

No. 632,094.

Patented Aug. 29, 1899.

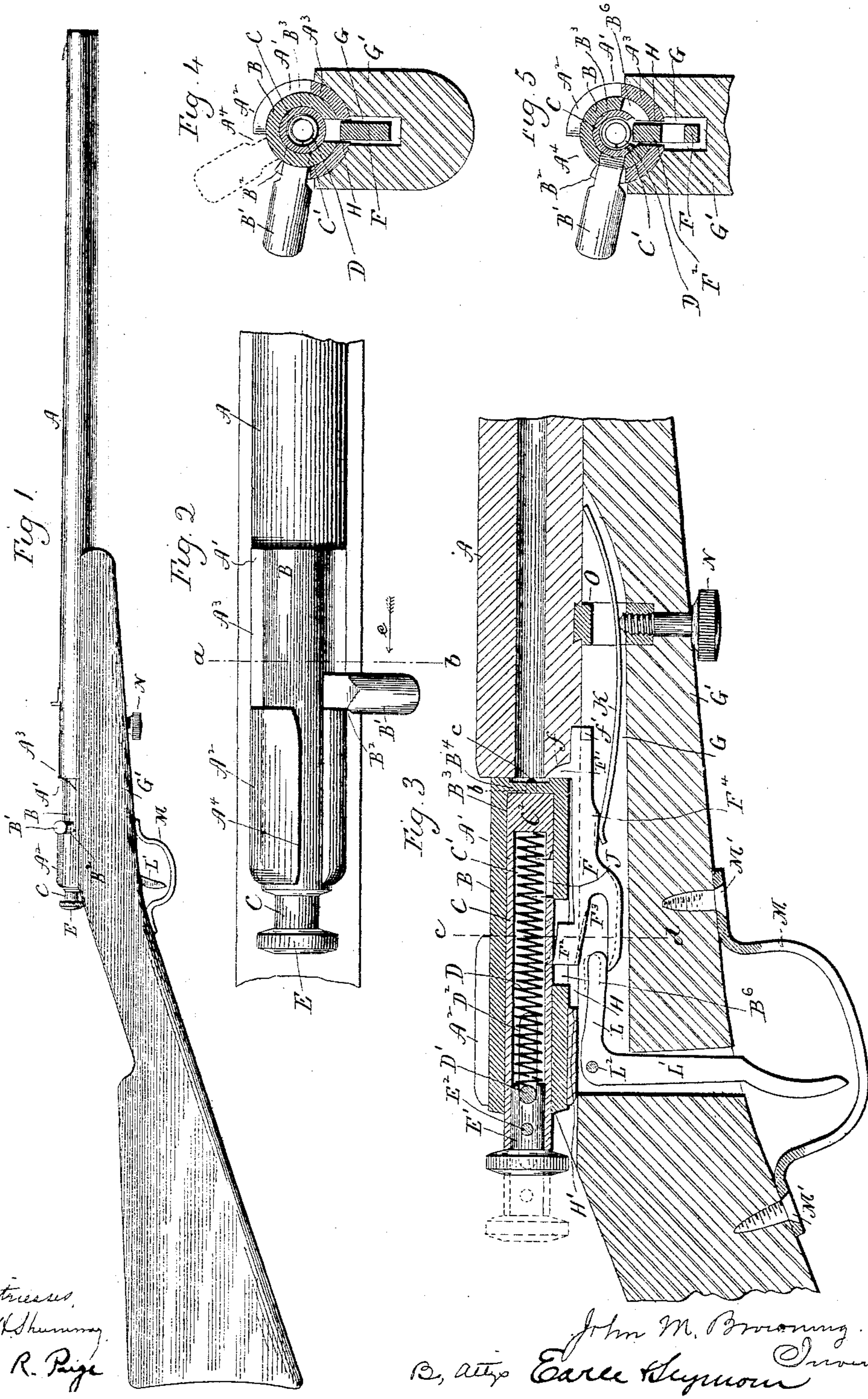
J. M. BROWNING.

