

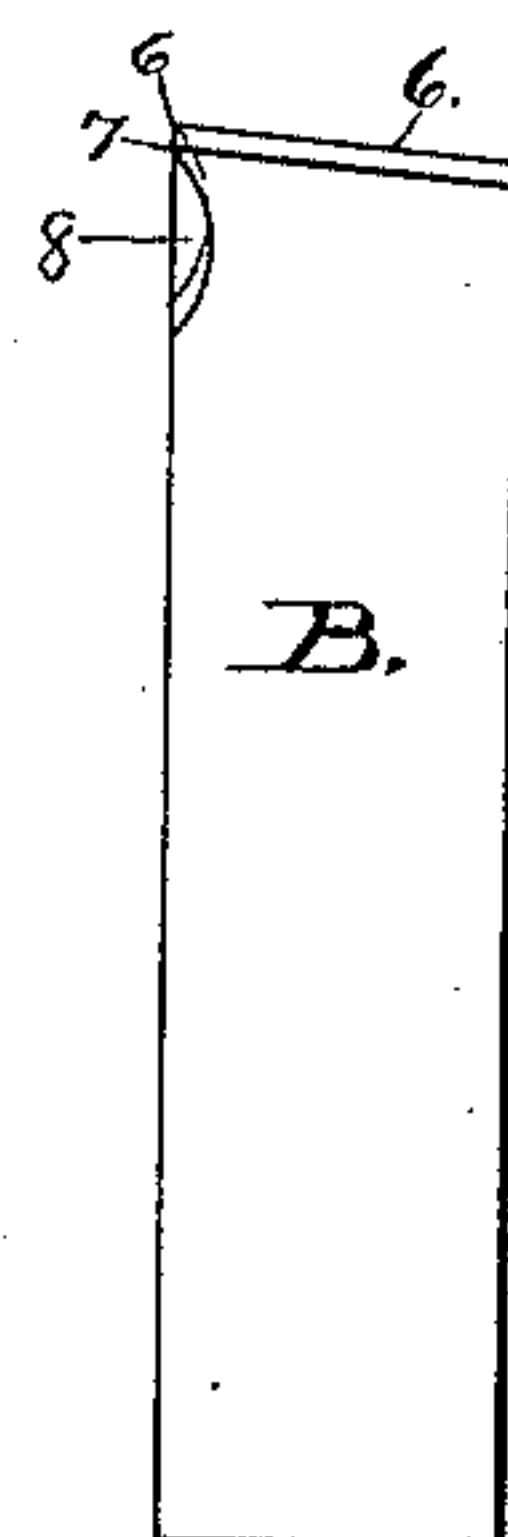
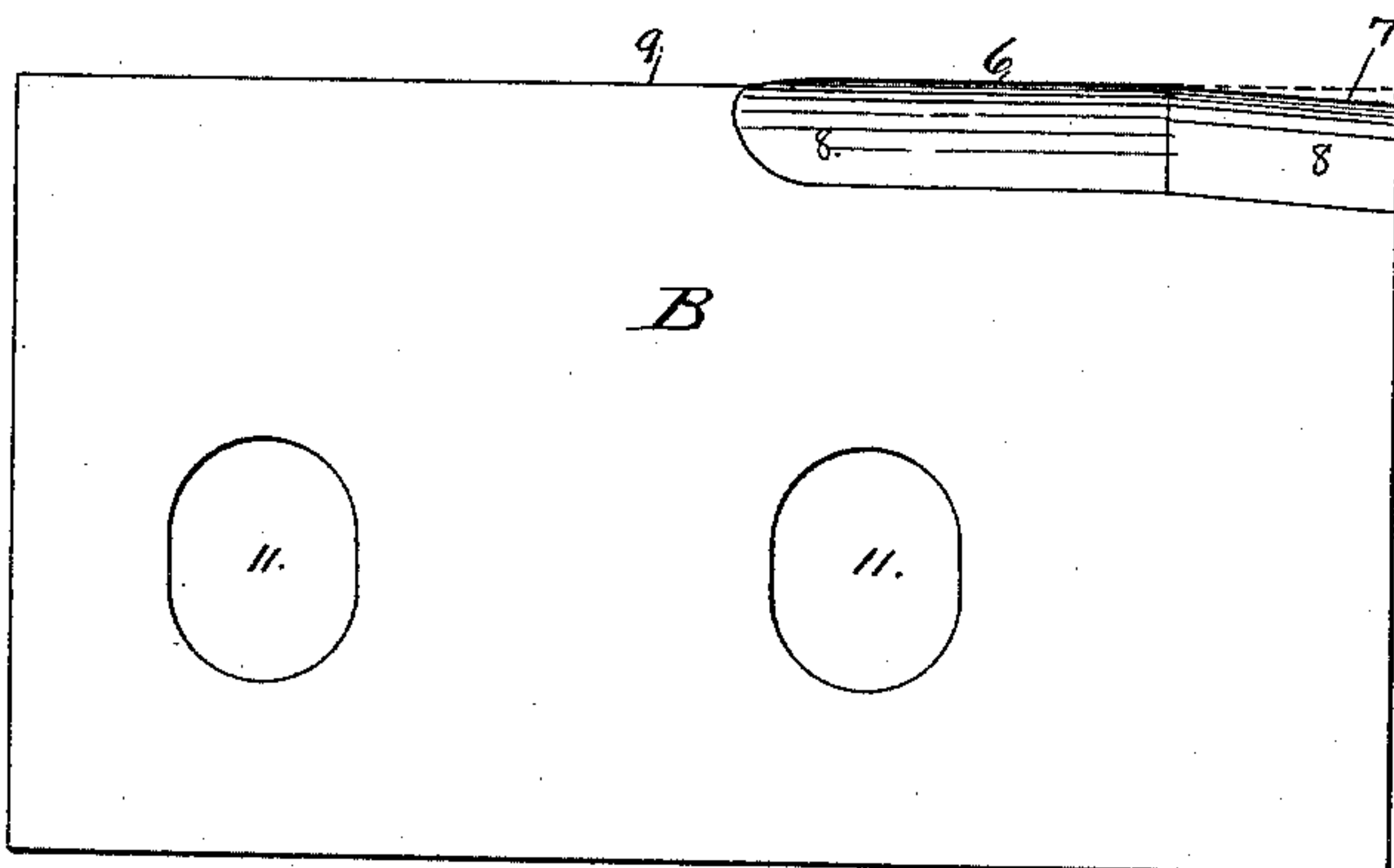
