

More Than \$40,000,000 to Be Saved Annually by Cold Seasoning Lumber

Invention of Robert Z. Drake, Bridge Builder, Brings Timber Users of United States a Saving in Money and Timber That During the Course of Years May Run Into Billions of Dollars.

By VINCENT C. KELLY.

It has been well said that man has, as yet, but barely scratched the wall that encircles that vast storehouse known as knowledge.

True, he has cast a bit of light in that black valley of ignorance, but oh, how dim the light. It is but the flare of a lone match vainly trying to show its light in the great open spaces of the darkest of nights.

Such men as Edison, Steinmetz, Bell, Ford and Wright have peered for a moment over that great wall and from what they saw gave to the world "bits" of knowledge from which man learned how to hear the voice of another thousands of miles away; how to fly at terrific speed; to save thousands of hours of weary toil; to enjoy the music and the songs of great artists

lities in salvaging timber heretofore wasted, there is possible a saving in freight charges to the timber districts of the Northwest an amount estimated at more than \$40,000,000 annually.

The art of cold-seasoning, while it takes the place of drying and cures the lumber approximately 900 pounds or more of weight to the thousand feet, is distinctly not a drying process. In fact in nearly every way cold air "seasoning" produces opposite effects from drying or air seasoning, except in the removal of moisture, and this is removed by a principle opposite to that of drying or ordinary air seasoning.

Best Results From Cold Air. Cold air is substituted for heat. Best results are obtained at from

tained considerable firewood my curiosity was aroused as to how this was possible, as it was very evident that the tree had been lying there for a great many years.

"Being aware of the fact that the average life of a tree in that condition is usually from 50 to 75 years I was stirred to considerable effort to ascertain what could have caused this preservation. Among other things that I took particular notice of at the time was the position in which the tree lay, resting as it was in a sort of depression within a basin. I also observed that although the wind was sweeping high overhead there were, apparently, no air currents down where the tree was lying.

"This peculiarity was substantiated by observing the smoke from the camp fire. It arose straight up for probably 75 feet before the air currents took hold of it and swept it away.

"Recalling that we were at a 2000-foot elevation it occurred to me that we were above the point where the air was carrying any very high moisture content. These observations gave me much food for speculation and eventually in the first conception of what later developed into the idea of cold-seasoning.

"The next observation of the query: 'What makes timber last?' was in the northern woods of Canada on the Hudson bay slope. Here I found generations of small trees lying on top of one another in sound condition. I here formed an opinion that the reason for the sound condition of these trees was because of the fact that the air at this particular place carried a very low moisture content at a low temperature, thus resulting in the wood remaining unhardened until it could become seasoned.

"From this opinion the idea of cold-seasoning began to shape itself. "From then on I began to study how lumber could economically be placed in position to automatically receive the benefits of cold seasoning.

"As a bridge builder I was annually using millions of feet of timber for construction of bridges. This fact, perhaps, more than any one thing, drove home to me the necessity of preservation of our timber resources. Realizing that cold-seasoning offered an immeasurable degree of saving in timber I was constantly spurred on to my self-appointed task of saving the raw product, the use of which was continually increasing.

"The consumption of timber in bridge building," continued Mr. Drake, "is higher than it ever was, in spite of the propaganda 'bait' regarding alleged superior substitutes.

"In the course of my efforts to develop the process of cold-seasoning I made many sketches of mechanical devices for assembling the lumber. Eventually these resulted in definite sketches, prepared by my engineers and myself, of a house with mechanism described by me as seasonous 'A.' The mechanism of the process was entirely drawn in working detail. When finished I bound the sketches laying them away knowing that while they would do what I wished to do they still were not the best plans that I knew could be produced. This point of development was reached in the fall of 1921.

"With other engineers I then began the sketches for what was termed seasonous 'B.' This engaged most of my time for the following year and resulted in complete designs, details and working drawings. And, although they were not closely followed they were the nucleus around which the first seasonous was built.

"This house was built in 1922-23 at one of our plants in Lincoln, Neb., and is still in operation. It was torn apart and rebuilt three times, finally resulting in a complete success as a cold-seasoning plant.