BOLT GUN.

(Application filed Feb. 17, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses,
J. H. Hummer,
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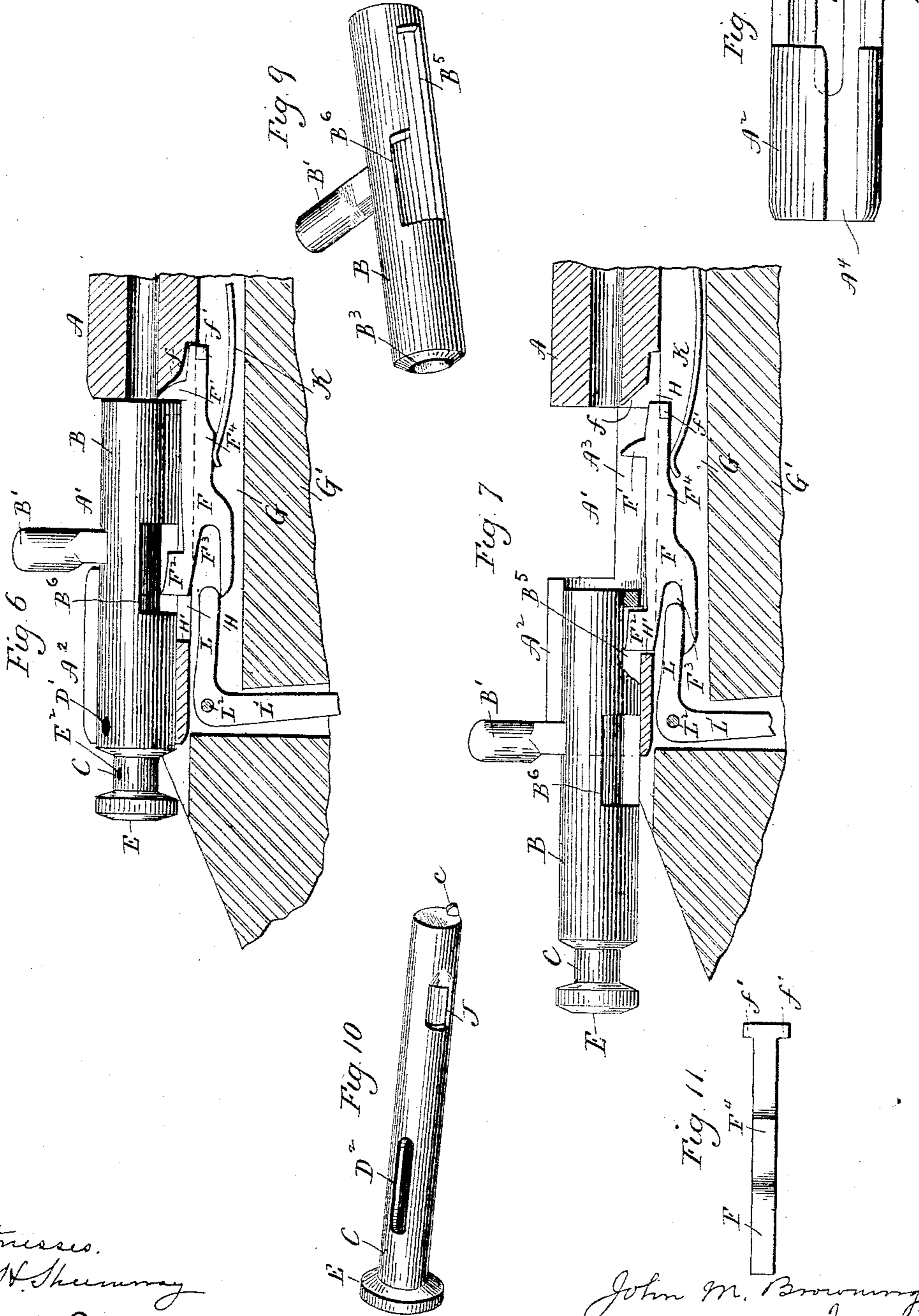
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JOHN M. BROWNING, OF OGDEN, UTAH, ASSIGNOR TO THE WINCHESTER REPEATING ARMS COMPANY, OF NEW HAVEN, CONNECTICUT.

