

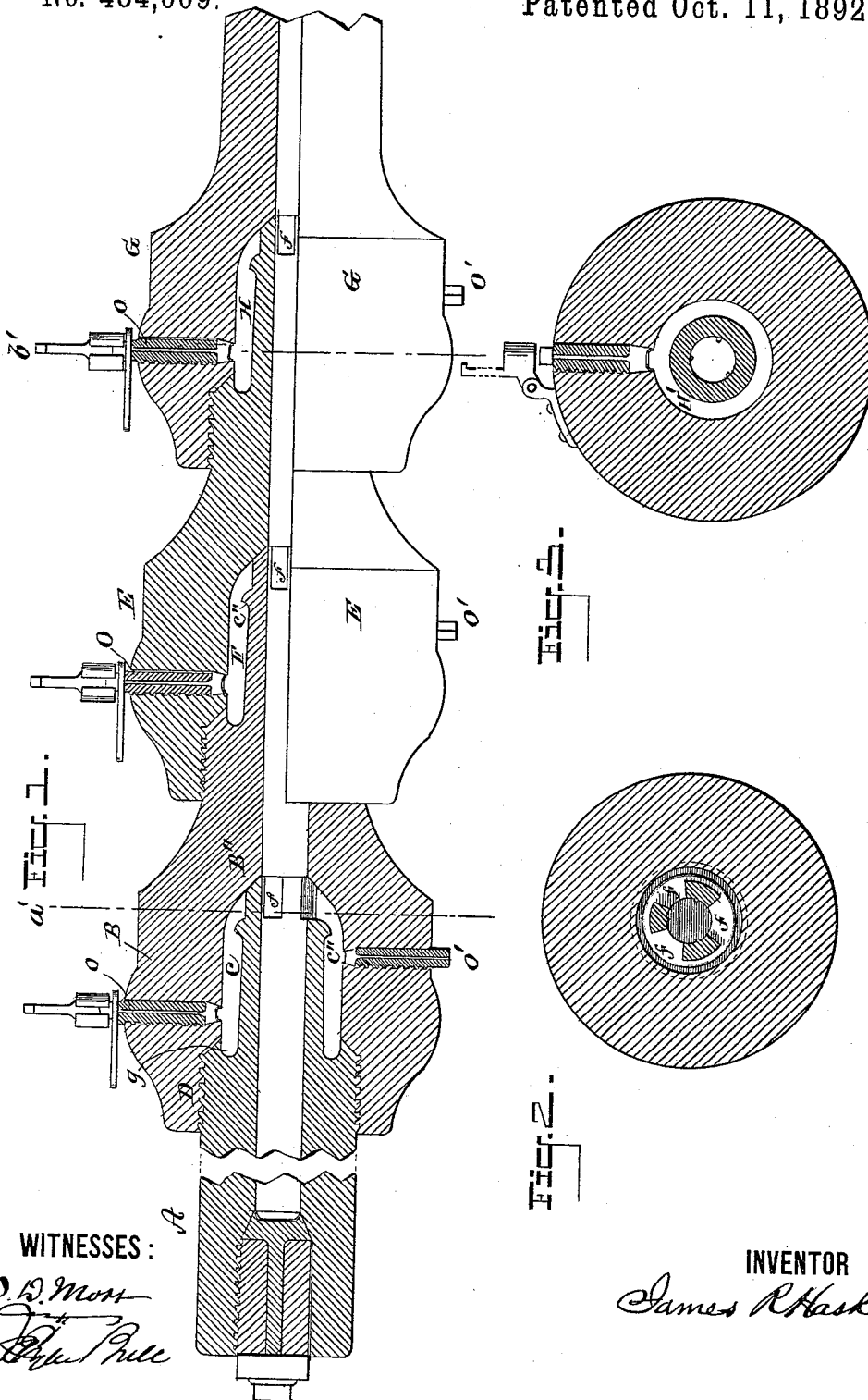
(No Model.)

