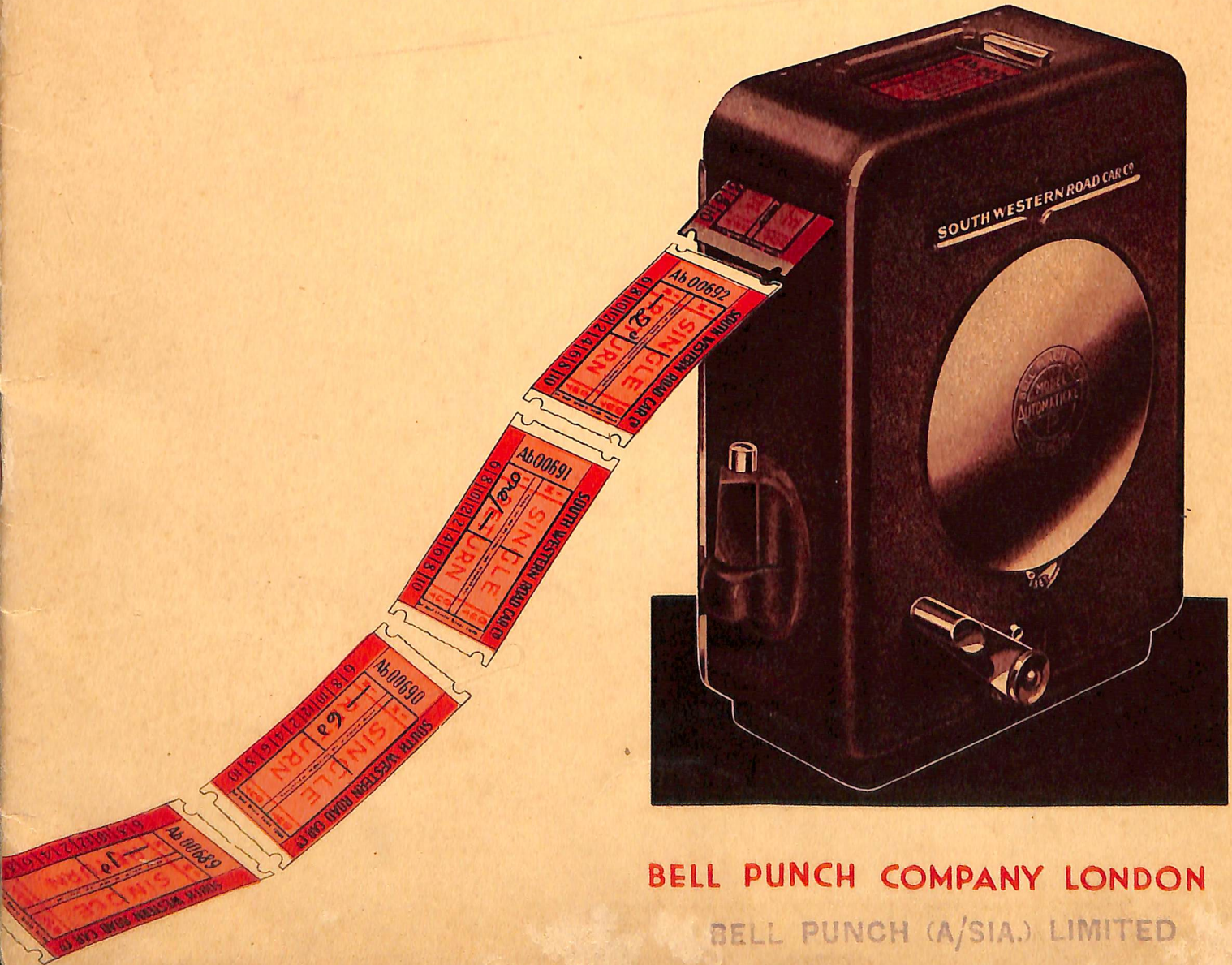


M. Turner 17-11-36

**THE  
PERFECT  
SYSTEM  
OF**

# **FARE COLLECTION AND CONTROL**

**THE AUTOMATICKET  
BELL PUNCH SYSTEM**



**BELL PUNCH COMPANY LONDON**  
BELL PUNCH (A/SIA.) LIMITED

*The  
Automatic Bell Punch System  
of  
Fare Collection & Control.*

A system devised for the simplification and standardisation of fare collection in Traffic Undertakings of any size and complexity. It is the outcome of many years of experimentation, followed by stringent practical tests, leading to elimination of impractical devices and adoption of all necessities to make the system adequate for any requirement. Covered by numerous patents throughout the world, it is in design and complete manufacture the product of the largest manufacturer of Ticket Issuing Machines and of Tickets in the World,

BELL PUNCH COMPANY LIMITED,  
39, St. James's Street,  
LONDON, S.W.1.