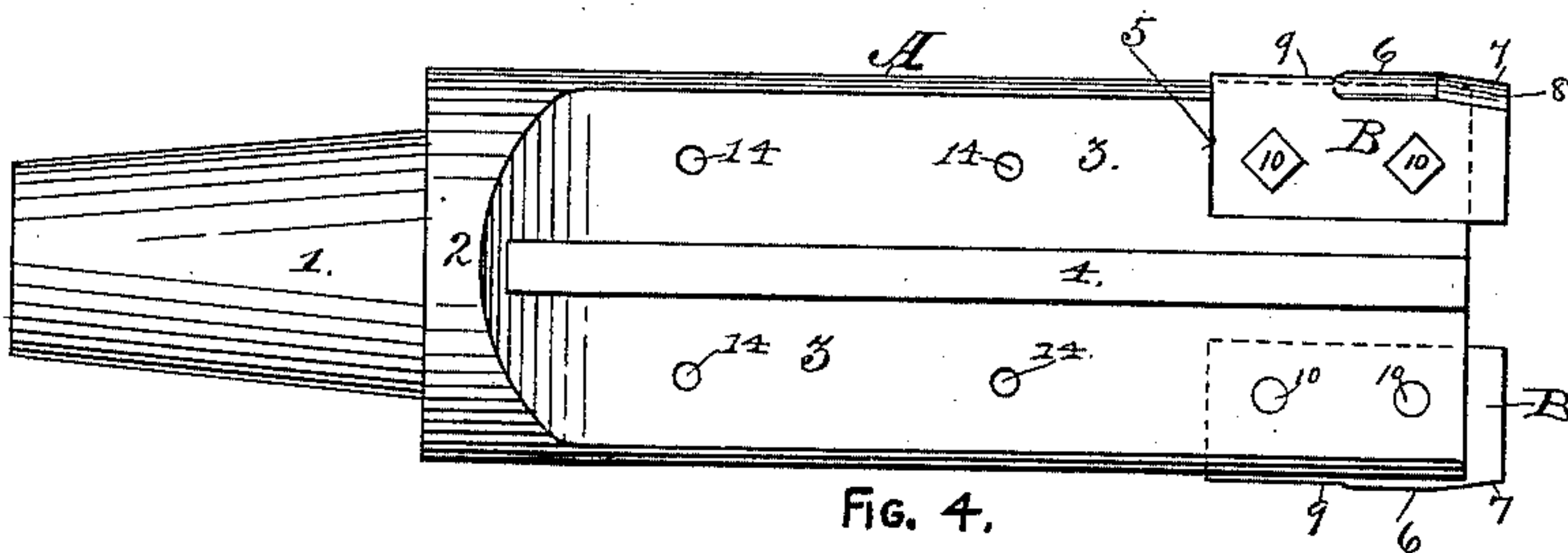
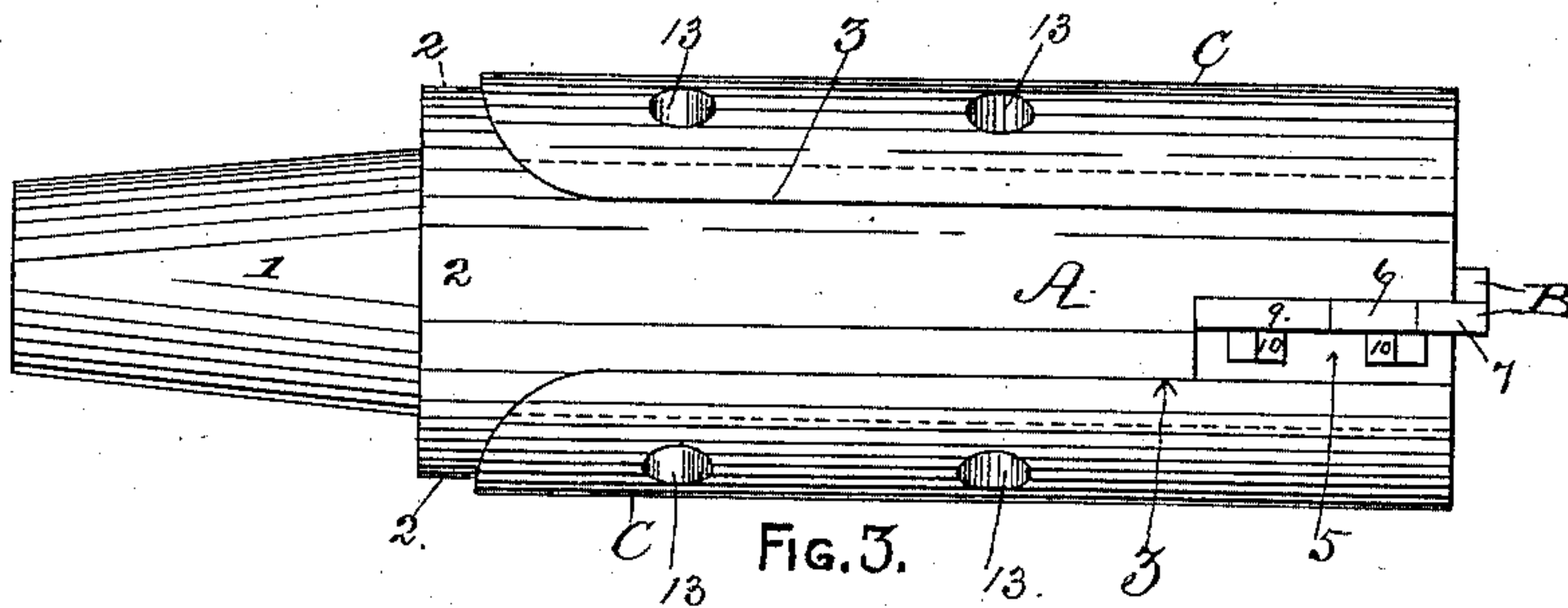
