N° 23,257 A.D. 1901

Date of Application, 18th Nov., 1901

Complete Specification Left, 18th Aug., 1902—Accepted, 18th Nov., 1902

PROVISIONAL SPECIFICATION.

"Improvements in and connected with Time Recorders"

I, WILLIAM MABERLEY LLEWELLIN 15 King Square Bristol Engineer do hereby declare the nature of this invention to be as follows:

My invention relates to improvements in connection with the filing of records or diagram sheets taken from that description of time recorders where the records are not made on ribbons of paper but are made in consecutive and proper order such as are described in my Patents AD 1882 No. 4653 and AD. 1889 No. 11597.

The objects of the invention hereinafter set forth are for the better filing of the records taken from time recorders and also for the readier manipulation of the records when taken off for inspection. I carry my invention into practice in manner as follows:—

I bind together in book form and of suitable size and shape a number of narrow leaves hereinafter called "guards" on these guards are ruled horizontal lines to correspond to certain horizontal lines or marks on the diagram taken from the recorder.

There are also a number of vertical lines ruled on the guards.

I will now explain the purpose for which these guards are required.

When the record for a day or any other required time is taken from the recorder it is fixed to the guards & by mucilage or in other suitable manner so that the lines or marks on the guard correspond to the lines on the diagram sheet. The vertical columns are used and are appropriately ruled for the following purpose.

The first vertical column is used for a number or name of a certain person.

The second vertical column is used for the total number of hours or units of time that certain persons may have worked.

The third column is used for the rate per hour or other unit of time that may have been agreed upon.

The 4th column is used for the result of the unit of payment multiplied by the number of units or fractions of units of time worked. There may be other vertical columns for the setting out of other details if required. Bound up with the guards are leaves ruled in suitable manner for various other requirements if desired to ascertain the details of the work which has occupied the time worked by a certain person for the purpose of ascertaining the cost of any article made or process carried on or for any other purpose.

In the case where it is desired not to bind up the records but to ascertain the particulars given on the records in a summarised form I use the following device:

I stamp or engrave on a suitably shaped piece of metal or other material a series of numbers or marks corresponding to those that apply to the horizontal lines on the diagram sheet this engraved piece of metal or other material will be hereinafter called the "gauge" this gauge is fixed on a suitable framework and may or may not have glass fixed on each side of it. The diagram sheet when taken off the recorder is passed under the gauge, and the lines and spaces on the gauge will thus become superimposed upon the lines and spaces on the record sheet, and thus the numbers or letters on the gauge will apply to the appropriate spaces or lines on the record sheet.

[*Price* 8*d.*]

At the side of the framework are carriers to hold the spools that contain the record and are so manipulated that whilst the record is wound off one spool, it is wound on to the other spool, the carriers of the two spools may or may not be connected together by means of bands or suitable gearing.

Attached to the gauge as hereinbefore described may be paper suitably ruled for a summary of the results as shown on the record sheet, this paper may be suitably ruled so as to show the total time worked for any required period as well as the rates paid per unit of work done, and any required summation of results, this record may be placed on a suitably prepared guard in a book as hereinafter described.

Attached to the side of the gauge is a toothed rack of a certain required length, gearing into this rack is a toothed wheel which is carried in a carriage. To the centre of the toothed wheel is fixed an axle, and to this axle is fitted an index wheel engraved with suitable numbers or marks as may be required on the diagram paper; these numbers are so spaced that they print the numbers on the required parts of the diagram paper & also so as to be spaced as exactly the numbers on the gauge. An inking pad is arranged on the carriage to supply the needful ink to the index wheel. An alternative arrangement for numbering the diagram sheet is as follows:—Attached or near the gauge is a hinged bar & on this bar a series of numbers are arranged that correspond to the numbers that are required to be printed on the diagram sheet. When the printing is required to be done the hinged bar carrying the numbers or marks is pressed on the diagram sheet & the numbers or marks are then found to be printed; a suitable arrangement for carrying an inking pad is fixed to the hinged bar or carried on a separate bar adjacent to the index bar.

So that dates or days or other matter may be printed on the diagram paper I adopt the following arrangement:—

On the inside of the top or in any other suitable part of the cylinder that prints the hours is fixed a bracket; this bracket carries a type wheel on which is fixed or engraved the names of the days or the dates of the months or any other required matter for printing. This type wheel is mounted on a spindle & to the spindle is fixed certain gear wheels which move the type wheel at certain required times; the gear wheels are actuated by means of a striker coming into contact with a fixed part; as the cylinder moves round, the type wheel comes into position opposite an aperture in the hour drum or cylinder & presses against the paper passing over the hour drum or cylinder & so prints on the portion of paper presented to to the type, the characters on the type wheel.

