bess narrows had commonded. This made in the plans already adopted. It was their idea that he changes is remained that no changes is remained in the plans already adopted. It was their idea that he plans are considered in the changes cannot be work to a stage of 20 feet above the remained in the plans are considered in the plans are considered in the changes and and bots in the plans are considered in the changes and and bots in the plans are considered in the previous stage on record. For the work of the plans are considered in the previous stage on record. For the work of the plans are considered in the plans canal be built of dry stone masonry to a beight that would correspond to a rise of 20 feet in the river, with the exception of those portions that would support the upper guard gates. These latter were to be made of masonry laid in cement. The board concluded by remarking that when the work proposed should be completed and its effect upon navigation, together with that of other improvements in the river then in progress and for which plans had been approved, was definitely known, it was possible that some extension of the project would then be needed for the canal which would insure navigation at higher stages of the river than they allowed for it was the opinion of the board that inis It was the opinion of the board that this part of the subject should be postponed until the interests of navigation should demand its construction, and in the mean time the plan recommended should be

completed as proposed.

In 1885 Major Handbury succeeded Cap-tain Powell as supervising engineer of the work of construction of the canal and locks at the Cascades. In his first annual report he invited attention to the meager appropriations that had been made for this work from 1876 up to that time, which amounted in all to \$1,142,569, or an average appropriation of \$50,000 a year for the 12 years the work had then been under conyears the work and then been under con-struction. He remarked that to bring the canal to its proposed state of completion with the small appropriations that had been available for its prosecution would require at least 21 years more before any benefit to commerce will result from this work. In 1888 a second board of engineers was convened for the purpose of considering certain questions connected with the details of the future construction work on the canal submitted by Major Handbury. The principal of these questions were the construction of the dry stone wall proposed by the previous board of engineers for revetting the sides of the canal included between the guard gate and the upper gate of the lock, and the kind of material to be used in constructing the guard gates and gates of the lock. Major Handbury proposed to substitute temporarily cribs filled with stone for the wall mentioned, replacing them by mason-ry should the requirements of commerces and the upper gates to form a sec-The principal of these ques

James, having been appointed during En-dicott's administration in 1889, a position he held during the incumbency of Minister Lincoln. He arrived in Portland on Feb-ruary 19 last, and immediately proceeds. ruary 19 last, and immediately proceeded to familiarize himself with the details of the work under his charge, he having been previously thoroughly acquainted with the work as a whole, having acted as a mem-ber of the boards of 1898 above referred to. The plans under which this work is now being done provide for one lock, 802 feet long by 30 feet wide, with a lift of 24 feet.

representing the low-water difference of level in the river above and below the Cascades. The heights of the walls of the canal are so regulated that provision is made for navigation with a draft of eight feet up to any stage of water not exceeding 20 feet above low-water mark. The lock is provided with lower guard gates, and there is also a second pair of guard gates placed above the lock. No provision has been made for walls between the upper lock gates and the upper guard gates, as it was unceretain at the time this project was adopted whether or not there would be a necessity for a second lock. Since the adoption of the last plans, steamers have succeeded in reaching the mouth of the Cascade locks on a 25-foot stage of water. Is feet above what was is made for navigation with a draft of stage of water, 16 feet above what was supposed to be the limit of navigation when the original estimates were made. This is directly due to the improvement of the river below the locks made by the government in charge of this work. It is now

ima and Ellensburgh, in Washington, and Prineville and Canyon City, in Oregon, The completion of the railroad line of the Oregon Railway & receiving a large share of the attention Navigation Company to The Dalles, and the subsequent construction of the North-

worry along very well. But as an off-set to these there are 1350 locomotive en-giness averaging \$1220 each, and this is the class drawing the highest aver-

think for a moment of giving it up and returning to pedestrianism instead. Aside from the exhilizating joy of riding, which every bicycle devotee will assure you is the nearest approach to flying at present possible to man, there is the opportunity of seeing a constantly changing land-

The blcycle is, indeed, the great leveler. It puts the poor man on a level with the rich, enabling him to "sing the song of the open road" as freely as the millionaire, and to widen his knowledge by visiting the regions hear to or far from his home of the result of the result. home, observing how other men live. He could not afford a railway journey and sojourn in these places, and he could not walk through them without tiring suf-Sciently to destroy in a measure the pleasure which he sought. But he can ride through 29, 30, 49 and even 70 miles of ountry in a day without serious fatigue, and with no expense, save his board and odging. To thousands of men and women the longing of years to travel a little as soon as they could afford it is thus grat-fied, virtually without limit; for a "little journey in the world" can be made on every recurring holiday or vacation.

WALLED LAKES OF IOWA

The Interesting Process by Which They Are Formed.