*Subsidiary and Associated Companies throughout the World.*

BELL PUNCH (A/SIA.) LIMITED

540 Collins Street  
F 2218. MELBOURNE

## Fare Collection and Control

*ROAD TRAFFIC OPERATORS* are unanimous on the features they regard as the essentials of a System of Fare Collection and Control. These are :

RELIABILITY from breakdown due to mechanical or other defects.

SECURITY for the Enterprise of its revenue, and for its Staff from possibility of unfounded suspicion.

SIMPLICITY which enables the collection to proceed properly under any adverse conditions.

SPEED which will cope with the utmost congestion of traffic.

ELASTICITY which will accommodate any increasing complexities of the traffic.

STATISTICS of the traffic which are simply and cheaply obtained, and can be as simple or intricate as the needs of the moment require.

A SYSTEM which is comprehensible to, and cannot fail to be upheld by, the Public.

A SYSTEM which provides independent and irrefutable proof of its truthfulness and accuracy.

## Fare Collection and Control

*ROAD PASSENGER TRANSPORT* in Great Britain was provided with these essentials from the day when Bell Punch Company introduced, over fifty years ago, its system of graduated fares whereby collection, control and analysis are covered by the pre-printed, staged ticket, the Bell Punch and the waybill.

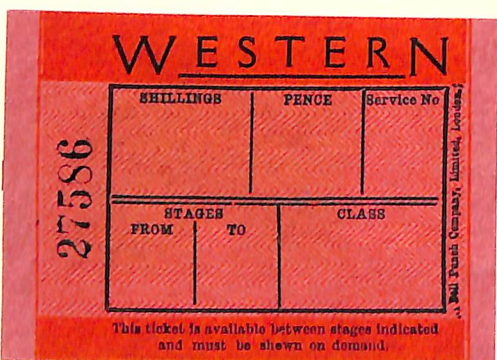
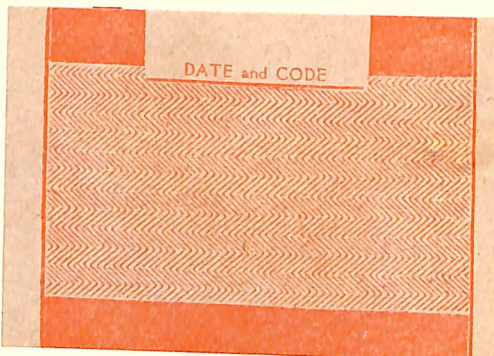
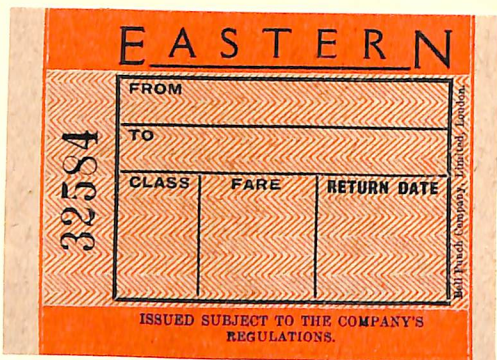
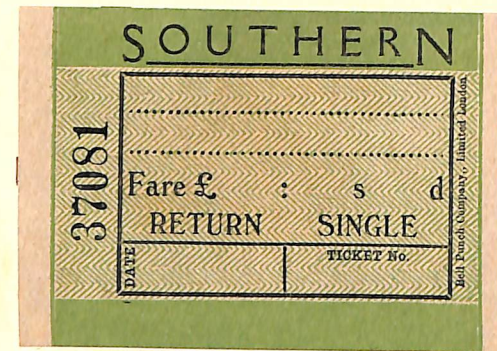
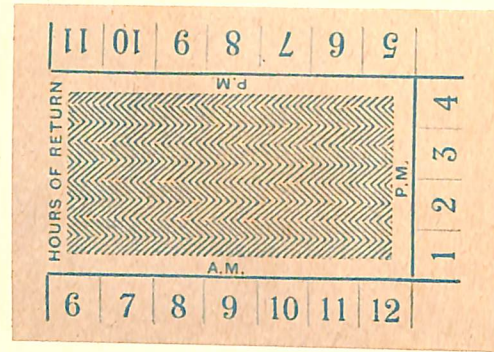
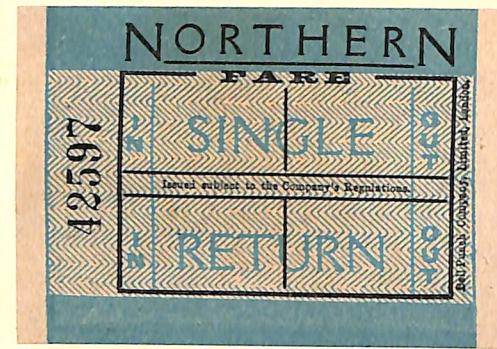
To-day the largest Traffic Systems in the world collect and control their revenue by its means.