"After operating this plant experimentally for a limited time and for the purpose of testing its capacity as a drying plant I added facilities for maintaining temperatures ranging from 50 degrees to 100 degrees and there found we could greatly expedite the drying feature of handling lumber, and at these low temperatures were able to do such drying without damage to the structure of the lumber.

"The temperature was never allowed to go above blood heat and seldom if ever approached that heat. The temperature averaged about 75 degrees. For many months we used this plant only for fir wood.

"One of the outstanding accomplishments of this first seasonous was the seasoning of black gum, a wood heretofore of little value in the commercial world, because it twisted and warped so badly that

it was almost impossible to use it." Asked just what value this was Mr. Drake pointed out that black gum, after going through the cold-seasoning process and being cross-sorted, becomes the most valuable bridge flooring so far produced.

This accomplishment of Mr. Drake's cold-seasoning process alone means a saving of millions of dollars to the people of the United States.

"Aware that certain climatic conditions," continued Mr. Drake, "favored cold-seasoning caused us to make an exhaustive research of communities having the most favorable climate. The culmination of our research work resulted in ten prospective locations, Cottage Grove being the most preferred of them. As a result I obtained the Shortridge property in May, 1924 and started work on seasonous No. 2.

The original No. 2 was 300 feet in size, but the success of this venture necessitated adding an additional 400 feet in January 1926.

"The present house has a cold-seasoning capacity of two and one-half million feet at a time, the annual turnover being about ten million feet.

"The duration of time necessary for cold-seasoning averages about 50 days to each inch of thickness of lumber.

"And thus," concluded Mr. Drake, "is written 'finis' to the task I set for myself back in 1909."

Mr. Drake is one of the largest users of timber in the world and the fact that he already has plans under way for four additional cold-seasoning houses to be erected here in Cottage Grove is mute evidence of the great success that the Drake cold-seasoning process has become.

The wide recognition Mr. Drake's cold-seasoning process is securing is evidenced by the fact that the United States government, through its forestry service, has sent Mr. Johnson to make observations and prepare a study of the results obtained in cold-seasoning, of a car of mixed clear of varying dimensions, to be cold-seasoned during the succeeding months at the Cottage Grove plant.

In the studies the forestry service will make the West Coast Lumbermen's association will furnish the inspection and the Booth-Kelly Lumber company will furnish the materials.

During the past year Mr. Drake has tendered the use of one unit (of the Cottage Grove plant) to lumbermen and the public generally for the purpose of making studies of the effect of cold-seasoning upon woods other than these to which the plant is commercially devoted.

By this it is hoped that observations may be made of the effects of cold seasoning on spruce, hemlock, white and Ponderosa pine as well as upon redwood and possibly eucalyptus and other California gum woods. A study is now being made on incense cedar, a wood that now has very little market value, because of the presence of many interstices and holes in the body of practically all the growing trees.

Notwithstanding this uniform apparent defect it has long been known that the heart of wood of incense cedar is practically impervious to decay. It is hoped by cold-seasoning that needed additional strength can be obtained in the wood and it is believed that should this result a very wide market at good figures for the lumber will result.

The greatest virtue of cold-seasoning is the fact that it costs less per thousand feet of timber to cold-season than it does to remove the moisture in any other way.

Like Fiction Is History of Life

Robert Z. Drake, Great Bridge Builder, Capitalist, Inventor, Lumberman, Philanthropist.

By VINCENT C. KELLY.

Upon a trip to Drake's cold "seasoning" house, one mile south of town, where a large odd-shaped structure lays, one is sure to be met with a pleasant smile by a modest-looking man, who waxes enthusiastic in his desire to explain just what the odd-shaped structure is and what it is doing every day for the lumber industry.

His frankness, his almost radical expressions of thought, the democracy of the man and his broad understanding and love of humanity, ever apparent, certainly would not lead one to think that his identity discloses him to be one of the greatest two-fisted industrial fighters in the country.

Robert Z. Drake was born in the state of Kansas, at the little place known as Drake—named after the Drake family who had owned the land for many years, and which is now in his possession.

His health as a child prevented him from securing more than a few years education in the common schools of Kansas. His first work was that of office boy in a bank at the age of 15. It was here where he received much of his training in business methods.

He remained in this position until he was 21. From this position he entered the offices of the Wrought Iron Bridge company.

It was with the Wrought Iron Bridge company that he obtained

his engineering education. In this company he became associated with the Hoover brothers, who later became known because of their many inventions. This association, together with that of Arthur Mason and David Miles, who were also in the offices, and who were very able engineers, was responsible, more than any other factor, for the success of Mr. Drake as an engineer.

Speaking of this incident in his career, he said: "I sapped these men, by constant questioning, of their knowledge of engineering as a youngster would rob a cookie jar of its last cookie."

The early forming of the habit of asking questions cultivated the inquiring mind, perhaps, and came to be his most valuable asset. As a result of his constant questioning he was often called, among his intimate friends, a "living interrogation point."

It was with the Wrought Iron Bridge company that he first developed the standardization of bridges. When in 1900 the Wrought Iron Bridge company was merged into the American Bridge department of the United States Steel corporation he left the employ of this company and entered business for himself, as the Standard Bridge company, which company he now owns.

From this parent company which pioneered the standardization of bridges, have sprung eight other companies all owned and directed by Drake. The Standard Bridge company has built more than 30,000 highway bridges, scattered from the Pacific coast to the Mississippi river and is today the largest builder of this class of structure in the United States.

Since entering business for himself he has designed and patented many of the devices now used in bridge construction.

Asked as to the advantages and improvement these devices gave, he replied with deep feeling and a very noticeable twinge of regret that the bridges of today, as far as his ability was concerned, could not be economically improved upon.

"This," said Mr. Drake, "is the reason I have turned my energies to the lumber industry. I feel that there I can be of some use, and the present success of cold seasoning has made me very happy."

One of the greatest improvements in the building of bridges, according to bridge builders, was the development of steel piling, made possible by years of experimenting by Mr. Drake.

The transverse joist steel girder bridge was another improvement that brought very wide recognition to Mr. Drake who designed and developed it. The advent of the transverse joist steel girder bridge has resulted in the saving of millions of dollars to the public.

His first company, the Standard Bridge company, was started in 1900. Since then he has added eight subsidiary companies, all owned and operated by him.

He has been married twice. His first wife, to whom one child was born, died in 1900. Later he again married and to this union one child was also born.

Asked as to what were some of the chief obstacles he had to overcome as a business man he replied: "To borrow money is to lose your liberty and to succeed in business without borrowing money is a most difficult task. This was the most difficult thing I had to overcome. The retaining of my liberty would have been impossible to me had I borrowed money and it was most difficult to proceed without borrowing."

In answer to the query: "To what do you attribute your present success?" he replied: "The vision my mother gave me of my relation to all things in life and the sureness of feeling she gave me that in my perishable finite state all things of infinite nature were governed and controlled by forces beyond my possible knowledge."

Asked as to whether he had a hobby his answer was, after some meditation: "Well, yes, I have. My hobby is to do things for people and to always abstain from doing things to them."

In answer to the question: "How many people are there in your employ and what is their annual payroll?" he replied: "As to the exact number I don't at the minute know. There are several hundred, though, and the payroll averages well over a million dollars per year."

There is a great deal of thought in the answer he made to the question: "What is your opinion as to the worth of the Bible?" "It is the basic knowledge that has guided me in every step I have ever successfully taken in my effort to really do anything for anybody."

"If you have formed an opinion on what basic law best governs humanity, please state what it is. His answer to this was expressed in one word: "Love!"

And to better express the meaning of his answer he recited the following poem from Thoreau, the great naturalist:

"Implacable is Love,—
Foes may be bought or teased
From their hostile intent,
But he goes unappeased
Who is on kindness bent."

"There's nothing in the world, I know,
That can escape from Love,
For every depth it goes below,
And every height above."

"Are you an individualist and to what extent?" "Yes, to the extent of discharging all the responsibility that rests on me."

"Is it true that you have purposely refrained from any trade combination because of an inborn desire to conquer that that seemed the most difficult?" "I am not a member of any trade combination because of my knowledge that any such arrangement would interfere with my liberty. By liberty I mean solely the right to do right—the worst of bondage is to be forbidden or restricted in your God-given right to do right."

Asked as to what gives him his greatest satisfaction in life he answered: "To witness the rise of the individual, first in his spirit, second in his mind, and third in the preservation of a clean, healthy body."

"How many patented devices have you to your credit?" "A very great many, I can't recall. Two of the most outstanding ones are the transverse joist bridge and the patents on my cold-seasoning process."

Mr. Drake is by no means a stranger in Oregon, even though his residence in Cottage Grove has been for only the past two years. He has been coming to Oregon for over 33 years, having made 76 round trips. He feels that he has a right to the claim of being called an Oregon pioneer.

It is hard to realize when talking to Mr. Drake that he is a man who has built, by sheer brawn and intellect, a fortune that ranks with the largest in the country. However, no man can converse with him for long without becoming aware that he is in contact with as keen an intellect as ever was bestowed on man.

His demeanor is humble, his life as simple as that of any villager. In fact there is no man in all this section more democratic in thought or in principle than Robert Z. Drake.

There is something fine and big in the man—something of strange depth and purity and fineness—something that transcends the usual brotherhood of good fellowship and superficial understanding by a splendor hardly to be guessed by men who have not known the tragedies and disappointments of life. In him is found a man who has a large understanding and love for humanity and, in his presence, one feels a strange warmth and closeness, a deep love of a vastness hardly to be conceived by men who have known no such love.

There is a strange spiritual beauty that emanates from the mind of Drake and if one is fortunate enough to get him to talk on some of the more beautiful things of life, as was the writer of this article, he will hear a flow of wondrous thoughts, as eloquent and as inspiring as ever were spoken.

But there is another side to the life of Robert Drake. It tells the story of a man who had to fight every inch of the way up the ladder to the very uppermost rung where he now stands.

In it is told the earthly life of a man who has the tenacity of a bulldog and the ferociousness of a lion in the determination to accomplish that which he sets his mind on.

Only glimpses of the man are possible in so brief a sketch as this. But there are chapters in the life of Robert Drake that read as strange and as thrilling as the wildest of fiction. It is hoped that some day he will see fit to permit the printing of his complete biography.

In the course of Drake's career he became the greatest bridge builder of the present day, a leader in thought, the friend of workmen, school men and statesmen, the associate of both the lowly and the lofty. But these are merely interesting happenings in his life as compared with his great inspiration—his passion to do something for the welfare of humanity.

In this special progress and historical number The Sentinel is indeed proud to point not only to the new art given to the lumber industry but to the man who founded it. The world-wide publicity given to Drake's cold-seasoning discovery makes Mr. Drake one of Cottage Grove's most valuable assets.

Willys-Knight Is In Capable Hands

N. J. Nelson Is Making Mark as Outstanding Automobile Man of This Section.

N. J. Nelson Jr., owner of the Willys-Knight Overland agency in Cottage Grove, is rapidly making a mark for himself among the outstanding automobile men of this section. In connection with his sales department he conducts one of the most up-to-date Overland and Willys-Knight service stations in this part of the country.

Of very great interest to automobile owners and to the public generally in this connection is the announcement recently made by Mr.

Nelson of the new Overland Whippet, America's first high speed European type light car.

It is predicted by those who have inspected this new type Overland, now on display at the show rooms on north Ninth, that the sales of the Nelson automobile firm will this year reach a new high record.

This new Overland Whippet is a car that has revolutionized the automobile industry, according to leading automobile engineers. Besides all the remarkable features of the 1925 Overland the new Overland Whippet has become the car pre-eminent because of the following outstanding features:

Has 31-horsepower motor; small bore, long stroke; speed of over 55 miles per hour; 30 miles to gallon of gasoline; balloon tires and 4 wheel brakes; has lower center of gravity giving greater security; has unique body design, permitting more inside space, and thus giving greater comfort; turns in a 34-foot circle, is easy to steer and park.

To fully appreciate the new Overland Whippet one must first inspect it—it has more power, more speed and a lower cost for operation, price considered, than any other car of its class.

Another model of the Willys-Knight agency that is making many friends for Mr. Nelson is the Overland Six, for which it is claimed it will outpull, out run and outperform any car of its class. Judging by its many enthusiastic owners in this locality the above claims are well substantiated.

A car that is also making many friends for Mr. Nelson in this community is the Willys-Knight, an automobile that runs smoother, more perfect and that has more power at the end of 50,000 miles than when it was first taken out new.

Many owners of this famous car claim 23 to 28 miles per gallon of gas. The Willys-Knight carries the most expensive and only 100 per cent fully adjustable front axle and steering mechanism that is used in the entire automobile industry. An exclusive feature of this car is the three-point suspension springs which cushion the car in a manner that gives a great deal more than ordinary riding comfort.

A special feature of the Nelson automobile firm is the individual and magnanimous service rendered each patron. A repair shop, manned by skilled mechanics, is also doing its share in making this firm one of the most popular automobile establishments of the city.

C. A. Bartell Builds Well in 15 Years

Makes Cottage Grove Known Over State as Home of First Class Hotel.

No resident of Cottage Grove is more responsible for the progress of this city than C. A. Bartell, proprietor of Hotel Bartell, who has just celebrated the fifteenth anniversary of his arrival here.

In 1911 he quit a job on the road to take the dining room of the old Oregon hotel which was located in a building which was torn down three years ago to make way for the C. J. Kem building. After a year or so there he took over the Cottage hotel and the traveling public followed him to his new location. A year later he took over the Oregon and remained there until moving into his present quarters, where he has three stories of solid comfort. The present hotel has 50 outside rooms, 26 with bath. In the annex there are 20 rooms, eight with bath. The Central hotel also is controlled by Mr. Bartell and has 40 rooms.

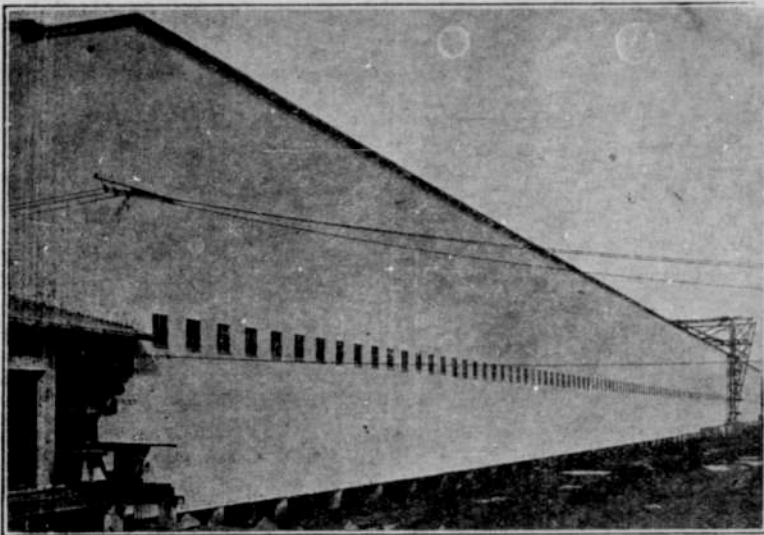
Not only is "Bart" one of the best known residents of the city, but his fame as a hotel man has spread beyond state boundaries and it is no unusual thing for travelers to pass up larger cities to come here to spend a night on one of Bart's downy comfort mattresses and to test the quality of his cuisine.

This summer Bart was put to the real test of caring for 65 members of the Buster Keaton troupe during the busy summer season when usually every room is filled every night. Bart makes it a rule never to let any one have to go outside the city for accommodations and it is no unusual thing for him to be phoning to private homes of the city at midnight or after to find a bed for some traveler who has arrived after all hotel rooms have been filled.

Group luncheons are a specialty with Bart and the chamber of commerce, Lions club and Keepers of the Den hold their noon meetings there, while women of the city, when they want something out of the ordinary, take their guests there for their club luncheons.

Bart has not only put Cottage Grove on the map as a hotel city, but he has done his part in every civic activity for which his services have been asked. He has served as secretary and president of the chamber of commerce and is usually on committee work for this organization and the Lions club. He is rajah for Al Kader temple of the Shrine and is usually at the head of charity work of the Elks lodge.

Everything in printing. The Sentinel.



OUTSIDE VIEW OF FIRST OF SEVERAL MAMMOTH SEASON HOUSES OF STANDARD SEASONING SOCIETY.

though many miles away. By means of the automobile the country was brought to the city and the city to the country—yes, men have received from the storehouse of knowledge some very, very wonderful things.

