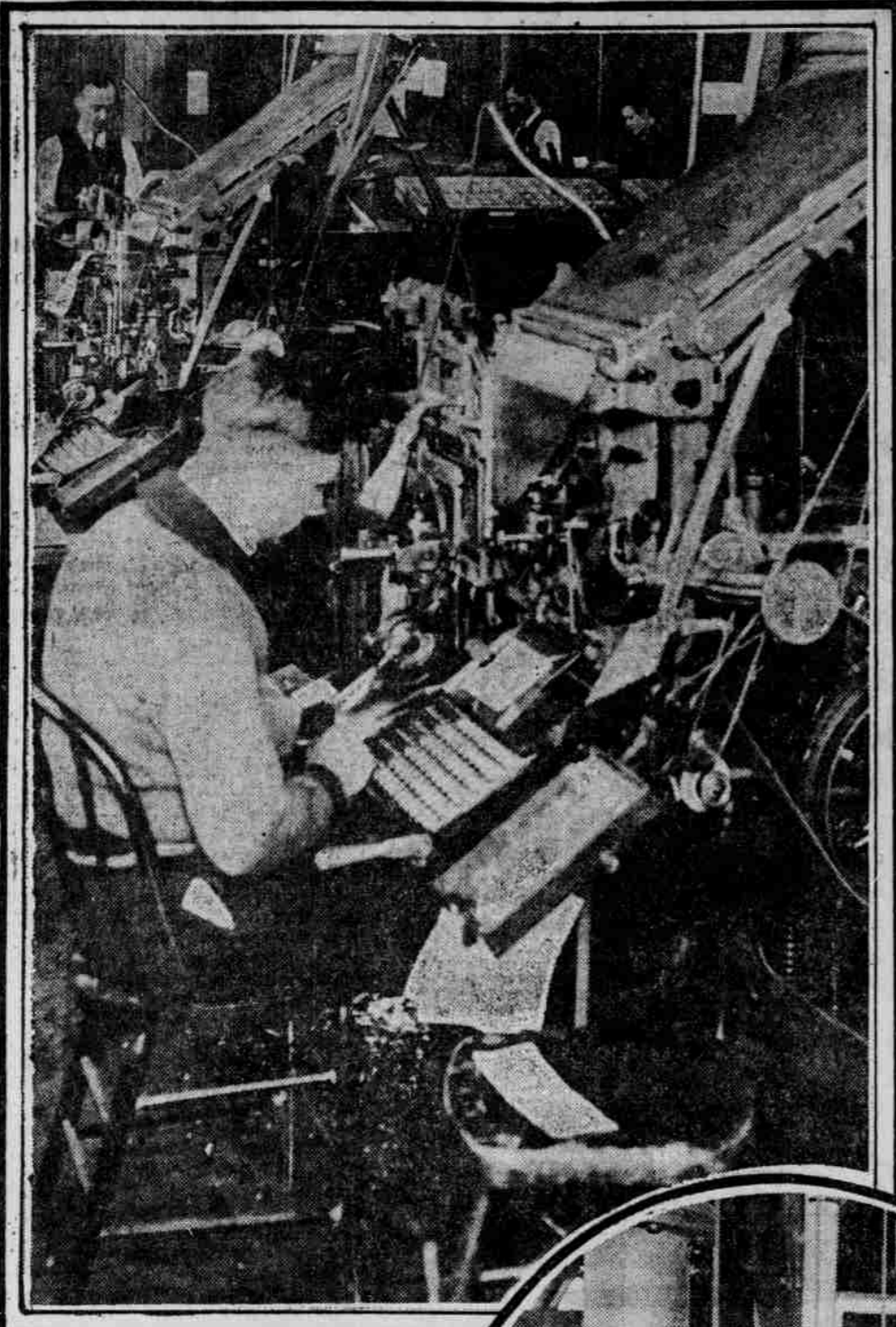


# Local School Leads All America

## Benson Polytechnic, Model Plant of Its Kind, Pays Portland Big Dividends



*Linotype Operator On His Machine.*

BY DEWITT HARRY.

"SCHOOLS, like factories, are known by their products," said the member of the school board when the preparation of this article was suggested, and this opened up a novel line of thought. It costs money to make machinery, to make furniture, to make cloth, and it is the workmen who create the most of this wealth from the raw materials. It costs money to make workmen, and good workmen are worth more, much more, than ordinary or poor ones, just like good furniture is more in demand. In a recent chart prepared by the Portland Chamber of Commerce, it was shown that local workmen were the most efficient on the coast, that they added more to the complete value of their products for the money expended in wages than those of any other city.

