
Friedrich Bohn and
Fritz Bündgens
By Knight Bros Attys

UNITED STATES PATENT OFFICE.

FRIEDRICH BOHN AND FRANZ BUNDGENS, OF KIEL, GERMANY.

MEANS FOR REMOVING POWDER-GASES FROM GUN-BARRELS.

No. 864,152.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed October 30, 1905. Serial No. 285,071.

To all whom it may concern:

Be it known that we, FRIEDRICH BOHN and FRANZ BUNDGENS, both subjects of the Emperor of Germany, and residents, respectively, of 7-9 Sackgasse and 14 Wilhelmstrasse, Kiel, Prussia, Empire of Germany, have invented a certain new and useful Means for Removing Powder-Gases from Gun-Barrels, of which the following is a specification.

In heavy ordnance, when the breech is opened after firing, the serving crew is annoyed by powder gases blowing back through the breech opening of the gun-barrel. This annoyance is especially great when a gun is served from an inclosure such as an armored turret, and the gases cannot pass directly out into the open air. Several suggestions have been made for removing this drawback. For example, attempt has been made to produce indirect suction at the muzzle of the barrel, by means of a continuous current of compressed air. Such suction is, however, very weak and it may be entirely neutralized by an adverse wind. Moreover, the air current in such instance, does not move the gases to be drawn out, until the breech closure has been opened, and the empty shell removed, and therefore, not until powder gases have passed back through the breech. The desired result is, therefore, only partly, if at all attained. The same is true of methods which introduce compressed air into the breech opening after the breech-block and the empty shell are removed.

The desired results are fully attained by the means forming the subject-matter of the present invention, which for purposes of illustration, is shown applied to recoil-guns with wedge-breech-block.

Figure 1 shows a rear view of that portion of a gun with which the invention is associated and which is assumed to be mounted in an inclosure. Fig. 2 is the corresponding top view. Fig. 3 is a section through a part of Fig. 1, on 3-3, and showing the empty shell; the breech being open. Figs. 4 and 5 are side and rear views of another embodiment of the invention.

Reference will first be had to the embodiment shown in Figs. 1 to 3. A mantle *c* secured to the breech of the gun closes that part of the wedge-block opening *a* (Fig. 3) in which is found the loading aperture *b*¹, of the block *b*, when the breech is closed. Leading from the mantle *c* to a ventilator *v*, mounted with its motor *m* on a wall of the gun carriage, is a tubular conduit, which consists of several parts *f*, *f*¹, *f*² and *f*³, of which part *f* adjacent the mantle *c*, moves telescopically in the part *f*¹, while the part *f*¹ is secured to the cradle *J*, of the gun, by means of straps *i*. A similar connection exists between the part *f*¹ and one arm of the curved part *f*², while the other arm of *f*² is located above the horizontal trunnions of the gun, and rotatably arranged in one arm of the part *f*³, the other

arm of which is connected to the ventilator. A discharge pipe *k* leads from the ventilator to the cover *l* of the protective inclosure or armored turret. The ventilator is in continuous operation during firing. When the breech-block is closed the ventilator draws air from the serving aperture *n* (Fig. 1) of the breech so as to provide continuous ventilation of the turret. When the breech-block is opened, after firing, and the empty shell is simultaneously forced out, the ventilator completely withdraws the powder gases which remain in the gun barrel and shell, through the mantle *c* and the tubular conduit *f*, *f*¹, *f*² and *f*³, and conducts them out into the open air through the discharge-pipe *k*. When the gun is elevated, the curved pipe *f*² turns in the pipe *f*³ and at the same time a slight relative displacement of the parts *f*² and *f*¹ takes place. During the recoil of the gun-barrel *A* in the cradle *J* and during the return to battery, the part *f* moves longitudinally in the part *f*¹.

Figs. 4 and 5 show the invention applied to a double-gun mount erected in an armored turret. The suction conduits *f*, *f*¹ and *f*² of the two guns lead in this instance from the bottom of the mantle *c* and unite in a T-shaped pipe *f*³ which is connected to the ventilator *v*, which with the motor *m* is arranged on the lower platform of the turret. The blow-pipe *k* passes through the cover *l* of the turret, as in the first embodiment. The part *f*¹ of the suction conduit is secured on the cradle *J* by means of straps, and its end toward the closure has telescopic connection with the part *f* which is connected to the mantle *c*. The part *f*² consists of two relatively movable parts, one telescoping into the other, and it is connected to the parts *f*¹ and the T-shaped pipe *f*³ by means of ball-joints *o*. The operation of this embodiment with respect to the drawing off of the powder gases, is the same as that first described. In the elevation of the gun-barrel and during the recoil and return movements thereof, there is yielding of the parts to avoid interrupting the suction conduit.

Flexible tubes might be employed for the suction conduits, or for parts thereof, without departing from the scope of the invention.

Having thus described our invention, what we claim as new is:—

1. In a gun, means creating a suction through the breech opening in a direction to remove the powder gases from the barrel through said opening after each firing.

2. A gun having means creating a constant suction through and around the breech opening of the gun during firing, in a direction to remove the gases in the barrel through said opening.

3. A gun having an inclosure around its breech opening and means creating suction within such inclosure, in a direction to withdraw gases from the barrel through the breech opening.

4. In a gun, means mounted upon a fixed part for cre-

ating a suction, and a yielding connection leading from said suction producing means to the breech opening of the gun.

5. In combination with a recoiling gun having a breech closure, means mounted upon a fixed part of the gun for creating suction and a suction conduit leading to and connected with the breech opening of the gun and constructed to permit such recoil movement as well as vertical and horizontal training movements in the gun barrel.

The foregoing specification signed at Kiel, Germany, 10 this 14th day of October, 1905.

FRIEDRICH BOHN.
FRANZ BUNDGENS.

In presence of—

JULIUS RÖPKE,
FERDINAND ROHWOLDE.