

A BRIEF HISTORY OF THE TELEGRAPH/BLOCK SYSTEM ON THE GREAT WESTERN RAILWAY

The Great Western Railway was formed by 1834. In May 1838 the Great Western Directors made an agreement for the setting up of a trial installation of an electric telegraph system which had been patented the previous year by Cooke & Wheatstone. Under this agreement, the company were to be granted in due time a free licence to extend the system throughout the GWR. The trial system, which ran between Paddington & the engine house at West Drayton, came into use in 1839, & was used not only to pass instructions & details of engine failures to West Drayton, but also to send public messages as well. The system reqd five line wires, & although these were carried in an iron pipe for protection, they very soon became damaged & the apparatus was out of action by November 1842.

At the time, Cooke agreed to replace the original system by an improved circuit using only two line wires, & to extend the installation to Slough. Two years later, this installation achieved fame when it was used to transmit information leading to the arrest of John Tawell, who believed he had escaped undetected after committing a murder at Slough.

However despite this success, this system like its predecessor, fell into disrepair, & in June 1849 was dismantled by the Electric Telegraph Company, who by then had brought out Cooke & Wheatstones licences & agreements.

Following the GWRs normal practice of dispensing with outside contractors & using internal resources whenever an activity so justified, the Company set up its own Telegraph Department, at this time the Telegraph & Signal Departments were separate institutions, & appointed C.E. Spagnoletti to be its Superintendent in May 1855. His principal contribution on the GWR was the application of the telegraph to signalling & block working (see figures 1, 2, 3 & 4), for which he devised many ingenious solutions including the familiar needle which he patented in 1869. The claim which Spagnoletti made for his instrument was that it could show one indication at a time. In the original form, tapper keys were held down by a peg pushed through a bracket to cover the depressed key; this arrangement was subsequently changed to a wire slide which made its operation easier. Reminder flaps were added in 1912.

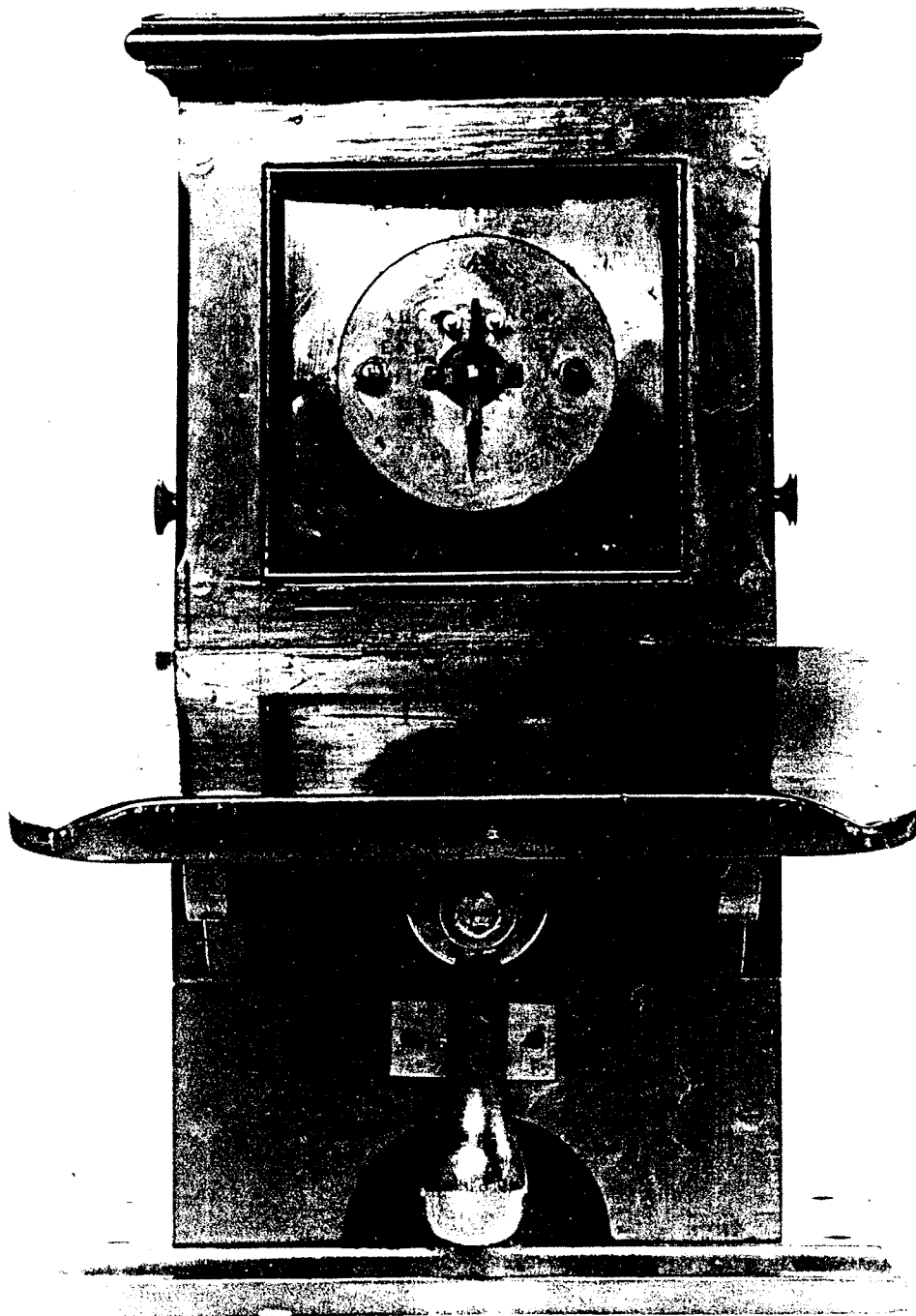
The whole GWR system was completely equipped with Spagnoletti's block instruments by August 1891, Spagnoletti retired from the GWR in 1892 & died in June 1915 aged 83.