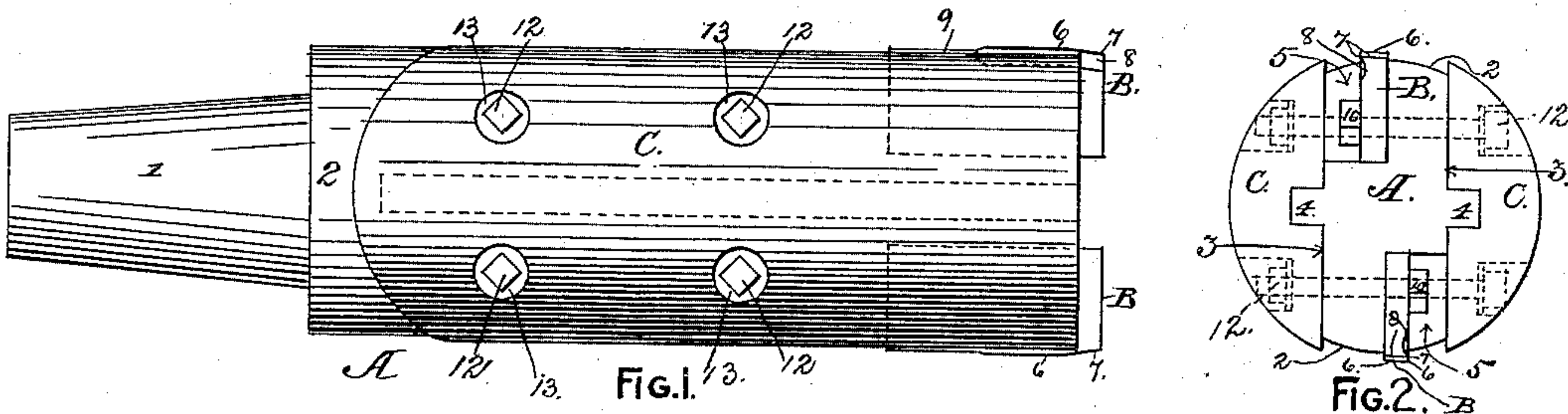
(No Model.)