2 Sheets—Sheet 1.

J. R. HASKELL.
MULTICHARGE OR ACCELERATING GUN.

No. 484,009.

Patented Oct. 11, 1892.



WITNESSES:

D. B. Moss
John P. Hall

INVENTOR

James R. Haskell

(No Model.)

2 Sheets—Sheet 2.

J. R. HASKELL.
MULTICHARGE OR ACCELERATING GUN.

No. 484,009.

Patented Oct. 11, 1892.

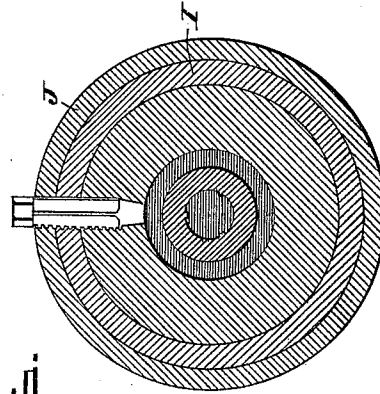
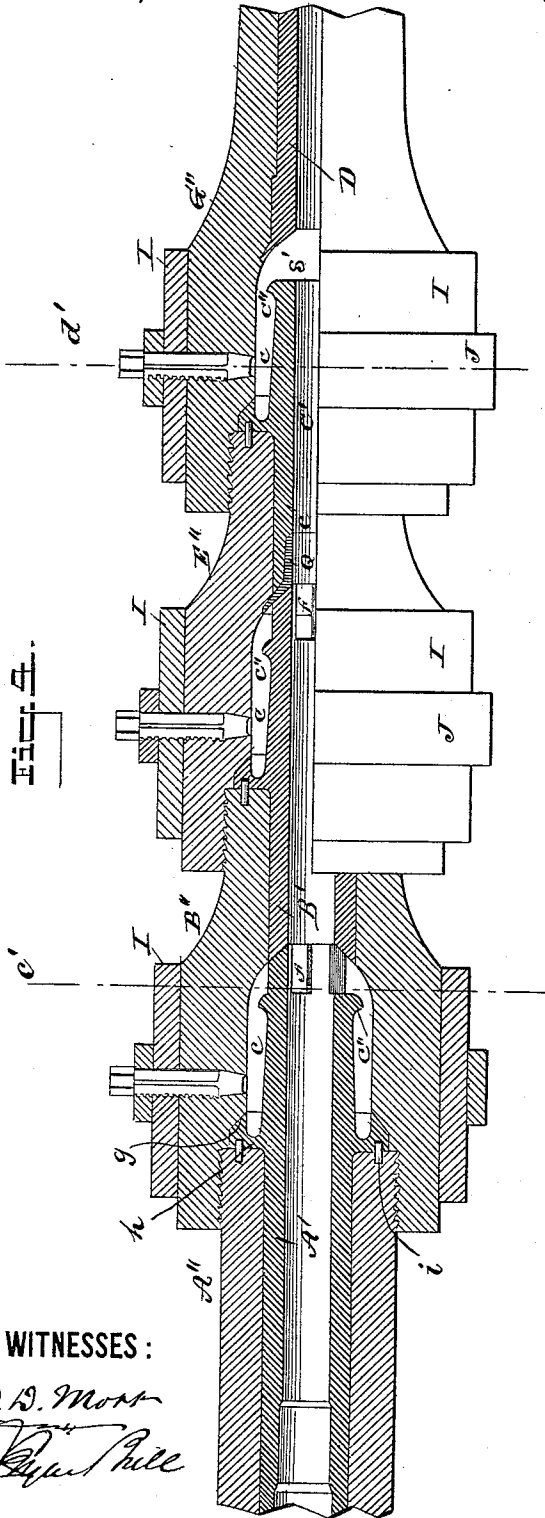


Fig. 6.

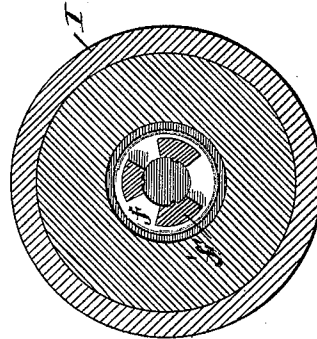


Fig. 7.