Through the years the growth in size and intricacy of Traffic Systems has resulted in increase in the classes and prices of the tickets, but still the Bell Punch System has been able to meet all requirements of control, though the inevitable result in certain cases has been an increase in the complexity and cost of administration.

To mitigate these, systems of control have from time to time been brought forward from experimentation to practical employment. These have, in some cases, solved one difficulty, but have left others untouched, or have introduced further complications which offset the advantages they provided. Mechanisms and devices in variety have been produced which have limited Managements in their available information or have asked for dependence on delicate mechanisms.

With a knowledge of the intricacies and pitfalls of the problem, gained in the past fifty years, Bell Punch Company has evolved a System which avoids the drawbacks of mechanical printing devices, has none of the complications of the priced ticket, provides simply and inexpensively an analysis of the facts of operation, *and has a speed of general fare collection faster than that of any known system.* This it puts forward as an adequate and complete solution of the problems of Fare Collection and Control in Enterprises of any size and complexity, under the name of—

*THE AUTOMATICKET BELL PUNCH SYSTEM OF  
FARE COLLECTION AND CONTROL.*



SAMPLES OF TRAFFIC TICKETS  
for Automatic Bell Punch System, showing fronts and backs.  
Each Traffic Enterprise has its own designs.

## The Principles of The Automatic Bell Punch System of Fare Collection and Control

THE PRINCIPLES of this System are the complete collection and control of the revenue of any Traffic Enterprise, whatever its complexity or the length of its routes, in an extremely simple manner, at a speed which will cope with any congestion of traffic, and in such wise that evasion of control is impossible. Statistics and information of the Traffic, as simple or as intricate as the Management desires, can be easily and cheaply obtained from the recorded facts of operation.

The principles are put into operation as follows :

Fare Collection is carried out by the issue of tickets, pre-printed, and completed by the Conductor in writing at the time of issue. Every ticket used in the Traffic System is alike, unless the Management wishes them to vary. They are printed in the form required by the Enterprise, are serially numbered, and have no value or special significance until the Conductor has written on them the value of the fare.

The tickets are not loose, but are enclosed in a containing and issuing mechanism, called the Automatic Bell Punch, in which they are completed before issue. With each ticket is associated a duplicate, similarly numbered. The duplicates are NEVER accessible to the Conductor, except by obvious breaking into the Punch, and the tickets are accessible only AFTER completion and issue.

When the ticket is written, a specially devised duplicating plate and a writing plate in the Punch produce replicas of the Conductor's writing, both on the back of the ticket and on its duplicate, but with peculiarities which are impossible of reproduction after the ticket has left the Punch. The duplication on the back of the ticket makes any alteration, by any party, on the front of the ticket, obvious at a glance.

## The Principles of The Automatic Bell Punch System of Fare Collection and Control



**THE AUTOMATIC BELL PUNCH**  
A ticket is ready for detachment and presentation to the passenger.  
The small mechanism at the side is the canceller.

The Conductor cannot complete or alter a ticket after it has been issued from the Punch without the certain danger of detection. Every duplicate ticket must be a facsimile of its original as written before issue.

