# Work on Oregon Rivers and Harbors

### CHIEF ENGINEER SHOWS PAST EXPENDITURES; MONEY NEEDED TO COMPLETE IMPROVEMENTS; OBJECTS TO BE ATTAINED

Washington. Dec. 6.—The annual report of the Chief Engineers, retist made public, in addition to subting estimates which will form basis of the river and harbor which is to be passed at the present den of Congress, conveys a general content of the Congress, conveys a general content of the Congress and the Congress of the Congress o sently made public, in addition to submitting estimates which will form hill which is to be passed at the present den of Congress, conveys a general idea of each and every project under marroction, shows past expenditures, future needs, and what is proposed to be accomplished in each instance. Considerae space is devoted to the works of the Pacific Northwest, notably the various Columbia River projects, foremost among them the project for providing a 40-foot channel across the bar at the entrance to the river. Below is given a condensation of the report, bringing out its most essential features.

### Mouth of Columbia.

Unless it shall be found necessary to construct a north jetty at the entrance of the Columbia River, it will require only \$776.181 in the way of new appropriations, to complete the extension of the existing south jetty to the projected and is no prospective commerce on the length, three miles beyond the point where the old jetty stopped. On the first of July there was an unexpended balance available for this improvement, aggregating \$618.111, but fully half of this was covered by uncompleted contracts. The Chief of Engineers recommends that at the coming session of Congress the \$776,000 needed to complete the present project, be appropriated, so that there need be no belay in finishing the great work. During the past year the total expenditure on this jetty work was \$406,815. Commenting In the progress of this improvement, Gen-eral Mackenzie says:

The estimated cost of jetty extension was \$2,534,346.51. This project consisted in an extension of three miles to the jetty previously constructed.

Punds were made available as follows; act of June 6, 1900, \$250,000; act of June IL 1902, \$500,000, with authoritity to con tract for work to the extent of \$1,000,000 additional, and repairs to plant and tramway were authorized pending a report and recommendation of a Board of Engineers. The board made its report under date of January 24, 1903, and the sundry civil act of March 2, 1903, made an addirienal appropriation of \$1,000,000 for the

the Secretary of War on March 16, 1903, is but a slight modification of the project of 1839, and provides for extension of the sent jetty. Dredging is also recom-nded as a temporary expedient to give early relief, and the thought is also exetty may be necessary at some future to secure the desired depth of 40 The essimated cost of south jetty is \$2.250,-100; of remodeling and operating dredge, 250,000; total, \$2,510,000. This does not nclude repairs to plant, tramway, etc. for which \$250,000 was provided by sundry-civil act of June 6, 1900.

nt expended on the old pro ject was \$1,868,755.14, of which the expendiures from 1896 to 1902, which were for are of plant, surveys and contingencies, may be considered as having been applied

"On the present project, including re-pairs under the project of 1899, to the end of the fiscal year 1904, there has been expended the sum of \$1,000,226.06.

The transport Grant was converted into a seagoing dredge at the Mare Island basy-yard, and renamed Chinook. She arrived at the mouth of the river on Noember 3, 1993, but owing to the f the season and on account of continued torms during the Winter practically softling was accomplished except to make needed repairs and additions. Since penditure resulted in removing some of about the middle of April she has operated under more or less favorable conditions between Celilo and Asotin, and in tions, details of which are given in the resport of operations, the total amount flect and concentrate the flow over shoals. The existing project, approved by Condged to June 30, 1964, being 174,323 cubic

At the close of last fiscal year stone was being delivered under an emergency ontract with the Northwest Construction, company, and a contract had also been made for the delivery of 475,000 tons under al contract. During the year about mem tons of stone was delivered under the emergency contract, and final payment was made thereunder. Owing to failure of the quarry, it was necessary to reduce the quantity to be delivered under formal contract, and this has accordingly been done under supplemental agreement. Contract was also made with the Columbia Contract Company for the deficiency. delivering 240,000 tons of stone to make up for the deficiency. This contract is now for the deficiency. This contract is now in farce, and delivery under these two amounts to approximately

"A survey of the bar completed at the close of the fiscal year shows some slight inges over the survey of the previous year, the most important of which is a slight movement seaward of the M-foot inner curve, the extension seaward of Clatsop Spit, the building up of Clatsop Spit on the north side, and in the vicinity of the obstruction book where the M. ford curve gives indication of breaking through