Dated this 15th day of November 1901.

W. M. LLEWELLIN,
15 King Square Bristol.

COMPLETE SPECIFICATION.

Improvements in and connected with Time Recorders

WILLIAM MABERLY LLEWELLIN, 15 King Square Bristol Engineer do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to improvements in time recorders of that class in which the exact minute or other period of time is impressed on a sheet of paper against the workers name or number.

In these presents I annex one sheet of drawings, which are to be taken & read as part of these presents.

Like letters do not correspond to like part in all the figures save and except where like letters are used in the same figure.

Figure 1—Shows a gauge, which is placed over the record sheet to show the correct number of the space appropriate to each person's name or number.

Figure 2—Is a plan of a number stamping device

Figure 3—Is a side elevation of the stamping device

Figure 4—Is an end elevation of the stamping device.

Figure 5—Is a plan of an arrangement for marking or printing certain required periodical markings on a diagram sheet.

Figure 6—Is a sectional elevation, of which Figure 5— is a plan.

Figure 7—Is an elevation of another method of marking the numbers or names on the diagram sheet.

Figures 8— 9— 10— & 11— Show the arrangement of a book, for inserting the diagram sheets in after they have had the registers of time made on them; Taken in order they are as follows—

Figure 8—Shows the book open with one day's record placed in it.

Figure 9—Is an end elevation of the record book.

Figure 10—Shows the method of attaching six or more day's records on one leaf of the book.

Figure 11—Shows the book open & the six days record (in plan) folded up.

Referring now to the detailed description of the figures:

In Figure 1 A— is the framework, B— is the slight space, C— is the number plate, D— is preferably glass, or may be made of any other transparent, or other suitable material; E—is a space, upon which may be placed or attached a slip of paper or any suitable material, which may be used for remarks or totalling hours, or other required data.

The manner in which the gauge is used is as follows:—

The paper or record is taken from the machine & laid out upon a suitable table or platform & the gauge is placed over it, when the correct numerical position of each line can be seen at a glance. The reason such a gauge is necessary is, that the record sheets are of considerable length, & the space only being numbered at one end of the sheet, the eye cannot follow the lines correctly along the whole length of the sheet without the assistance of the gauge, which locates the number of the space where necessary.

In Figures 2— 3— & 4—, A^1— is the framework B^1— opening or space to admit stamps F^1—. D^1— glass or other suitable material, F— moveable lever, upon one side of which is attached type, or stamps F^1—. U— fulcrum of the lever F—. In its normal position the lever F— will stand vertically, but when it is required to print or mark, it will be brought down until it assumes the position shown by dotted lines U^{11}—.

U^1—U^{111}— are rollers or spools; the record sheet is wound upon U^{111}— & then drawn off upon U^1—, which is also used as a platen, but if required, a separate platen can be used.

The numbers or signs or other required marks can be stamped as often as required on the record sheet.

I will however explain the use of this gauge in fuller detail as follows:—This apparatus will be used chiefly in cases where the numbers corresponding to names of operatives have not been previously printed upon the diagram or record sheet, *i.e.* the paper will be supplied in the form of a roll, with lines ruled the whole length of the roll, that is in the direction the movement of the paper. In the case where this device is used as previously stated, no numbers having been previously printed on the paper, the portion of the roll which has been through the time recorder & marked by the operatives, is taken off whenever desired & placed in this apparatus, & the necessary numbers printed or marked as described.

In Figures 15— & 6— is shown an arrangement by means of which the day of the week or date of the month or any other required period of time can be

printed on the record sheet, during its progress through the machine, at the same time as the hours of the day are printed, as explained and set forth in my Patents No. 4653 of 1882; No. 11,597 of 1889 and in my Patent Specification No 2627 of 1902.

Inside the hour cylinder N—, is mounted a small type wheel O—, a portion of its periphery projecting slightly above the periphery of the cylinder N—, a suitable opening P^{III}— being provided for this purpose.

Upon the periphery of the wheel O— is arranged the required days of the week or dates of the month or other periods of time. This wheel O—, is attached to the spindle P—, which has bearings at P^{I}— & P^{II}—.

