

Giant Gear Used On Western Work

**Pygmy Tools Fail So Special Tackle
Is Made for Mighty Tasks**



*Manganese
Steel Buckets
Stand Wear
in Mines.*

BY DEWITT HARRY.
"H"OW much elephant power in one of your biggest machines? was the query put to a Portland machinery sales firm by a concern engaged in logging in Tasmania. Then the correspondent went on to state that his firm contemplated doing away with their great herd of elephants and handling their immense hardwood output by machinery, always providing they could get engines strong enough to stand the tremendous strain. From another letter, with a Borneo stamp—that land whence came the wild men exhibited in the circus of old—came a message stating that coolie labor was getting scarce; that the days of the cheap native worker seemed about past, and they also wanted to get figures for the purchase of modern equipment for use in their forests.

In making inquiries of this nature eastern American agencies are neglected to a great extent, for the reason that the men engaged in logging in the lands adjacent to the Pacific have to handle enormous weights in their operations. The forests on the south sea islands are generally hardwood, huge, heavy timbers and ordinary lightweight machinery would fail in the tasks. Knowing that the woods of Oregon and northwest America furnish the nearest parallel to their peculiar conditions, these men write to Portland, the city known as the center for the manufacture of heavy-duty machinery for woods work, and generally manage to get their wants satisfactorily filled. This is a virgin field, one essentially belonging to this city, on account of the combination of circumstances, and one that is just developing. Inquiries began to come here prior to the declaration of war and have just been renewed after the necessary cessation of activities on account of world hostilities. Unprecedented development of the export machinery business is confidently expected within the next few years.

Giant Tools Are Made.

However, it is not only in the manufacture of logging machinery that Portland is coming to the fore, but in the making of numerous other necessary adjuncts to heavy work. Peculiar conditions early met with in the development of the great western section of the United States necessitated the creation of a giant set of tools here, the ordinary machinery so efficient in the east proving a failure. Not only was this the case in the woods, but in the fields, the shops and many other industries. Therefore a group of plants destined to play a prominent part in the later upbuilding of the country started, and it is on them that the main reliance has been placed of late years. It has been necessary to import a great deal of the raw materials, but the final completion of the machinery and apparatus for the great western work took place near the scene of its future use.

In the city of Portland are fully a score of plants engaged in the manufacture of tools essential to the particular conditions to be met. The gain in smoketacks locally is expected to increase in greater ratio in the near future, as indications are that there will be an increased demand for their products. Huge ropes, cordage and tackle to handle the great weights have to be made, as few other facilities have sufficient demand for such a product to warrant the starting of factories for its manufacture. One such firm here turns out miles of giant rope that makes most other cordage look like tiny threads in comparison. In the manufacture of this rope enormous quantities of fiber have to be imported, more business for the ships plying into the local harbor. Of late years there has been some effort made to get Oregon ranchers interested in the growing of some plant that would yield a fiber tough enough to permit its use in rope making.

Orient Demands Special Goods.

Then there is one firm here that is getting repeat orders for huge pulleys for oriental trade, pulleys over five feet in diameter and with a face

fully a yard across, an enormous wheel that is seldom made in the ordinary course of trade but that is turned out here in exceptionally fast time and meets with general satisfaction for its particular use. Local firms find it possible to comply with the most exacting demands of oriental correspondents, for the exigencies of the home market have made them see the force of being able to fill exceptional orders. There is hardly an order that has to be turned down, for in the furtherance of their plan and with an eye to future business the people here consider it the best kind of practice to go out of their way to meet exacting conditions.

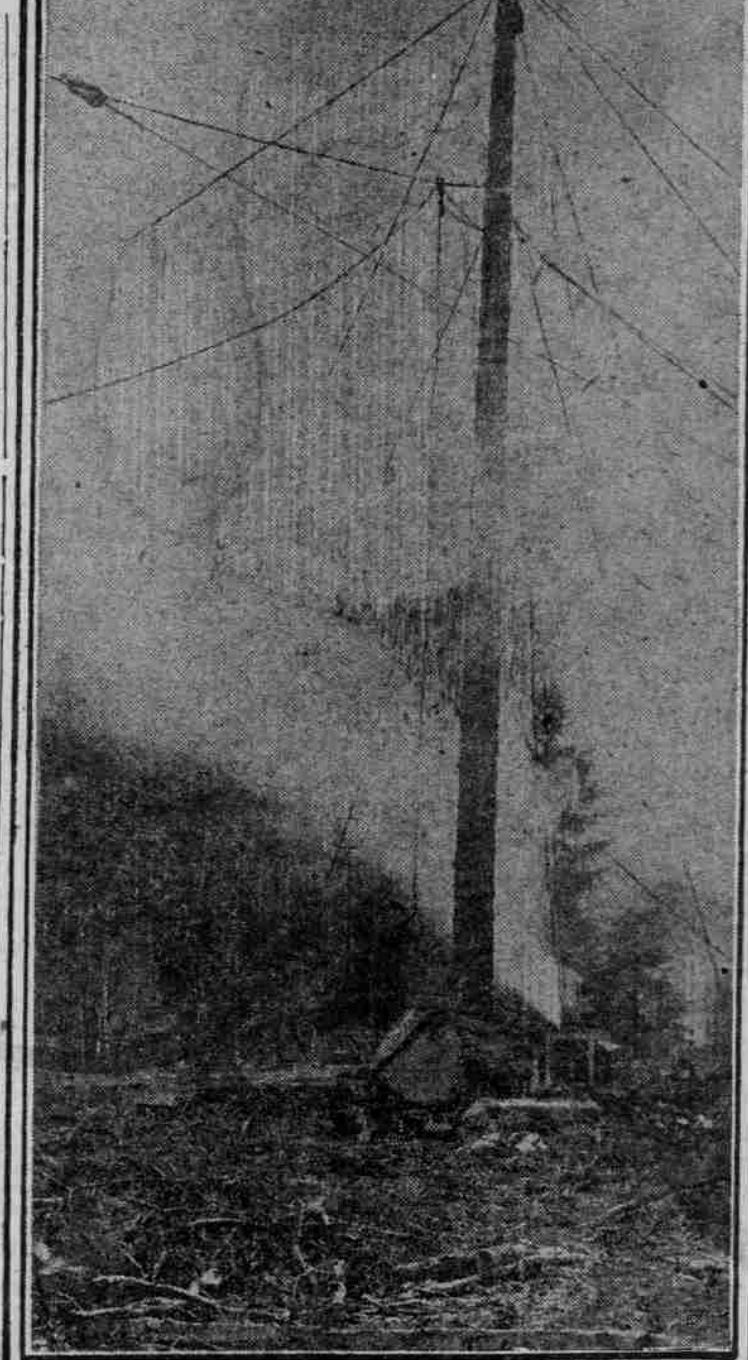
High-duty machinery for big tasks is coming into greater request as the lands of the western world begin the harvest of their natural resources. When the great farms of the west came into being the owners soon found that they could not make a success of the game with the type of machinery found practical in the east. In the sowing and reaping of thousands of acres they invented great combined harvesters and threshing machines, enormous engines that went across their fields and cut and threshed the grain at one operation. It would have been impossible to perform a similar task on the smaller eastern farms for the reason that the great combines were too expensive for limited acreage, but out here they filled a real need. However, of late years the birth of the practical tractor has solved the problem of many owners of entire townships that were placed in grain and these are the same conditions that have to be met with across the Pacific.

Giant block and tackle outfits weighing many tons, huge dredges and shovels, enormous boilers and donkey engines, large ships all have been made in record time in Portland mills and plants and without the provision of extra or extraordinary equipment, just in the ordinary course of events as it were. During the war, for instance, one plant within the city limits had the American record for the manufacture of Scotch marine boilers. This plant made the greatest record of the country and at the same time had the largest output, one complete boiler daily. It yet has this equipment and can turn out the jobs providing there is a demand for their product. Portland is extremely jealous and proud of its war record, for there was not a city in the country that found itself in such an enviable position when the call came for increased production. The firms operating here were familiar with meeting emergencies and the manner in which they met this one and the number of construction records they set will stand for years to come.

Mining Problems Solved.

In the working of the mines in the west another set of particular conditions had to be solved, one of them being for materials tough enough to stand the wear from the extremely hard ore to be handled. To do this successfully a Portland man made a study of toughening processes for metals, with the result that now the city markets an ore bucket that will stand almost unlimited wear. This man also makes it possible to use his materials for the salvaging of worn-out buckets and scoops, as he has a process for lining them with the new materials, hardened so that they will stand the wear.

The development of Portland as a manufacturing center has been retarded to a great extent by the necessity for importing its metals. Because that this will be overcome in the near future through the location of immense bodies of iron ore near the city now seems possible. There are those who question the feasibility of smelting ores here on account of the size of the market, they holding that there would not be enough demand for the establishment of reduction plants with the consequent heavy investment of capital. On the other hand the argument is set forth that numerous manufacturers, realizing the strategic location of this



Heavy Equipment Drags Timber to Market.

city with its great opportunity for development in both local and overseas fields would welcome a chance to bring the plants here, provided they could be assured that the raw materials were at hand.

It is understood that several parties of engineers are now engaged in exploring the iron deposits, and that their reports are hopeful. Occasional inklings of sub-rosa deals and counter deals crop to the surface, bearing the facial assurance that big interests are becoming intensely interested in the possibilities of a great deposit near the city. If present indications materialize, Portland, with her exceptional reputation already achieved in the field of foreign commerce on a limited output, will step to the front as one of the greatest of the manufacturing cities in America and undoubtedly will be the metropolis of the Pacific slope. Be that as it may, prospecting for iron continues unabated, with the chances getting better and better that the parties in the field have located indications greater than they feel warranted in making public before they are absolutely certain of their ground and that they have their backers fully protected.

One of the healthiest signs of the condition of the local industrial field is the tendency, continually apparent, of most local firms to expand their business. New sites are in greater demand as time passes. One big manufacturing corporation, handling metal products exclusively, started 15 years ago with a five-acre site, considered at that time ample for all



Huge Journey Yarder to Handle Forest Giants.

future development of their business. How it has surpassed their fondest expectations could not better be illustrated than by stating that they will move within a few months to a new and greater plant on an 11-acre tract that they are preparing for occupation. While they consider this large enough to cover all of their future chances for growth, it is not too far-fetched to predict a similar condition of affairs after a few years and the next move to another and even larger site.

Huge Steel Market Here.

In the fabrication of structural steel Portland plants have long taken a prominent part, the metal coming here in the rough and being shaped in the city. With the recent drops in this material there soon should be renewed activity along these lines, though of recent years the development of reinforced concrete construction has nearly crowded steel out of the building field. Another industry, essentially a local one, that is of national consequence at the present time is the making of drag saws. These saws, invented and perfected here, are filling a long-felt want and the demand is increasing by leaps and bounds, with the result that the factories engaged in their manufacture are hard put to it to keep up with their orders.

However, it is on the forests of the world that the main interest seems centered at the present. Will they hold out? Already it seems to have become profitable to ship timber across oceans and Oregon's products



Huge Log Starting for Sawmill.

are reaching the nooks and crannies of the world by this means. The operations in many of the lands, outside of the United States but bordering on the Pacific, are yet in their infancy. In certain development of this work Portland should take a prominent part, with her admitted leadership in the making of heavy-duty woods machinery. The trend towards steam in these fields is apparent. Immense belts of timber in Siberia and even in Africa create a demand for machinery that Portland can supply and likely this city will get a chance at her share. Judging by the inquiries that are coming in and by the success of the heavy operations that are carried on hereabouts.

Many Lands Demand Machinery.
Central America is another section of the globe that has been largely very little to date, though there are



Huge Log Starting for Sawmill.

several operations being started now. In common with the localities already mentioned, and that will be mentioned, this section can be reached and can supply machinery manufactured here. Plenty of timber is yet standing in India and the same is the case with most of the tropical islands of the south sea, the growth near the equator being exceptionally heavy and difficult to handle. In Tasmania is found another locality with similar problems to logging here, heavy trees and difficult terrain, mountains and no roads making it impossible to use horses. The knowledge that Oregon knows how to solve their problems is a vital factor in drawing the business here.

