

(No Model.)

F. TITTMANN.
GUN BARREL.

No. 559,550.

Patented May 5, 1896.

Fig. 1.

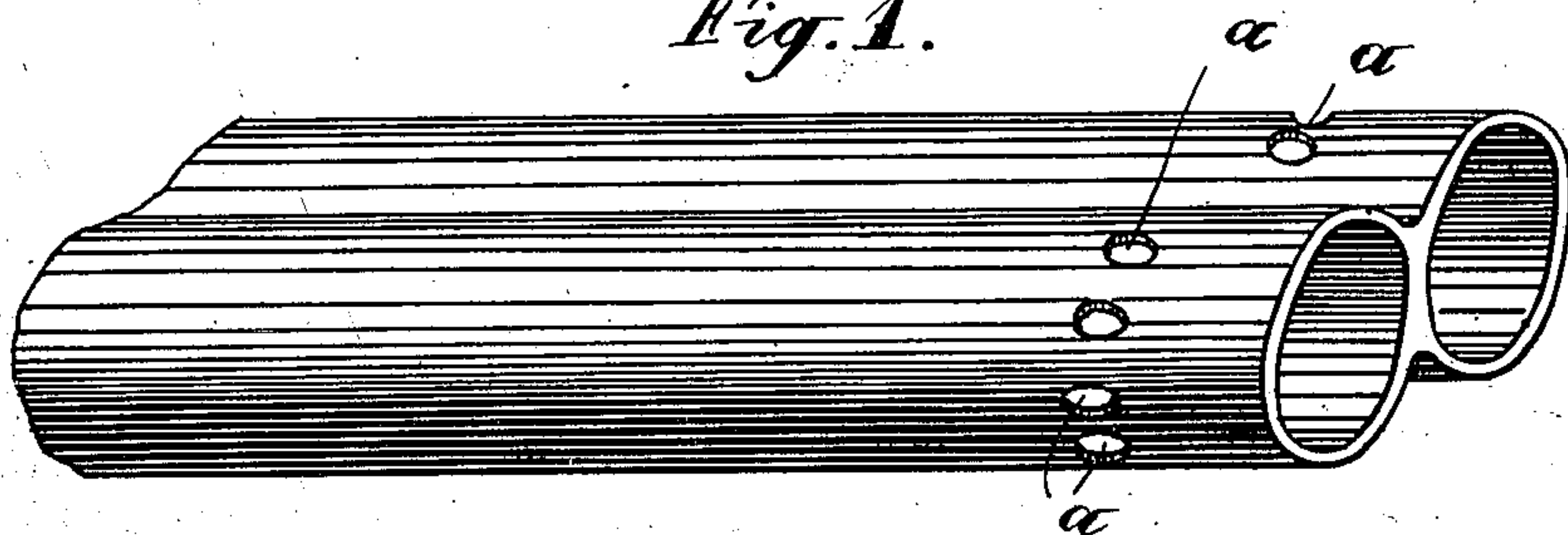


Fig. 2.