BOLT-GUN.

SPECIFICATION forming part of Letters Patent No. 632,094, dated August 29, 1899.

Application filed February 17, 1899. Serial No. 705,793. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. BROWNING, of Ogden, in the county of Weber and State of Utah, have invented a new Improvement in Bolt-Guns; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of a gun constructed in accordance with my invention; Fig. 2, a broken plan view thereof on an enlarged scale, showing the integral receiver extension of the gun-barrel and the bolt; Fig. 3, a broken view of the gun in vertical longitudinal section; Fig. 4, a view of the gun in vertical transverse section on the line *a b* of Fig. 2, looking rearward in the direction of the arrow *c*; Fig. 5, a less comprehensive view of the gun in vertical transverse section on the line *c d* of Fig. 3; Fig. 6, a broken view of the gun, partly in elevation and partly in vertical section, showing the bolt in its closed but unlocked position; Fig. 7, a similar view showing the bolt in its open position; Fig. 8, a broken plan view of the gun-barrel, showing its receiver extension stripped of all the parts mounted therein; Fig. 9, a perspective view of the bolt; Fig. 10, a perspective view of the hammer; Fig. 11, a detached plan view of the combined extractor and sear.

My invention relates to an improvement in that class of bolt-guns in which the bolt is located in a bolt-housing formed in a rearward extension of the gun-barrel itself, the object being to produce at a low cost for manufacture a simple, safe, and effective gun composed of few parts and not liable to derangement.

A further object of my invention is to produce a gun in which the barrel may be readily removed from the stock without the use of tools to permit the gun to be more compactly packed for transportation.

With these ends in view my invention consists in a gun having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention I provide the barrel A at its butt-end with an integral receiver extension, which is "separated," so to speak, from the barrel proper by means of a transversely-arranged loading-opening A', which extends downward below the axial center of the barrel. The said receiver extension may be said to consist of a tubular bolt-housing A² and a grooved reach or tie A³, which connects the same with the barrel. The bolt B, which is cylindrical in cross-section, is located within the said bolt-housing A² and at its forward end has bearing in the said reach or tie, which is concaved to conform to it in curvature. The said bolt is furnished with a radially-arranged handle B', movable back and forth in a longitudinal clearance passage or slot A⁴, extending throughout the length of the housing and constituting the means for locking the bolt in its closed position, for when the handle emerges from the forward end of the slot A⁴ into the transverse opening A' it is free to be swung to the right in position to be engaged with the right-hand portion of the forward end of the housing at the point B², (seen in Fig. 2,) whereby the bolt is not only turned on its longitudinal axis, but also locked in its closed position. The bolt is itself formed with a longitudinal hammer-chamber B³, open at its rear end and extending nearly to its forward end, where it terminates in a wall B⁴. This hammer-chamber receives the reciprocating hammer C, which is entered into it from its rear end and which is provided at its forward end with a firing pin or nose *c*, which passes through a small opening *b*, formed in the wall B⁴ just mentioned. When the said firing-pin is projected through the said opening, it engages with the head of the cartridge in the cartridge-chamber of the gun-barrel, into which the cartridges are entered through the transverse loading-opening A' aforesaid. The said hammer is also formed with a longitudinal spring-chamber C', entering it at its rear end and extending forward nearly to its forward end, where it terminates in a solid wall C². A spiral hammer-spring D is inserted into this spring-chamber C' through the rear end thereof and is impinged at its forward end against the wall C²,