# From Portland to Sea.

To complete the existing project, which contemplates a 25-foot channel from Portland to the sea, will require future appropriations aggregating \$1.673,509. Of this amount, \$450,000 can profitably be expended next year. There is now on hand an available balance of \$80.24, which will be fully consumed before additional funds are available. With reference to this

project, the report says:
"The existing project, adopted by the act ef June 13 1902 is based on survey au-thorized by act of March 3 1890, and pro-poses a 26-foot channel to the sea by con-struction of controlling works and dredging. Fatimated cost, \$2,786,500, with \$175,000 as cost of a new dredge and accessories, and \$50,000 for maintenance.

"The sum of \$25,000 was appropriated by act of June 13, 1802. This sum was in-sufficient to allow of the construction of a new dredge, paying operating expenses of the dredges, making necessary repairs to plant, and construction of any permanent works. In view of this, it was proposed to confine operations to dredging, and a contract for the hire of either of the dredges of the Port of Portland was made and approved. Consequently, dredging at sheal places has been the only work of improvement done during the year. The rement done during the year. The in use were the United States dredge W. S. Ladd, which removed 666.687 cubic yards of material, and the 20-inch suction dredge of the Port of Portland, the above-mentioned contract, removed 1,238,142 cubic yards. The Port of Portland operated its 20-inch suction dredge during such time as it was not being repaired; also the 30-inch dredge when not under hire by the United States, and reports having removed 1.167,550 cubic pards. The improvement has been bene-

as not to allow of dredging operations un-der contract with the Port of Portland, a report was submitted under date of May

It is estimated that a combination suc-It is not recommending that an allotment to this purpose of \$30,000 be made from the appropriation provided by the river and harbor act of April 28, 1904. The report was returned under date of June 4.

1204. making an allotment of \$15,000. The countries for higher the decire was countries for higher the decire was countries for higher the decire was countries.

has cost the Government to date, \$247,747. There is still available for use a balance of \$31,417, but for continuing operations next year an additional appropriation of \$90,000 has been asked. Commenting on this project, the Chief of Engineers says:
"The project for improving Long Tom
River was adopted by act of March 3. 1899. The river is of very small volume, and runs so low during the Spring and Summer that navigation is impossible The improvement was intended to furnish navigation only during seasons of fresh-The amount appropriated was trans ferred from the improvement for William-ette and Yamhili Rivers, and amounted to \$3000, all of which was expended and the project satisfactorily completed. Although the river and harbor act of June 13, 1902, allowed \$500 for maintenance of river. It is recommended that the Long Tom River be dropped as unworthy of further improvement by the General Gov-

1904, an allotment of \$12,000 was made on June 2, 1904, from the appropriation provided by the river and harbor act of April 28, 1904, for dredging, snagging and maintenance of existing works. funds will be expended during the com-

The work done on the Williamette and Yambill Rivers during the fiscal year 1904 has been in the nature of repairs to exteting dams and reverments, the construction of permanent revelment at In-dependence, and the removal of snags.

logs, etc., from the channel.
"The amount expended during the fiscal year included part payment on contract for construction of a one-cubic-yard dip-

The total amount expended on the project of 1898 up to the close of the fiscal year ending June 30, 1904, was \$59,557.67. In this amount is included \$3000 expended on the improvement of the Long Tom nance in operating snagboat and repairs to dams

### Dalles-Celilo Canal.

The report has little to say about the Dalles-Cellio canal, aside from showing past expenditures at this point and the present status of previous appropriations. To June 30 last, the Government had expended \$27,037 on the old boat rallway project, and \$31,279 under the new canal project, the latter expenditures being al-most wholly for surveys. The canal project is held up pending the acquisition of right of way by the state, and the dona-tion of the same to the Federal Government. There is remaining, unexpended, of previous appropriations a total of \$281,607, a sum sufficient to start operations when right of way is acquired. An appropriation of \$500,000 is asked for immediate use, but it is stated that to complete the canal will require the ultimate appropriation of \$3,829,724, bringing the total cost up to \$4,121,331. This expenditure, is expected to provide a canal 65 feet wide and eight feet deep. A slight expenditure has been made in blasting out rocks from the channel below Three-Mile Rapids as a preliminary to com-mencing canal construction.

