

Sheet Concrete To Dely Subs.

Discussion of the comparative claims for the steel ship and the wood on ship has raised the question whether any more novel form of marine construction offers improvements. A Boston expert in construction engineering has written for the Boston Evening Record the claims for the ship of reinforced concrete, his argument being that it is quickly constructed, of large carrying capacity, and proof against destruction from torpedo attack. He writes:

It is urgent that every effort be made by inventors and specialists in modern construction to bring out a strong sea-going ship that can be built quickly and be proof against the torpedo. A number of men of inventive minds are working on the problem, and with the aid of specialists, each in their own line, the torpedo-proof ship will soon be afloat. One proposition was made and illustrated in the Scientific American of June 9th by Hudson Maxim. He says:

"It is necessary at this time to stimulate inquiry and invention with respect to ways and means for protecting freight-ships and troopships against torpedoes, and while I believe that my plan of torpedo-proofing ships will be very efficient, and that it is the best thing that has yet been suggested, still what I have done may possibly serve as a suggestion to lead some other inventor to do far better than I have done, and the facts that I have given in this article about the nature and action of the explosive blast will help others in the investigation and understanding in this subject."

It is by the careful study and research given by the specialists, the marine engineer, the concrete engineer, the naval architect and the gun expert, each doing his own part, that the problem will be successfully solved and will bring forth the ship of such sturdy strength that on the new ship the submarine will have lost its power.

Many are conversant with the feats of engineering accomplished with reinforced concrete; factories and manufacturing plants having great strength and practically free from vibration, bridges capable of carrying any load, are demonstrated facts, but its possibilities in modern shipbuilding are not so well known. But nearly every country in the world is making some use of reinforced concrete as applied to shipbuilding. It remains for the methods to be thoroughly worked out and perfected by specialists to give us practically an indestructible ship.

This article is to deal with the torpedo-proof ship; the writer makes public this plan for the same reason as that given by Hudson Maxim, inventor of the gun silencer; the perfected work is for our common good and to defeat the enemy. Let other specialists bring forth their experience to perfect the work, and the work they may discover, and the work of putting the submarine out of commission (as far as the new ship is concerned) is accomplished. Let us put forth every effort to build up quickly an unsinkable, fireproof merchant marine.

THE CONCRETE SHIP.

My plan makes little if any change in the outward appearance of our modern steel ship, except that the structural part of the ship is of a specially prepared emulsified concrete reinforced with a fabricated network of steel rods that binds the ship together in every part, giving great strength and making the structure one continuous monolith. All decks, bulkheads, partitions, etc., are interwoven together in one continuous mass of steel and concrete. The ship has two hulls and a double bottom; the double hull runs to above the water line all around the ship. There is a space of three feet between the outer and inner hull which is divided every 12 feet, making a continuous number of water-tight compartments 3x12 feet, girdling every part of the ship to above the water line. In the centre of this three feet space is a system of fabricated steel rods looking somewhat like a heavy wire fence, the purpose of which will be explained later. This space between the double hulls and double bottom is not wasted, but being water tight, is used as storage tanks for carrying oil cargoes and for storing fuel for the ship's engines, the vessel being driven by oil engines, requiring a much smaller crew than a steam driven vessel and giving more space for freight.

The designs and methods of fabricating the steel reinforcing rods is such as to make a ship strong enough to resist the heaviest sort of a gale without straining itself, yet no attempt is made in this plan to build the outer hull heavy enough to resist the explosion of a torpedo; so let us suppose such a ship is struck by a torpedo fired from an enemy submarine; the force of the explosion is so great that a hole two or three feet in diameter may be shattered in the outer hull, and now appears the use for the fabricated rods (or strong wire fence) inside the space between the two hulls.

TORPEDO MADE HARMLESS.