its rear end being engaged with a transversely-arranged pin D' , mounted in the rear end of the bolt B and passing through an elongated slot D^2 , formed in the hammer. The said pin D' not only constitutes an abutment for the rear end of the spring D , but prevents the hammer from rotation within the bolt and limits its reciprocation therein. The rear end of the spring-chamber C' , formed in the hammer, is closed by an operating-button or finger-piece E , having a stem E' , which is secured within the hammer by means of a pin E^2 . It will be understood, of course, that the operating-button E , with its stem E' , is removed for the introduction and removal of the hammer-spring. A very simple and economical construction and one easily accessible for attention and repair is thus provided. Moreover, the hammer-spring is located entirely within the hammer and the firing-pin made integral with the forward end thereof. These are obvious advantages. With this bolt and hammer I employ a longitudinally and vertically movable combined extractor and sear F , which is made in one piece and which is mainly located in a narrow recess G , formed in the gun-stock G' . The upper edge of this combined part extends upward through a long slot H , formed in the reach or tie A^3 of the receiver extension, the said recess G and slot H being long enough to permit the said part to be moved back and forth, as will be hereinafter explained, the rear wall H' of the slot H limiting the rearward movement of the said part, while the forward movement thereof is limited by the engagement of the extractor-hook F' with the forward wall of the notch f , formed in the rear end of the gun-barrel for the reception of the said hook. I may here remark that the said notch f and the forward end of the slot H are adapted in form and size to provide enough clearance for the forward end of the said combined part to permit the play required for the rocking movement thereof upon its lugs $f' f'$, as will be more fully described later on. The recess G is also made deep enough to permit the required vertical movement of the rear end of the said combined part. The sear-lug F^2 , which is located upon the upper edge of the rear end of the said combined part, extends upward into a clearance-opening B^5 , formed in the lower face of the bolt, the rear end of the said opening being laterally enlarged, as at B^6 , Fig. 9. The said sear-lug also enters a cocking-notch J , formed in the lower face of the reciprocating hammer C , which the sear-lug enters under the influence of a spring K , located within the recess G . The rear end of the combined part is formed with a deep horizontally-arranged notch F^3 , which receives a finger L , extending forward from the upper end of the trigger L' , which is hung on a pin L^2 and the lower end of which extends downward into a trigger-guard M , secured by screws $M' M'$ to the lower face of the stock G' . For the purpose of giv-

ing a slight impulse to the rearward or extracting movement of the said combined part and also for preventing the extractor from moving forward until after a cartridge has been entered into the cartridge-chamber of the gun-barrel the lower edge of the said combined extractor and sear is formed with a doubly-beveled operating-nose F^4 , over which the rear end of the spring K snaps, as will be described later on. The extreme forward end of the said combined part is formed with two laterally-arranged lugs $f^2 f^2$, which engage with the lower face of the barrel and reach A^3 on opposite sides of the slot H , the main portion of which is located in the reach, but which extends forward into the gun-barrel and rearward into the bolt-housing, these lugs preventing the forward end of the combined part from undue upward movement and acting as pivot-pins, upon which the part virtually swings, while its rear end moves upward and downward for cocking the hammer and releasing the same.

The gun-barrel and its connected parts are secured in place by means of a removable or take-down screw N , which passes upward through the gun-stock into a heavy lug O , which may be dovetailed into the gun-barrel, as shown, or made integral therewith. By removing the said take-down screw N the barrel and all of its connected parts may be readily removed from the gun-stock and readily replaced therein, at which time care should be taken to cause the finger L of the trigger to enter the notch F^3 in the said combined extractor and sear.