Upper Columbia and Snake.

The improvement of the Upper Colum bis and Snake Rivers is going ahead, re-gardiess of delays on the Dalles-Cellio improvement. Up to the close of the last flecal year, the Government had expend-ed on these streams \$36,712. This exgress by act of June 13, 1992, provides for completing and maintaining the improvement of the Snake River between Riparia and Lewiston, and for the improvement of the Snake River between Lewiston and

Pittsburg Landing.

The estimated cost of the project of improvement between Riparia and Lewiston is \$23,000, with \$5000 additional for maintenance for two years.

It is proposed to complete the proj-

under construction will be used as a dredge, blasting plant, and towboat during the periods when the stage of river will permit operations. After completion of the work outlined in these projects, it is estimated that the boat should be kept in commission at least two months each year on each stretch of river for maintenance of the channel.

Between Riparia and Lewiston, during the extreme low-water period in August and September, the principal shoals were deepened to some extent by scraping with a harrow-like rake. For this purpose a leased steamer was continuously in use for a month or more. Prior to scraping, boats drawing 5½ to 4 feet had with disculty been able to make regular trips, and after scraping and repairing existing dams, no difficulty was experienced with 4% feet draft.

# Canal at Cascades.

The total expediture that has been made on the canal at the Cascades is reported to be \$3,776.60%. To properly complete the work, and finish off walls, grounds, etc., will require a further appropriation of \$228,350. It is believed that \$100,000 of this could be expended next year.

The last river and harbor act authorized the blasting of a few rocks in the rapids near the canal. Bids submitted were found to be excessive, so no blasting has been undertaken.

To date it has cost the Government 142,-

100 to operate the canal and tooks at the

Deeper Channel to Vancouver. According to the Engineer's report, the maximum draft that could reach Vancouver last year was ten feet. The En-gineer Board has recommended the dredg-ing of a channel to a 29-foot depth, and thinks this can be done for \$60,000, though it is their opinion that it will require continual dredging, at an annual cost of \$10,600, to keep such a channel clear. Un-til Congress authorizes the 20-foot chan-nel project, no estimate can be made for

that work. The total appropriation asked for the Vancouver harbor work for next year is only \$10,000. Dredge Needed for Coast Work. The engineers have reached the conclusion that a dredging plant for use on the bars at the entrance of Tillamook, Ya-

quina and Coos Bays, and the Siusiaw and Coquille Rivers, would be a good invest-Scial to deep-draft navigation and has reduced the delays to shipping.

The condition of the funds being such terial deposited in most instances being of

sonville up to Tillamook had been se-cured by dikes and dredging, but the freshets in the rivers flowing into the bay have since that time deposited sand and gravel on some of the shoals, and have reduced the depth in two or three places to not more than eight feet at ordinary high tide. The work of redredging these shoals with the unexpended balance on

hand is now in progress.

The maximum draft that can be carried June 30, 1904, at mean low tide over the shoalest locality under improvement is about three feet. The mean range of tide

Coquille River. Fifty-five thousand dollars is necessary o complete the jetty improvement at the entrance to Coquille River, and this amount is asked for for immediate use. The report, touching on this project, shows that the total expenditures on this project to June 30, 1994, amount to \$277,-The expenditures for the past fiscal were principally for continuing the improvement by extending the north jetty seaward 185 feet, laying a foundation mattress of brush fascines and de positing thereon an enrockment of rub-

The total expenditures to date have re sulted in completing the south jetty throughout its projected length of 2709 feet, in constructing about 1065 feet of the north jetty and in removing some of the obstructing snags in the river channel be-tween Coquille and Myrtle Point.

The work so far done has resulted in closing up the dangerous old channel at the mouth of the river and opening up a new channel straight out to sea, controlling bar depth ranging from four

to ten feet at mean low tide.

The maximum draft that could be carried June 30, 1994, at mean low tide across the bar channel at the mouth of the river was about seven feet, though the bar is usually crossed at high tide.

Coos River. In order to keep Coos River free from snaga and obstructions, \$600 is asked for for expenditures next year. Altogether to date the Government has expended \$554!

on this stream, and has on hand for im-mediate use a small balance of \$458. Coos Bay.

