

KRUPP GUNS,

To the Editor of the Army and Navy Journal.

Sir:—I have waited patiently in the hope that some of our well posted artillery officers would reply to "Ozark's Battle of the guns," but thus far in vain. Though a late, I must fain take up the pen myself, and reply to that portion of the article which questions the value of Krupp steel guns. I am afraid that your correspondent has not in mind, when writing his essay the injunction of the dying scholar: "Verify your quotations." "Ozark," draws all his facts from the 43rd volume of the English Blue Books of 1870, a not very valuable authority on distasteful ordnance subjects. The very looseness and indefiniteness of some of the statements should have warned "Ozark" to search farther without indorsing them. Your correspondent seems to have his doubts, for he certainly does not quote the report fully and literally. He reproduces the sixteen "bursts" mentioned in the Blue Book, adds one already fully described in the *Army and Navy Journal*, and hints at several more. I propose to examine these in detail.

1st, "Ozark" says, "On November 13, 1871, a Krupp 20-pounder burst at the second fire." The report of the Ordnance Council, page 43 says: "Krupps 20 pdr. breech-loading steel gun, rifled on the Armstrong principle. This gun burst at the second round of proof, on the 11th November, 1861. Charge, first round, 37lbs. 8oz., charge second round 5lbs. It separated at two of the angles formed by slotting the breech to receive the wedge; the upper part separating at the front angle, the lower part at the rear angle.

The fracture presented a perfectly uniform appearance, with every indication of good metal.

This shows conclusively that it was the model (square mortise) and not the metal was at fault.

2. "Ozark" says, "In April, 1863, a Krupp 20 pounder burst after 132 rounds; heavy charges." The report quoted by him says: "Twenty pounder rifled breech loading gun, of 24 cwt., made from a block of Muehot's steel.

So this must be omitted from the catalogue of burst Krupp guns.

3. "Ozark" says: "On January 27, 1867, a Krupp 7 inch or 110 pounder burst at the second fire." The report says: "Krupps 7 in. rifled, breech loading steel gun. (*Experimental No. 228.*) This gun burst on the 29th January, 1867; charge, 18 lbs, shot, 110 lbs., the breech being blown out and thrown a distance of 13 yds. The separation took place in line with the rear end of the slab, the fracture appearing sound without flaws or air cells." Again the material is not at fault even in this *experimental* gun. The mechanical model explains the whole difficulty.

4. "Ozark" says: "At Koniggratz a Krupp field gun burst: estimated rounds 150."

5. "Ozark" says: "At Koniggratz another Krupp gun burst; estimated rounds 150."

6. "Ozark" says: "At Berlin a Krupp field-gun burst, and killed three cadets."

7, 8, 9, and 10. "Ozark" says: "During the campaign in Austria, a Krupp field-gun burst in action." The report quoted thus speaks of these seven cases; "Six of Krupp's 4 pounder breech loading rifled steel guns, and a rifled field-gun (nature not stated.) Lieutenant-Colonel Rielly reported; 14, 8, '66, that two 4-pounder (Krupp's) on the Wahrendorff principle, burst at the battle

of Koniggratz, and that a rifled field-gun had just burst at Berlin, killing three cadets. And on 20, 8, '66, he stated that 6 Krupp steel rifled field-guns (including probably the two above mentioned), had burst during the campaign in Austria, and that the manufacture of steel guns had been stopped in consequence! Lieutenant Hozier, in a letter dated 13, 8, '66, stated that he had seen one of the Prussian steel guns which burst at Koniggratz.

The muzzle and the foremost portion of the bore, for about six inches from the muzzle, remained intact, but from this point nearly up to the trunnions, the whole side of the gun was blown away. He attributed this to the pin of the fuse coming out, and the shell bursting in the bore; it certainly was not due to continued fire, as the gun had not fired 150 rounds during the campaign, and the rifling showed no signs of wear and tear. He did not see the other gun which burst, but thought that its bursting was also due to the premature explosion of the shell in the bore." This is the literal account of the Blue Book, upon which "Ozark" founds his seven indictments. The story of the failure of steel guns during the campaign of 1866, and of their consequent abandonment by the Prussian Government has been repeatedly advanced, and as often denied. Captain Nicaiso in his "Field Artillery," published in the *Army and Navy Journal*, denies this story in very forcible terms, and characterizes the statement concerning the "prejudices of the Krupp guns as the assertions of "newspaper reporters" as opposed, I presume, to authoritative record. That their fabrication was not given up, as stated by this official English Blue Book, upon which "Ozark" relies for his facts, needs no further refutation than the fact that the German armies used over 1 500 steel guns in the late war, most of them manufactured after 1866. The whole truth as given in the Prussian reports, is that two guns, model 1864, (square wedge), burst during the Bohemian campaign; one in the breech, and the other as stated by Lieutenant Hozier, sideways. This gentleman, however, neglects to report that the latter piece had been deeply indented in the chase by an Austrian shell, which of course readily accounts for the peculiar fracture described by the English officer. "Ozark" might have added to this list of failures, five Krupp guns which were tested to extremity at Spandau and Legel in March, June, and July, 1866.

