

solved the drive problem in their wood-working plant. The motors are Westinghouse 2-phase induction motors operating on 60 cycle, 220 volt circuits. At the time the photographs were taken the mill was running night and day, necessitating a large accumulation of shavings and sawdust, in some instances nearly covering the motors.

This furnishes a forcible illustration of the immunity from fire risk secured with induction motors.

The illustrations show well the methods of applying the motors to the machines, and the methods of conducting the wires to the motors, so that they are not in the way, yet safe.

Saving Effectuated by Piecework System

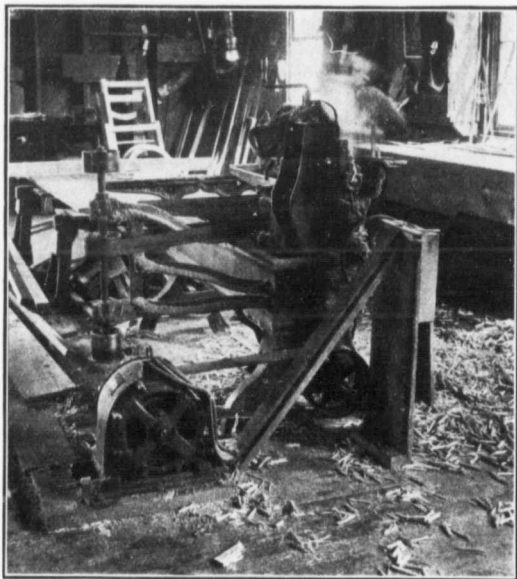
Output of a Large Railway Shop Increased 52 Percent, and Earnings of Machinists 33 Percent, by Introduction of Piecework System. Report Prepared by the Master Mechanic and Published in Railway Age Gazette.

Remarkable evidence of what can be accomplished with a piece work system in a railroad repair shop is shown in a report prepared by the master mechanic of a large shop in the United States. The results to the road and to its machinists are summarized in this sentence: "If the 772 engines repaired in 1906 had received general repairs to tires, boxes, flues and machinery under the non-piece-work conditions existing in 1904 and 1905, the additional cost to the company would have been \$163,470,

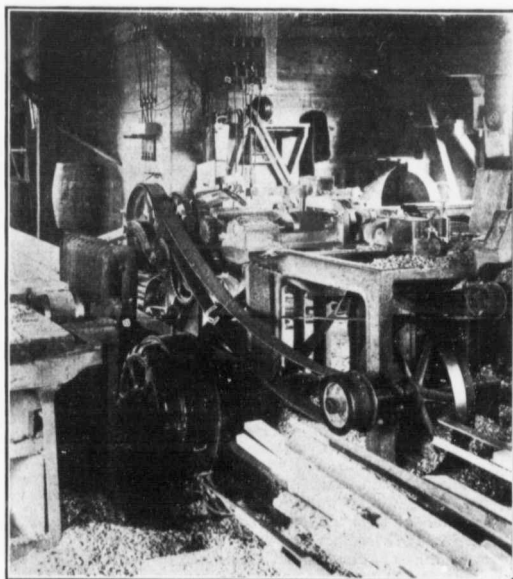
proval of each price is necessary before it is put into effect.

(b) The assistant mechanical superintendent in charge of shop work, who approved all prices before they were submitted to the mechanical superintendent. This office has since been abolished.

(c) The shop specialist or piecework expert, who has general charge of making all schedules and putting into effect the piecework prices in all the different shops along



Tenoning Machine Driven by 2 h.p. Induction Motor.



Moulding Machine Driven by 15 h.p. Induction Motor.

or \$211.75 per engine, whereas the average rate per hour for all machinists working piecework on the system in January, 1907, was 34.2 cents, as against 25.9 cents, average rate for day work during the same month—a gain to the individual workman of one-third."

Interesting details of the operation of the system are furnished and some extracts from these are given below, taking up first the

PIECEWORK ORGANIZATION.

as it was introduced September 1, 1904:

(a) The mechanical superintendent, whose final ap-

proval of each price is necessary before it is put into effect.

(d) The master mechanic of the shop, who passes on all prices before they are submitted to the shop specialist.

(e) The general foreman of the shop, who personally signs all prices before they are submitted to the master mechanic.

(f) The assistant to the general foreman, who times all operations on which it is desired to make piecework prices, giving in detail the time necessary to perform the operation, which if performed on a machine would include: