

The Telephone Valuable in Target Practice

THE telephone is doubtless the one instrument which performs more useful things than any other electrical device. It is now used in target practice and it has been

found to be the most satisfactory means ever tried for signaling in this kind of work.

In the target pits are a number of iron frames, each equipped with two movable sashes, as indicated in Fig. 1. In the sashes are placed iron buzzer boxes equipped with buzzers and terminal strips. Midway in the pit, or at about the central position of all the targets, is placed a telephone box. This box is equipped with a bell that can be operated from any of the firing lines, two jacks for plugging in hand sets, and six push buttons. The push buttons are for ringing the bells mounted in the telephone boxes that are located at different firing lines. These firing lines are usually planned at 200 to 1,000 yards from the targets; Fig. 2 shows a squad firing from the 200 yard line. At each of these firing lines there is located a substantial cast iron telephone box. Each box is fitted with a bell that is operated from the telephone station located in the pit, two jacks for connecting a composite hand set, a push button to ring a bell at the station in the pit, and a number of similar push buttons for operating the buzzers that are installed in front of each of the targets in the pit.

When a company or squad of men are on any of the firing lines for practice shooting or contesting for record marks, an officer is stationed in the rifle pit at the telephone station to communicate with the firing line. At each of the targets with its associate buzzer is stationed an attendant to answer the buzzer signals, checking the targets and registering the position of the shots fired at the target.

On the firing line the contestants for marksmanship are assigned to their respective places in line with the targets they are

to fire at. A man is detailed and stationed at the telephone box with a telephone hand-set plugged in. After firing, any one of the men may call to the man at the telephone to sash or mark targets Nos. 2, 4, 10, etc.

target that is above the pit and being shot at. This target is in turn pulled down in answer to a buzzer signal and marked as in the first case. This alternating of targets is continued with every shot and carried on at each of the other targets in the same manner.

Sometimes it happens that the marking is not properly understood, or there has been an error in the location of the shot. The range officer will then instruct the operator at the telephone to call the officer in the target pit and instruct him to have certain targets re-marked, or to have any other information that may be desired communicated over the telephone. The officer at the telephone box on the firing line

gets in touch immediately with the officer in the pit, to whom he gives instructions using the hand set described. When the officer in the pit desires to talk to someone on the range he pushes the button connected to the station desired. The operator at that point answers the call and procures the person wanted or delivers the message.

In some cases where the firing lines have quite a number of targets, say fifteen or twenty, it is found difficult to call out to the man stationed at the telephone the number of the target to be signaled. When this is the case, plugs are inserted in jacks with their signal conductor running out to the man on the firing line. One of these is illustrated in Fig. 3. These men can then do their own signaling by touching the

end of the conductor to an iron rod driven into the ground. This feature is shown by the cords from the telephone box to a protecting cover on the ground. When not in use these conductors are coiled up and put away with the hand set. This interesting equipment was installed for the Georgia State Militia at Augusta, Georgia, by the Western Electric Company.

Every day sees some new application of the telephone to the wants of mankind.



Militia Using the Telephone for Checking Target Scores at Augusta, Ga. 1—The Target Pits; 2—Officer and Telephone Operator at Firing Line; 3—A Closer View of the Firing Line Telephone Operator Communicating with the Target Checkers.

The man at the telephone will push the corresponding number of buttons on the target called; the man in the pit hearing the buzzer immediately pulls down the sash with target and locates the shots. As one target is pulled down the one in the other sash automatically goes up, so that one target always appears above the pit. The result of the firing is signaled to the scoring officer and the men on the firing line by holding a disc over a like position on the

American industries. And now it is beginning to seriously affect the telephone business.

The pair of jumper wires used on the main frame formerly consisted of one white and one red cord. But in future they will consist of one white cord and another white one with a couple of red threads woven through it.

UNION OF GERMAN TECHNICAL ASSOCIATION.

A "Verband" of the principal German technical associations has been formed under the name of the Association of German Scientific Societies. Those societies comprising the "Verband" are the Insti-

tution of German Electrical Engineers, the Institution of German Engineers, the Institution of German Architects, the Association of Blast Furnacemen, the German Chemical Society, and the Association of Shipbuilding Engineers. Headquarters are in Berlin. The "Verband" will thus represent 60,000 members of the different professions involved. One of the principal results which is looked for from the combination is the furtherance of the work of finding substitutes for the raw material hitherto obtained in neutral countries or those with whom Germany is now at war. What a fine chance for a "successful" alchemist, who could turn lead into copper, and silver into gold.

STATUE TO PROFESSOR JOSEPH HENRY.

A bronze statue to Professor Joseph Henry, whose name is intimately associated with the invention of the telegraph, is to be erected at Albany, N.Y., for which purpose funds are now being collected. Among the members of the honorary committee are Dr. Alexander Graham Bell, Theodore N. Vail, Thomas A. Edison, Dr. M. I. Pupin and Dr. J. J. Carty.

TELEPHONE CORDS TO BE WHITE.

The shortage of dyes, due to the European war, has been felt in practically all