

MECHANISM OF A SHELL.

How It Is Timed to Explode Over the Enemy.

The Difficulties of Timing the Fuse Showing How the English Have so Far Excelled the Boers in Accuracy of Firing and Bursting.

Scarcely one person out of every hundred or more knows the exact manner in which a shell is made to explode at a given distance in its aerial flight.

The mechanism in the top left-hand side of the fuse, shown in the second drawing, is the part that acts when the shell is required to explode whilst in flight.

The accompanying diagram will show at a glance what is known as the time fuse, or percussion cap of a shell. It is a wonderful piece of mechanism, and, although the workings are delicate, it is surprising how reliable it is when handled by trained men.

The details on the right-hand side of the lower part of the fuse act when an explosion is desired on impact. The safety-pin having been withdrawn the discharge of the shell from the gun.

Having found the range, it is probable that "shrapnel shell" would be ordered. This is a terribly destructive shot, the case being filled with bullets with a small charge of powder to "open" the shell, and send the contents on their death errand.

There are many other complications about a fuse, such as gas escapes, very fine and important wires. In fact, the fuse of a shell is a delicate mass of complications, and the reader can well imagine the difficulties under which the artillery men work when such intricate work as setting a fuse has to be done under heavy fire.

It might be incidentally mentioned that "case shot" is used mostly in bombarding a town, or against a big obstacle, such as a fort. It is filled with small balls of iron, well arranged, and the explosive force is greater. Shrapnel would be used against an army in comparatively open ground.

tion, and when nuts have to be screwed down tight, it is no mean task to keep the parts precisely as wanted. In addition to the difficulties of a fuse, those in charge of guns have to make allowances for the wind, from whichever quarter it is blowing and what is of great importance see that the gun-carriage is on a level. If on a rough ground one wheel is slightly above or below level, a precise allowance has to be made for this in the sighting of the gun.

So that in 3,000 yards range the number 15 would be brought precisely over the lower broad arrow shown on the fuse. The two pins are of vital importance. If it is required that the shell shall explode in the air the upper pin is withdrawn; but if it is required to explode on impact the lower pin is taken out.

It is believed that the Boers have been careless as to these pins, which, in some measure, explains away the bad results of some of their artillery fire. So as to make certain of the shell exploding, our men frequently withdraw both pins, so that if the shell should meet an obstacle before the limit of the time-fuse expires, it would immediately explode.

The pin or pins having been withdrawn and the time ring moved into the desired position, the nut on the top would be screwed down tightly and the shell given to another man who would place it in the breach of the gun. Immediately before doing so, however, the officer in charge of

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Extravagant Mrs. Erskine

"Leila, darling will you have me I've run away."

"Leila Vaughan started up from her cosy corner, and held out her hands in astonishment to the gay little woman who had burst so unexpectedly into her room."

"I tell you I've run away, Leila, Kenneth doesn't know where I am."

"No, we haven't—at least, not really," replied Dora, rousing herself and taking off her big feathery hat and fashionable cape.

"I'm so glad to see you, childie, for now you can help me with my dance to-morrow night. Tony isn't a bit of good, you know, for receiving always goes him; and I might adorn the place with cabbage and dress myself with an old sack and he would still say we both looked charming."

"Do you like it? You were always a dreadful girl for pretty frocks. It came from Liberty's."

"Ah, me! but Kenneth looks black if I hint at a new dress now. I don't know what's the matter with him. Yesterday we went out to Baroness Tesserai, and I wore a lovely gown—white lace over pink. It is a perfect dream, and suits me so beautifully; but when Kenneth saw it, instead of going into raptures as he used to do, he actually frowned."

"Do you see, he said, slowly, 'but Dorry, you had that blue one only last week. I really can't afford it.'"

"Don't you like it, dear? I said, 'it is very nice,' he said, slowly, 'but Dorry, you had that blue one only last week. I really can't afford it.'"

"Dora poured her sweet lips with the air of a spilt child. She was so fair and so young, and so much adored by her parents and brothers and even by her husband, so her little imperious airs might be forgiven her."

"Leila thought of this, and wondered if it were possible that Kenneth Erskine had some trouble which he dare not reveal to his gay, child-like wife, and determined to question her own husband, confident that he would know all about it almost before she had time to ask the company affairs of Erskine, Wigton & Company, if anyone did."

"And he's so dull and absent-minded," went on Dora, pouring out her troubles freely now. "I don't believe he loves me as he used to do, either, and I won't be frowned at and scolded. Everybody said Kenneth was to be envied when he married me, you know—another sunny smile—and if he doesn't realize his good fortune, he must be made to do so. So I ran away to-night and came to see you."

"Leila covered over and kissed her old friend."

"Very imprudent of you, I'm afraid, dear. Surely you won't leave Kenneth in the dark as to your whereabouts?"

"I've left him at home," was the answer, a little defiantly. "And please don't ask me why."

dressing-room, Kenneth absolutely worshipped Dora, and for him to be attracted in her company and to deny her anything—well, it sounds really absurd and improbable."

"Well, Leila, but she wouldn't say anything about it if I were you, but the idea has got about that Erskine, Wigton & Co. are rather shaky. I didn't credit it for a minute, but if Erskine talks like that—"

"Well, I really don't know, darling. If things are as they say—"

"My dear girl!"—Tony wheeled round suddenly—"you mustn't say such a serious thing to me when I may not be true. For Heaven's sake don't breathe a word. It isn't our business, and it was told to me in strict confidence."

"I don't care, Dora ought to know," insisted Leila, but she was impressed by her husband's seriousness nevertheless.

"Dear Kenneth—good-bye; I can endure this misery no longer. All love seems at an end between us. I am gone to one who has said he worships me. Don't try to track me—Dorry."

"The next day was a busy one for the two young wives, and Dora thoroughly enjoyed the excitement and importance of preparing for Leila's departure, time to think up until after tea, when the twin sat resting in the twilight before dressing for the evening."

"Do you think Kenneth is in trouble about anything, dear? she asked, with a suddenness that startled Dora."

"Well, of course, you know best how to deal with your own husband, childie. But, at any rate, write and relieve his mind of any doubt as to your whereabouts. Tell him you are with me, dear. I suppose he'll think you are at your mother's."

"Dora laughed wistfully."

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"Dora stepped back a pace in horror, as if a cold hand had suddenly snatched from her eyes, which now flashed with indignation. In a moment the man remembered, and he bit his lips in deep remorse."

"Forgive me! Forgive me!" he murmured.

"Dora draw herself up haughtily."

"I know—I know!" cried Dora; "and I pouted and scolded you, never dreaming of this. Oh, Kenneth, forgive me!"

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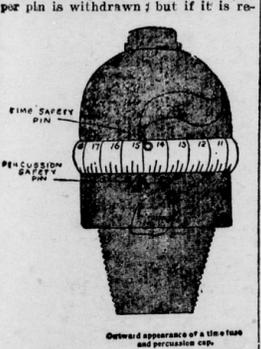
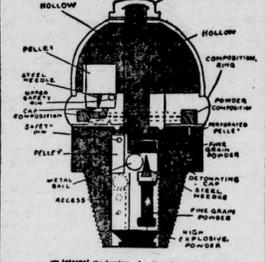
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