Upon the spindle P— is also fixed a star wheel Q—, having the same number of teeth as there are characters on the wheel O—. In a suitable position to engage with the teeth in the wheel Q—, is placed or fixed a pin or pivot Q^{1}—.

As the cylinder rotates about its axis N^{1}—, one of the teeth in the star wheel Q— engages with the pin Q^{1}— & the wheel O— is rotated one division, corresponding to a certain period.

This is shown so that it happens once only in one revolution of the cylinder N—, but it can be arranged to occur 2 or more times as may be required, but must be so adjusted that the rotation of the wheel O— takes place when it is clear of the record sheet R—. S— is an inking roller.

The foregoing is not intended to print the days of the week & dates of the month simultaneously, but can be used for either as desired.

When wanted for dates of the month I should employ a star wheel with 31 teeth. instead of seven, as shown.

I will further in a supplementary manner explain the action of the device shown in Figures 5— & 6 as follows;—The cylinder N— is provided with needle points inserted in the cylinder N,— or other suitable means to draw the paper R— off its spool, by the motion of the cylinder N—, another friction spool or winding roller being suitably placed, and working in unison with the cylinder N—, to wind up the loose end of the paper R— as drawn off by the cylinder N—.

When therefore the wheel O—arrives at that portion of its circuit which is covered by the paper R—, the character which is standing above the periphery of the cylinder N— is marked or printed upon the paper R—.

In Figure 7— A^{II}— is the framework, G^{1}— roller or spool for winding the record sheet, M— a plate, preferably of metal, but may be of any suitable material in which is a slot M^{II}—.

In this slot is fitted the pivot or spindle M^{1}—.

K^{1} is a toothed rack, & K— a pinion gearing into K^{1}—.

K is also fixed to the spindle M^{1}—;

J— is a type or number wheel, the numbers or signs being placed upon its periphery. J— is also fixed to the spindle M^{1}—.

L— is the platen.

When it is required to mark the numbers or signs on the record sheet, it is drawn over the platen L— on to the roller G— & the type wheel J— is rotated by means of a handle attached to the spindle M^{1}—, when J— moves across the record sheet, & prints or marks the number or sign in the correct position on the record sheet: the pinion being geared into the rack prevents the wheel J— from slipping, so that the numbers or signs on the wheel are always in their correct position relative to the spaces on the record sheet.

The apparatus shown in Fig. 7— is a modification of Figures 2—3—& 4— The type or characters being arranged upon a narrow cylinder J—, the circumference of which is equal to the width of the record sheet upon which it is intended to mark or print the numbers that stand for operatives names. The record sheet is placed in the apparatus over the platten L— which will keep the paper in position against the type wheel J—, & will allow the numbers to be printed,

or marked, by the printing wheel J—, when the same is put in motion as described

Figures 8— 9— 10— 11 relate to the time book as herein-before referred to.

In Figure 8— the book is shown open with a days record Z, (as (marked in the machine or time recorder) fixed in place, on the left hand leaf or guard Y^1

The Figures V— running horizontally, refer to the hours; the Figures V^1— below the hours, refer to the number of minutes after the hour; thus for example, the figure 3— in the line V^1— being under the figure 2— shows, that the time when the figure 3— was stamped was three minutes past two o'clock.

The letters in the column V^{11}— on the right hand leaf of the book correspond to certain required persons names. The figures in the column W— correspond to certain names of persons indicated by numbers.

The figures in the column W^1— correspond to a total of hours, and the figures in W^{11}— correspond to minutes.

The figures in the column X— correspond to rates per unit of time; in this case it will be assumed it is rate per hour.

Figures in the column X^1— show the total amount of money earned in a certain period of time.

The space X^{11}— may be used for details of work done, or other data. It will be understood that the vertical and horizontal lines on the right-hand leaf, with the headings are ruled and printed before-hand, and form part of the book; but the record sheet on the left-hand leaf is taken from the time recorder, and placed in the book.

In Figures 10— & 11 a method is shown in which six or one week's daily records are attached to a sheet or page of the time book. It will thus be noted from the drawing that each sheet record is so folded that one part underlaps the other a certain required distance, & this underlapped & exposed part can be used for each day's summation of time worked.

The same letters and figures as used when describing Figure 8— apply to Figure 11—.