The Signal & Telegraph Departments were combined in July 1903 under A.T. Blackall who became known as Signal & Telegraph Engineer.

Information taken from THE NINETEEN SIXTY EIGHT CLUB - ANNIVERSARY OF THE APPOINTMENT OF THOMAS BLACKALL 18 MARCH 1885.

BS/PB

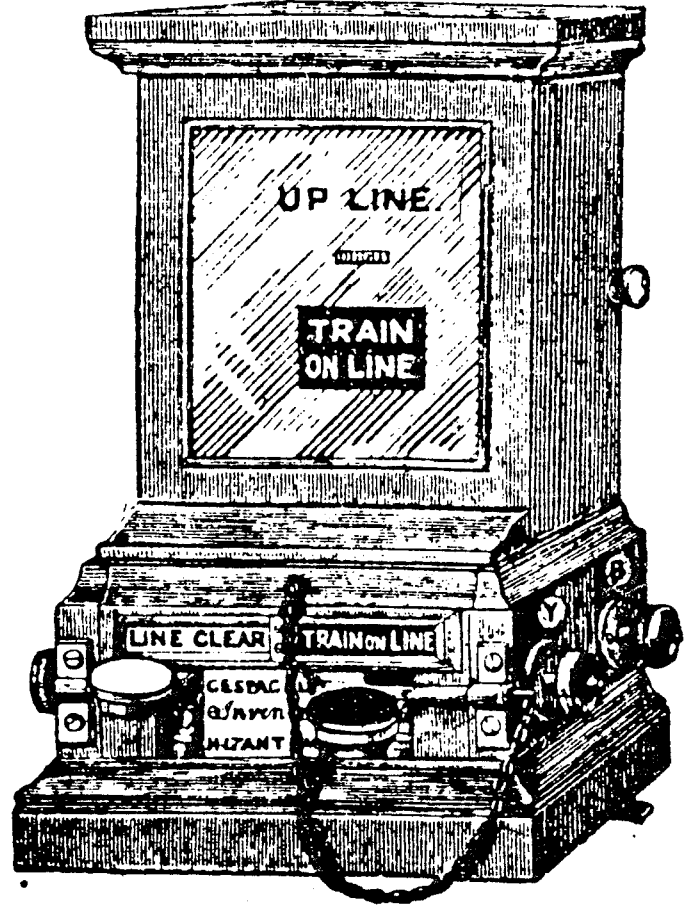
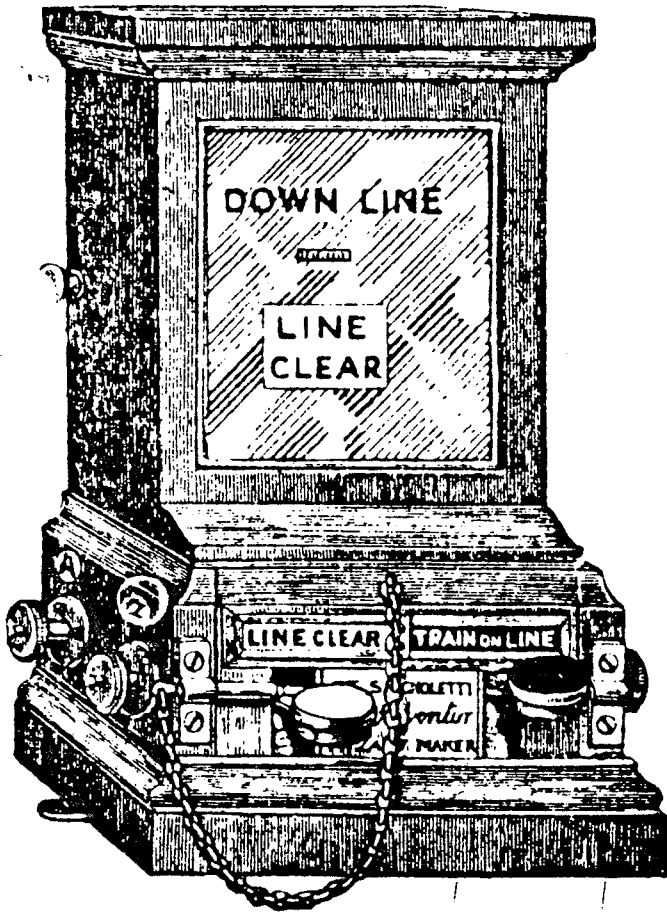
SPAGNOLETTI, s ORIGINAL TELEGRAPH INSTRUMENT