Mr. Krupp had always been opposed to the square wedge system, as radically defective, and after the experiments made in 1866, the Government adopted the model of 1867, the cylindro prismatic wedge system.

11. "Ozark" says: "A Krupp, 9.75 in. gun burst with a moderate charge." The English authority says: "72 pounder Krupp's steel gun. Colonel Walker reported 20, 8, '65, that the largest Prussian gun he had ever seen, a 72 pounder (i. e. 200lbs. English) of 9.75 in calibre, (a mistake which "Ozark" indorses, the calibre is 8-in.) made in the same manner as the 4 pounder (11.1 lbs. English) burst at the upper angle of the breech, when under trial, with as he thinks, a very moderate charge of powder. He stated that the select committee ascribed its bursting to the inferior quality of steel supplied by Mr. Krupp." This gun was fabricated from designs furnished by the Prussian Navy Department. Mr. Krupp remonstrates officially against the model, but assumed the entire responsibility of the metal. The gun burst at one of the sharp angles of the breech-mortise as might have been expected.

The select committee having furnished the drawing, would naturally ascribe the failure rather to the weakness of the metal than to an error in the model.

12. "Ozark" says "In January, 1869, a Krupp 8-inch gun burst at Berlin." In this case your correspondent quotes the English report literally and fully, for the above is all the information the Blue Book vouchsafes to give. The Prussian reports show that this gun burst under the following circumstances: "The piece was originally designed for a charge of from 12 to 14 pounds; the chamber was afterwards increased to hold 20lbs. Six hundred and fifty rounds were fired from it—100 with 20lb. charges; it burst with 24 pounds of powder and 200 lbs. of shot. The gun had further been used in experiments with the barytic nitrate powder, a very "offensive" mixture, for it damaged the wedge and caused cracks to appear in the chamber already after two rounds. An account of this powder is given in the Prussian report on prismatic powder. The limits of elasticity once passed, a gun may burst at any time, even with a much less than usual charge. Furthermore, this gun was of the solid forged, not hooped, model.

13, 14, and 15, "Ozark" says: "In April 1864, a Krupp 8-inch gun burst at Cronstadt." "In July, 1866, a Krupp 9 inch gun burst in Russia, rounds fired 66." "In February, 1868, a Krupp 9 inch gun burst in Russia."

The Blue Book quoted gives the above as follows: "1st. In March or April, 1864, a Krupp 9 inch breech loading gun burst at Cronstadt. 2nd. Nine inch Krupp's steel breech-loading guns. In a confidential report on Russian naval and military armaments, in war office paper, as per margin, it is stated that a Krupp 9 inch breech-loading gun burst at the fifty-sixth round in June or July, 1866; charge, 45 pounds; shot 200lbs *greatly shaking confidence in steel guns.* 3rd. In January or February another Krupp breech loading 9-inch gun burst in Russia. It will be noticed that the English authority is very indefinite in its statement, not even fixing the particular month in which these accidents occurred, a deficiency which your correspondent very kindly remedies. All the Russian trials have been reported officially, and have been published in the *Russian Artillery Journal*. Many cases of burst guns are given, but the result of all experiments was that confidence was so little shaken that after 1866 Russia ordered steel ordnance for millions of dollars.

16. "Ozark" says: "In July, 1869, on the Russian frigate *Alexandri Nerski*, a 9-in. Krupp gun burst with great destruction of life."

The English report merely adds, "two officers and forty men were said to have been killed or wounded." This is the crowning case mentioned in the Blue Book, and so unhesitatingly reproduced by "Ozark." The trustworthiness of the whole report may be gauged by the utter recklessness shown by reproducing officially a fact founded on newspaper rumor only. In 1868 (and not in 1869 as stated in the report) the *Austrian Military Gazette*, (Nos. 51 and 52,) reported that a Krupp gun had burst on board a Russian vessel. Official certificates were furnished, and in No. 64 of the same journal this "item" was withdrawn, yet the writer persistently added that after all a gun had burst. An action was brought against the paper, and in No. 77 it was compelled to declare that no accident at all had occurred, and to pay a fine and costs! Upon such a basis rest statements given in the English Blue Book.