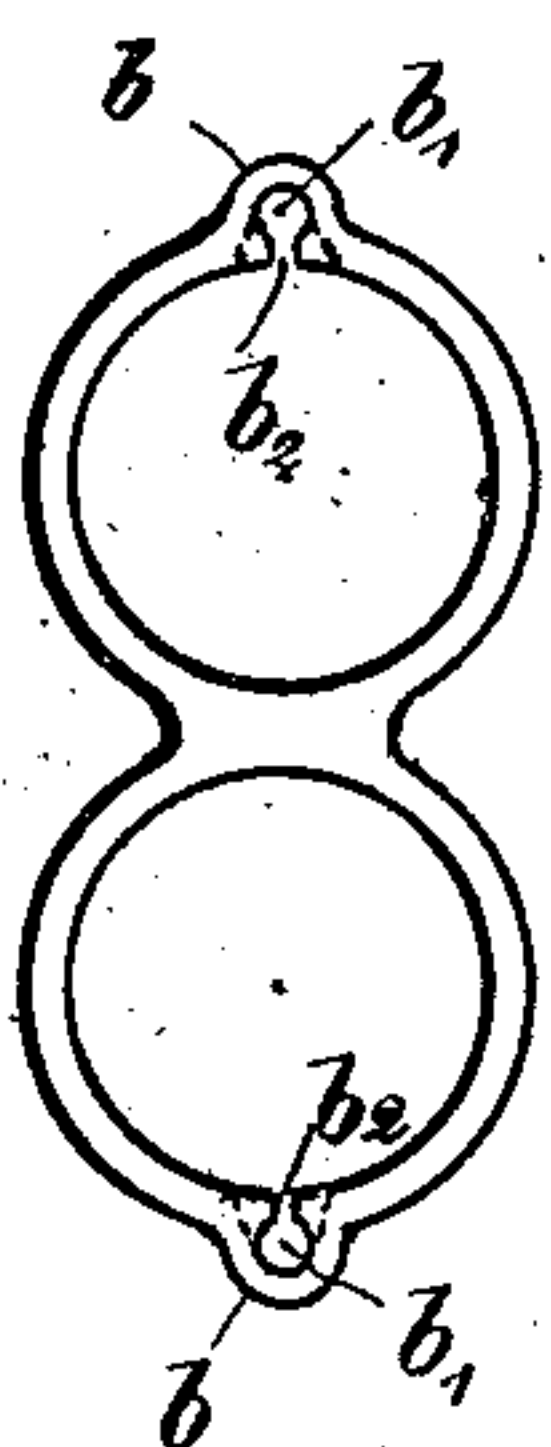
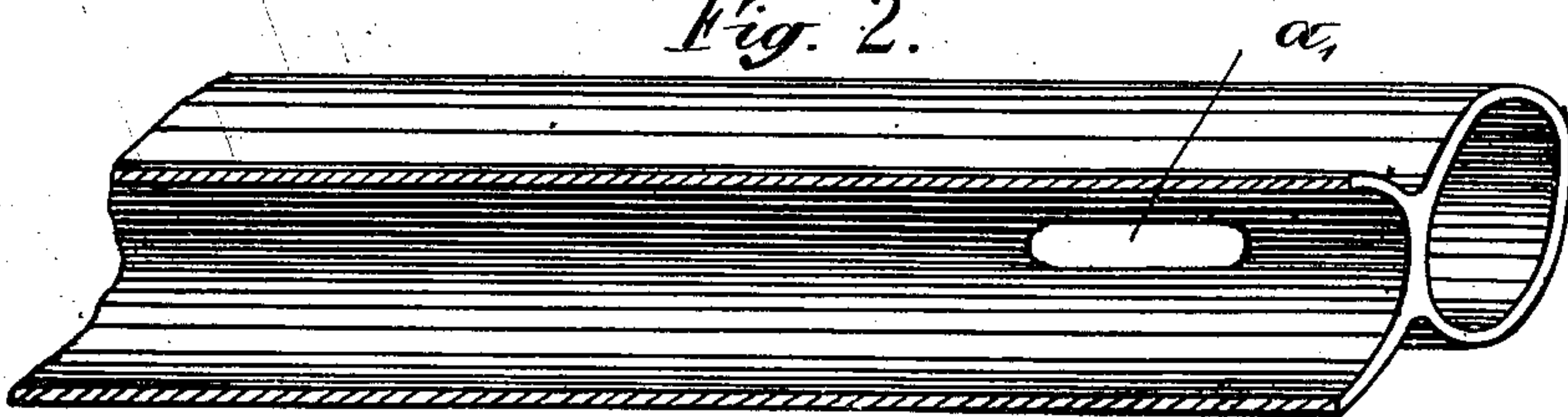


Fig. 3a.

Fig. 3.

