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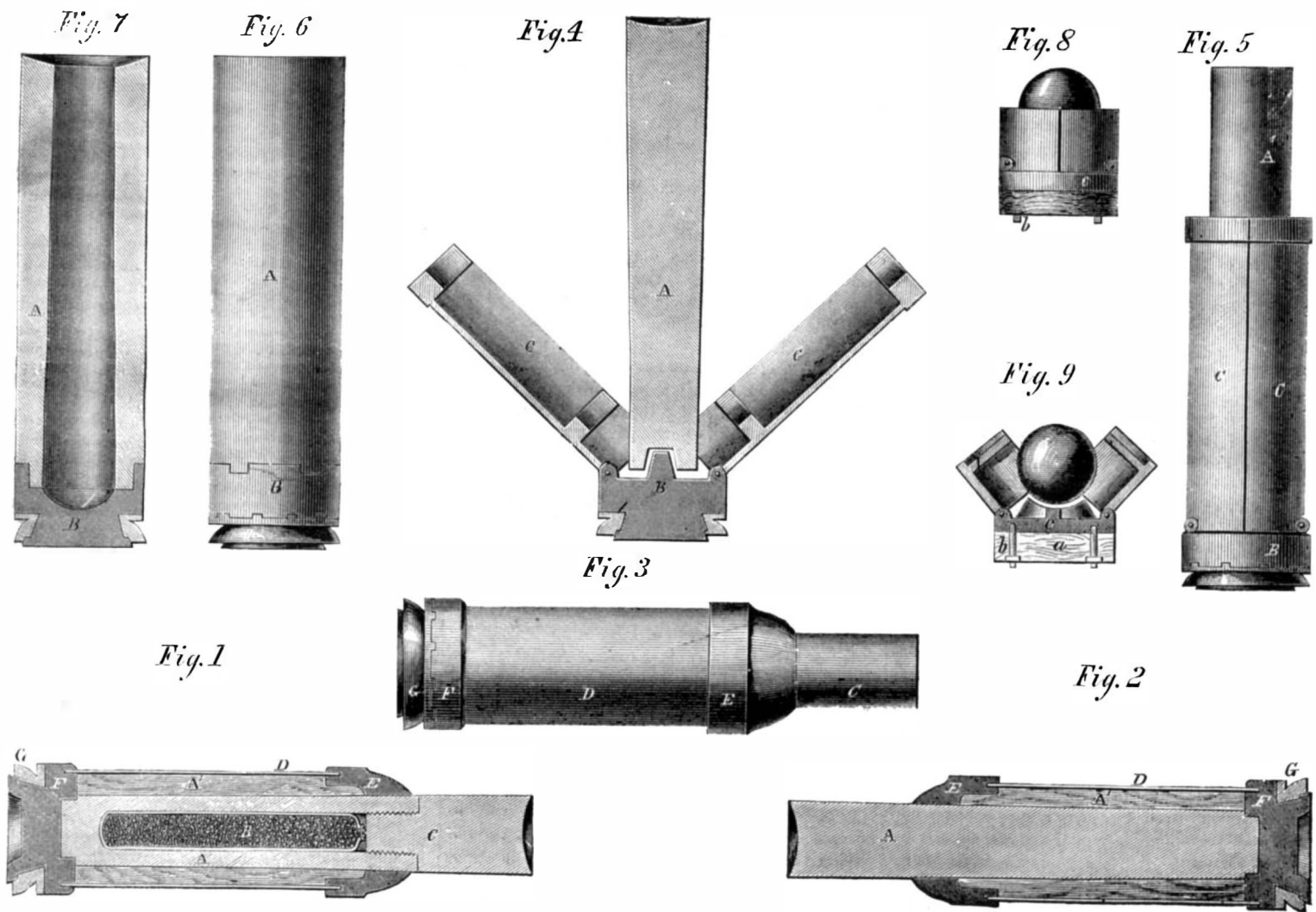
Improved Patent Projectiles.

The shot and shell herewith illustrated, embrace several novel features in their construction and manufacture. Figs. 1 and 2 represents sub-caliber shot and shell. In manufacturing them a great portion of the boring and turning usually done on projectiles is avoided and they are, beyond the absolutely necessary parts, all made in the foundry. The shell

the halved jackets, C C. The operation of this apparatus is to open after leaving the muzzle of the gun. The wings, then resisted by the atmosphere, break off and leave the shot to continue on its course unimpeded by them. It is as economically constructed as any of the other shot, and the inventor says that experiments have proved that its flight is true.

structive power is very great and has wholly revolutionized the art of modern warfare. At this writing some iron-clads have by no means kept pace with the artillery in respect to their offensive qualities. What will be done to render them equal in the future, time alone will show.

It will be seen that the particular shot here illustrated present great advantages in their sheet-iron



SMITH'S PATENT SUB-CALIBER PROJECTILES.

Fig. 1 is made from a steel bar, A, bored out for the reception of the bursting charge contained in the case, B; the end of this cylindrical chamber is furnished with a thread into which the plug, C, is screwed tightly. The exterior casing, D, is made of sheet-iron, one-eighth of an inch in thickness, and is secured in position by the caps, E and F. These caps are cast on by a process not necessary to describe here, and the interior of the sheet-iron case is filled with a resinous cement, A'. The brass cap, G, which expands into the rifle grooves is also cast on, and the shell is ready for use. The shot, Fig. 2, is similarly constructed. No time fuse or friction tube is needed in this shell, as the percussion generates sufficient heat, when passing through iron plates, to fire the charges. Fig. 3 is an elevation of the same shot. Fig. 4 and 5 are views of a singular-looking sub-caliber shot; they consist of the steel bolts, A, bored out at the base for the reception of the cone formed on the cap, B. To this cap there are hinged

Figs. 6 and 7 are shot intended for piercing angulated armor and for attacking batteries plated with railroad iron. They are steel bolts, A, cupped out at the forward end, and are in effect hollow punches propelled by powder; a large portion of the substance of the shot being removed in order, the inventor says, to lessen the weight. The base, B, is attached in the same manner as all the others. Figs. 8 and 9 are sub-caliber shot, intended for the largest navy guns. They are fitted with the hinged jackets already described, and have a wooden sabot, a, fastened to the back end by the tap bolts, b. The shot, less in diameter than the bore of the gun, is seated on the casting, c, which centers it properly before the gun is discharged. When the case is forced out, the wings expand and release the shot, which flies onward while the case drops to the ground. Steel bolts are coming into general use in the navy, and the greatest damage inflicted on the *Monitors* in the recent naval battle was by missiles of the class here illustrated. Their de-

casings over others not so fitted. It has been found by experience that wooden-cased shot, when stored in forts or places more or less damp, or when exposed to the weather, warp or shrink so much as to materially alter their shape and impair their value as projectiles. No such occurrence can take place with Smith's projectiles, as the metallic casings very fully protect them from injuries of the kind mentioned.

The patent for these shot and shell was procured on Dec. 23, 1862, by Wilson H. Smith, of Birmingham, Conn. The patent is assigned to himself and Royal M. Bassett, of the same place, and further information can be had by addressing them as above.

From every section of our country reports come to us, that all the crops afford promise of a most abundant harvest.

No less than 583,000 bushels of grain were shipped from Chicago in one day last week.