Now we cannot attribute this last statement to schooling, but it is just cited at this place to give an idea of the healthy atmosphere skilled labor breathes in Portland. Naturally they take a pride in the standing of their city, and the mechanics and tradesmen have a worthy example in their apprenticeship. Possibly some little of this permeates the being of the boy studying and working at the bench or lathe. In any event, Portland is in an enviable position when it comes to the production of boys with a trade, to treat the subject in a commercial manner. The great factory that manufactures skilled mechanics here is a public school, and it seems paradoxical to mention it, but this school, Benson Polytechnic, is better known outside the city than at home.

### Plant Pays Big Profit.

Just to get back to the matter of output: Here is a school, or, to maintain the simile, a factory, whose output is a human product. Boys come here from all over the United States with their parents and pay tuition so that they may have the advantages of an education obtainable nowhere else. The monetary investment in the Benson plant is \$750,000. The output of this plant has shown a steady increase. Five thousand dollars is a low valuation to put on a good mechanic; most of them are worth many times that sum. Each one is qualified, trained and fitted to be self-supporting and a creator of wealth, an asset of the highest type. The most excellent productive material for citizens. This year Benson graduated 80 of these \$5000 students, an output, figuring humanity in the dollars and cents sense, of \$400,000, or over 50 per cent return on the investment.

Talk about efficiency and profiteering! Here it is in the ultimate sense: A factory returning over 50 per cent profit to its owners, the citizens of Portland! It's no wonder that the eyes of the rest of the country have been on Benson Polytechnic for several years. It has been a revelation in schooling and the possibilities of perfecting the technical educational facilities.

Next year there will be a class of 100 given their certificates, equal in this day to any apprentice papers held by any tradesman. The output is on the increase and the end is not in sight. This year over 50 per cent return on the investment, next year 75 per cent. And the recently voted bonding issue for the construction of new buildings and the improvement of the old will call for a substantial addition to the facilities and equipment of Benson, and the output