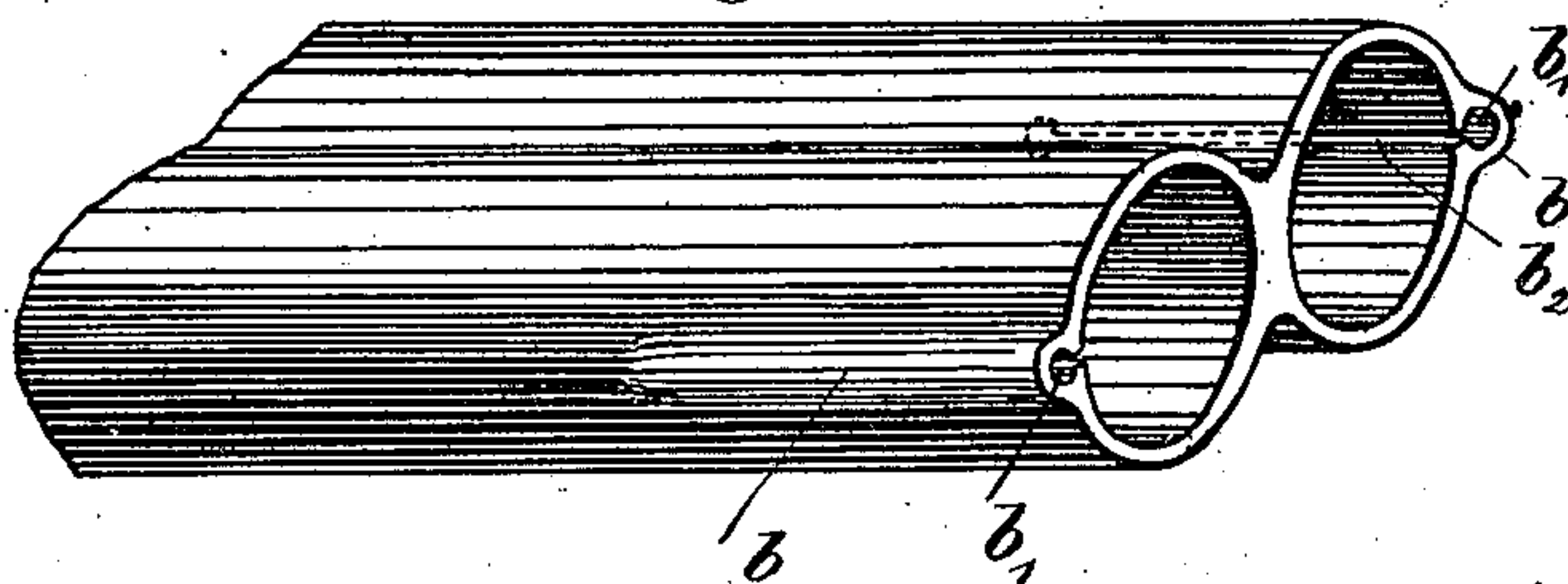
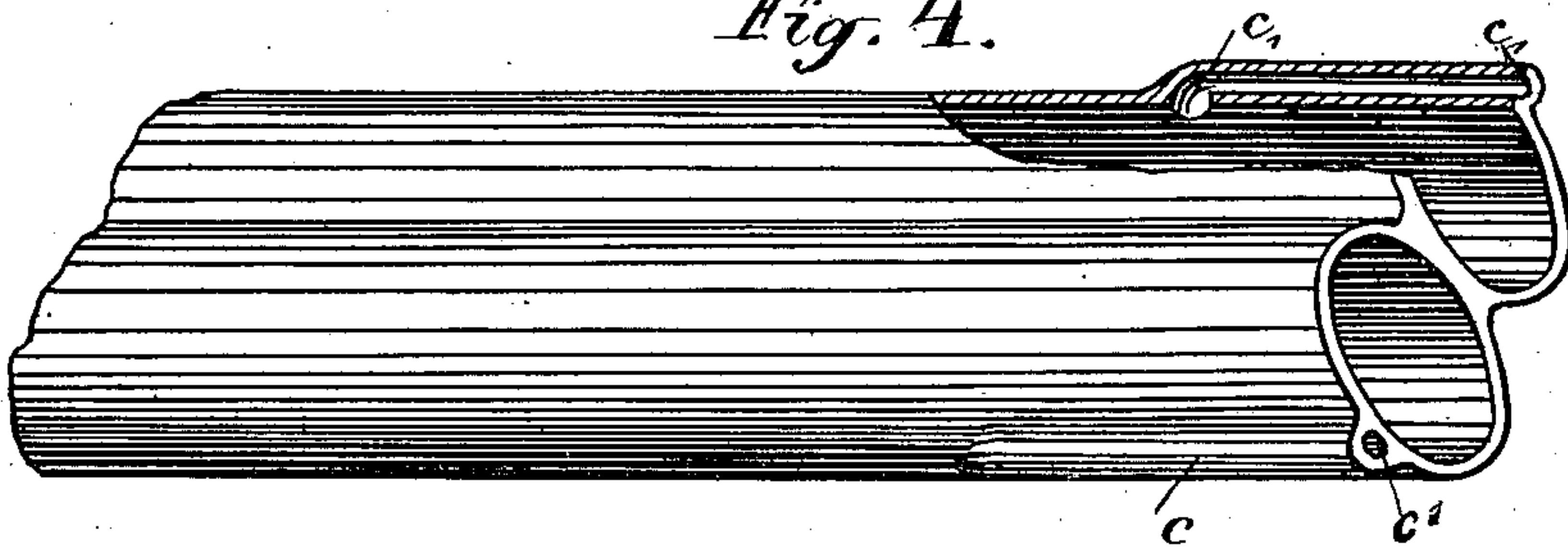