These rods work on the same principle as Mr. Maxim's gun silencer, they dissipate, or in other words, break up, the force of the explosion, at the same time they protect the walls of the inner hull from being damaged by flying pieces of the concrete; thus a section 3x12 feet is damaged and its cargo of oil is thrown against the force of the explosion, but this of itself helps to cool the hot gases caused by the explosion; each 3x12 foot section is vented at the upper deck with a hatch that opens outward to let the explosive gases escape. The torpedo has now done its worst, and the ship has lost a few hundred gallons, maybe, of fuel oil, but the damage can readily be repaired in a few hours on arrival at her destination, or even while at sea if necessary, as concrete will set in water without decreasing its strength.

It will also be seen that a vessel of this kind should be damaged by collision or by striking a rock or an ice-

berg, only her outer hull could be damaged, while her freight and passengers are carried to their destination in safety. A few of the lines to recommend such a vessel are:

First. A stronger and more durable sea-going vessel at less cost.

Second. Can be built in one-half the time required for a wood or steel vessel.

Third. An absolutely fireproof structure.

Fourth. A vessel practically free from vibration, greatly adding to life of machinery and comfort of passengers.

Fifth. A saving in up-keep; the hull, all exposed and outside surfaces can be of white cement, effecting a large saving in painting, etc.

Sixth. The attainment of graceful lines and good design at no added cost, owing to the flexibility of the material while in its plastic state.

Seventh. A powerfully strong hull with an outer surface as even and smooth as glass and proof against barnacles and corrosion.

Eighth. The arrangement of a series of watertight compartments that will make the vessel practically unsinkable.

Secrets of Westminster Abbey.

Few who explore Westminster Abbey are aware that there are many of its most ancient and interesting parts of which they have never had a glimpse. For instance, in the eastern cloisters there is a door so guarded against unauthorized intrusion that it can only be opened by seven keys, which are in the jealous custody of as many government officials. Five of the keyholes of this wonderful door, which is covered with human skins, are concealed from view by a stout iron bar which traverses it. This door gives access to a vaulted chamber, known as the chapel of the Pyx, the walls of which were standing as they stand to-day before even the Norman conqueror landed in Sussex. The chamber was once the treasury of England, to which were brought the most holy cross or Holyrood were here, and for many years the plan served as a mint for coining silver and gold. It was centuries ago the scene of a daring robbery, and to-day it contains, in addition to a stone altar, some old chests, one of which is said to have held the jewels of Norman kings.—Exchange.

Minard's Liniment Cures Burns, Etc.

PLAGUE OF LOCUSTS.

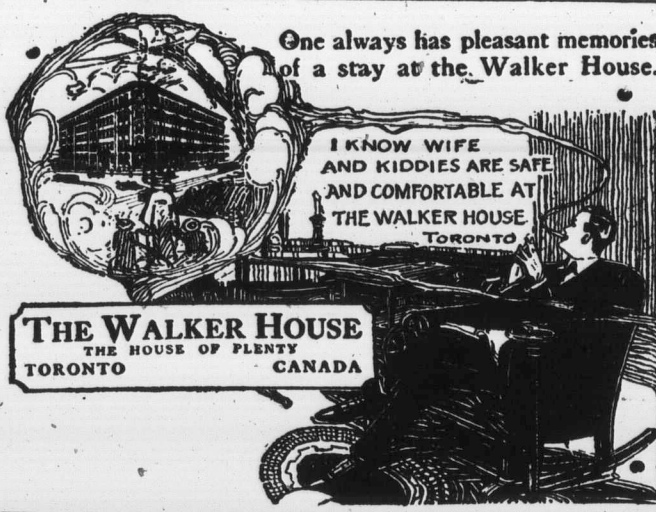
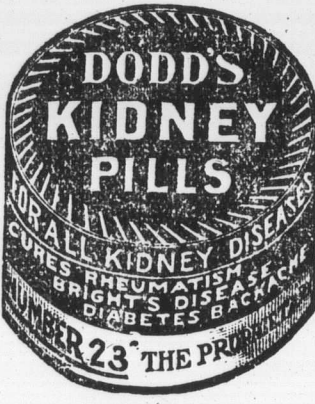
Argentine Has Suffered and Sympathizes With Sufferers.