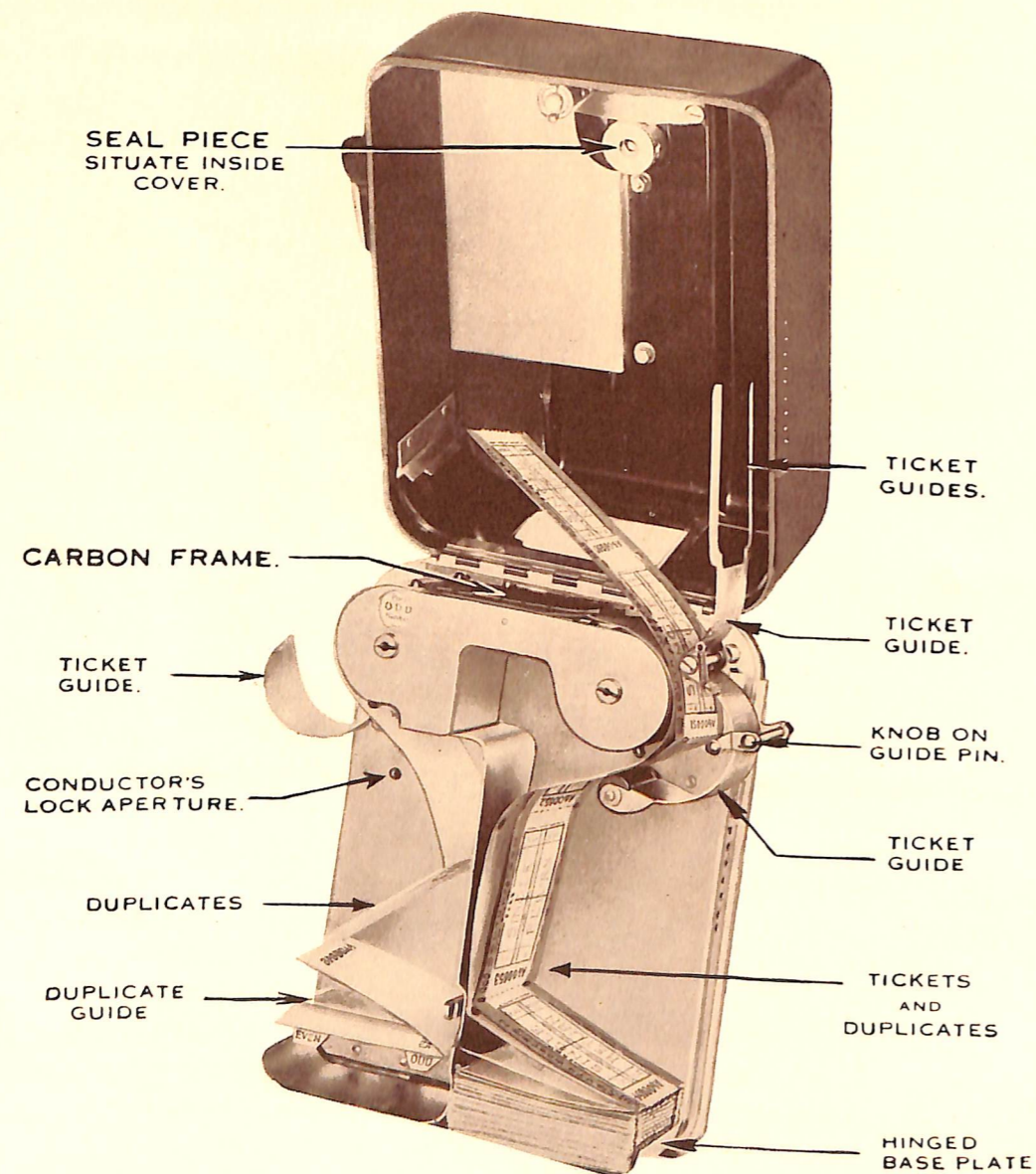
The tickets and duplicates are printed on continuous strips of appropriate material, suitably printed in simple or intricate fashion. They can provide the following information, and yet be printed *all alike* :—

- Fare values, to any amount.
- Stages, to any quantity.
- Classes, to any number.
- Single or Return.
- Dates of issue.
- Code, designating the issuer or vehicle.
- Any particulars of operation desired that Conductors or Inspectors should convey.

**THE FACTS OF OPERATION** are available from the duplicates. For their rapid analysis an electro-mechanical Analyser and an Analysis Form are available. Waybills are not necessary to provide the facts of operation. If used, they are merely to facilitate route inspection. On these Waybills the Conductor enters at each stage only one number—that of the ticket next to be issued from his Punch.

