

THE AMERICAN BISON

is fast becoming extinct, but this fact need not trouble the housewife. Her interest is centred on the fact that, thanks to SUNLIGHT SOAP, the terrors of wash-day have become quite extinct. With

Sunlight Soap

as a helper the wash is quickly over. Labour is reduced by its use—time is saved and the clothes are preserved.

SUNLIGHT SOAP does the work. It is made for that purpose.

Try it and save your time and money.

4219



"SHIPS' EARS" AS A DEFENCE

AGAINST SUBMARINES AND ICE-BERGS.

Remarkable Invention by Which Wireless Messages and Warnings Are Sent Beneath the Seas and Heard by Steel Diaphragms or Ships' Ears.

A remarkable new invention will enable battleships to keep out of the way of submarines. It provides a ship with "ears" or steel diaphragms or oscillators, which will hear wireless messages and warnings sent beneath the water—so that the screw of a submarine may be heard while miles away.

By means of these oscillators, or ears, a ship's commander could give orders to his submarines, and it is possible even for submarines and other ships to talk with each other by means of this submarine wireless telephony.

They Hear Icebergs.

These "ships' ears" by means of echoes will also give warning under the water when icebergs are approaching. Such an apparatus might have saved the Titanic—just three years ago. Echoes from icebergs six or eight miles away have been recorded. "These echoes were not only heard through the receivers of the oscillator in the wireless room, but were plainly heard by the officers in

the wardroom and engine storeroom below the water-line."

The Inventor.

The inventor of these most sensitive "ships' ears," or oscillators, is Professor R. A. Fessenden, of the Submarine Signal Co., of Boston, Mass., who has described how it works to Mr. Cleveland Moffett for the American Magazine.

"All his life Professor Fessenden has been an active explorer in new fields of knowledge. For years he was associated with Thomas A. Edison. He was one of the pioneers in wireless telegraphy and his system of wireless transmission is used in the great Arlington towers at Washington, D.C. Also his system of electric power transmission was used by the Canadian Government in distributing the energy of Niagara Falls through the Province of Ontario. For years he was Professor of electricity and physics at the University of Pittsburgh.

The Two Ears.

"Does a vessel need more than one oscillator?" asked Mr. Moffett. "Yes, it needs two, like two ears, one on either side, which allows it to fix the direction from which a signal comes," replied the Professor. "This is done by a delicate instrument that takes account of differences in the intensity of a given signal as heard by the two electrical ears, one of which, on the more favourable side, hears the signal more distinctly than the other. A ship's officer has only to adjust this instrument and then read off on a dial the exact point of the compass from which the signal comes."

"How about the distance of a submerged submarine from a battleship—could the battleship tell that?"

"Yes, approximately, by the intensity of the sound received, for, of course, the oscillator's loudness grows less as the distance increases. There will be a distance indicator with a dial graduated in thousands of yards, and an officer will read off these distance indications just as he notes the points of the compass. Besides this, a battleship will get precise information from the submarine herself. I mean a friendly submarine, by talking with her in code, by asking questions as to her speed, direction, distance below the surface."

"From all of this it is plain that a battleship which can thus control the movements of submerged submarines has an enormous advantage over the ships of an enemy. A single cruiser, aided by half a dozen deadly craft, steaming far below the surface and able to manoeuvre safely on the lower levels, at the bidding of the mother ship might easily wipe out a whole squadron of Dreadnoughts unprotected against this new danger. With oscillators aboard, a battleship becomes an eye to see, a brain to guide, while the submarines, moving, sightless, through the deep, black waters, are arms that strike and destroy unerringly according to orders from above."

Safety for Battleships.

"Your invention increases the terrors of the submarine?" I said. "It leaves the Dreadnought practically helpless."

"The professor shook his head. "That is true for Dreadnoughts not equipped with oscillators, but for others that are able to listen with electrical ears, the submarine becomes far less formidable. The oscillator makes it possible for a ship's officer to hear the propeller movements of an enemy's submarine while it is miles away. With our existing

apparatus we can detect such propeller sounds at a distance of two miles; and we have a sound-amplifying device that will extend this distance to five miles or more."

"Does that mean safety for battleships from submarine attack?"

"A great measure of safety, yes." "Then those three British cruisers that were sunk by German submarines could have escaped if they had carried these listening oscillators?"

"Unquestionably."

"What would they have done?"

"As soon as they heard the propeller noises of the attacking submarines, which would have been some time before the German torpedoes were launched, they would have changed their courses and gone ahead at full speed. That would have baffled the enemy, for submarines are slow-going craft and only dangerous when their presence is not suspected. It is even possible that the British cruisers, knowing by dial indications the approximate distance and also the direction of the submerged German vessels, could have destroyed them by launching torpedoes of their own."

"Not less startling in its bearing on the present war is the theory advanced convincingly by the Submarine Signal Co., that the German raid on the east coast of England in December could never have taken place if British Dreadnoughts and super-Dreadnoughts had been equipped with listening oscillators."

"But this has never been actually accomplished, has it—the control of submerged submarines from a battleship?"

"Not yet, but it soon will be accomplished. We have already put oscillators on several American battleships, on the Wyoming, the Delaware, the Utah, the Florida, and on four of the U. S. submarines, the D-1 and D-2, the K-1 and K-2; and we are now installing them on battleships of a great foreign power."

"We not only succeeded in sending and receiving long-distance water wireless messages between submarines," said Professor Fessenden, "but

are not safe or sane; forget it."

Had ship's anchor fall on my knee and leg, and knee swelled up and for six days I could not move it or get help. I then started to use MINARD'S LINIMENT and two bottles cured me.

PROSPER FERGUSON.

at short distances, up to half a mile, were able to talk with the human voice from one submarine to the other. I would say to the transmitter, for instance: 'Please ask Capt. So-and-So to come to the 'phone,' and a moment later by water wireless I would hear the captain's voice asking what I wanted."

Sound Moves Quickly.

"This Fessenden oscillator is a submarine sounding apparatus that sends its signals through the water, not through the air, one result being that these signals travel more swiftly than they would through the air, since sound moves through water at the rate of 4,400 feet a second, while through the air it moves at the rate of only 1,100 feet a second. All sea-faring men know the untrustworthiness of sound warnings sent through the air from steam whistles, or steam sirens."

"It was in trying to extend the usefulness of submarine bells, especially in connection with ships, that Professor Fessenden evolved his present electric oscillator, and solved the whole problem of protecting vessels from collisions at sea."

"His system of submarine signaling is really a kind of water wireless, destined, perhaps, to as important a development as aerial wireless."

To send messages through the water without wires or cable it was simply necessary for the oscillator "to trot out dots and dashes according to the Morse code." These would be reproduced by a similar diaphragm or telephone receiver on another ship miles away."

"We have already received messages at a distance of 32 miles. With larger oscillators and more powerful currents it may be possible to transmit the water vibrations several hundred miles."



will clear up your urine—neutralize uric acid—dissolve stone in the bladder—and cure all Kidney and Bladder Trouble. 50c. a box, 6 for \$2.50. Trial treatment free if you write National Drug & Chemical Co. of Canada, Limited, Toronto.

Ever Ready Hot Water, Night and Day.

FOR THE NURSERY.

"The bath ready for baby, when baby is ready for the bath" should be an adage of every housewife—who should also keep in mind that any trouble saved to the nurse makes for a well-ordered, contented household. Gas Water-Heaters, whether of the instantaneous or Circulator type, offer the convenience of available hot water "upstairs, downstairs, and in my lady's chamber"—without any labour at all—independently of the state of the kitchen fire.

The cost is reasonable.

FOR THE BATHROOM.

An uncertain supply of hot water in the bathroom is a frequent cause of annoyance.

Hot water can only be secured, usually, by getting the cook to act as stoker, but at what a cost! Think of the coal that is wasted—the fatigue of coal carrying—the after-labour of grate cleaning—and the discomfort of a hot kitchen in warm weather!

A Gas Water-Heater is economical, because it only heats the water actually required; and labour-saving, because there are no coals to carry, no flues to clean, no ashes or dirt to remove.

The master of the house has hot shaving water and a hot bath whenever he wishes without delay or trouble.

HOT WATER FOR THE HOUSEHOLD.

When "Spring cleaning days" engross the busy housewife then the convenience of an unlimited supply of hot water on the upper floors is brought home to her with special force.

But at all times—apart from convenience—a gas water-heater makes an irresistible appeal to the housewife from the point of view of dealing with the domestic problem.

Latter-day domestic life is difficult to keep unless due consideration is shown by saving them unnecessary drudgery—and in the category of unnecessary drudgery may be included the toil of carrying hot water or coal upstairs, the cleaning of grates and the removal of dirt and ashes. The gas water-heater renders such labour superfluous—may 12, 14

ARE THE DARDANELLES LINED WITH TORPEDO TUBES?

The difficulties and dangers of forcing the Dardanelles are much greater than most people realise. The strength of the forts, the number of guns, and so on, have been immensely increased by the German military experts since last August, and though the Straits might have been forced easily in that month, it is a very different matter now.

Among the defences of the Dardanelles which are extremely difficult to locate, are the torpedo tubes hidden along each shore. These tubes, exactly like those on board big battleships, are often hidden underground and fired from beneath the surface of the water, the cliff, representing, as it were, a battleship's side.

In the famous Narrows the width of the Dardanelles is only about a mile, and the chances of a torpedo missing at that range is very small. There is very little doubt, in fact, that the Irresistible, Ocean and Bouvet were sunk by means of these hidden torpedo tubes, and not from floating mines, against which it has been possible to guard."

For Indigestion and Dyspepsia take Stafford's Prescription "A". Price 25 and 50c.; postage 5 and 10c. extra.—may 18, 14

A REMARKABLE CORPS.

Perhaps the most remarkable corps training in Canada just now is the Fourth Brigade of Field Artillery camped at Toronto and Guelph.

They were selected in the first place on the score of their high standard of education. They are men who are more than ordinarily smart, mentally. Over ten per cent of them are University graduates, and over twenty per cent. are college men. There is a large number of professional men among them. One corporal is an ex-member of the United States Congress and a graduate of three universities. In the ranks of one battery there are three ordained clergymen. There are several college professors and demonstrators, engineers and mechanics of all kinds. There is nothing in the matter of technical skill that the Fourth Brigade cannot do. Then in its ranks are a number of men who have been in the royal navy. All of the twelve men who man the limber guns are ex-navy men—the limber gunner is really the caretaker of the machine, as it were—and all are excellent men, reliable, and careful mechanics.

Next the men are selected for their good moral character. "We have no time," remarked Lt.-Col. Brown, the commander of the brigade, "to bother with men of indifferent character. Artillery work is so technical that it is only men of the higher type who have sufficient assiduity to master it." Thirdly, physical fitness is looked for; and lastly, some special kind of fitness in the applicant.

Stafford's Liniment cures Rheumatism, Lumbago, Neuralgia and all Aches and Pains. may 18, 14

Specially Attractive Value

We are now offering just what you want for the weather.

Ladies' Showerproof COATS,

New Styles.

Ladies' Oil Coats and Hats to match,

Children's School Capes, in Navy & Cardinal.

Children's OIL COATS and HATS to match.

The above are at old prices and excellent value.

SEE OUR WINDOW.

Bishop Sons & Co., Ltd.

New Goods! New Goods!