There are several old projects for which no money is asked. The existing Coos Bay project, which contemplated a 20foot channel at the entrance to the bay, has already cost the Government \$574,218. This expenditure was utilized in con-structing a north jetty \$600 feet long. Since the completion of this jetty a straight channel through the ocean bar has been maintained, having a depth rang-ing from 17 to Z feet. To complete the 20-foot project would entail a total expenditure of \$2,456,412, and in view of the depth obtained by the single jetty and the comparatively light commerce of Coos Bay, it has been decided to make no further expenditure for jetty work at this

Vessels loaded at Marshfield, the principal town on the bay, are frequently delayed by an obstructive shoal in the channel opposite Pony Slough. This shoul is now being dredged out with an emergency allotment of funds. There is an unex-pended balance of \$50,607 remaining charged up to the Coos Bay improvement. This will not be expended unless it shall develop at some subsequent day that there is a shouling on the bar. If it is eventually determined to complete the original 25-foot project, Congress will have to opposed it with all the power appropriate \$1,74.412, in addition to funds command of that organization. heretofore appropriated.

The report of the Chief of Engineers shows that the maximum draft that can be carried over the bar at the entrance to Sluslaw River is about seven feet. Vessels which cross the bar can ascend to above Florence, and light-draft steamers can navigate the river for fully 15 miles. The commerce of the river is ilm-ited, and in view of the adverse report by the Engineer Board, work on the jetty project at the entrance has been discontinued leaving on hand an unexpended balance of \$31,691. It is estimated that it would cost \$512,000 to produce an additional foot depth over the bar, an expendi-ture that is deemed unnecessary at this

present project for improvement provided for confining the mouth of the river in the ocean between two high-tide rubblestone jettles, the north jetty to be 7500 feet long, including a tramway approach at its shore end 3000 feet long, and the south jetty to be 5600 feet long, including a tramway approach at its shore end position and to maintain the depth of eight feet at low tide in the bar channel.

The estimated cost of the improvement er the original project was \$700,000. The amount expended on the project to June 30, 1904, is \$151,700.83, which completed about 4050 feet of north jetty and includes the cost of the tramway approach 2029 feet long. In addition, \$4157.27 has been expended for maintenance and in making

# Yaquina Bay.

The Government has expended about \$200,000 at the entrance to Yaquina Bay, and has on hand \$4281 remaining of previous appropriations. No money is asked for continuing this improvement, for, like the Siusiaw and Coos Bay projects, it is believed sufficient depth has already been produced to meet the present demands of

The expenditures to date have resulted in completing the two jettles provided for by the original and modified projects, as stated above, and in removing the cluster of rocks in the bar channel, under the provision of the act of June 6, 1900, to a depth of 12 or 13 feet below mean low

The construction of the jetties resulted in closing up two of the three channels formerly existing, in developing the third channel and in obtaining from 13 to 15 feet of water on the bar at mean low tide, or from 21 to 22 feet at high tide.

As the project called for but 17 feet at high tide, it is considered to have been satisfactorily completed.

The maximum draft that could ordinarlly be carried during the fiscal year end-ing June 30, 1904, at mean low tide over the shoalest part of the locality under imprevement was about 13 feet.

# Clatskanie River.

appropriation of but \$500 is asked for the Clatakanie River, there being on hand a balance of \$160. The amount expended on this work up to the close of the fiscal year ending June 30, 1904, was \$11,807.37.
The results in the way of increased depth and width due to the completion of the project in 1900 were an increase of two feet in depth over that portion below the town of Clatskanie where work was done, and a shortening of the distance to the head of navigation of about 4500 feet by

straightening the channel.

No increase in depth or width has been obtained Juring the fiscal year 1994.

ning of the present year of \$114,294. Most of this is still available. This money was spent in dredging the city waterway from deep waters in Commencement Bay to Eleventh street, to a depth of 25 feet; from Eleventh street to Fourteenth street to a depth of 15 feet, and from Fourteenth street to the south end of the waterway to a depth of 15 feet. The dredging is being done under continuing contract \$60. to a depth of is feet. The dredging is being done under continuing contract, \$60. The having been expended to date. It is left over from last year amounting to shown that a channel of the depth con-templated and an average width of 190 feet has been secured nearly the whole length of the waterway. "The commerce to be benefited by this improvement," says the chief of engineers, "Is of a large and extremely varied character health." and extremely varied character, inc that carried on by sound and river types of boats, as well as that of the largest steam and sailing vessels. A very important item is the export of grain, in which the port of Tacoma exceeds all other ports on Puget Sound."