**THE AUTOMATIC BELL PUNCH SYSTEM** is equipped with the necessary features to ensure that, in any eventuality, fare collection can proceed without error or hitch. The Organisation, Conductors and Passengers are adequately protected in all their vital interests. The System cannot break down or be evaded, and it reduces the work of outside and inside Staffs to a minimum. *It is the only System in the world which provides direct and incontrovertible evidence of any fraud. The speed of general fare collection is faster than that of any other known system.*

## The Components of The Automatic Bell Punch System of Fare Collection and Control



*THE AUTOMATIC BELL PUNCH, OPEN.*

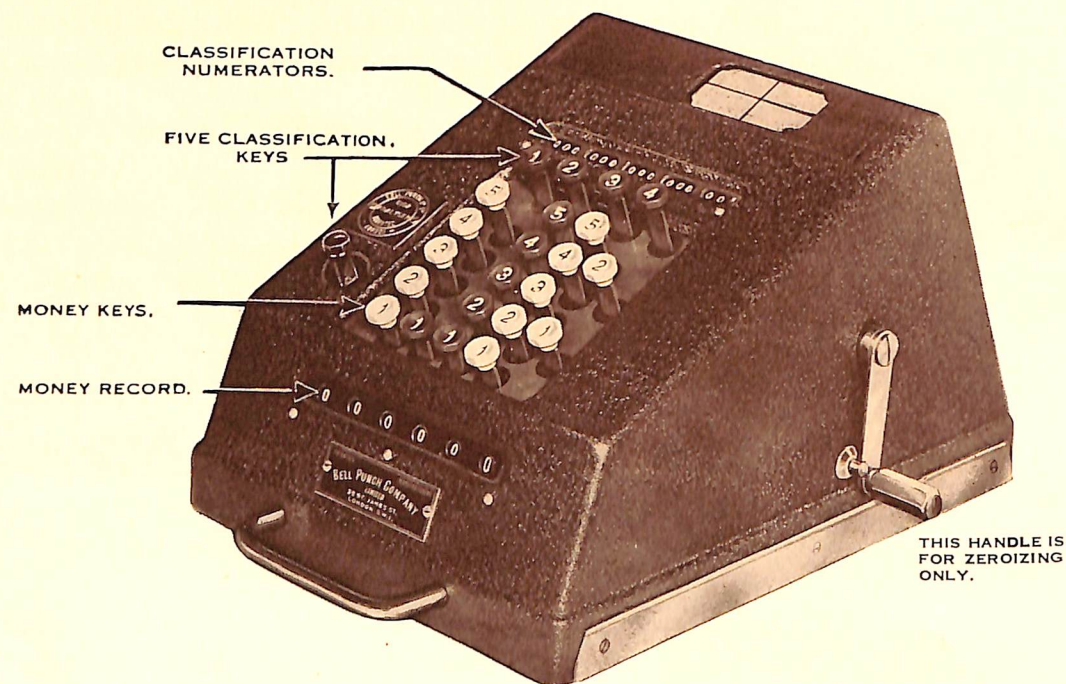
*TICKETS AND DUPLICATES* printed in strip formation. The ticket material is of suitably stout material and is available in a large range of colours, printed with designs and particulars as required. The duplicate material is of superior stout paper not easy to tear, and bears no printing except the serial numbers. Tickets and duplicates are similarly serially numbered and are folded together in zigzag formation, which allows both ends of the strip to be accessible to the Office Staff. This enables the joining of further supplies to the exhausting supplies in the Punch. They measure  $2\frac{1}{2}$ " by  $1\frac{3}{4}$ ".

The ticket material can be background printed, with special authenticating devices. This feature ensures that erasures of the written particulars are immediately detectable. All the tickets of the service, or of any section of it, can be alike, or can vary in colour or printing for special managerial purposes.

*THE AUTOMATIC BELL PUNCH* a ticket containing and issuing mechanism measuring  $7\frac{1}{2}$ " by  $5\frac{1}{2}$ " by 2" and weighing, fully loaded, about  $3\frac{1}{2}$  lbs. It is made of steel and duralumin, in a case of moulded bakelite. The standard colours are black, red or green. At the top is the writing plate, protected by a sliding weather shield. Ticket issue takes place when the ejection lever has been depressed to the full extent of its travel. Ejection is impossible whilst the ticket is being written. The mechanism cannot be deranged, and if the tickets jam, *for any reason*, the conductor can free them himself. The Punch bears on its face the name of the Operating Company and is carried on a smart "Sam Browne" belt. It is provided with a perfect sealing device, a Conductor's Lock and a bell.

*THE ANALYSER*, an electro-mechanical device, key-operated, for mechanically totalling the cash values of the tickets sold, and for their analysis into classes. These particulars are obtained from the duplicate ticket strip, which is placed in the machine and moves under a sighting aperture, a fresh duplicate appearing in the aperture each time a classification key is depressed. Analysis is possible at the rate of 150 tickets a minute. Simpler forms of analyser, for use in offices already equipped with adding machines, are also available.

## Method of Operation



THE ELECTRIC ANALYSER FOR AUTOMATIC  
BELL PUNCH TICKETS.



THE SPECIAL CONTROL DEVICE, FOR INSPECTORS.  
When attached to the Punch, it is known as the "Ticket Reserve" Device.

*FARE COLLECTION* is a simple matter. The Conductor fills in the necessary particulars on the ticket, depresses the Punch lever and issues the ticket for the fare. If necessary, he can do all this with one hand. Return tickets and exchanges are dealt with in the usual way, the Conductor accepting the original ticket as payment. In cases of emergency, such as exhaustion of supplies of tickets in the Punch, he issues tickets from his "Ticket Reserve" device.

*ROUTE INSPECTION* is much simpler than in most other systems of fare control, and fewer Inspectors are needed, because the System is, to a great extent, self-protecting. It provides obvious and incontrovertible evidence of any mistakes or irregularities. The Inspector examines the tickets held by the passengers, sees that they are in conformity with the ticket numbers on the Waybill, and that the writing on the front and back of the ticket agree. He carries Special Control Tickets in a device identical with the "Ticket Reserve" device, for issue of replacement tickets when, for example, he collects tickets from passengers for examination at Head Office.

*ANALYSIS* is performed by means of the Analyser. The cash value of the tickets sold is totalled, and they are totalled by classes. This information, together with any special information they provide, is set out by the Checking Office Staff on the "Daily Route Summary" form, from which it is transferred to the "Daily Total" form. Thus the organisation is provided with route summaries and totals of each day's operation.

OPTIONAL AUXILIARY FEATURES of the Automatic Bell Punch System are:—

- (a) THE SPECIAL CONTROL DEVICE, sealed by the Ticket Office before issue, for holding a supply of pre-printed tickets (and duplicates) for issue under extraordinary conditions by Inspectors. When issued to Conductors, it is attached to the Punch, and is known as the "Ticket Reserve" device.
- (b) THE CANCELLER, a device in substitution of the usual ticket nipper. It is designed for attachment to the side of the case of the Automatic Bell Punch, and is used for perforating certain classes of ticket, such as Returns. The Cancellor has available a large range of punches and dies of various shapes and positions of perforating. In this way any function usually performed by nippers can be done by the Punch itself. The punches and dies can be changed at any time, but by the Office Staff only.
- (c) THE CODE-DATER, a printing device, set and sealed by the Office and operated by the Conductor. It prints on the tickets the date and month of issue, or the limit of availability, and a three-number code designating the Conductor or the vehicle. The limit of availability can be, for example, the opening and closing dates for which the ticket is valid.
- (d) THE EVERLAST PENCIL, specially designed for ticket writing. It is unbreakable, possesses unique qualities, and is smart in appearance.

THE PRINTED FORMS are (a) The Waybill.  
(b) The Daily Route Summary.  
(c) The Daily Total.

## *The Automatic Bell Punch System*

*commends itself because :—*

*It has been created with an unique knowledge of fare collection and control for road passenger transport enterprises.*

*The application of this knowledge has resulted in a System which is the subject of a series of patents covering features which are present to protect the System from breakdown by accident or by acts with fraudulent intent, and to make it absolutely efficient.*

These features ensure :—

1. The impossibility of incomplete or fluctuating control. The Management is not dependent on the accuracy and reliability of mechanical devices.
2. The impossibility of production of a ticket except as a conscious act.
3. The impossibility of production of a ticket other than in the form required. The ticket can completely designate the service it confers.
4. The impossibility of production of a ticket without a complete and true record of that production.
5. The impossibility of that record being falsified without imminent danger of detection. Incontrovertible proof of the fraud is always available.
6. The suitability of that record for rapid and complete analysis.
7. The availability of production of traffic facts unobtainable by any other system.
8. The possibility of cross-checking the work of operators without this cross-checking being looked upon as an act of suspicion.
9. The ability of controlling any traffic system of any size and of any complexity, in the simplest manner.
10. The reduction of fare collection and control to its simplest exact form.
11. The collection and control of fares in a manner most suitably independent of thwarting elements.
12. The collection and control of general fares at a speed unobtainable by any other system.