In order to load the gun, the handle is lifted from its locked position of engagement with that portion of the forward edge of the tubular bolt-housing lying just below the lower or right-hand wall of the longitudinal clearance-slot formed therein. When the handle has been brought into registration with the said slot, during which time the bolt has been rotated, the bolt may be retracted into its open position, when its forward end is withdrawn into the forward end of the tubular bolt-housing, so as to leave the transverse loading-opening entirely unobstructed to permit a cartridge to be readily entered into the cartridge-chamber of the gun-barrel. Shortly before the bolt reaches its open position the forward edge of the sear-lug F^2 is brought into engagement with the extreme forward end of the clearance-slot B^5 , formed in the lower face of the bolt. After this engagement takes place the combined extractor and sear is drawn back until the extreme rear end of the said combined part is brought into engagement with the extreme rear end of the slot H , formed in the reach or tie of the receiver extension, whereby the rearward movement of the bolt is arrested and the bolt prevented from disengagement from the gun. A cartridge is now entered into the cartridge-chamber of the gun-barrel, after which the bolt is

moved forward, but without disturbing the
 combined extractor and sear, which is held at
 the limit of its rearward excursion by means
 of the engagement of the spring K with the
 5 forward bevel of the nose F⁴, formed upon the
 lower face of the said part. When, however,
 the forward end of the bolt engages with the
 rear edge of the extractor-hook, the bolt
 "picks up" the combined part, so to speak, and
 10 pushes it forward into its home position, dur-
 ing which time the combined extractor-and-
 sear spring K rides over the nose F⁴ and then
 engages with the beveled rear face thereof.
 The bolt is now locked in its closed position by
 15 turning its handle down into engagement with
 the forward edge of the bolt-housing, as al-
 ready described, at which time the bolt is ro-
 tated on its longitudinal axis. The operating-
 button is now seized and the hammer drawn
 20 back against the tension of its spring to bring
 the cocking-opening formed in its lower face
 into engagement with the sear-lug, which is
 then immediately lifted into the said notch for
 cocking the hammer by the lifting action of
 25 the combined extractor-and-sear spring K.
 It may be here mentioned that the said cock-
 ing-notch is only brought into registration
 with the sear-lug when the bolt and hence
 the hammer are in their locked or closed po-
 30 sitions, for at other times the sear-lug simply
 rides upon the exterior surface of the lower
 portion of the hammer. The hammer having
 been cocked the gun is fired by pulling the
 trigger, which pulls the sear-lug down out of
 35 the cocking-notch and permits the hammer-
 spring to project the hammer forward with
 sufficient force to cause the firing-pin to ex-
 plose the cartridge. I should here explain
 that the cocking of the hammer by the en-
 40 trance of the sear-lug into the cocking-notch
 thereof locks the bolt in its closed position,
 for the bolt cannot be rotated unless the ham-
 mer rotates and the hammer cannot be ro-
 tated as long as the sear-lug is entered into
 45 its cocking-notch. The pulling of the trig-
 ger, however, unlocks the bolt and permits
 it to be turned back to bring the handle into
 line with the clearance-passage of the bolt-
 housing, after which the bolt is retracted, with-
 50 out, however, disturbing the combined ex-
 tractor and sear, until in the rearward move-
 ment of the bolt the forward end wall of the
 clearance-opening formed therein engages
 with the forward edge of the sear-lug, at which
 55 time the combined extractor and sear is
 "picked up," so to speak, by the bolt and
 drawn rearward against the tension of the
 combined extractor and sear-spring, which,
 when it snaps over the nose of the said com-
 60 bined part, pushes the same rearward with
 a sudden movement, assisting more or less in
 the extraction and ejection of the spent shell.

It is obvious that in carrying out my inven-
 65 tion I may make some changes in the con-
 struction herein shown and described, and I
 therefore wish it to be understood that I do not

limit myself thereto, but hold myself at liberty
 to make such changes and alterations as fairly
 fall within the spirit and scope of my inven-
 tion.