Nothing for Everett.

No appropriation is asked for Everett Harbor. There is an available balance of \$3572 still remaining of past appropriations. Congress appropriated \$422,000 for improving this harbor, and on June 30, last, the total expenditure had reached \$412,627. The harbor basin has been dredged for a length of 5569 feet and for a width of 460 feet and a depth of 25 feet. Dredging and dike repairs were completed in July, and the maximum draft that could be carried. the maximum draft that could be carried through the dredged area at low water was 25 feet. The total variation is approximately 15 feet. Everett Harbor is now freely accessible to vessels of deepest draft up to the entrance to the dredged harbor basin. To extend and make fully available the benefits of this improvement the dikes should be extended southward and the dredged area should be enlarged.

Olympia Dredging Completed. The dredging out of a 12-foot channel in Olympia Harbor has been completed at a cost of \$133,839, and there remains available, unexpended, a balance of \$30%. The way new 12-foot channel has a width of 250 full feet, and is considered adequate to handle and permit access to wharves which are now only accessible at high water.

### Puget Sound and Tributaries.

Most of the channels of Puget Sound proper have ample depths for purposes In addition to the works reported on, of navigation, but a number of streams the Chief of Engineers asks for \$5000 and rivers tributary to the Sound, of value to beat navigation and for logging purposes, are liable to be obstructed by debris, hence require constant care by the Government to preserve open navigation. There is a and \$7500 for maintaining open chan-general project requiring the removal nels in the Pend Orelile and Okanogan of snags and other obstructions in the Rivers.

improvement of Tacoma Harbor under the existing project. During the past year 30, last, the Government had expended 585,584 was expended on this harbor, leaving an unexpended balance at the beginning of the present year of \$132,294. Most of this is still available. This money was spent in directing the city waterway from the Skagit and its tributaries, the Snohom-lish, Snoqualmie, Skykomish, Stilaleft over from last year amounting to \$12,147.

### Gray's Harbor Jetty.

The long stone jetty at the entrance of Gray's Harbor must be extended seaward in order to maintain a navig-able channel across the bar at the entrance to this harbor. The fetty, conpleted at a cost of \$1,000,000, was suc-cessful in maintaining a 24-foot depth for a time. Lately, however, there has been a marked shoaling on the bar, which necessitates the extension of the jetty, and for this purpose \$20,000 has been asker for. Difficulty has been exerienced in maintaining fixed buoys to mark the existing channel across the bar. A part of the money asked will be utilized in permanently marking the channel.

The engineers ask for \$25,000 additional for work on the north channel inside Gray's Harbor. The past appropriation for this work has been ex-

Congress has authorized the dredg-ing of a 12-foot channel, 200 feet wide from deep water to the railroad bridge in Whatcom harbor, at a cost of 489, Alrendy \$25,000 has been expended on this work, and it is estimated that \$35,000 additional can be used next year, leaving \$20,000 to be appropriated at some future session of Congress. A channel 50 feet wide and 12 feet deep, with turning basin at the inner end, was dredged last year. The channel extends the full length of the waterway, and the basin at the inner end has full width of the waterway, 330 feet, and is 383 feet long. Before this work the commerce of the port of Olympia. To was begun the Secretary of War re-extend the benefits of this improvement the dredged area should be enlarged to they would take measures to prevent dumping of sawdust and refuse into the harbor. This agreement has been lived up to.

### Minor Projects.

# Obedience to Orders Saves Life

HARRIMAN SYSTEM PROVES WHAT A RIGID SYSTEM OF SIGNALS WILL DO

Chicago Record-Heraid, Nov. 27, 1904.

ASUALTIES on American railroads could be reduced at least 50 per cent by the creation and strict enforcement of rigid discipline. This fact has been demonstrated by the director of maintenance of operation for the Harriman system by means of persistent signal tests maintained on the Southern Pacitic, the Central Pacific Union Pacific, Oregon Railroad & Navigation Company and Oregon Short Line during a period of two years. By means of such tests the Harriman management has succeedthe average for all railroads in the United States.