On the great Plains of Argentina, where huge estates still survive, where the cattle range free as they used to do over the West, and a single man may still own land the size of a European Kingdom, there come at long intervals great invasions of locusts, far worse even than the destructive swarms of grasshoppers that have ruined the crops in Middle Western States on occasion. A locust invasion in the Argentine is a unique and terrible thing to watch, and a traveler who has this experience is not likely to forget it. He comes out of it with a lively sympathy for the ancient Egyptians who were schooled by Moses.

They come first as a small cloud on the far horizon, and the wise old natives shape their heads and mutter uneasily. Next day a few vagrant millions flutter overhead with glittering wings. The cloud comes closer; it veils the whole horizon in a purple mist. In countless billions of billions they come then, fluttering and clinging everywhere; hiding the trees and walls with the multitude of their clinging bodies. They do not destroy anything yet; they have simply come to lay their eggs, and this they do, and then move on.

But the crops are as good as ruined, and everyone knows it. Soon the eggs hatch out. A multitude of tiny, green-backed "hoppers" as the natives call them crawl forth from the burrows where the females placed the eggs. The whole countryside is covered with locusts. They grow fast and eat everything green with a few exceptions.

A few attempts may be made to fight them. Men will burn fields of dry grass and billions of locusts with them. They will rig huge pits and rake other billions in to be buried. They will drive herds of sheep over them to crush them, but the number of locusts is not perceptibly diminished. They are numerous past all thinking. They will cling to the walls of a house and cover it as with a rustling curtain, so that not an inch of wood or stone can be seen. They cover paths and roadways until you walk on them wherever you go. It is no wonder that some people, usually women, are unable to endure many days of this, and have to leave the estancia for the time being. The big clumsy insects with their bold staring eyes are everywhere, crushed by every passing foot, individually so weak, irresistible in their myriads. When the horde has grown its wings and flown away, darkening the sun like a cloud, it leaves desolation behind.



IN ANCIENT THEBES.

Amenhotep IV. of the Eighteenth Dynasty Had Plenty of Fun.

Politics, political rows, political scandal and corruption evidently are as old as the ages, to judge from the experience of Thebes, ancient capital of Egypt, where old Amenhotep IV. of the eighteenth dynasty, got elected for one term and had a regular time; this according to Mrs. Grant Williams, Egyptologist.

When Amenhotep won the election, as the story runs, he got up on his hind feet and told the good Thebans that it was all wrong; nothing was just right in Thebes.

"He even grew dissatisfied with his own name and changed it to Ikhnaton," said Mrs. Williams. "Then he told the people that he had an option on a nice townsite downstream away at a place on the Nile known to moderns as Tell el Amarna."

"And of course he moved the capital down there and left the old Egyptian stock company with a franchise for selling water from goatskins high and dry," Mrs. Williams was asked.

"He did that very thing," she admitted. "Not only that. He told them their religion was all wrong and that the disc of the sun was the thing they should worship. He only served one term," Mrs. Williams added, thoughtfully, "and after retiring him to private life the Thebans picked up their bag and baggage and marched back to where they belonged, prospering mightily."

Mrs. Williams then switched from governmental question. It was suggested that one did not know what the ancient Egyptians did when the parlor maid dropped one of those fine glazed vases they kept the goose grease in, smashing it to bits. One pleaded guilty to ignorance.

"Picked up the pieces and wrote letters on them," said Mrs. Williams.

An Egyptian, she intimated, could put more real ardor, passion and pipe dream onto the broken spout of a clay mug than moderns secure with all the arts of chirography, paper making and special delivery they have been developing through the centuries.

"They used a little camel-hair brush," she said, "and painted the characters of their language in bright colors."

"Why do their beards all look so funny, and what are those little strings running up the sides of their faces?" one asked, indicating a large masculine mummy and some painted pictures of masculine Egyptians.

"Make-up," she said. "The Egyptian barbers did a fine business. No one who was anybody at all let his beard really grow. But everyone had a beard, with little strings to it by which they tied the thing on when going to call on the young women of the neighborhood. It made them look masculine when they wanted to and allowed them to be comfortable at other times, also to wash their faces with some success."—Minneapolis Journal.

Minard's Liniment Cures Dandruff.

PROTECTION FROM COLD.

Assured by Keeping the Skin From Chilling.

Persons who are prone to catch cold should wear suitable clothing especially during the changeable weather.

Coughs, colds and diarrhoea are all caused by chilling of the skin. Going from an overheated, unventilated room to a cooler room or outdoors without being protected by a wrap or coat (even a newspaper serves to keep one warm), to prevent loss of heat from the body and chilling of the skin, is always to be avoided if one expects to keep free from colds.

Exposure to draughts and wetness and dampness is one of the commonest causes of colds and the so-called "summer complaint." It is impossible almost to avoid being exposed to draughts in the summer, and many persons are unable to wear or carry coats everywhere they go during the day. What are such persons to do, then, to protect themselves from the ills that result from sitting or standing in a draught? Protection is given first by the clothing worn, and next by keeping the body in such a state of health as to enable it to resist chilling.

The weak, aged or debilitated should at all seasons of the year protect themselves against chilling of the skin by wearing woolen underwear; heavyweight in winter and half-wool or one-third wool in summer—from the neck to the ankles.

Those who appear to be strong also need these woolen garments next to the skin. Certain portions of the skin are more sensitive to cold than others, and these should never be left unprotected. One of the best preventive treatments for summer diarrhoea is warmth next to the skin over the abdomen. Wearing a flannel bandage, which can be made from one-quarter of a yard of flannel, day

and night during the summer season prevents and cures intestinal affections caused by cold. It is not necessary to wear all wool flannel—half-wool will answer.

To train the body to resist cold and chilling there is nothing so potent as frequent bathing of the skin. A sponge bath from head to foot every day gives the skin good resisting power. This kind of bath can be taken quickly and without expense. A pitcher of water, a basin and towel can be had anywhere one may journey to or wherever he may live. Water may be used cold or warm, as one may prefer. If warm water is used it is better not to go out of doors for an hour after taking the bath—this is especially needful if one has taken a tub bath. A cold water plunge or sponge off is best taken upon rising in the morning, and the warm bath at night.

The body needs rest to keep in a condition to resist cold. Sleep is needful eight or nine hours every night. Losing sleep lowers the resisting power and makes the body susceptible to any form of disease.

Exercise is essential to increase the resistance to cold. A daily walk of two to five miles builds up the health. The vacationists and the stay-at-homes can escape many ills during the summer months by following these suggestions given for strengthening the resisting power of the body and for preventing chilling of the skin, for prevention is always less expensive than cures.

Minard's Liniment Relieves Neuralgia

PLANE'S PLANKS LOST IN CLOUDS

Airman May Find He's Flying Upside Down.

New Instrument to Show Direction Needed.

Dangers of flying in heavy clouds when it is impossible to keep the airplane on even keel, and the aviator has only his compass to depend upon, were described by Captain B. C. Hucks, of the Royal Flying Corps, in an address on "Modern Airmanship" before the Aeronautical Society. Describing an experience of his own, he said his airplane "tumbled about" in the cloud, and that he emerged from it flying nearly upside-down. Captain Hucks was emphasizing the need of an instrument that would show an aviator in the clouds whether he was flying horizontally. He said:

"I set out on a very cloudy, windy day to do a test climb to 10,000 feet on a late type two-seater. On reaching 1,200 feet we got into a dense rain cloud, but carried on beyond 5,000 feet, still in the cloud, when the compass, apparently, began to swing, although actually it is the machine that begins to swing, not the compass. Efforts to check the compass had the effect of causing it to swing more violently in the other direction. The air speed then rushed up far beyond normal flying speed. All efforts to pull her up checked her only slightly. Then the rudder was tried. Back went the air speed to zero. There was an unusual, uncanny feeling of being detached from the machine, and I knew her to be literally tumbling about in the clouds. All efforts to settle down again to straight flying seemed to be unavailing, until we emerged from the cloud very nearly upside-down."

"A few days ago a squadron commander told me that on one occasion when in France everything loose in his machine fell out while in a cloud. A week or so ago, on the south coast, a machine disintegrated itself in a cloud and the main planes landed half a mile from the fuselage. In a cloud you can see nothing whatever but your machine. There is no fixed point visible."

"The only means by which you can tell if you are flying in a straight course is by your compass and your air speed. The compass should give you your direction horizontally, your air speed your direction vertically."

"Before your compass starts to move your machine has already started to turn. Your rudder the opposite way to check it, over correct it, and turn; then the nose drops and speed goes up. Pulling back your elevator lever has little or no effect, for if you are banked above an angle of 45 degrees the elevator becomes the rudder. All this occurs without the pilot being in the least aware of the position his machine is taking relative to the ground."

Captain Hucks said the rate of improvement in aircraft was so alarmingly rapid that manufacturers could scarcely keep pace. Comparing the average performances of five different types of machines used at the beginning of the war with others of late patterns, he said that maximum speed for level flying had nearly doubled.

Horse-power was more than doubled. Airmanship had advanced more than it would have done in eight or ten years of peace conditions, and the advance seemed to have been along what might be called conventional lines—that is, improvement on standard designs, and not good results had been obtained from any departure from that standard. To this mind, improvements in engines were responsible for present-day performances to a far greater extent than improvement in machines.

He said the most marked development in the modern machine is its capacity for climbing. At the beginning of the war, he said, the average height flown on active service was 4,000 to 5,000 feet. To-day a height of 20,000 feet is reached, and, if progress continues, heights a great deal beyond this figure will be reached as a usual thing.

TRICKING THE CREDULOUS.

Lures of Gold Brick Schemes for the Small Investors.

Will persons with money never learn how to take care of it? Will they never guard themselves against the horde of tricksters who make a business of taking advantage of the credulous and especially of credulous women?

Bear in mind that no one will make money for you when he can make it for himself. If he offers to give you the key to wealth, suspect him, for such keys are kept by their possessors, and are not given away to strangers. The post office a year or two ago showed that over \$150,000,000 had been paid by persons who listened to the gold-brick schemers, but the game still goes on despite the vigilance of the Post Office Department and the passage of protective measures known as "blue sky laws," by many states. Will the people never learn to discount the alluring literature which these shysters send out and which is written for them by some of the sharpest and brightest writers of our day, whose services can be easily obtained for a few dollars?

I advise my readers who receive these tempting propositions to send them at once to the Postmaster-General at Washington for investigation. That is the business of the Post Office Department, and it will be only too happy to take up such matters.

Small investors are particularly the victims of these bunco schemes, for the false notion prevails that a man or woman with a small amount of money cannot buy high-class investment securities such as successful investors prefer. This is erroneous. An investment can now be made in the best of paying securities was as small an amount as \$10 through the partial payment plan, which is readily understood, though the term may sound formidable.—Leslie's Weekly.

Fireproof Paper.

Patents have been taken out at various times for paper which is claimed to be proof against fire and therefore particularly suitable for documentary records. Most of these papers contain asbestos or a similar mineral fiber, with or without the addition of clays or metallic salts.—London Standard.

I consider MINARD'S LINIMENT the BEST Liniment in use.