Fig. 4.



Witnesses:

W. H. Berg
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per
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UNITED STATES PATENT OFFICE.

FRANZ TITTMANN, OF PODERSAM, AUSTRIA-HUNGARY.

GUN-BARREL.

SPECIFICATION forming part of Letters Patent No. 559,550, dated May 5, 1896.

Application filed June 22, 1895. Serial No. 553,648. (No model.) Patented in France April 29, 1895, No. 246,972; in Belgium April 29, 1895, No. 115,350; in England April 29, 1895, No. 8,451; in Switzerland April 29, 1895, No. 10,365; in Norway April 29, 1895, No. 4,283; in Luxemburg April 30, 1895, No. 2,294; in Hungary May 11, 1895, No. 2,759; in Italy June 30, 1895, XXX, 38,731, LXXVI, 36; in Spain August 26, 1895, No. 17,373, and in Denmark February 26, 1896, No. 417.

To all whom it may concern:

Be it known that I, FRANZ TITTMANN, a subject of the Emperor of Austria, residing at Podersam, in the Province of Bohemia, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Barrels for Shotguns, (for which I have obtained the following patents in foreign countries: in Hungary, No. 2,759, dated May 11, 1895; in France, No. 246,972, dated April 29, 1895; in Belgium, No. 115,350, dated April 29, 1895; in England, No. 8,451, dated April 29, 1895; in Switzerland, No. 10,365, dated April 29, 1895; in Denmark, No. 417, dated February 26, 1896; in Norway, No. 4,283, dated April 29, 1895; in Italy, R. G., Vol. XXX, No. 38,731, R. A., Vol. LXXVI, No. 36, dated June 30, 1895; in Luxemburg, No. 2,294, dated April 30, 1895, and in Spain, No. 17,373, dated August 26, 1895,) of which the following is a specification.

