

(No Model.)

2 Sheets—Sheet 1.

C. M. WOLLAM.
BREECH LOADING FIREARM.

No. 498,043.

Patented May 23, 1893.

Fig. 1.

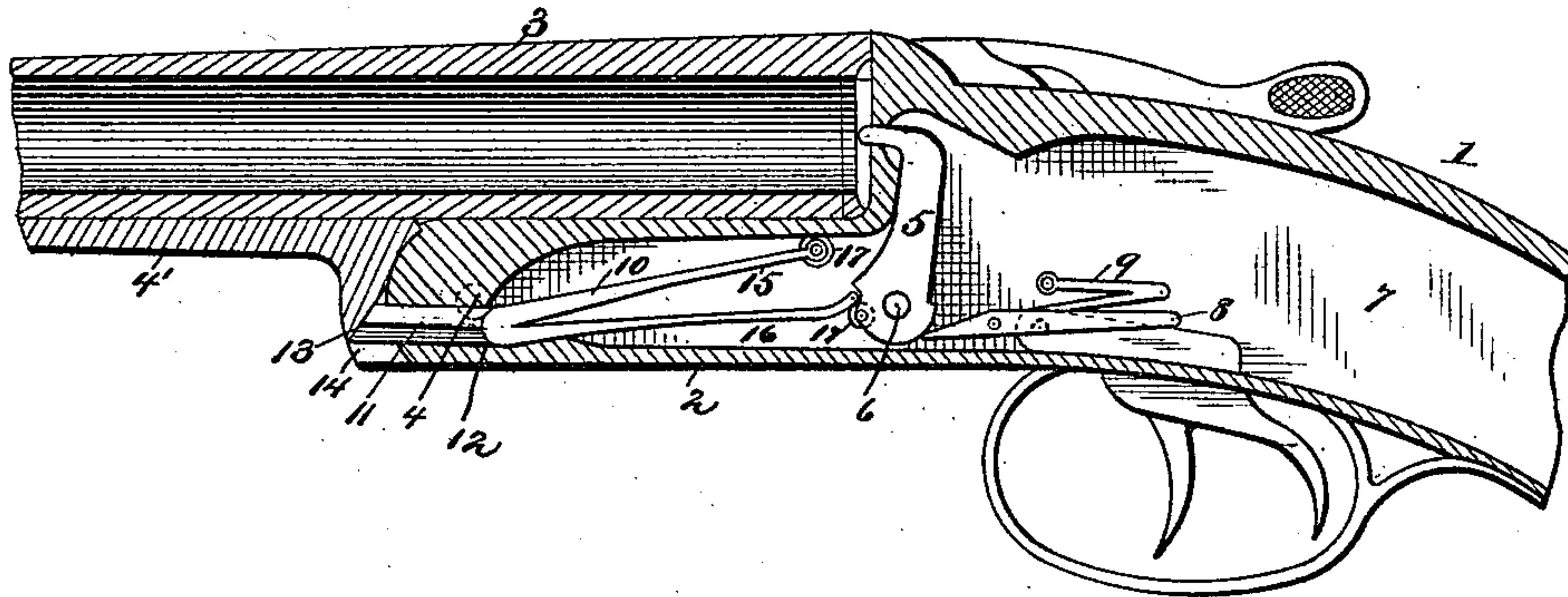


Fig. 2.

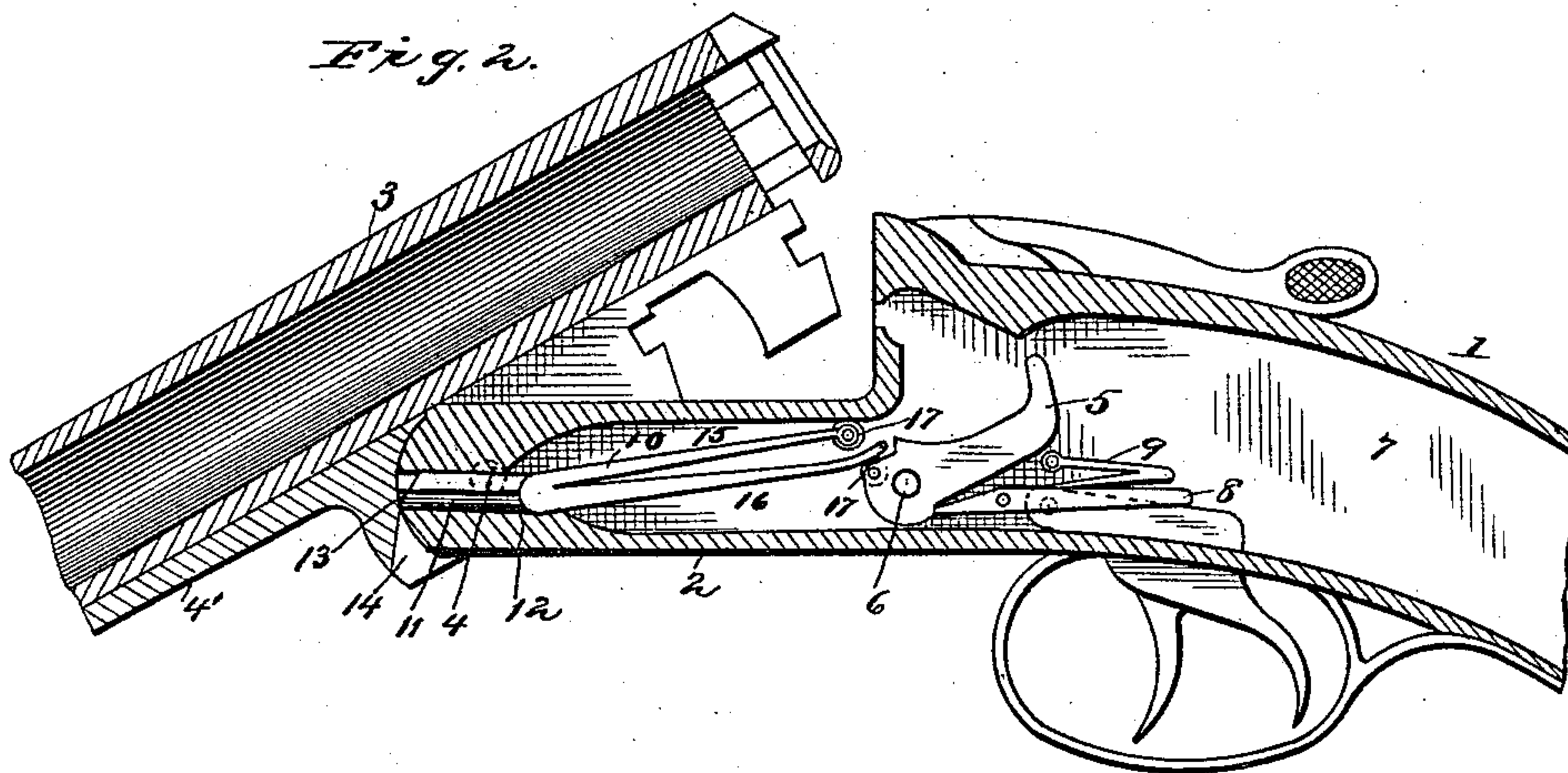
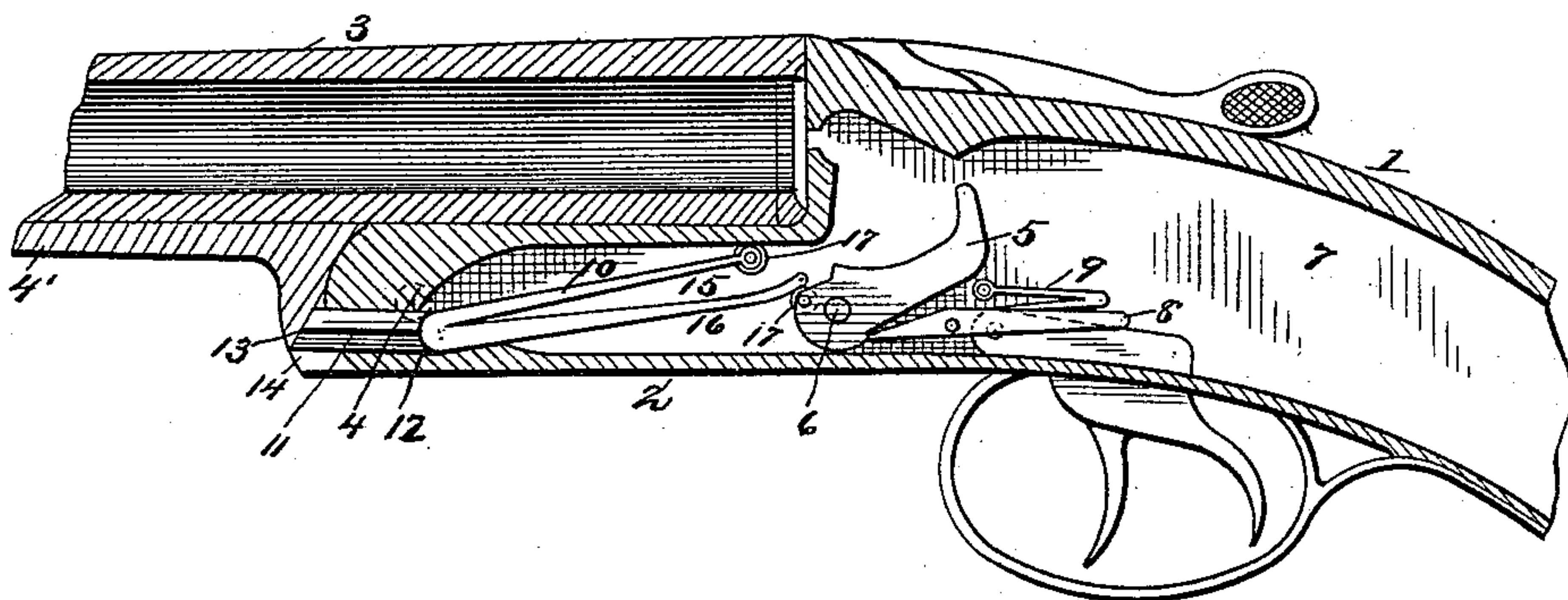