G. GERDOM.

TOOL FOR BORING BREECH LOADING ORDNANCE.

No. 466,869.

Patented Jan. 12, 1892.



WITNESSES:

*B. B. Brewer,*  
*J. H. Reynolds*

INVENTOR:

GREGORY GERDOM,

BY *William H. Low.*

ATTORNEY.



# UNITED STATES PATENT OFFICE.

GREGORY GERDOM, OF WEST TROY, NEW YORK, ASSIGNOR OF ONE-HALF  
TO JOHN H. REYNOLDS, OF SAME PLACE.

## TOOL FOR BORING BREECH-LOADING ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 466,869, dated January 12, 1892.

Application filed September 15, 1891. Serial No. 405,744. (No model.)

*To all whom it may concern:*

Be it known that I, GREGORY GERDOM, of West Troy, in the county of Albany and State of New York, have invented new and useful Improvements in Tools for Boring Breech-Loading Ordnance, of which the following is specification.

Heretofore great difficulty has been experienced in obtaining a true and uniform bore for the modern form of steel breech-loading ordnance on account of the extreme length of the same, and to a great extent this imperfection of the bore has been occasioned by the ineffectiveness of the cutter mechanism used for boring the guns.

The object of my invention is to remedy these defects; and I attain this object by the means illustrated in the accompanying drawings, which are herein referred to and form part of this specification, and in which—

Figure 1 is a side elevation of a cutter-head provided with my improvements. Fig. 2 is an end elevation of the same. Fig. 3 is a plan view. Fig. 4 is a side elevation of said cutter-head with one of the cheek-blocks removed therefrom. Fig. 5 is an enlarged and detached side elevation of my improved form of cutter, and Fig. 6 is an end elevation of said cutter.

As represented in the drawings, A designates my cutter-head, which is generally made of cast metal and is provided with a shank 1 or other suitable means for securing said cutter-head to the end of a cutter-bar of the form commonly used for boring breech-loading ordnance. Said shank projects from the end of a cylindrical portion 2 of said cutter-head. A flattened portion 3 of said cutter-head extends longitudinally from said cylindrical portion, and each plane face of said flattened portion is provided with a longitudinal tongue 4, and said tongues are preferably arranged to be diametrically opposite to each other. At the outer extremity of said cutter-head rectangular recesses 5 are formed for receiving the detachable cutters for said cutter-head. The back of each of said recesses constitutes a seat for attaching one of said cutters thereto, and each of said backs ranges on the diametrical center line of said cutter-head in such manner that the two recesses will be located at opposite sides of said line

and, as shown in Fig. 2, at opposite edges of the flattened portion of said cutter-head.