Having fully described my invention, what
 I claim as new, and desire to secure by Letters
 Patent, is—

1. In a bolt-gun, the combination with a
 gun-barrel formed at its butt-end with an in- 75
 tegral receiver extension comprising a tubu-
 lar bolt-housing formed with a longitudinal
 slot, and a reach formed with a downwardly-
 opening longitudinal slot; of a longitudinally-
 movable and rotatable bolt mounted in the 80
 said receiver extension and provided with a
 radially-arranged operating-handle which is
 movable back and forth in the longitudinal
 slot of the bolt-housing, a reciprocating ham-
 mer located within the bolt, and a combined 85
 extractor and sear located below the said
 reach, but extending upward into the longi-
 tudinal slot therein, and adapted at its for-
 ward end to be directly engaged by the bolt
 for being pushed forward thereby and at its 90
 rear end to be directly engaged by the bolt
 for being drawn rearward thereby, the for-
 ward end of the said part acting as an ex-
 tractor, and the rear end of the said part act-
 ing as a sear by engaging with the hammer. 95

2. In a bolt-gun, the combination with a
 bolt having a hammer-chamber open at its
 rear end, of a reciprocating hammer located
 within the said hammer-chamber, projecting
 rearward beyond the rear end of the said bolt, 100
 and formed with a hammer-spring chamber
 open at its rear end, a hammer-spring which
 is introduced into and removed from the said
 hammer-spring chamber through the open
 rear end thereof, an operating-button or fin- 105
 ger-piece formed independently of the ham-
 mer and adapted to be secured thereto so as to
 close the rear end of the said hammer-spring
 chamber and a combined part located below
 the said bolt, adapted at its forward end to 110
 act as an extractor and at its rear end as a
 sear, and to be engaged by the bolt which
 slides it forward and back.

3. In a bolt-gun, the combination with a
 bolt formed with a hammer-chamber open at 115
 its rear end, and closed at its forward end by
 a wall provided with a firing-pin opening, of
 a reciprocating hammer located within the
 said chamber, provided at its forward end
 with a firing-pin arranged to pass through the 120
 said firing-pin opening, and the said hammer
 being formed with a hammer-spring chamber
 open at its rear end which projects beyond
 the rear end of the bolt, a hammer-spring
 which is introduced into and removed from 125
 the said hammer-spring chamber through the
 open rear end thereof, a removable operat-
 ing-button or finger-piece adapted to be at-
 tached to the projecting rear end of the ham-
 mer, and to close the rear end of the ham- 130
 mer-spring chamber and a combined part lo-
 cated below the said bolt which coacts with

it to move it forward and back, and adapted at its forward end to act as an extractor and at its rear end to act as a sear.

4. In a bolt-gun, the combination with a
5 gun-barrel formed at its butt-end with an in-
integral receiver extension comprising a tubu-
lar bolt-housing and a reach having a longi-
tudinal slot, the said reach being located en-
tirely below a transversely-arranged loading-
10 opening separating the cartridge-chamber of
the gun-barrel from the said housing; of a
longitudinally-movable and rotatable bolt
mounted in the said receiver extension, pro-
vided with an operating-handle, and formed
15 with a hammer-chamber, a hammer located
in the said hammer-chamber from the rear
end of which it projects, and provided with
a hammer-spring chamber, a pin passing
through the said bolt and extending through
20 a slot formed in the rear end of the hammer
for securing the same to the bolt, a hammer-
spring introduced into and removed from the
said hammer-spring chamber through the
open rear end thereof, and abutting at its
25 rear end against the said pin, an operating-
button or finger-piece secured to the pro-
jecting rear end of the hammer, and re-
moved for the insertion and introduction of
the hammer-spring, and a combined extractor
30 and sear extending into the longitudinal slot
of the reach in which it is moved back and
forth by the bolt, and adapted at its forward
end to act as an extractor, and at its rear end
to act as a sear.

35 5. In a bolt-gun, the combination with a
longitudinally-chambered bolt provided in
its lower face with a clearance-opening, of a
reciprocating hammer located within the said
bolt and formed with a cocking-notch regis-
40 tering with the said clearance-opening, and
a sear passing upward through the said clear-
ance-opening in the bolt and entering the
said cocking-notch in the hammer, the said
sear being formed at its forward end so as to
45 constitute an extractor and adapted to be
engaged by the bolt which slides it rearward
for the performance of its extracting function
and which slides it forward into its home po-
sition.

