

to the office, where it is retained by a chief piecework timekeeper under the supervision of the chief clerk, while the duplicate is handed to the leading workman, so that he may know what repairs are expected of him. At the end of the last item column, there is a space for the entry of the number of workmen on the car, check number, hours and amount. With this repair sheet before them, the workmen know exactly how much money there is in that car for them, and proceed accordingly.

Each pair of workmen operate independently of the others on the balance of the cars in the early part of the work. From the nature of things, some cars will require more extensive repairs than others, and will not be completed as soon as the ones requiring the light repairs. Therefore, the pairs from the light repair jobs, as they complete their tasks, are combined with others on the heavier repair tasks until that job is also finished. In that way, all the workmen are kept employed up to the completion of the final car, by a careful juggling around on the part of the foreman. The total cost of the car is pooled, and the different workmen paid in proportion to the number of hours each one has worked. Needless to say, there are no loafers under such a system, as the balance of the workmen see to it that each one does his proper share and works at the proper rate.

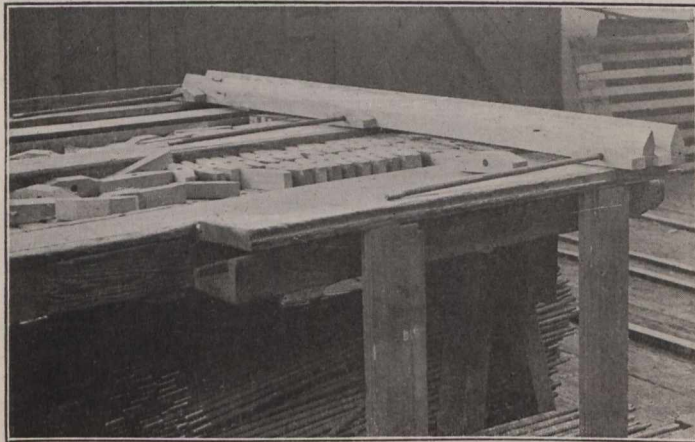


Fig. 7.—Assembling Parts of Cattle Guard.

The order for the work from the incoming inspector can at the best only cover such repairs as are apparent before the car is stripped. On stripping, other defects frequently become apparent, and to have them added to the pay list, the workman makes out a separate list of these on a plain piece of paper, and has this signed by either the incoming inspector or the foreman, who must then make an inspection to see if these defects really exist. Unless such an extra slip is made out and signed by the proper authority, the workmen are not paid for this work. This course is taken so that there can be no danger of bunco work.

The workmen each night put in slips of the amount of work performed that day. The piecework inspector, with these slips, checks over the work to ascertain if that amount really has been completed, and on verification, proceeds to make out pay memos to the men, stating the amount earned the previous day. These are delivered to the men before 10 a.m. next day, so that each day, the men are kept advised of the previous day's work. This has been found to be a good incentive to keep them keen on improving past records.

The work as it progresses is checked by the outgoing inspector for quality, and to determine if all the repairs have been performed. The outgoing inspector makes the final inspection after the body of the car has been lowered on the trucks, and the

whole car run out into the yard. The final inspection was formerly made in the shop, before the body was lowered on the trucks, but as the car strains are different when in service conditions, it was found that bolts, etc., that had been indifferently tightened up in the shop, were loose in the yard. The workman now makes a point of having everything tight, so as to avoid having to make an extra, unpaid-for trip to the yard to finish a careless job.

Crooked work on the part of the men in turning in false statements of the work, is almost impossible, and requires the co-operation of at least five to make it possible—incoming inspector, two workmen, piece work inspector and the outgoing inspector—an almost impossible combination. The job as finally correct, is signed by the outgoing inspector, and the sheet returned to the office, where it can be compared with the original, and any changes detected.

The work in the passenger car department is handled somewhat differently from that in the freight car department from the very nature of the work. The work here cannot be pooled in the same way, as there are several classes of skilled labor at work at the same time on the car, whereas in the freight car, most of the labor is of a rough type.