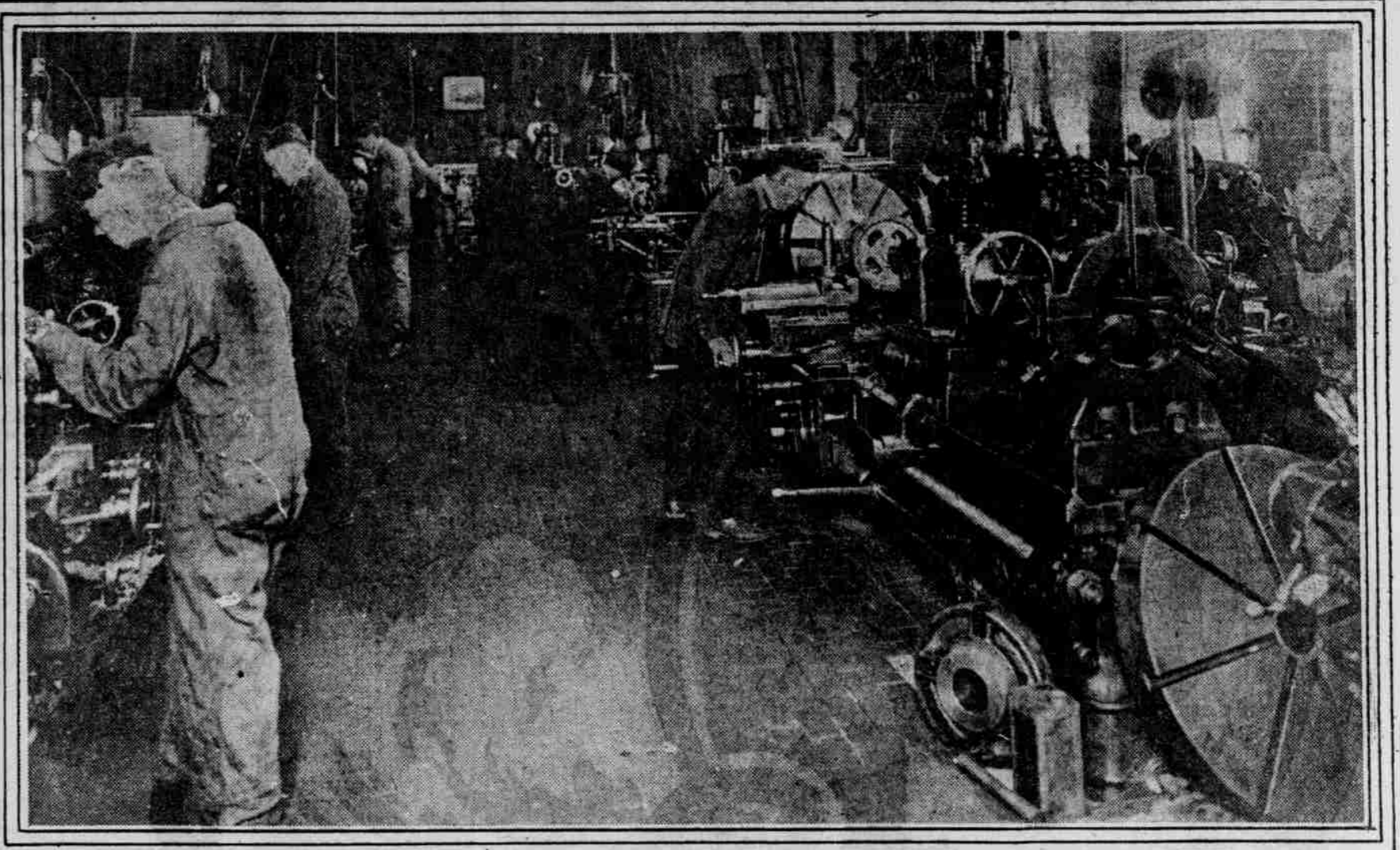


*Trip Hammer and Crew.*

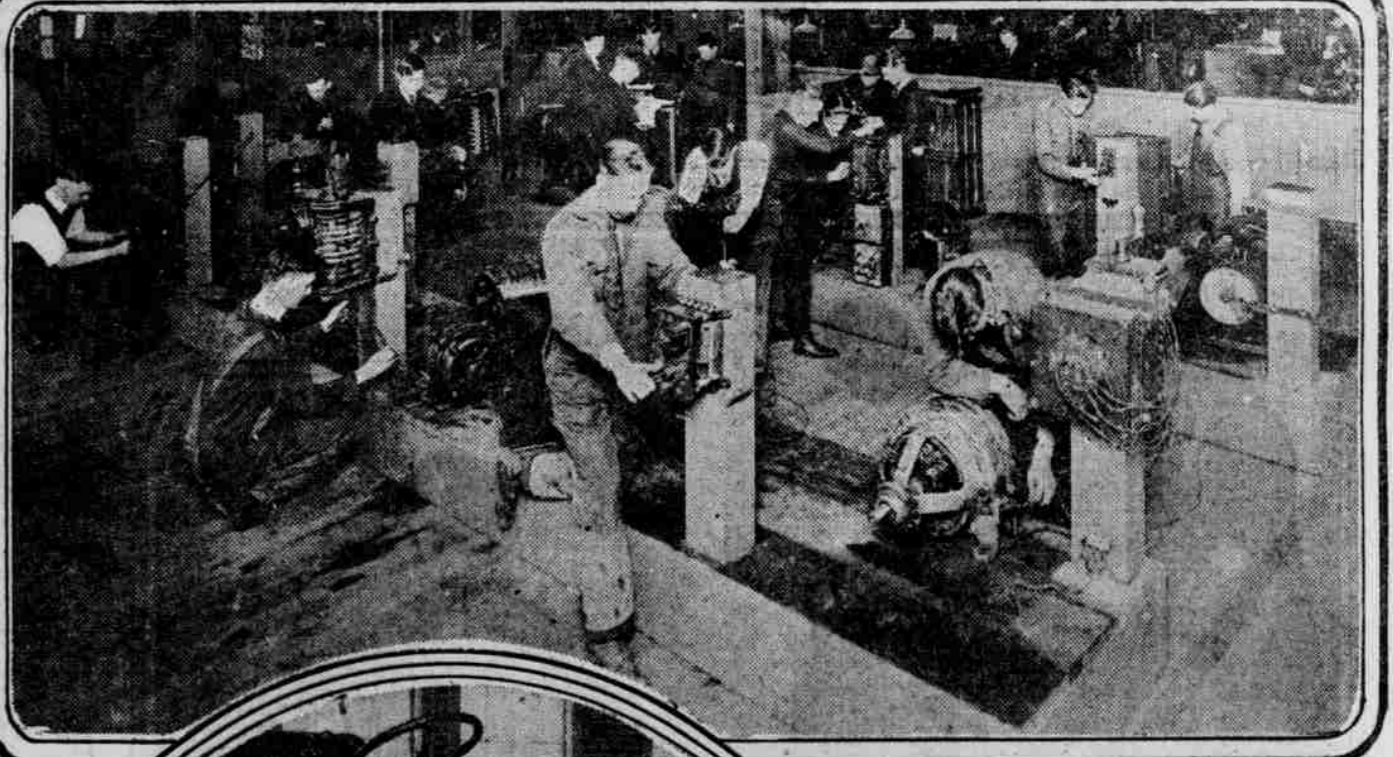
may be expected to increase. Good business—well, anyone will admit it! In reality this educational achievement that has riveted the eyes of the country on Portland, that is an asset to be ranked along with typically Portland things such as the Rose Festival, is not such a revolutionary departure from accepted methods as might be judged from the opening paragraphs of this story. It is merely the application of practical principles in place of theory. George B. Thomas, member of the school board, worked for years as a machinist in Portland shops. He is an excellent machinist, can take any of the big pieces of equipment in Benson and make them eat right out of his hands. He never set out to be an educator, but he did know machinery and shop work. He was sent east to represent the school board at the National Educational association meeting and was placed on the programme to give a talk on Benson. All of the delegates were qualified by years of experience in the teaching field, what could a mere tyro like Thomas tell them? However, he prepared his address, a real practical talk on the unrivaled success of Benson, and the audience sat spellbound. They were learning some-