St. Louis Republic. Along the watershed of northern Iowa there is a series of small, clear lakes varying from a few rods to four miles in diameter. One of there, in Wright coun-ty, and another in Sac county, have each received the name of "Walled lakes," on account of the stone embankments which completely surround them. It has been generally supposed that these walls were built by the prehistoric Hawkeyes, but careful scientific investigation favors the idea that the embankments are the 3609, and telegraph operators have an even 3600. Station men other than were "erected" by the periodic action of



wan menioned, replacing them by mason-ry should the requirements of comperce call for navigation at a higher stage of the river than 20 feet. The board did not deem it advisable to give a decision on

the engineers and the contractors and by working large shifts of men day and night for over a week that it was possible to keep the work in advance of the rising waters and prevent them from overflowing the dam, embankments and bulkheads. Had the river once gained an entrance to the canal, the extensive improvements would have been swept away, thus undeing a work that it had taken nearly 30 years to build. Several times during the freshet the river threatened to break through some part of the protecting.

The Cascade semi-tropical varieties do exceedingly well mountains to Puget sound, cut off much of much of this fruit tay and the shipment of this fruit yearly claiming increased attention from the people of this part of the state party made up for the less of the trade which the railroad has diverted to other provements would have been swept away, thus undeing a work that it had taken nearly 30 years to build. Several times during the freshet the river threatened to break through some part of the protecting.

All A 3/Add 8-3/A FREI ABOVE 2000 and A A 3/Add 8-3/A FREI ABOVE 2000 and A A 3/Add 8-3/A FREI ABOVE 2000 and A 3/Add 8-3/A FREI ABOVE 2000 and A 3/Add 8-3/A FREI ABOVE 2000 and A 3/Add 8-2000 and A 3/Add 8-3/A FREI ABOVE 2000 and A 3/Add 8-2000 and A 3/Add 8-3/A FREI ABOVE 2000 and A 4-3/A FREI 2

OLD GARRISON MAP OF THE COLUMBIA RIVER From the Cascades Canal to the Foot of Bradford's Island, showing work done on river improvement. SCALE BRADTORDIS MODLE ON HOUSE PORTA RAPID NOTE. Shore line is for a stage of two feet above extreme low water. Rocks remov-ed in river improvement shown in black. Points removed in river improvement shown in black. Reef removed in river improvement, 1884, shown thus: 920.

proved Major Handbury's proposition that all the gates should be constructed of steel, and they gave a general indorsement of his plan of working.

In 1890 Major Handbury submitted a revised estimate of the cost of the work, based on the latest approved plans as recommended by the board of 1898. These plans were substantially the same as had been proposed by the board of 1890. The only modifications made were those rendered necessary by the collections of additional matter and by the results of experitional tional matter and by the results of experi-ence gained in the progress of the work. The most important of these modifica-tions was the substitution of a dry stone wall for the timber cribbing first pro along the sides of the canal, and the steel I

begal With the Flood-Plant
Finally Saved.

N June of hast year there was a freshed in the Columbia river which was unprecedented. The heights of the walls of the experience of the flood of 1876, the highest water known in the Columbia river; but last June the river rose six feet above the 176 mark. An additional six feet must thus be added to the heights of the walls to protect the subsection for what is considered by his selection for what is considered by added to the heights of the walls to protect the canal remainder of the subsection for what is considered by added to the heights of the walls to protect the canal remainder of the subsection for what is considered by added to the heights of the walls to protect the canal remainder of the subsection for what is considered by added to the heights of the walls to protect the canal remainder of the subsection for what is considered by added to the heights of the walls to protect the canal remainder of the subsection of the subsection for what is considered by added to the heights of the walls to protect the canal remainder of the subsection of the subsection for what is considered by added to the heights of the walls to protect the canal remainder of the subsection of the subsection for what is considered by this selection for what is considered by this well-known that the contract for combined the freshet of last year led. The great danger of an interest of the subsection of the pass the contractions at all stages of water. The completion of this great work will afford continuous river traffic between The Dalles and Portiand, and also been a most important factor in sections of the work it is hoped to have completed some time during the great work will afford continuous river the present year, will allow the first beautiful the clumbal of the columbia river at Astoria. The completion of this great work will afford continuous river traffic between The Dalles and Portland, and also been a most important factor in sections of the great work will afford continuous

this matter at that time, as the construction of this wall would not be begun for
some time in the future, and that in the
mean time the necessities of navigation
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and mechanics and telegraphers, average \$565,
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and midmould and the position
the inland empire were thus assured of an
open river to Portland and the season where,
than mechanics and helpers in the shops
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locks was overcome, and the opposition
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the inland empire were thus assured of an
open river about 40 miles
of eight and passengers at the Cash
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locks was overcome, and the opposition
the inland empire were thus assured of an
open river about 40 miles
of transportation afforded by the
fright and passengers at the Cash
and the probability and the standard in the steamhouts
are probable.

THE JUNE FRESHET.

THE Dalles has the advantages of rival
and mechanics and telegraphers, average \$565,
the ice, aided by the force of three
would increase the period of navigation
through the locks was overcome, and the opposition
of eight and passengers at the Cash
and mechanics and telegraphers, average \$565,
the ice, aided by the force of three
lines of transportation afforded by the
foreight an ope

find profitable employment here.

The only town of importance between The Dalles and Pendleton on the main line of the O. R. & N. Co. is Arlington, 44

miles east of the former place. Arlington is the largest town in Gilliam county, and before the completion of the branch line of the O. R. & N. Co. to Heppner it was the most important shipping point for wool in either Gilliam or Morrow county. The completion of the Heppner branc the completion of the Heppher branch diverted much of Arlington's former trade to Heppher, but it is still an important trading and shipping point. The town contains a present population of about 250, and it is one of the conservative places of business in Eastern Oregon.

HEPPNER.

One of the Leading Towns of Eastern Oregon-The Great Wool Output.



EPPNER, the sent of justice of Morrow county, dates its first real start from 1888, when the branch road at Willows was completed. This road has made Heppner one of the leading shipping points of Eastern Oregon, and it has been of ines-

entire country of which Heppner is the trading center.

Before the construction of the railroad

and telegraph operators, of whom there are 5314. Next come the 4579 trackmen, 3516 mechanics and helpers in the shops, and the 2523 switchmen.

REIGN OF THE WHEEL. The Present Passion for the Bicycle Likely to Hold Out.

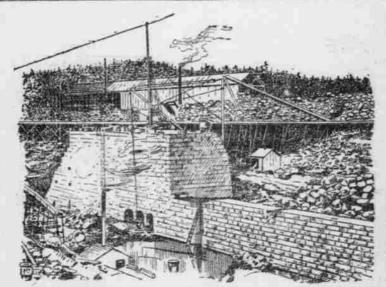
What may be called, not improverly, the bicycle passion has full possession of several feading countries of the world. Eng-land and France, notably those parts of them in and about London and Paris, have: been so given over to it for some time that a large proportion of their popula-tion come and go on their errands of business or pleasure "on a wheel," says the December Century. Americans who have recently traveled abroad have been asness or pleasure "on a wheel," says the December Century. Americans who have been astonished at the general use of the bloydle there, and have been still more aston-ished, on returning to their own country method of estimating the duration of light-

the walls to natural causes argue after this fashion: The lakes are shallow, and in winter, especially if it be a winter of unusual cold, freeze solid to the bot-

This ice freezes fast to the boulders, pebbles and earth beneath, and, in its expansion, acts in all directions from cen-ter to circumferance. Every year a cer-tain portion of the deposits of the lakes' bottoms are pushed toward the abore. This going on from year to year, and from century to century, has caused the wonderful walls which have so frequently

Duration of Lightning.

By using at a measured distance in front

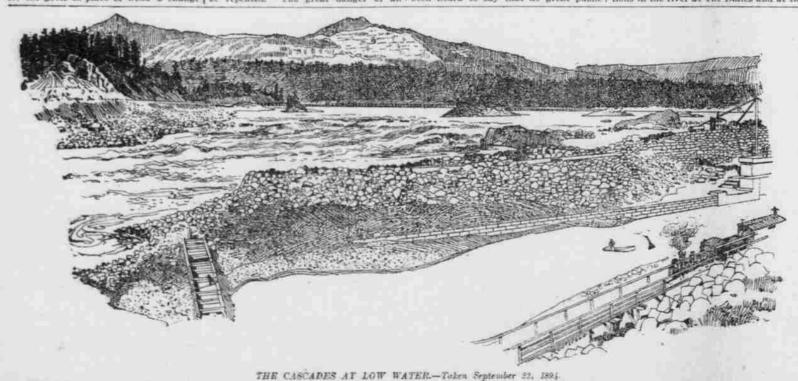


UPPER GUARD-GATE MASONEY: NORTH SIDE.-Taken December 15, 1801.

furing the last year, to discover what | ning flashes. Mr. Warner has made a headway the passion has made here. It is raid to be a conservative estimate by competent authorities that during the year now closing a quarter of a million bleycles have been sold in this country, presumably, of small diameter.

Dows are less abundant on lelands and on ships in midocean. Seamen noaring land can tell that fact by reason of the

One of the heaviest snowfalls in the history of this country was February 19 to 24, 1717, when the snow remained five to



THE CASCAPES AT LOW WATER.—Token September 22, 1894.

Under castal continuous and gates permanent in character. Up to that time there had been appropriated for the time there had been appropriated for cascade locks and gates permanent in character. Up to that time there had been appropriated for the construction of the Cascades was at 50 time less the construction of the Improvement of the cascade locks and gate permanent in character. The total time there had been appropriated for the time there had been appropriated for the time there had been appropriated for the same permanent of the cascade locks and gate the cascade locks and gate to the improvement of the section of the improvement of the section of the propries of all the work of the section of the propries of all the work of the section of the section of the time there had been appropriated the propries of all the work of the section of the section