50 6. In a bolt-gun, the combination with a
gun-barrel formed at its butt-end with an in-
tegral receiver extension comprising a tubu-
lar bolt-housing and a reach, which latter
lies below a transversely-arranged loading-
55 opening located between the cartridge-cham-
ber of the barrel and the said housing, of a
longitudinally-movable and rotatable bolt
mounted in the said housing, and a longi-
tudinally-movable combined extractor and
60 sear provided at its forward end with an ex-
tractor-hook and at its rear end with a sear-
lug which enters a cocking-notch formed in
the hammer through a clearance-opening
formed in the bolt.

65 7. In a bolt-gun, the combination with the
barrel thereof, of a longitudinally-movable

and rotatable bolt, a longitudinally-movable
hammer located within the said bolt, and
formed with a cocking-notch, and a combined
extractor and sear located below the pathway 70
of the bolt, and provided at its forward end
with an extractor-hook, and at its rear end
with a sear-lug which enters the cocking-
notch of the hammer through a clearance-
opening formed in the bolt and locks the bolt 75
against rotation as well as reciprocation, when
the hammer is cocked.

8. In a bolt-gun, the combination with the
barrel thereof, of a longitudinally-movable
and rotatable bolt, a longitudinally-movable 80
hammer located within the bolt and formed
with a cocking-notch, a combined extractor
and sear located below the path of the bolt,
and formed at its forward end with an ex-
tractor-hook and at its rear end with a sear- 85
lug which enters the cocking-notch of the
hammer through a clearance-opening formed
in the bolt, a nose located upon the lower face
of the combined extractor and sear, and a
spring engaging with the lower edge of the 90
said combined part, and coacting with the
nose to give the part a rearward impulse in
the ejection of spent cartridges, and coacting
with the said nose to retard the forward move-
ment of the part in the closing of the gun. 95

9. In a bolt-gun, the combination with the
bolt thereof, of a reciprocating hammer
mounted therein, a trigger, and a longitu-
dinally-movable combined extractor and sear
located below the bolt which moves back and 100
forth over it, and which as well as the ham-
mer has reciprocating movement independent
of it and by which it is directly engaged at
its forward end for being pushed forward, and
by which it is directly engaged at its rear end 105
for being drawn rearward, its forward end
acting as an extractor and its rear end coact-
ing with the hammer as a sear and adapted
to be engaged by the trigger.

10. In a bolt-gun, the combination with the 110
bolt thereof, of a longitudinally and vertically
movable combined extractor and sear located
below the bolt which moves back and forth
over it, and adapted at its forward end to act
as an extractor and at its rear end to act as a 115
sear, and also adapted to be engaged by a
trigger, and provided at its forward end with
lateral extensions upon which it swings as
upon a pivot, but which do not prevent its
sliding movement back and forth under the 120
action of the bolt, which also has reciprocating
movement independent of it.

11. In a bolt-gun, the combination with a
gun-barrel formed at its butt-end with an in-
tegral receiver extension comprising a tubu- 125
lar bolt-housing and a reach which latter is
formed in its bottom portion with a long slot, of
a longitudinally-movable and rotatable bolt,
mounted in the said housing, a longitudinally-
movable hammer located within the said bolt 130
and formed with a cocking-notch, a combined
extractor and sear, having longitudinal and

vertical movement in the slot formed in the reach, adapted at its forward end to act as an extractor, and at its rear end to act as a sear by entering a cocking-notch formed in the hammer through a clearance-opening 5 formed in the bolt, a spring engaging with the lower edge of the said combined part for operating and controlling it, and a trigger engaging with the said combined part for draw-

ing its rear end downward out of the cocking-notch of the hammer in firing the gun. 10

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

JOHN M. BROWNING.

Witnesses:

WM. F. CRITCHLOW,

M. J. HALL.