Spagnoletti's single needle telegraph instrument. The needle was flicked from side to side by the operator's manipulation of the handle, beneath the shelf. The two white stops enabled the operator to read off the flicks left or right. The letter "A" was indicated by \/, "B" /\ \ \, "C" /\ \ \. Routine messages were condensed into code to save time. For instance "D.M." to indicate "emergency signal."

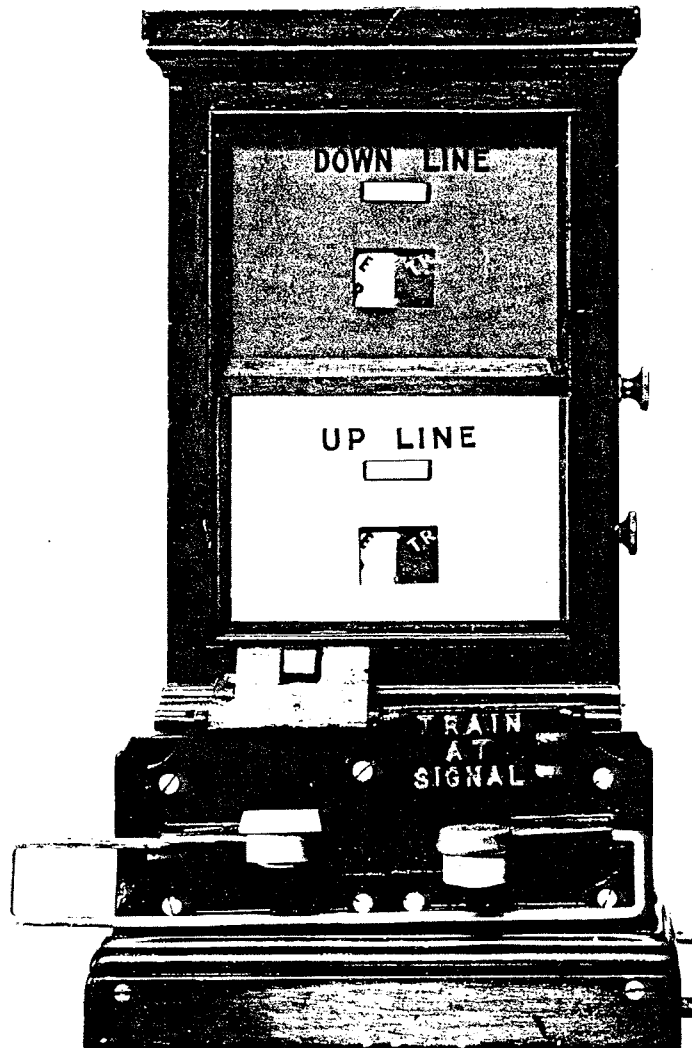
This type of Telegraph instrument was in use on the GWR well into the middle of this century.