My invention relates to improvements in the barrels of shotguns, and has for its special object to prevent or diminish the dispersion of the shots while they are leaving the muzzle. If the volley of shots discharged from the barrel of a pistol—say Lancaster, caliber 16—is compared with that discharged from the barrel of a shotgun of same construction and caliber, and provided that both contained exactly the same charge, then the following differences are observed: The shots issued from the pistol show greater dispersion and less force of penetration, while the shots issued from the shotgun show greater force of penetration and less dispersion. This difference is an apparent contradiction. The greater force of penetration causes a greater resistance of the air, and consequently a deformation of the shots. Therefore the dispersion ought to be greater, while the contrary is the case.

My invention is based upon the perception of this fact. The stated difference in the force of penetration of the shots proves that the velocity of the shots in the barrel of the shotgun increases from the point of the barrel corresponding with the muzzle of the pistol until they reach the muzzle of the shotgun-barrel. The dispersion of the shots is

owing to the fact that the front portion of the column of the shots, while being just beyond the muzzle, is no longer laterally restrained by the inner walls of the barrel and is retarded by meeting the resistance of the air, while the rear portion of the column, which is still within the barrel, is forced forward into the front portion, thus causing it to spread laterally. In order to prevent this, I have constructed a novel barrel for shotguns which is provided with one or more openings near the muzzle of the barrel, and if more than one are provided then the openings are at equal distance from the muzzle. The opening or openings form an outlet for the powder-gases, thus diminishing their pressure while the column of shot is issuing from the muzzle.

My invention thus effects an artificial relieve of acceleration for the rear portion of the shots.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the front portion of a double barrel with openings *a* in each barrel and at equal distance from the muzzle. Fig. 2 is a perspective view of a double barrel, of which one is in section, showing an elongated opening *a'* communicating with both barrels. Fig. 3 is a perspective view of a double barrel with projecting tubular portions *b*, of which each communicates by a slit *b²* with the interior having round openings *b'* on the muzzle. Fig. 3^a is a front elevation of the muzzle of Fig. 3. Fig. 4 is a modification of Fig. 3, partly in section, showing the projecting tubular portion *c*, which forms a canal and communicates with the interior of the barrel by openings *c'*.

I do not limit myself, however, to any form or shape of these openings. They may also be annular, square, polygonal, or of any other suitable shape. The location and the area of the openings necessarily vary with the dimensions and style of the barrels. They depend, further, upon the caliber and the form of the barrel, whether it be conical or cylindrical. They depend also upon the interior of the barrel, whether it be rough or smooth,

and of the nature of the explosive substance employed. There is, further, a certain relation between the area or size of the opening and the distance of the same from the muzzle. Distance and area of the opening vary in a retrograde ratio. For instance, a barrel having a small opening at greater distance from the muzzle is as effective as a barrel with a larger opening nearer to the muzzle. For example, a barrel of about five-eighths of an inch caliber may advantageously be provided with an outlet of about one-eighth of an inch in diameter at a distance of about two inches from the muzzle. All the openings, however, must be provided at such distance from the muzzle that the discharge of the powder-gases begins just in that moment in which the first portion of shot begins to issue from the muzzle or right before this moment. If it is feared that the barrel is weakened by these openings when heavy charges of powder or other explosives are employed, then the same may be provided with strengthening bands or rings.

Having thus described my invention, what

I claim therein as new, and desire to secure by Letters Patent, is—

1. A double barrel for shotguns provided near the muzzles with an elongated opening which communicates with both barrels, substantially as described and for the purpose set forth.

2. A barrel for shotguns provided with projecting tubular portions on the front part of the barrel of which each communicates with the interior by a slit throughout the whole length of the tubular portion and having an opening at the front end, as specified.

3. A barrel for shotguns being provided with projecting tubular portions on the front part of the barrel forming canals which communicate with the interior of the barrel by openings, as specified.

In testimony whereof I have signed this specification in presence of two subscribing witnesses.

FRANZ TITTMANN.

Witnesses:

TAROSLAU CIETEL,
SAM FISCHER.