Fig. 3.



Witnesses:
J. M. Fowler Jr.
Fletcher Johnson

Inventor—
C. M. Wollam

By *Robert Mason,*
Attorney.

UNITED STATES PATENT OFFICE.

CLARENCE M. WOLLAM, OF SAN FRANCISCO, CALIFORNIA.

BREECH-LOADING FIREARM.

SPECIFICATION forming part of Letters Patent No. 498,043, dated May 23, 1893.

Application filed December 8, 1892. Serial No. 454,533. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE M. WOLLAM, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Breech-Loading Firearms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates, generally, to breech-loading fire-arms and, particularly, to improvements in that class thereof in which the barrels are hinged or pivoted to the frame at points forward of their breech ends, so that the rear ends of the barrels may be swung upwardly for opening or exposing the cartridge-chambers, and in which the hammers are concealed within receivers in the frames and brought to their cocked positions during the opening movement of the barrels, this class of arms being usually double-barrel, but this invention is equally applicable thereto and to single-barrel and other break-down guns; and it consists in the peculiarities of construction and arrangement or combination of parts and features hereinafter fully disclosed in the description, claims and drawings.

The objects of my invention are, first, to provide improved means for effecting the cocking of hammers by the direct contact therewith of the mainsprings, which, during the opening of the barrels and the simultaneous cocking of the hammers, will be compressed to a very great degree of tension for imparting the necessary force to the hammers when they are released, and which, during the closing of the barrels, and after the hammers have been fully cocked, will automatically move forward slightly, independently of the hammers, and place themselves in the most advantageous positions for giving great momentum to said hammers, after they have been released from the sears, and, second, to provide novel and improved lock-mechanism of this character which will be simple or of but few parts, light and strong in construction, not liable to undue strain or wear at any point and comparatively inexpensive to manufacture. These objects are accomplished by the improved construction and arrangement

or combination of parts illustrated in the accompanying drawings forming part of this specification, in which the same reference numerals indicate the same or corresponding parts and features, and in which—