WITNESSES:

S. B. Moss
Robert Hall

INVENTOR

James R. Haskell

UNITED STATES PATENT OFFICE.

JAMES R. HASKELL, OF PASSAIC, NEW JERSEY, ASSIGNOR TO JULIA W. HASKELL, OF SAME PLACE.

MULTICHARGE OR ACCELERATING GUN.

SPECIFICATION forming part of Letters Patent No. 484,009, dated October 11, 1892.

Application filed March 24, 1890. Renewed January 15, 1891. Again renewed March 9, 1892. Serial No. 424,269. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. HASKELL, a citizen of the United States, residing at Passaic, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Multicharge or Accelerating Guns, of which the following is a description in such full, clear, and exact terms as will enable any one skilled in the art to which my invention appertains or with which it is most nearly connected to make and use the same, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon.

By Figure 1 of said drawings is shown a longitudinal section through one form of my improved gun. By Fig. 4 is shown a longitudinal section through a gun made upon the same general principle as that shown by Fig. 1. By Fig. 2 of the drawings is shown a transverse section through Fig. 1 on the line *a'*. By Fig. 3 is shown a transverse section through Fig. 1 on the line *b'*. By Fig. 5 is shown a transverse section through Fig. 4 on the line *c'*. By Fig. 6 is shown a transverse section through Fig. 4 on the line *d'*.

The object of my invention is to facilitate the construction of multicharge-guns; and it consists of making the gun of several transverse sections, as will be particularly designated in the claims concluding this specification.

In the drawings, which show my invention applied in forms which I now prefer to employ, the first section is the breech of the gun and contains in itself the charge-chamber, as in an ordinary breech-loading gun. The gun as a whole is made by uniting to this breech-section and to each other a series of supplemental sections which contain the supplemental charge-chambers. By making these multicharge-guns upon this plan it is possible to make them much cheaper and of much greater and more uniform strength than it is by making them of a single piece of metal. Indeed, it would not be possible to make these guns of the internal form illustrated by the drawings of a single casting or forging, and if they could be so made it would be very difficult, if not impossible, to get such casting or forging without flaws that would be fatal

to its construction, it being very much easier to obtain a small casting or forging solid than it is to obtain a large one, and, moreover, when the gun is made in sections it can be more readily handled and expeditiously made in the desired shape than it can be when made of a single piece of metal, whether forged or cast. By making the gun in sections the several sections can be in process of construction at one time upon different lathes and by different workmen, whereas if the gun be made of one forging or casting only one lathe can be used in its construction at the same time and not more than one or two workmen can be advantageously employed upon it at the same time, thus necessitating a long time and great expense to make the gun, and, moreover, by making the gun in sections, as illustrated, the openings from the supplemental charge-chambers to the bore of the gun can be made long or short, wide or narrow, large or small, as may be necessary to insure a free discharge of the gases from the pocket behind the projectile.

The following is a description of the accompanying drawings, which show some of the forms in which my invention may be advantageously applied. It will be understood that my invention is not limited to the precise forms herein illustrated or described, as various modifications may be employed without departing from the general principle of my invention or the scope of the concluding claims.

In the gun illustrated by Fig. 1 of the drawings, A is the breech containing the primary charge-chamber.