B designates the cutters for my cutter-head. Said cutters are made of steel in the form of flat plates, which, after being properly shaped, are tempered to the required degree of hardness to effect the cutting away of the metal in the process of boring the gun. The finishing part 6 of said cutter is made parallel to the centerline of the cutter-head A and of such size that when secured in place on said cutter-head it will bore the gun to the required caliber, and the leading part 7 of said cutter is slightly inclined toward the center line of the cutter-head A, whereby said cutter-head and cutters are adapted to enter the primary bore of the gun and effect the finishing cut of the bore of the gun, the tapering portion of the cutters B effecting the removal of the surplus metal and the straight portion of said cutters effecting the finishing of the bore of the gun to the required caliber in a very smooth and perfect manner. A groove 8, which follows the outline of the parts 6 and 7, is formed on the working side of the cutters B, and thereby a sharp cutting-edge is produced on the parts of the cutters which are above designated as the "leading" and "finishing" parts. Immediately following the finishing part of each cutter the latter is reduced in width, as at 9, to give sufficient clearance for the cutters to prevent injury to the bore of the gun after the finishing part 6 has properly performed its work. Each of said cutters is secured in the recess 5 appropriated thereto by means of bolts 10, and each of the cutters is provided with bolt-holes 11, which are slotted toward the edges of the cutters, so as to allow the latter to be adjusted from and toward the center line of the cutter-head A.

C designates the cheek-blocks, which are preferably made of wood and secured by means of bolts 12 to the opposite flat faces of the flattened portion 3 of the cutter-head A. Said bolts are inserted in counterbored holes 13 in said cheek-blocks and pass through bolt-holes 14 in the cutter-head A. The face of each cheek-block which comes in contact with the flattened portion of the cutter-head is provided with a longitudinal groove that fits snugly onto the tongue 4 of the correspond-



ing side of said cutter-head. After the cheek-  
blocks C are properly secured to the cutter-  
head A they should be turned off to the exact  
diameter to which the bore of the gun is to  
5 be finished, whereby the segments of a cylinder, as shown in Fig. 2, will be produced, and  
said segments, by fitting snugly into the bore  
of the gun, will hold the cutter-head in a steady  
position, and thereby prevent the production  
10 of a chattering cut in the bore of the gun.

My improvements are specially designed  
for boring breech-loading ordnance made of  
steel or wrought-iron in which a preliminary  
bore less in diameter than the finished bore  
15 of the gun has been made longitudinally  
through the entire length of the forging for  
the gun. Said preliminary bore of said forging  
should be sufficiently large to permit the  
contracted end of the cutters B, when attached  
20 to the cutter-head A, to enter freely into said  
bore.

What I claim as my invention, and desire  
to secure by Letters Patent, is—

1. In a tool for boring ordnance, a cutter  
25 which has at its foremost end a cutting-edge  
that is slightly inclined to the line of the cen-  
tral axis of said tool and immediately succeed-

ing said inclined cutting-edge, but continu-  
ously therewith, and a cutting-edge that is par-  
allel with said central axis, said cutting-edges 30  
having the form of a sharp lip, which is pro-  
duced by a groove or gutter formed in the  
face of the cutter to conform to the outline of  
the corresponding edge of said cutter, as and  
for the purpose herein specified. 35

2. In a tool for boring ordnance, the com-  
bination of a cutter-head having a flattened  
portion whose opposite faces are each pro-  
vided with a tongue or rib arranged longitudi-  
nally thereon, each of said faces having a re- 40  
cess for containing a cutter, removable cut-  
ters secured in said recesses by means of  
screws or bolts, and segmental cheek-blocks  
whose flat faces are provided with longitudi-  
nal grooves fitted to engage on the tongue of 45  
said cutter-head, said cheek-blocks being se-  
cured to said cutter-head by means of bolts  
and being turned to conform to the caliber of  
the gun for which it is used, as and for the  
purpose herein specified.

GREGORY GERDOM.

Witnesses:

J. H. REYNOLDS,  
WM. H. LOW.

It is hereby certified that the residence of the assignee in Letters Patent No. 466,869, granted January 12, 1892, upon the application of Gregory Gerdon, of West Troy, New York, for an improvement in "Tools for Boring Breech-Loading Ordnance," was erroneously written and printed "of same place," whereas said residence should have been written and printed *Troy, New York*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 2d day of February, A. D. 1892.

[SEAL.]

CYRUS BUSSEY,  
*Assistant Secretary of the Interior.*

Countersigned:

W. E. SIMONDS,  
*Commissioner of Patents.*