The assistant foreman allocates the work to the various workmen, giving out slips

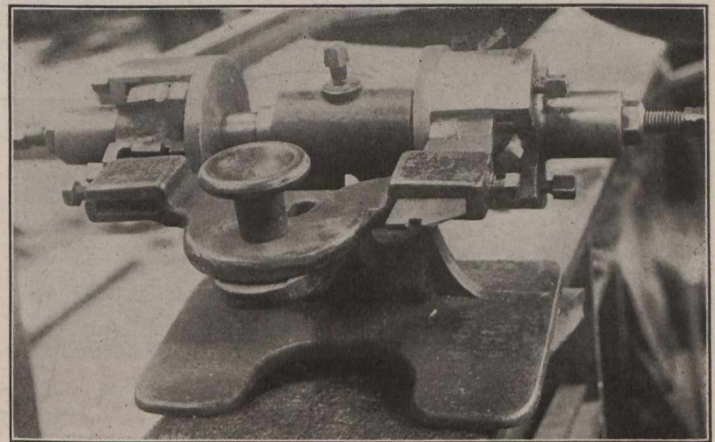
remarkable, and all are of the opinion that conditions are much improved to what they were formerly under the old day work system.

The amount of clerical work involved would at first sight appear to be rather heavy, especially when it is mentioned that for the passenger car painting alone, there are over 3,000 different prices, covering even the smallest detail of repair. The clerks become so thoroughly familiarized with the prices of the different operations that only one is required in each department, and he makes up all the entries and the memos to be given the men each day.

Matching Head Tool Setting Gauge at the Grand Trunk Railway London Shops.

In the saw setting department of the G.T.R. shops at London, Ont., there is a handy little gauge for the setting of the cutters of a planer or lumber matching machine. As shown in the accompanying illustration, it is set up for aligning the cutting tools required in the tonguing and grooving of the edges of matched lumber.

The device consists of a base casting, carrying an upright with a bearing through which projects on each side an arbor of the diameter of the matching machine



Gauge for Setting Cutters in Matching Machine Head.

called "shins," on which the nature of the work is noted. The workman proceeds to perform the work outlined, and on the completion, has the assistant foreman inspect the job and initial the shin, which is then deposited in the piece work timekeeper's box, the assistant foreman then giving the workman another shin for further work. The assistant foreman is in reality an inspector, and distributor of work.

The shins, as they are collected by the piece work time clerk, have the information contained entered on a schedule sheet, one of which is made out for each car, stating the nature of the operation and the price, dimensions, etc., in the same manner as the original sheet used in the freight car department. Before this entry, the clerk measures up the work to ascertain if the amount noted has actually been completed. The entries from the various shins finally completing the car repairs, the schedule is signed by the foreman and passed on to the office. In this case, there is a similar chain through which the orders pass, as in the freight department, requiring a general conspiracy on the part of the various parties responsible in order to have any manipulation of the accounts. The individual amounts are so small as to make the incentive for crooked work of no account.

Briefly, the above outlines the system of piece work as applied to these car shops. The smooth operation throughout is most

spindle which carries the cutter head. On a projecting ledge to the front, there is a movable cross arm, the ends of which are located opposite the location of the cutter on the arbor. These ends are open to receive the gauging pieces used for setting the cutting tools.

A gauging piece made of wood is cut as closely as possible to the shape desired, the tongued part in one end and the grooved part in the other as in the piece in the right opening. The cutters for the matched lumber are three in number, at three equidistant points on the circumference, making nine cutters in all. These individual cutters are ground to shape previously to being brought to the setting machine. The gauging piece for the tongued side of the lumber is set in the right-hand opening, the correct distance in towards the centre to give the right diameter to the cutter. The sets of three blades for the tip of the matching and the two sides are then set to this wooden gauge, which has been clamped in position in the opening. The three sets are each in turn set to the same gauge by revolving around the arbor to each successive position. Each combined cutter will then cut to the same diameter. The reverse end of the gauge is entered in the other opening, and the other cutters set in a similar manner. The corresponding cutters are then both ready for application to the machine.