SPAGNOLETTI, S ORIGINAL BLOCK INSTRUMENT.



Original Block where tappet keys were held down by a peg.

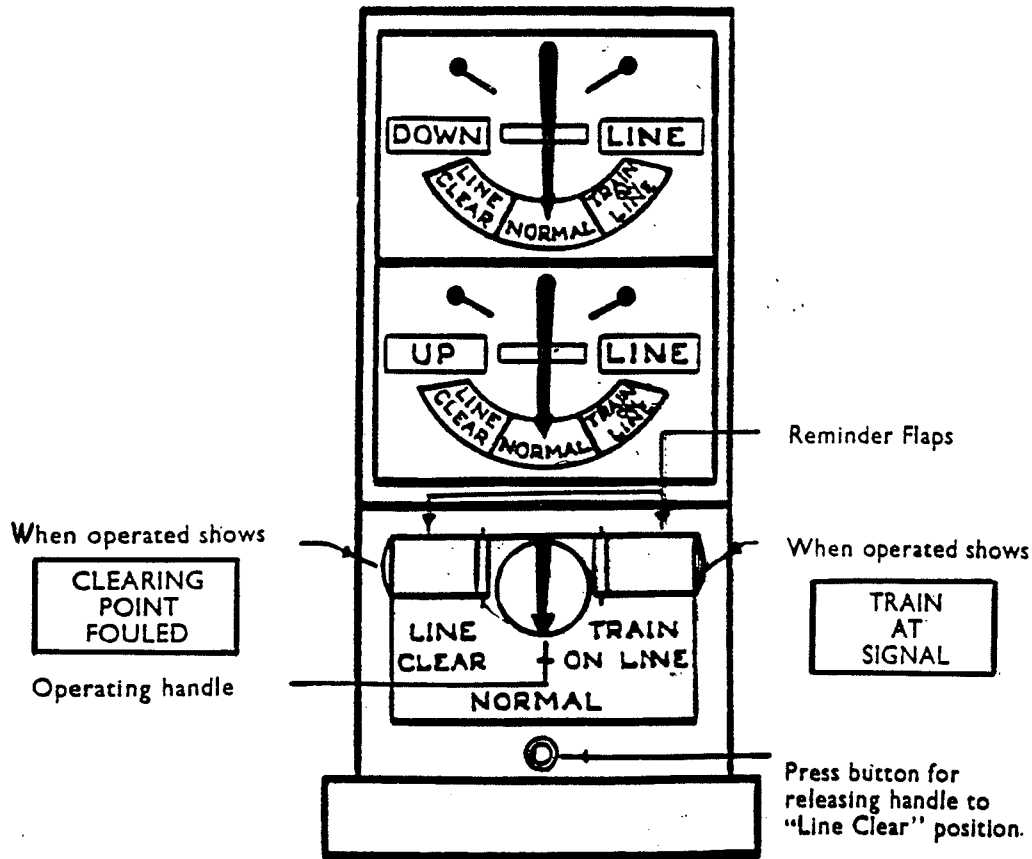
BLOCK INSTRUMENT.



This type of instrument was in common use on GWR/BR up until the late 1960s & only varied slightly to that shown in figure 2 by the inclusion of reminder flaps & wire pegging down.