The object of this book is, for the methodical placing of the record sheets taken from time recorders. Thas is, the class of machines used for recording the times of arrival or departure of employees, when the time of such arrival or departure is stamped on sheets or webs of paper, or where the time is indicated by a signature on a certain position on a record sheet, I will now explain the mode of placing the records in the record book:—one method of filing is shown in Fig—9, in which the record sheet Z— is shown attached to the guard or leaf Y^1—, Y— being a guard to which no record is attached

Another method of filing is shown in Fig 10—, in which Y^{111} is a a page of a record book. A series of records (say corresponding to days of the week) can be attached to the page Y^{111} by folding over a certain portion of the record sheet, & attaching it to the page Y^{111}—by that side of the record sheet which is not marked in the time recorder, The position of the fold in the record sheet allowing a portion of the record sheet to project beyond its other parellel edge. This is shown in Figure 10—, in which it will be seen that in the record of "Mon" the thickened line next to the leaf Y^{111}— is the part fixed to the page or leaf Y^{111}— whilst the fold Z^1— of "Mon" is the short fold, Z^{11}— the projecting fold on which any summaries can be made.

Having now particularly described & ascertained the nature of my said invention & in what manner the same is to be performed I declare that what I claim is:—

1—The use of a gauge in connection with diagram sheets of recorders for ascertaining the exact alignment of certain required names or numbers in the manner as herein set forth & described.

2—A stamping and printing arrangement for stamping or printing the names

or numbers on the diagram sheets of recorders substantially in the manner as herein set forth & described.

3—The automatic printing of days & dates on the diagram sheet of recorders in the manner substantially as set forth & described.

4—The automatic printing of days or dates in automatic time checking machines & time recorders.

5—The method of making & arranging books for containing records from time recording machines substantially in the manner as herein set forth and described.

6—The printing of certain required details on one or more pages of a book & fastening in proper alignment in the said book certain records from time recorders & similar instruments to time checking machines for which patents herein-before named have been granted to me.

7—The method herein described & set forth of attaching separate sections of a record corresponding to a certain period of time on one sheet & arranging them so that the periodical results can be carried forward in sight to a total summary.

Dated August 16, 1902.

W. M. LLEWELLIN, C.E.
15 King Square Bristol.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1902.

A.D. 1901. Nov. 18. N° 23,257.
LLEWELLIN'S COMPLETE SPECIFICATION.

(1 SHEET)

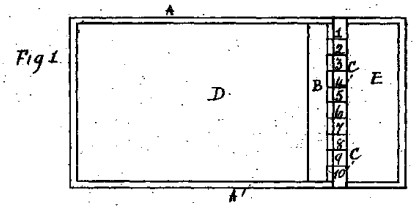


Fig 1.

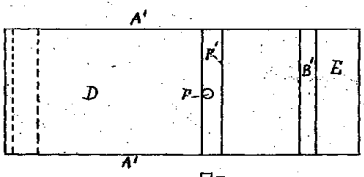


Fig 2.

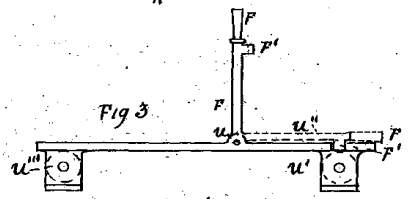


Fig 3.

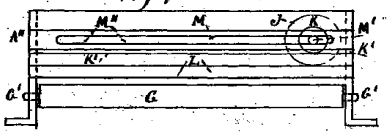


Fig 7.

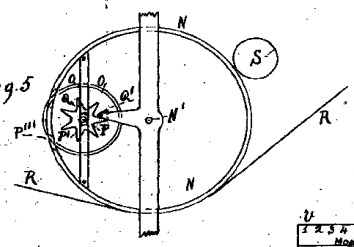


Fig 5.

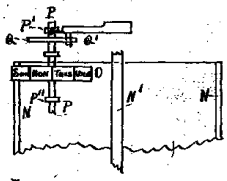


Fig 6.

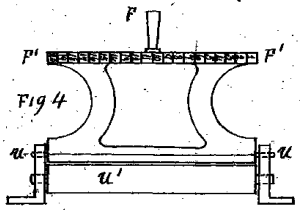
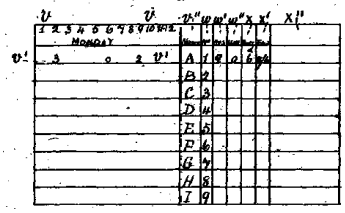


Fig 4.

Fig 8



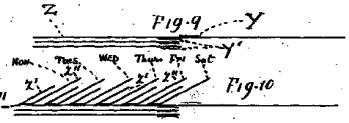


Fig 9.