Other American and European cities cannot furnish the equipment they need, as they do not appreciate the enormity of the contemplated operations. The closest approach to paral-



Huge Log Starting for Sawmill.

lel conditions is met with in the timber of the Pacific northwest and here they must look for equipment to handle their tasks. The Dutch operators have already placed orders here. In the Philippines and Java Portland machinery is proving efficient. In Brazil and other South American countries they swear by Portland equipment and Mexico would use more if conditions were not so turbulent there. All down the isthmus the Portland firms have been taking orders, in Paraguay and Uruguay, across the Pacific in Tasmania, New Zealand and Australia, and north in our real territory of Canada and Alaska.

Thanks to the early development of this exceptional line of heavy duty machinery, destined for big work and not small tasks, Portland's outlook for a bright future as a machinery manufacturing city is exceptional.

AMERICAN SKYSCRAPERS WIN RECOGNITION OF EUROPE

Sweden Pronounces It "She-Screwpa." But That Nation Is Building One in Good Old Manhattan Style.

BY ALLEN W. PORTERFIELD.
An article in a recent number of Dagens Nyheter begins as follows: "Stockholm will soon have its first skyscraper. Will this new giant be built as were its ancestors in America, from the top down? Whether it will or not is incidental; it is to be built and that is the main thing. Located in Kungäsgatan (King street), it will be christened 'Norra Kungstornet' (Northern King's Tower)."

After three centuries of waiting then we may come into our own. Europe has been but little inclined to give us credit for having added greatly to the world's civilization and hardly at all as this connects the extending of the arts. In architecture we have been accused of being either imitative or original in an uninspired way. However, with the foundation already excavated for a skyscraper (called skyskrapa and pronounced she-schra-wpa) in Stockholm and with plans under way for their general introduction into Germany—as soon as the funds are available—we may look forward to the time when the American skyscraper will be treated with the same sort of respectful consideration enjoyed at present by

Italian Renaissance or French Gothic. There is a sound reason to believe that Sweden is adopting the American skyscraper out of admiration for its artistic features and not under commercial duress; for however many lakes there may be in Sweden, land is plentiful. And yet Josef Noren, who has made a careful study of the American skyscraper and is the authority on it in Sweden, has manifestly pleased his fellow-countrymen by his statement: "It must be borne in mind that the Woolworth building with its 57 stories is not to be regarded as the maximum in tall architecture. There is indeed no limit to the height to which a building may reach up into the air."

Nor are the Swedes inclined to balk at expenses. When Germany recently began to make propaganda for the skyscraper those opposed to the idea and some of those in favor of it were amazed when they learned that the Woolworth building cost \$3,000,000. They realized that nine millions was an enormous sum even when reckoned in dollars and that prices had greatly increased because of the war. Then, having secured much white paper, they tried to visualize \$3,000,000 in marks. Mathematically they suc-

ceeded, but their success created a number of skeptics. Germany is postponing the erection of skyscrapers for the time being on the ground that should a strike break out while the building was only half completed it would tie up a great deal of material and leave a temporary municipal eyesore.

But there is none of this wavering spirit in Sweden. Dagens Nyheter speaks of the cost of the Woolworth building as though it were a mere incident in the romance. In the first place it estimates the cost "at \$15,000,000 just before the war." It then calmly proceeds: "It would now cost three times as much, or \$45,000,000. This would equal 22,000,000 kronor. It is a lot of money, but it is a good investment when so much business has to be transacted in one spot."

Nor are the compatriots of Hjalmar Branting contemplating the erection of an unusual building without having first set down and studied how the thing is done. They are ready for any emergency. If the owners of the contiguous buildings enter a suit against the architects of Stockholm's highest on the ground that they have no legal right to shut out air and sunlight which they have enjoyed from time immemorial, they are prepared to follow the example of the builders of the Metropolitan tower, who, when the Madison Avenue Presbyterian church objected to the building of that beclouding cathedral of business merely went ahead and built from the top down and had the affair settled out of court by the time they began to put in the walls near the ground.