INTRODUCTION TO RAILWAY SIGNALLING COURSE

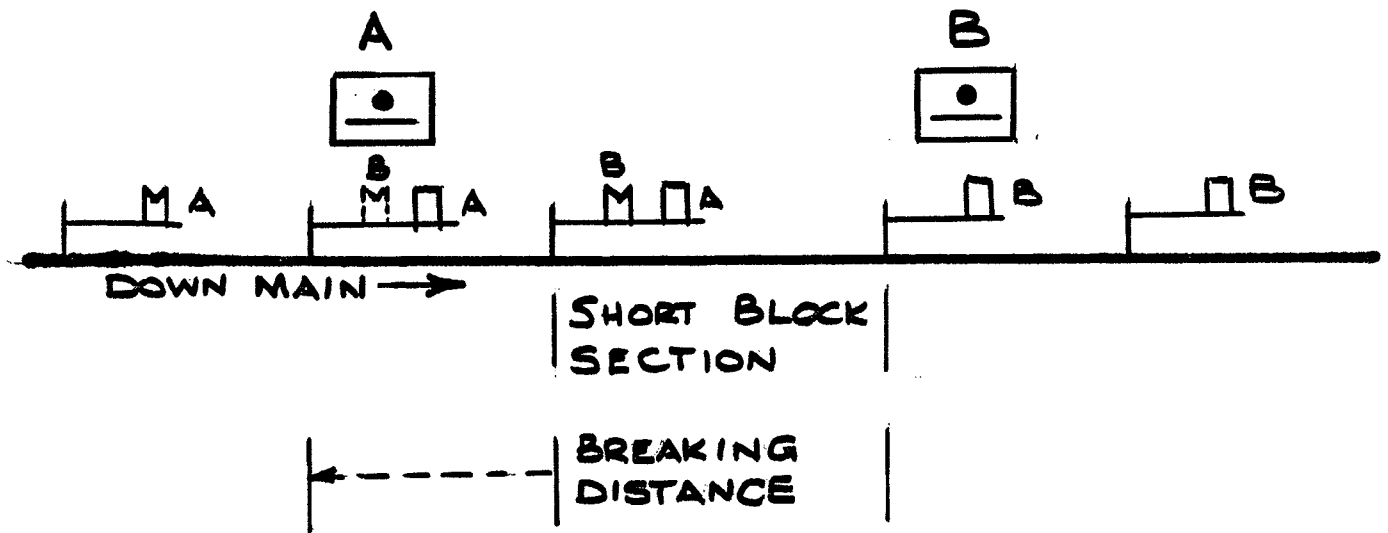
MODERN COMMUTATOR BLOCK INSTRUMENT.



New type standard Block Instrument

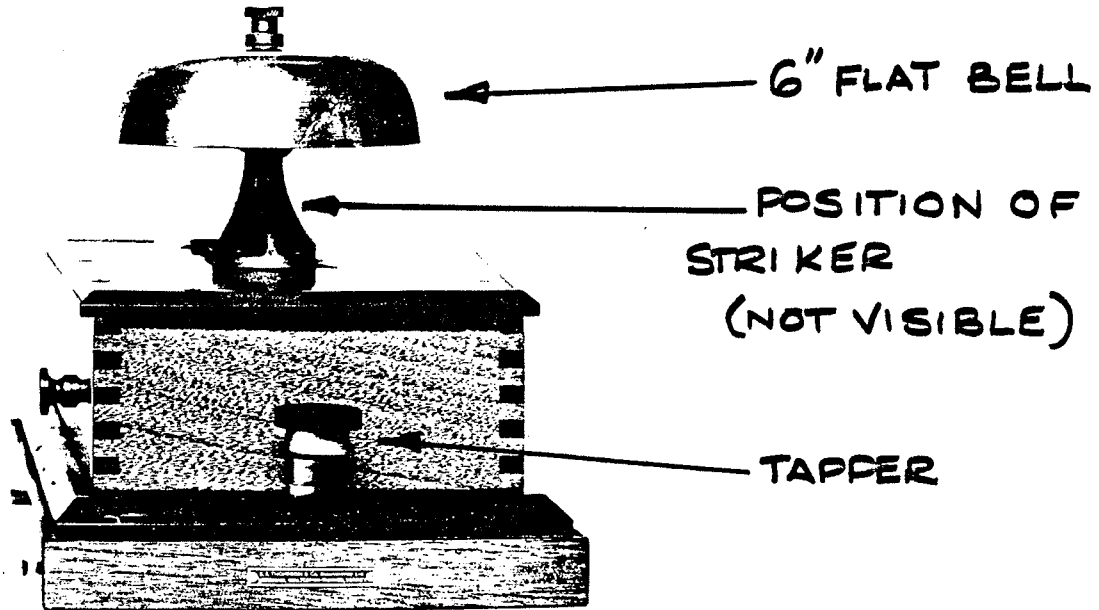
Above is shown the final form that block instruments took on BR - Western Region these instruments were first introduced in 1947 are still in use today in the following areas of Regional Railways, Welsh Valley lines, West Wales & Parts of Cornwall.