Fig 10

Fig 11

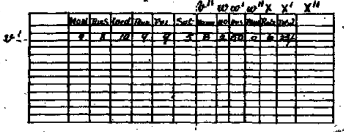


Fig 1

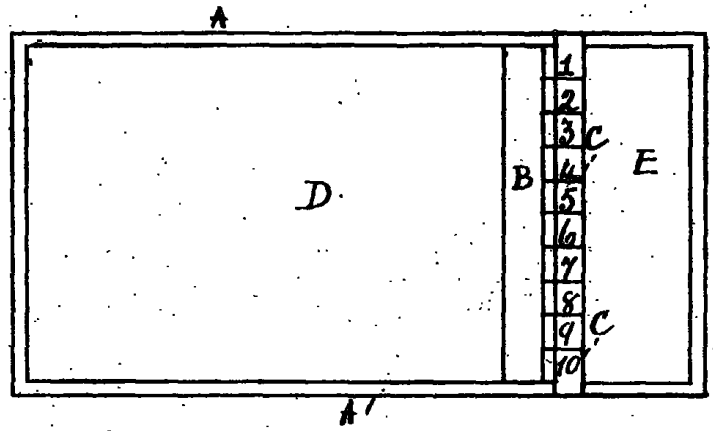


Fig 2

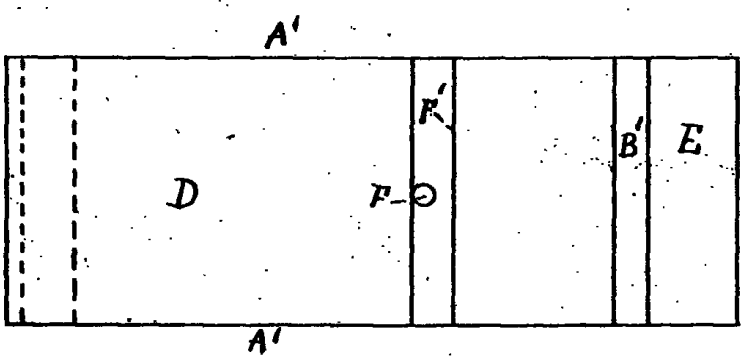


Fig 3

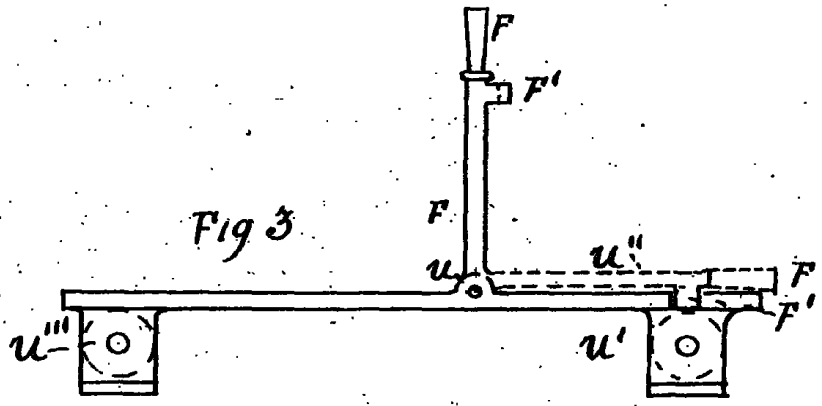


Fig 4

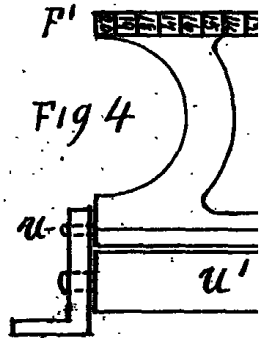


Fig 5

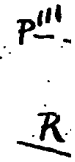
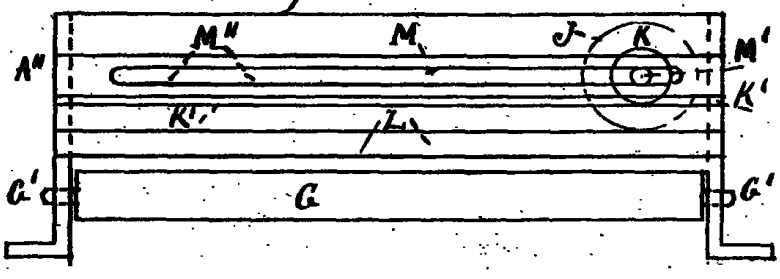