But always it has been by the gift of the tireless, unceasing toil of some man who knew not the idle frivolities of life.

Such men are called inventors, sometimes geniuses, but God knows that they are but men who have used the brain with which He in His wisdom gave alike to all.

And now we come to the relating of how Robert Z. Drake, another man, who by long, weary hours of untiring effort has given to the world a bit of knowledge that means so much to the saving and the preservation of our already rapidly diminishing timber resources.

It is well to state here that when asked for an interview Mr. Drake was reluctant to take any credit for the great work he has done in discovering the process of cold seasoning. He emphasized that he was only too happy to offer this invention as an appreciation of the comforts and pleasures he has enjoyed from the learning other men have taken from that vast storehouse of knowledge.

The tremendous beneficial results to the people of the United States and the world from Mr. Drake's invention in cold seasoning come from the greatly extended life of seasoned wood as compared to wood not seasoned.

The fact that the wood becomes from one-third to one hundred per cent stronger than wood not seasoned gives one a slight idea of the magnitude of benefit the world will derive from Mr. Drake's tireless efforts.

Knots that come loose in either air or kiln drying, remain tight and sound after having gone through Drake's cold-seasoning process. The wood does not split nor does it check, remaining in its original state as received.

Cold seasoning as perfected by Mr. Drake, has a potential possibility of salvaging small wood and other wood that has always been considered more or less waste. It already has created an extensive market for black gum, a wood heretofore having but very little use, because of its tendency to twist and warp.

An outstanding benefit to be derived from cold-seasoning is that fir wood, long complained of as hard when dried, becomes soft and pine-like when cold-seasoned and will not split when being worked.

Of very great importance to the small mill man is the prospect that in warehousing for cold seasoning will be found the solution by which he may save the side lumber and small sizes now wasted to a very large extent.

All tests of lumber that have passed through this process show that, at least, in thickness the lumber does not shrink.

Aside from the benefits to the wood, and the tremendous possi-

50 to 75 degrees Fahrenheit. "Seasoning" begins inside the lumber and works toward the outside. There is nothing to discolor the lumber, and timbers come from the process apparently the same size as when the process started. The lumber does not crack or check and is actually strengthened from 33-133 per cent to as high as 100 per cent, in some cases. The general average of increased tensile strength is 50 per cent over ordinary air drying.

The capacity of the "seasonhouse," 700 feet long, 42 feet wide and 36 feet high, is one hundred cars of lumber, or approximately 2,500,000 feet. This is the first of ten such plants to be erected here and to be used for "seasoning."

Because of standardization of all material and mechanism used in the construction of the seasonous a very low cost has resulted and it is believed that further reductions will result in the building of these plants.

Man power has been reduced to a minimum. Through the center of the entire building, and to the outside at each end, two endless cables move upon heavy timbers. Two men place the lumber on these cables outside the house and no more attention need be given the lumber until it reaches the hoisting or stacking mechanism.

The stacking mechanism is set upon a carriage which moves upon its own tracks inside. Power is supplied to the carriage and stacking mechanism by an endless rope operating separately from the cables which transport the timbers. One man operates the stacker. Three men, therefore, may handle the entire business of putting lumber into the building and into the seasoning slots.

Development at Own Expense.

It is indeed a fortunate thing for the people who will benefit from Mr. Drake's invention that he was financially able to develop and execute the idea of cold-seasoning. Had he not been so financially fixed it is doubtful whether the process would have ever been developed as no doubt, because of its almost miraculous powers, he would have been told he was crazy and that no such thing was possible.

How Mr. Drake evolved the idea of cold-seasoning is a silent tribute to the tireless, unceasing efforts of a man who conquered and solved a self-appointed task.

The following interview will carry the reader back to the time when the idea of cold-seasoning first began to take root in the mind of "Bob" Drake:

"It was back in 1909," said Mr. Drake, when asked how he first began to think of cold-seasoning, "when two other men and myself were camping in the woods on the north side of the Columbia river, near Cascade locks. We had just finished building a camp fire and were idling away the time until the evening meal was ready. A few feet away from the fire I noticed a fir tree lying in a sort of a sub-basin. A very large cedar tree had grown on top of the fir tree. Observing that the fir tree con-