SIMPLE SLOTTING



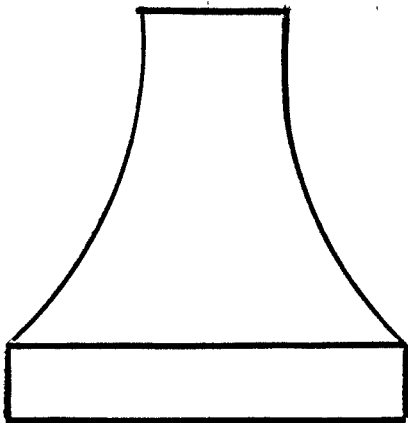
The slot signal is placed to achieve breaking distance.

TYPICAL GWR BLOCK BELL

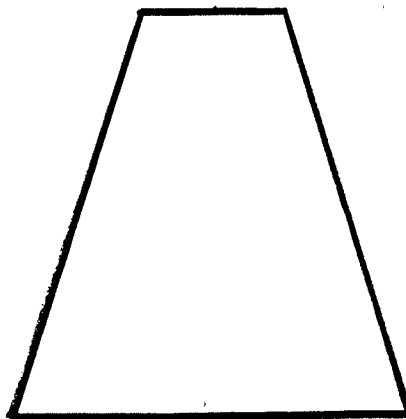


EXAMPLES OF BELLS

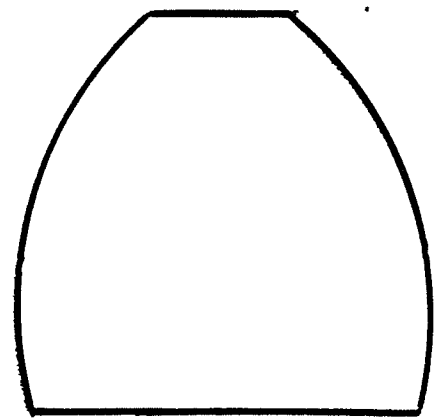
CHURCH



SHEEP

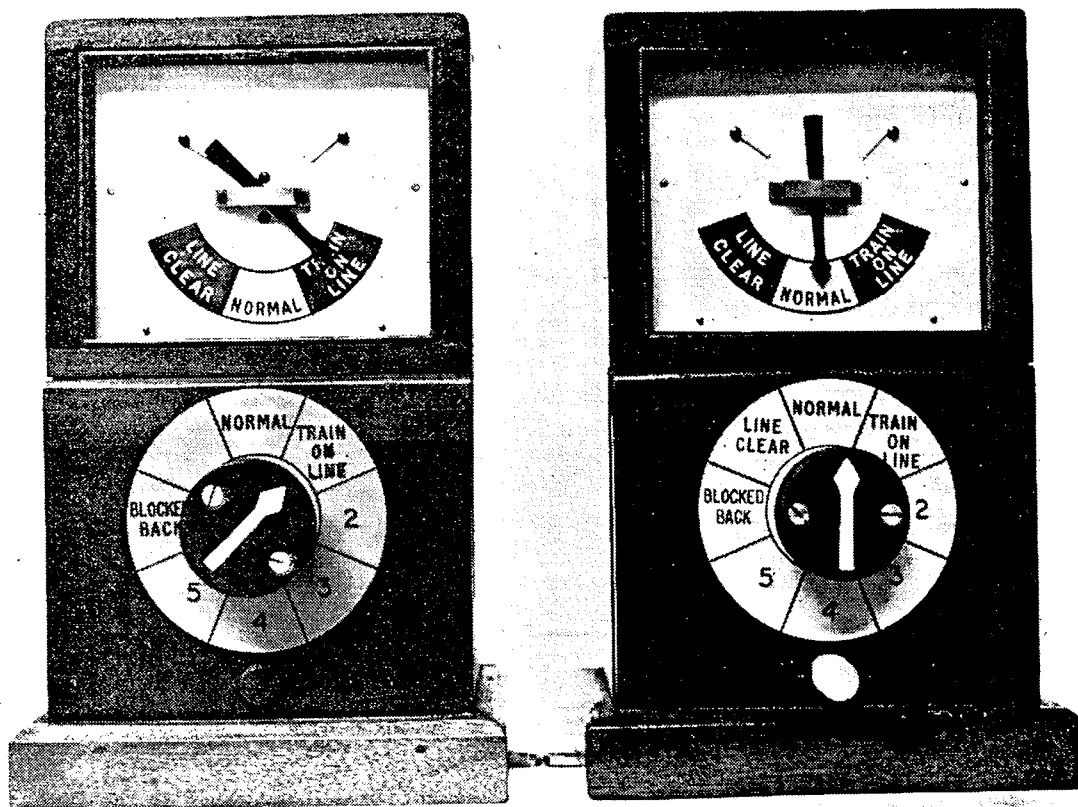


COW



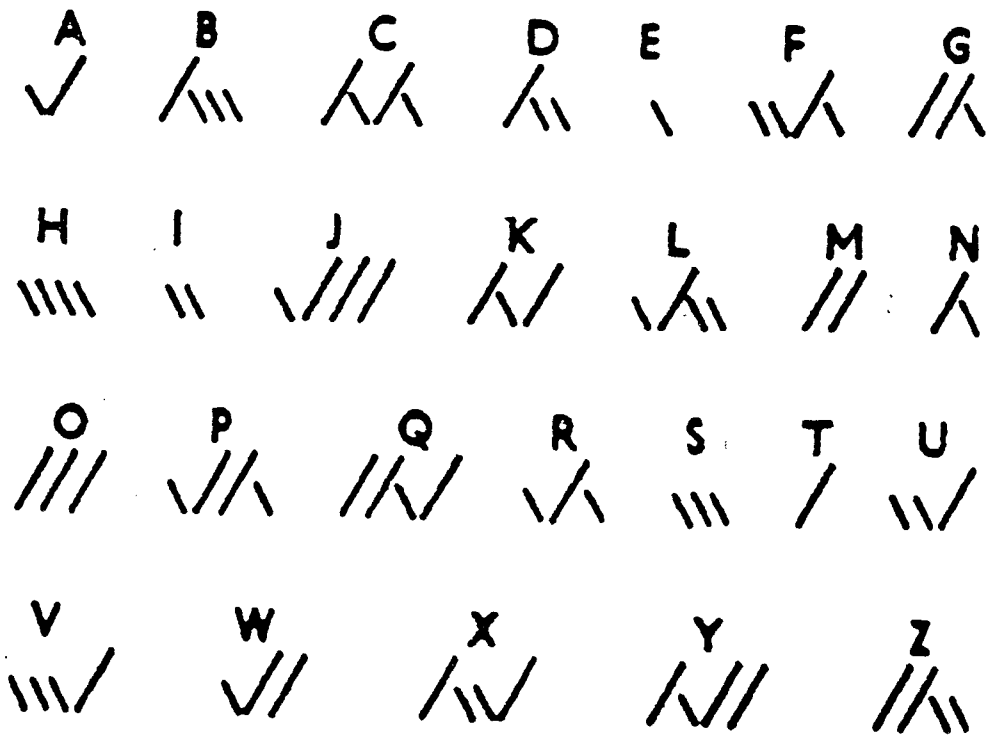
PERMISSIVE BLOCK INSTRUMENTS

NEW PATTERN PERMISSIVE BLOCK INSTRUMENTS.



Receiving Instrument shewing
Mechanical Train Recording Dial.

Sending Instrument



EXPLANATION OF ALPHABET

THE LONG STROKES REPRESENT POINTING THE NEEDLE TO THE RIGHT, THE SHORT STROKES TO THE LEFT; THUS A \ / IS MADE BY POINTING THE NEEDLE ONCE LEFT AND ONCE RIGHT; C / \ / IS MADE RIGHT, LEFT, RIGHT, LEFT; F \ \ / \ LEFT, LEFT, RIGHT, LEFT; Y / // RIGHT, LEFT, RIGHT, RIGHT

Single Needle Telegraph Alphabet.