B is the first section, containing the first supplemental charge-chamber C. This charge chamber or pocket is formed upon the muzzle of the gun A by boring out or casting the rear end of section B big enough to form a pocket of the desired size, the sections A and B being united by means of screw-threads D, cut in the two sections in the manner shown. To the section B the section E is united and forms the supplemental pocket F, the same as in the case of section B, and to the section E the section G is united, the same as before, forming the supplemental pocket H around the muzzle of the section E, the muzzle of

which section is fitted snugly into the breech of the preceding section upon a diagonal plane, as shown in the drawings. In the muzzle of each section are cut three slots, as shown by *f* in Fig. 2, by which three openings are formed, leading from the bore of each section to the supplemental pockets C, F, and H, the supplemental pockets being annular chambers inclosing the muzzle of each section composing the gun, as shown by H', Fig. 3. The object of the openings *f* is to admit to the pockets the flame from each preceding charge and ignite each succeeding charge behind the shot or shell as it moves forward into the bore of the gun and to provide ample space for the escape of the gases from the supplemental chambers to the bore of the gun. The several supplemental pockets of the gun are charged through priming-holes, which are stopped by breech-plugs O, having interrupted screws, the same as are now in common use in breech-loading guns. These priming-holes are made in one or more sides of the supplemental chambers, as may be required, and each chamber is fitted with as many cleaning-holes, which are also fitted with interrupted screw-plugs, as may be thought necessary to thoroughly clean the pockets.

The same principle of construction as that above described is found in the gun illustrated by Figs. 4, 5, and 6; but in the gun of Fig. 4 the several sections composing it are strengthened by bands shrunk upon the several sections forming the gun, and in this case the construction of the gun is further modified by additional internal sections A', B', C', and D', upon which the sections A'', B'', E'', and G'' are closely fitted or shrunk, the several sections being united by screw-threads, the same as in Fig. 1.

The communication between the several pockets in Fig. 4 and the bore of the gun is obtained in the same way as in Fig. 1—viz., by means of slots cut in the muzzle or forward end of each section, as shown, also, by *f* in Fig. 5. To prevent the escape of gas through the joint between the sections B' and B'' and between C' and E'', a ring Q of steel or some suitable metal is inserted between the ends of sections B' and C' and extended up above the joint between C' and E'', the intention being that the expansion of the gas in the pocket will force the ring out against the joint tight enough to prevent the escape of gas from the pocket through the joint between the inner section C' and the outer section E'', this ring to be inserted between the ends of each internal and external section, so as to effectually close the joints between the two. To prevent the powder from running out of the chambers *c* through the opening *f* into the bore of the gun, collars *c''* are made around the forward end of each section at the base of the openings *f* and bridges *f'*. By these means the chambers can be loaded

with the necessary powder without overflowing it into the bore of the gun.

It will be seen that the rear ends of the supplemental charge-chambers are formed by cutting an annular groove or ring in the breech of the preceding section, by which a lip *g* is formed on the inside section at the rear of the chamber. The forward end of this lip on its outside is chamfered off to form a beveled seat against the outside section B'', the object of which is to form a gas-tight joint between the two parts, it being intended that the explosion of the charge shall force the lip out against its seat, so as to close the joint absolutely. To accomplish this, in the construction shown in Fig. 4 a flange *h* is made on the internal section, out of which the lip *g* is made, and in the rear side of this flange pins *i* are inserted to fit in corresponding holes in the external section to prevent the possibility of the two sections from being twisted out of their right relations. It will also be seen that the inner tube of the gun is formed by the inner longitudinal sections A', B', C', and D', connected together longitudinally by the external sections A'', B'', E'', and G'', the gun depending for its longitudinal strength upon these external sections, a mode of construction that differs from all other modes of construction used in "built-up" guns, in which the internal sections have been composed of one continuous tube upon which the longitudinal strength of the gun depends.

I have stated that in the construction of this gun the openings or slots *f* cut in the muzzle end thereof, by which bridges or sections of solid metal are left between the openings, may be omitted, the openings being made in the form of a ring, as shown by *s'*, Fig. 4; but I prefer to make the gun with the bridges at the end of the muzzle, so as to form a continuous bore for the projectile, the lands of the rifling being cut on the bridges between the openings *f*, as shown in Fig. 5. By adopting this mode of construction there is no unnecessary space left to be filled with air or gas and the density of loading is much greater, and, moreover, the openings *f* may be made from thirty to fifty per cent. larger in area than the bore of the gun, which becomes necessary to equalize the pressure due to the change in direction of the gas-pressure from the pocket to the bore of the gun through the openings *f*.