Figure 1 represents the preferred form or construction of my invention, in which a short, sliding rod or piston is employed for pushing the mainspring rearwardly and causing it to fully cock the hammer, the view being a longitudinal section through parts of the frame, the fore-end thereof and one of the barrels and showing the lock-mechanism in side elevation, its parts being in the positions they assume when firing has occurred; Fig. 2, a similar view, showing the parts in the positions they occupy when the barrel has been thrown open and the mainspring has been fully contracted and moved to its greatest extent rearwardly for cocking the hammer; Fig. 3, a similar view to and with its parts in the same positions as Fig. 1, except that the hammer is shown as fully cocked and as held in that position by the sear, while the mainspring is shown in its firing position or slightly forward of that in Fig. 2; Figs. 4, 5 and 6, views the same as those just described and showing a modified form or construction of the invention, in which the mainspring is pushed rearwardly and caused to cock the hammer by the action of a rock-shaft and, Fig. 7, a view similar to Figs. 1 and 4 and showing another modification in the devices for moving the mainspring and cocking the hammer, this device being a bell-crank lever.

In the drawings the numeral 1 indicates the frame of the receiver, from which the arm 2 projects forwardly and beneath the barrels 3, which are hinged or pivoted upon the rigid or fixed body-pin 4; also, the fore-end 4' is secured to and beneath said barrels, which, on being raised at their rear ends, will open the breech and which, by a reverse movement, will close the same, in the usual manner. Each of the hammers 5, in a single or double barrel gun, is mounted or hinged upon the transverse pin or pivot 6, arranged and concealed within the receiver 7, and provided with a nose at its upper end which passes through an opening in the breech end of said receiver for striking a primer, or it may be constructed and arranged for striking a fir-

ing-pin, as usual. In rear of said hammer are respectively pivoted and secured the sear 8 and sear-spring 9 for the usual purposes.

Each of the V-shaped and flattened-steel mainsprings 10 is loosely supported at both ends, or is not pivoted or rigidly fastened to any hammer lever, link or other device at either end, is longitudinally arranged and movable independently of said hammer within the receiver 7 of the frame and, as shown in Figs. 1, 2 and 3, has its forward or bent end in direct but loose engagement with the short, longitudinally-movable rod or piston 11, which may be of square or other polygonal shape in cross-section and which is fitted in a correspondingly-shaped opening formed in the front portion of the frame-arm 2. The rear end of each of these sliding rods or pistons is dished or curved, as at 12, for loosely receiving and supporting the forward or bent end of the mainspring, while the front end thereof is inclined or beveled forwardly and downwardly, as at 13, and, also, projected slightly out of or beyond the front portion of said frame-arm, whereby it will be in proper position for entering the correspondingly-inclined or beveled slot or recess 14, which is formed in the rear, lower part of the fore-end 4' of the gun, and which, on being moved downwardly by the dropping of the barrels and said fore-end, will force said piston rearwardly, which, in turn, will push the mainspring in the same direction and thus cock the hammer. During this movement the arms 15 and 16 of the mainspring will be contracted or compressed toward each other, or leave the position shown in Fig. 1 and assume that shown in Fig. 2, after which, and while the breech is open and the hammer is fully cocked and held in the position shown in Fig. 2 by the sear 8, said arms, owing to their own resiliency when the breech is closed and fastened, will automatically expand and move forward to the points shown in Fig. 3, when the rear end of the lower arm of said mainspring will rest in the most favorable position upon the hammer for imparting great momentum thereto, when released from the sear. This automatic expansion of the arms and forward movement of the mainspring as a consequence is due to the fact that the upper arm thereof is shorter than the lower one and that the rear end of the latter is bent or curved slightly upward and, as a consequence, has a tendency to normally force the whole of said spring forwardly, while it will still remain in constant and direct contact with the front lower part of the hammer.

For facilitating the longitudinal to-and-fro movements of the mainspring, small antifriction rolls 17 are journaled in the rear end of the upper and shorter arm thereof and in the front edge of the hammer, at the lower end of the cocking-notch therein.