We have just received a shipment of

Ladies' Goods,

such as

BLOUSES, DRESSES, SKIRTS, PETTICOATS, UNDERSKIRTS, NECKWEAR, APRONS, BELTS, HOSE, VESTS, CORSET COVERS, WAISTS, COLLARS, JABOTS, BOWS in the Latest American styles, &c.

We have also received some lines of

FURNITURE,

such as

SIDEBOARDS, BUREAUS and STANDS, WICKER ROCKERS, CANVAS, &c.

And in stock a large assortment of

PARLOR SUITES, DINING SUITES, EXTENSION TABLES, WRITING DESKS, CHAIRS, LOUNGES, COUCHES, CLOCKS, SEWING MACHINES, CLOTHES WRINGERS, WASHING MACHINES; also a large assortment of BEDS, SPRINGS and MATTRESSES, from the cheapest to the most expensive.

No need of worrying about the extra duties imposed when you can come to the only store on Water Street that has factory connected, where the past months we have had thousands of dollars worth of Furniture made up which we now offer at greatly reduced prices. Remember, you save the duty and freights on the imported which is 70 to 80 per cent. Worth saving, isn't it?

The G. L. MARCH Co., Ltd.,

Cor. WATER & SPRINGDALE STREETS.

CABBAGE, CABBAGE, etc.

To arrive to-morrow:

100 crates CHOICE GREEN CABBAGE.
30 cases CALIFORNIA ORANGES—150's, to 176's; also CABBAGE PLANTS, first for the season; early and late.

And to arrive ex train:

400 half bags POTATOES—Blues.

PRICES RIGHT.

BURT & LAWRENCE,

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CHEAPER PRICES

For Marine Engines.

Latest Make Ferro Kerosene Engines

and Gray Kerosene Engines.

Also, Kerosene, Gasoline and Lubricating Oil.

A. H. MURRAY, - - St. John's.

Statutory Notice!

In the matter of the Estate of James W. Grant, late of St. John's, Lumber Merchant, deceased.

All persons claiming to be creditors of, or who have any claim or demand upon the above mentioned estate are required to send particulars in writing, duly attested, to the undersigned Solicitors for the Administratrix of the said estate, on or before the 15th day of June next ensuing; and notice is hereby given that after that date said Administratrix shall proceed to distribute the said estate, having regard only to claims of which she shall then have had notice.

St. John's, May 3rd, A.D. 1915.

HOWLEY & FOX,

Solicitors for said Administratrix.

Address: Board of Trade Building, Water Street, St. John's, may 3, 15, m

Notice to Property Owners!

We are prepared to give you the benefit of our experience and guarantee satisfaction in our work and in your bill. Tile Floors, Walls or Fireplaces, Concrete Steps, Walls or Walks or anything in mason work.

COADY & MURPHY, Bricklayers & General Masons, 73 New Gower St., St. John's. Orders sent to Phone 65 will be attended to. may 11, 15, m

BOYS' JERSEYS

WITH CAPS

Special Value

Henry

BOYS' JERSEY SUITS, with following shades: Navy, Reseda and Myrtle Green.

Price: \$1.45

BOYS' FINE RIBBED WOOL Cap to match, in Navy, Myrtle Green, Reseda, to 4.

Price: \$2

Great Bargain in BOYS' extra good value, in Navy, Reseda, Cardinal, Myrtle

75c. to \$1

SEE WINDOW!

HENRY

June Patterns Fashion

NOW ON SALE. Patterns 17c., postage included. free pattern your choice, 27c., must accompany order.

CHARLES H.

Fancy Depart



The coming of Spring means the putting on of the new, the new white and dressey in Spring Coatings, the new silk facings? Topnotchers, are in Scotch suitings, Glenris and W. EXCLUSIVELY M. A.

John M.

FOR PRESENT

A Great Display of White Lawn Blouses from White & Colored Wash Dresses from White Pique & Jean Costume Skirts from All brand-new, and includes the new styles. Special and prompt attention given.

WILLIAM F.