When signal tests were inaugurated by the Southern Pacific with a view of ascertaining the degree of discipline pertaining to that system it was regarded in some quarters as an unwarranted innovation in operating methods and the Brotherhood of Locomotive Engineers opposed it with all the power at the

# Signals Are Slighted.

The first tests made, however, showed that on portions of the system the observance of signals was as low as 64.2 per cent, despite the fact that the road had the reputation of being well disciplined. This meant that in almost 4 instances out of 100 an engineman would run past a signal when it was set at danger, or would disregard other precautions against loss of life and property.

This disclosure was followed by an order which required every superintendent to make signal tests each month and report the results. The discipline in each case of failure was by the Brown system, which makes promotion dependent on an employe's efficiency as disclosed by

a complete marking system. Similar tests were inaugurated over all Harriman roads, with the result that in October, this year, there were a total of 553 signal tests, with only five failures, making an efficiency of 99.5 per cent. The failures were of an unimportant character, and therefore the tests may be taken ing a tramway approach at its shore the constraint of the result of the result of the river in one as observance of signals is concerned, as observance of track.

# Increase in Efficiency.

This showing is an increase from %.6 per cent, which was made in the mouth

by producing rigid discipline, will do in the way of preventing accidents, the department compiled a table showing a the railroad casualties during 1900 and the number of accidents per 1,000,000 train miles. A similar table was prepared regarding accidents on the Harriman system

The result was shown in the fact that on a train mileage basis the average num-ber of casualties on the Harriman lines was only 30 oer cent of the average the railroads in the United States, taken as a whole. This demonstrates clearly, it is held, that rigid discipline will reduce the total number of accidents on American railroads at least one-half

### Tests on Harriman Lines. A glimpse at the results obtained on the

Harriman system is given in the follow-ing table, which shows the tests made tests made during the last six months:

Tests observed Fallures efficiency.

June 574 20 96.6

July 149 26 96.6

August 881 16 98.2

September 191 8 196.2

October 996 5 199.5 The failures were: One running past

torpedo, two Vallures to check caboose indicator changed, one running past red flag and one failure to respect the absence of signal light in station, semaphore which, under the rules, is regarded as a danger or stop signal.

block signal at danger, railroad cross-ing semaphore at danger, light out in station semaphore, light out in block sema phore, station semaphore at clear, oper-ator on duty, one marker left red on rear of train on siding, headlight uncovered train on siding, yellow lantern, relantern, white lantern, hand signals, sta

in a circular sent to the various general managers of the system they are strongly urged to prosecute the signal tests vigorously during the remainder of making an allotment of \$15,000. The contact for hiring the dredge was consequently renewed, and it is proposed to begin the operations of dredging as soon as the conditions permit.

The ruling depth at the end of the sail year between Portland, the head of deep draft navigation, and the sea is

jollity of the season and the greater proneness of men to occasionally break the rules prohibiting the use of alcoholic

### Ordered to Be Watchful.

In order that this holiday laxness may not pertain on the Harriman system and employes be on the alert, bulletins have been issued to all trainmen, engincers and operators requesting that extreme measures be taken to prevent acci-dents. Roadmasters also are warned to admonish section foremen to impress on admonish section foremen to impress on trackwalkers the necessity for the greater care in the inspection of tracks. Furthermore, those in charge of the motive power of the system are requested to warn inspectors to be extraordinarily careful in the inspection of equipment. Only by such means as these, it is chances by reason of which, it is evi-claimed, can railway managements pre-dent from the figures given, a very large

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[Unsolicited Correspondence.]

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good, and I heartily recommend it.

Geo. A. Thompson, Taylorsville, N. C.-It affords me pleasure to bear testimony to the most excellent merit of Kodol Dyspensia Cure. I have used it in my practice with the most satisfactory results and recommend it as one of the finest digestants known to the profession. Every person suffering with Dyspepsia or Indigestion should use it. O. L. Hollar, M. D.

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New Britain, Conn.-Kodol Dyspepsia Cure is giving such universal satisfaction and is so surely becoming the Posltive relief and subsequent cure for this most distressing ailment, I feel that I am always sure to satisfy and gratify my customers by recommending it to them.

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### Where Others Have Failed to Cure We Heal Surely and Permanently

Scope of the Tests.

It is interesting to note that the tests on the Harriman system include torpedoes, fuses, slow flag, stop flag, caboose indicator changed, switchlight reversed, block signal at danger, railroad crossing semaphore at danger, light out in sta-

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