Fig 6

Fig 7



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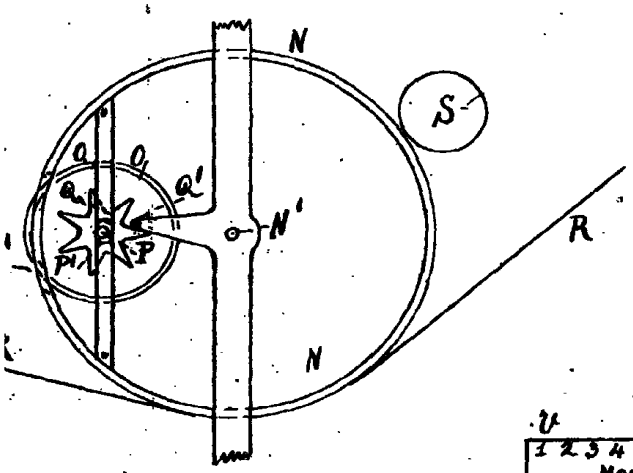
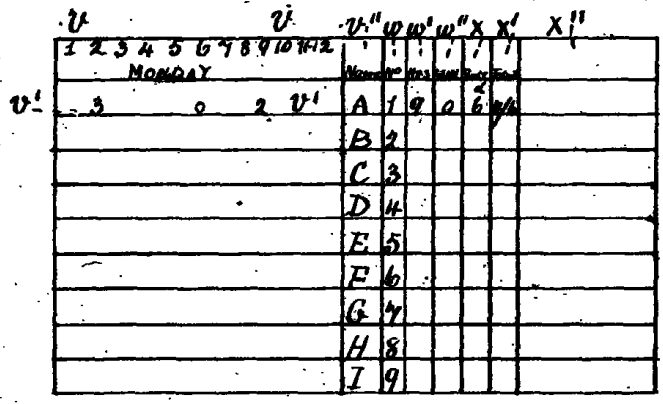
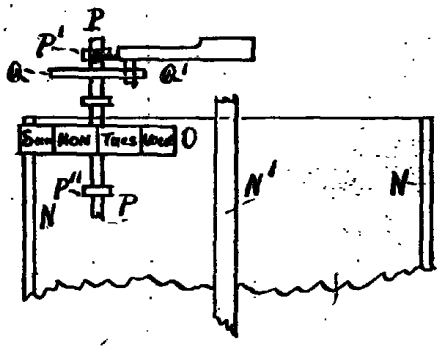
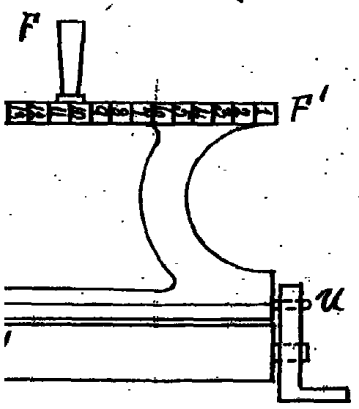


Fig 8







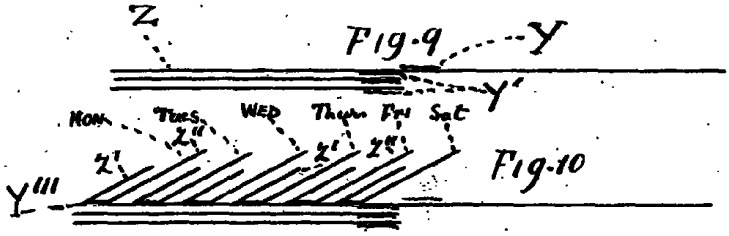
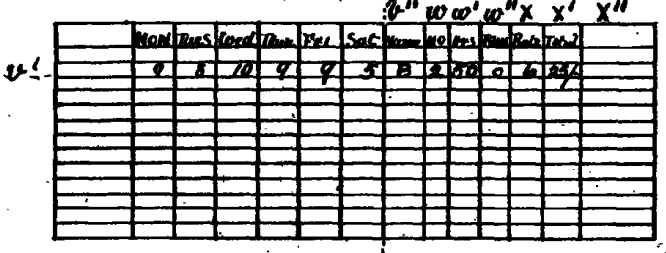


Fig-9

Fig-10

Fig 11



[This Drawing is a reproduction of the Original on a reduced scale.]

Malby&Sons, Photo-Litho.