Under the peculiar and preferred construction and arrangement of the parts and features of my invention, as just described, its

advantages and improvements are very evident, but it will be obvious that the same results will be produced by the employment of the modification illustrated in Figs. 4, 5 and 6, since the devices and their arrangement, as therein employed, only differ from those shown in Figs. 1, 2 and 3 in the character or nature of the power employed for moving the mainspring rearwardly and cocking the hammer simultaneously with the opening of the breech, this power consisting of the rock-shaft 18, which is arranged transversely in the front part of the frame-arm 2 and has formed on its lower side the lug or cam 19 and the curved recess 20 for acting upon and receiving the forward or bent end of the mainspring. Motion is imparted to this rock-shaft by the pins or studs 21, which project from the front side thereof and pass through the vertical slots 22 formed in the front end of said frame-arm and into the holes 23 in the curved rear part of the fore-end 4', whereby, when the latter is lowered from the position shown in Fig. 4 to that in Fig. 5, said rock-shaft will be correspondingly turned or rotated downwardly and rearwardly. As the forward or bent end of the mainspring 10 rests loosely against the lug or cam 19 and within the curved recess 20 of said rock-shaft, the turning of the latter rearwardly, from the position shown in Fig. 4 to that in Fig. 5, will have the effect of pushing said mainspring in the same direction, of compressing the arms thereof and of causing the upwardly-curved rear end of the lower one of said arms to act directly upon and cock the hammer. After this operation has taken place and while the breech of the gun is being closed and fastened, the arms of said mainspring will automatically expand by their own resiliency and move forward to the points indicated in Fig. 6, when the curved rear end of the lower arm thereof will be in proper position upon the hammer for moving the same forcibly forward, when released from the sear 8.

The additional modification of my invention which is illustrated in Fig. 7 embodies the same construction and arrangement of parts and features as those before described and referred to in the other figures of the drawings, with the exception that the power employed for pushing the mainspring rearwardly and cocking the hammer simultaneously with the opening of the breech of the gun consists of the bell-crank lever 24, which has its vertical or upper arm pivoted upon the transverse rod or pin 25 in the front part of the frame-arm 2, its rear lower edge dished or curved, as at 12, for receiving the forward or bent end of the mainspring, and its horizontal or lower arm formed of tapering or wedgeshape, which projects forwardly through a correspondingly-shaped opening in the front portion of the frame-arm 2, and which is operated by the fore-end 4', in which is formed another, but smaller, tapering or wedge-shaped opening for receiving the for-

wardly-projecting end or portion of said lower arm.

I am aware that it is not new in this class of fire-arms to cock the hammers by the indirect action of mainsprings, such as have the rear ends of their arms pivoted to links and the like, which are secured to said hammers, and such as have their front ends pivoted to bell-crank levers or resting upon long cocking-bars hung upon the upper sides of rock-shafts, and I make no claim thereto, as my corresponding devices are made differently, comprise but few parts and are light, strong and comparatively easy and inexpensive to manufacture.

Having thus fully described the construction and arrangement or combination of the several parts and features of my invention and its advantages and operation, what I claim as new is—

1. In a breech-loading fire-arm in which the fore-end carrying the barrel is hinged to a recessed frame-arm and in which the breech end of the barrel is turned upwardly and forwardly in opening, the combination therewith of a hammer mounted upon a transverse pivot and concealed within the recess or receiver of said frame-arm, a V-shaped mainspring loosely supported at both ends and free to move longitudinally independent of the hammer and having the rear end of its lower arm in constant and direct contact with said hammer, and means in direct contact with the front or bent end of said mainspring for pushing the same rearwardly and cocking said hammer, substantially as described.

2. In a breech-loading fire-arm in which the fore-end carrying the barrel is hinged to a recessed frame-arm and in which the breech end of the barrel is turned upwardly and forwardly in opening, the combination therewith of a hammer mounted upon a transverse pivot and concealed within the recess or receiver of said frame-arm, a V-shaped mainspring loosely supported at both ends, free to move longitudinally independent of the hammer and provided with arms of different lengths, the upper one being the shorter, and the lower one having its rear end curved upwardly and in constant and direct contact with said hammer, and means in direct contact with the front or bent end of said mainspring for pushing the same rearwardly and cocking said hammer, substantially as described.