thing and they knew it. Thomas was made head of the department of business administration of the association. Benson became a by-word in technical education. Men were sent here from all over the country to study at first hand the methods in vogue. The school was written up a score of times in magazines and educational publications, until now it is accepted as the model establishment of its kind in the country. This tribute unquestionably has been earned and the result is natural. Benson graduates are being sought after. Plant managers know it and, let a boy step into their place of business and say he is "Benson trained," and he gets a job—and holds it. And, the strangest part of it all is that so few citizens of Portland realize what Benson means.

The school board gives the following historical data regarding the school: "Benson Polytechnic had its beginning in the old Atkinson building in the heart of the city in 1908 under the name of the School of Trades. Then, owing to the generosity of Simon Benson, who gave \$100,000 for this purpose, it was moved into a new building at East Twelfth and Hoyt streets in September, 1917, adopting the name Benson Polytechnic school.



*Few Commercial Plants Equipped Like This.*



*Electricians Assembling Motors.*



*Auto Mechanics at Work.*

"Benson Tech offers three-year courses in printing, pattern making, cabinet making, carpentry, machine shop, sheet metal, operating steam engineering, architectural drawing, machine blacksmithing, tool making, electrical construction, plumbing, gas fitting, molding and foundry practice, gas engine and automobiles and mechanical drawing. It is important to train workers for the trades that predominate in this locality. This assures mutual benefits to the boys and to the industries of the community. The course of study for the four-year courses includes English, mathematics, general science, mechanical drawing, foundry, pattern making physics, blacksmithing, machine shop, industrial history, civics and chemistry.

### Training Is Thorough.

"The students devote half their time to shop work and half to drawing and academic subjects. The school started with an enrollment of 127 students in the year 1908 and was practically at a standstill, so far as enrollments were concerned, until 1917, when the enroll-

ment reached 460. Then began equipment from a productive standpoint. The result was that it produced workmen who were in demand and the enrollment today on account of such equipment was 1700 in the day school and 600 more at night.

"The shops are equipped with up-to-date machines, large enough to enable the boys to turn out real work, such machines as they find in actual industry, and very much in advance of the average shops, for there is nothing but the most modern and highly developed machinery, which is the most important factor that makes skilled workmen of students, who are more and more in demand by employers. These conditions stimulate the interest of the boy in his work, as he realizes that he is working in a situation that approaches that of an actual shop, with real machines to work with, and that the training which he is receiving will make him an efficient mechanic when he graduates. The efficient mechanic is not the man who makes the expensive mistakes by using the cut-and-

try method. He gets it right the first time because he has been scientifically trained. This is the kind of a mechanic that Benson produces.

### No Toy Workmen Here.

"Too often the mistake is made of equipping trade schools with small tools, not much larger than toys. It is just as essential to teach production as it is theory. Because of this mistake, the manufacturer is loath to give school graduates work until they have served an apprenticeship in real production plants. One can readily understand this because of the enormous investments in plants that require them to produce, as the real object is profit. In these days of competition, production is the real essential.

"Another object we kept in mind is to fit students to make a success of their trade from a financial standpoint, and to do so they must be provided with the machinery and equipment of modern shops to learn to operate and to have thorough knowledge of their construction.

"It is the practice of the Benson school to have the boys thoroughly familiar with each machine, the work it is designed for and how much it should produce. This is taught first by having the boys disassemble the machines and reassemble them again and, in many cases, rebuild them. Before starting a job they make careful estimate of the time that will be required to finish it. They are trained to calculate the cost of the job in material and labor, plus a certain per cent for overhead expenses and profit. At every stage in the process a check is taken to compare with the original estimate. This gives them a thorough knowledge as to the construction and capacity of each machine, enabling them to figure the actual cost of production. General shop practice is thoroughly taught. Arrangement of equipment is another very essential point, often enabling plants to produce to such an advantage that it is, from a financial standpoint, often the real factor that secures the contract.

### Shop Practice Exact.

"All index tables calculated by machine builders that are placed on machinery pertaining to speed, feeds and other mathematical calculations are re-

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