In the foregoing specification I have incidentally referred to a few of the modifications which may be adopted in the practice of my invention; but I have not endeavored to specify all the modifications which may be employed, the object of this specification being to instruct persons skilled in the art to practice my invention in its present preferred forms and to enable them to understand its nature, and I desire it to be distinctly understood that the forms mentioned by me of a

few modifications are in no way intended to exclude others not referred to, but which are within the spirit and scope of my invention.

Many of the details and combinations illustrated and above described are not essential to my several inventions, broadly considered. All this will be indicated in the concluding claims, as the omission of an element or the omission of reference to the particular features of elements mentioned are intended to be formal declarations of the fact that the omitted elements or features are not essential to the invention therein covered.

Having now described the structures embodying my improvements in multicharge-guns, I claim as new and desire to secure by Letters Patent—

1. A multicharge-gun consisting of a breech-section, combined with one or more supplemental sections, one or more of said supplemental sections to be provided with an independent charge-chamber charged with any suitable explosive and opening into the bore of the gun and discharging its load behind the advancing projectile subsequent to the explosion of the breech-charge.

2. A multicharge-gun consisting of a breech-section, combined with one or more supplemental sections constructed to unite with and form, in combination with another section, an annular pocket or charge-chamber suitable for receiving, confining, and sustaining a charge of any suitable explosive about the muzzle or forward end thereof and opening into the bore of the gun behind the projectile after the explosion of the primary charge.

3. A multicharge-gun consisting of a series of sections united longitudinally to the breech of each section succeeding the breech-section, forming an annular charge-chamber upon and around the muzzle of the breech, and said charge-chamber being made suitable to receive, confine, and sustain a charge of any suitable explosive, opening into the bore of the gun, and being supplied with the necessary priming and cleaning holes fitted with the necessary stop-pins, as described.

4. A multicharge-gun consisting of two or more separately-formed cylindrical sections screwed together longitudinally, each of said sections being made independent of all the rest and combined with separate independent charge-chambers suitable to receive, confine, and sustain a charge of any suitable explosive to discharge successively from the several chambers into the bore of the gun when the several sections are united, as described.

5. A multicharge-gun consisting of a succession of external sections united together longitudinally upon central longitudinal sections, forming the internal wall and bore of the gun, said several parts being fitted and where it may be necessary shrunk together to unite the whole in a solid structure.

6. In a multicharge-gun consisting of several sections, one or more of which contains a supplemental charge-chamber, a band of some suitable metal shrunk upon the section over the charge-chamber, substantially as described.

7. In a multicharge-gun consisting of a series of sections containing charge-chambers, a gas-check ring interposed between the joining ends of the sections in which the bore is made, substantially as described.

8. In a multicharge-gun suitable for firing explosives, composed of two or more sections united longitudinally and containing supplemental charge-chambers for receiving, sustaining, and confining any suitable explosive, opening into the bore of the gun, a channel or opening leading from the supplemental explosive-chamber to the bore of the gun, equal to or greater in area than the bore of the gun.

9. A multicharge-gun suitable for firing explosives, consisting of a series of supplemental sections and charge-chambers formed around the muzzle end of one section and in the breech of another section, said explosive-chambers being the result of the form and union of the several sections.

10. A multicharge-gun consisting of a series of supplemental sections containing charge-chambers to receive, confine, and sustain a suitable explosive, as set forth, the several sections being united by screw-threads cut therein or thereon.

11. A multicharge-gun consisting of a series of external and internal sections, the internal sections being held together longitudinally by the longitudinal union of the external sections, the gun depending for its tensile strength upon the union of the external sections, substantially as described.

12. In a multicharge-gun in which the supplemental charge-chamber is formed around the muzzle and in the breech of contiguous sections, a collar or flange by which the powder or other explosive is prevented from overflowing into the bore of the gun.

JAMES R. HASKELL.

Witnesses:

J. EDGAR BULL,
R. A. CORINALDI.