3. In a breech-loading fire-arm in which the fore-end carrying the barrel is hinged to a recessed frame-arm and in which the breech end of the barrel is turned upwardly and forwardly in opening, the combination therewith of a hammer mounted upon a transverse pivot and concealed within the recess or receiver of said frame arm, a V-shaped mainspring loosely supported at both ends, free to move longitudinally independent of the hammer and provided with arms of different lengths, the upper one being the shorter and having a small anti-friction roll at its rear end, and the

lower one having its rear end curved upwardly and in constant and direct contact with said hammer, which is provided at the lower end of its cocking-notch with a small anti-friction roll for the rear, curved end of said lower arm, and means in direct contact with the front or bent end of said mainspring for pushing the same rearwardly and cocking said hammer, substantially as described.

4. In a breech-loading fire-arm in which the fore-end carrying the barrel is hinged to a recessed frame-arm and in which the breech end of the barrel is turned upwardly and forwardly in opening, the combination therewith of a hammer mounted upon a transverse pivot and concealed within the recess or receiver of said frame-arm, a V-shaped mainspring loosely supported at both ends and longitudinally arranged within said receiver and having the rear end of its lower arm in constant and direct contact with said hammer, and means in direct contact with the front or bent end of said mainspring for pushing the same rearwardly and cocking said hammer, said means consisting of a short, longitudinally-movable rod or piston, substantially as described.

5. In a breech-loading fire-arm in which the fore-end carrying the barrel is hinged to a recessed frame-arm and in which the breech end of the barrel is turned upwardly and forwardly in opening, the combination therewith of a hammer mounted upon a transverse pivot and concealed within the recess or receiver of said frame-arm, a V-shaped mainspring loosely supported at both ends and longitudinally arranged within said receiver and having the rear end of its lower arm in constant and direct contact with said hammer, and means in direct contact with the front or bent end of said mainspring for pushing the same rearwardly and cocking said hammer, said means consisting of a short, longitudinally-movable and polygonally-shaped rod or piston having a dished or curved rear end and a forwardly and downwardly inclined or beveled front end, and means for pushing said piston rearwardly, substantially as described.

6. In a breech-loading fire-arm in which the fore-end carrying the barrel is hinged to a recessed frame arm and in which the breech end of the barrel is turned upwardly and forwardly in opening, the combination therewith of a hammer mounted upon a transverse pivot and concealed within the recess or receiver of said frame-arm, a V-shaped mainspring loosely supported at both ends and longitudinally arranged within said receiver and having the rear end of its lower arm in constant and direct contact with said hammer, and means in direct contact with the front or bent end of said mainspring for pushing the same rearwardly and cocking said hammer, said means consisting of a short, longitudinally-movable and polygonally-shaped rod or piston having a dished or curved rear end and a forwardly and downwardly inclined or beveled front end, and means for pushing said piston

rearwardly, said means consisting of the fore-end of the gun having a forwardly and downwardly inclined slot or recess in its rear lower portion, substantially as described.

- 5 7. In a breech-loading fire-arm in which the fore-end carrying the barrel is hinged to a recessed frame-arm and in which the breech end of the barrel is turned upwardly and forwardly in opening, the combination therewith
10 of a hammer mounted upon a transverse pivot and concealed within the recess or receiver of said frame-arm, a V-shaped mainspring loosely supported at both ends and longitudinally arranged within said receiver and pro-
15 vided with arms of different lengths, the up-

per one being the shorter, and the lower one having its rear end curved upwardly and in constant and direct contact with said hammer, and a short, longitudinally-movable rod or piston in direct contact with the front or bent 20 end of said mainspring for pushing the same rearwardly and cocking said hammer, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CLARENCE M. WOLLAM.

Witnesses:

GEORGE W. SHREVE,
A. T. GREEN.