I got my foot badly jammed lately. I bathed it well with MINARD'S LINIMENT, and it was as well as ever next day.

Yours very truly,

T. G. McMULLEN.

ROAR OF A GUN.

Unfamiliar Uses of Molasses. One Word.

The loud noise made when a gun is fired is due to an explosion, the sudden expansion of a compressed gas, as it escapes into the air from the space in which it was confined. Now, in a pop-gun the gas that is compressed and then allowed to expand is air which already exists as air. But there is no air or any other gas in a cartridge, and the question is, Where does the gas come from that makes the noise and fires the bullet when a gun is fired?

What happens is that we suddenly burn a powder we have prepared of materials such that when they are burned a large quantity of gas will be produced, and it must be produced very suddenly if the full explosive power is to be obtained. We have another great advantage in trying to make this kind of explosion, as we have not when we fire a pop-gun—that is, that the gases produced are exceedingly hot for they are heated by the burning which makes them.

A hot gas naturally occupies a great deal of space—far more than a cold gas—and so when we fire a gun we suddenly produce a great quantity of hot gas in a tiny space which is not nearly sufficient to hold it. If this were done in a closed box it would burst the box, but in the case of the gun we have prepared a way for it—only that we put a bullet in the way. Out comes the gas, driving the bullet before it, and as it expands it starts the wave of sound we hear.—Kansas City Star.

"Do you take any periodicals?" asked a Missouri minister on his first round of parish visits. "Well, don't," replied the woman, "but my husband takes 'em frequently. I do wish you'd try to get him to sign the pledge."

ISSUE NO. 1, 1918

HELP WANTED.

WANTED—PROBATIONERS TO train for nurses. Apply, Welland Hospital, St. Catharines, Ont.

WANTED—LOOM FIXER ON CRAMP-ton and Knowles Looms, weaving heavy blankets and cloths. For full particulars, apply to Slingsby Manufacturing Co., Ltd., Brantford, Ontario.

WANTED—SLASHER TENDER FOR Saco-Lowell Cylinder Slasher, Grey and White wraps for union Blankets. For particulars, apply to Slingsby Mfg. Co., Ltd., Brantford, Ont.

WANTED—EXPERIENCED WEAVERS and apprentices; steady work; highest wages paid. Apply, Slingsby Mfg. Co., Ltd., Brantford, Ont.

MONEY ORDERS.

A DOMINION EXPRESS MONEY Order for five dollars, costs three cents.

MISCELLANEOUS.

RAW FURS WANTED—ALSO BEEF hides, tallow, wool, sheepskins, horse hides, catkins; referenced the Bank of Montreal; I have bought furs since 1888; ships me yours. Henry O'Brien, opposite Y.M.C.A., Third Street, Collingwood, Ont.

FARMS FOR SALE.

AT A SACRIFICE—4,000 ACRES LUMBER, timber and ranch; 3,000 acres lumber and fruit lands; in Buckley and Lakeview Valleys. Address, Box 788, Prince Rupert, B. C.

POULTRY WANTED.

A POULTRY WANTED OF ALL kinds. We pay highest price. Write for complete price list. Walker's, 89 Spadina Ave., Toronto.

WE HAVE THE BEST MARKET IN Western Ontario for good live or dressed poultry. We supply crates and remit promptly. Get our prices before selling. C. A. Mann & Co., London, Ont.

BUSINESS CHANCES.

JUST TWELVE SALES EARN \$18 premium and \$36 in cash. Opportunity to make several hundred dollars monthly. Write quick for facts. Foster Photograph Co., Foster, Que.

AGENTS WANTED.

MEN AND WOMEN WANTED everywhere, no matter how small the village or how large the city. To sell samples or mail circulars, if preferred for Large Canadian Cut-Rate Grocery Mail Order House selling groceries at factory prices to be consumed. For example, Redpath's best granulated sugar \$8.50 per hundred; Sunlight, Surprise or Comfort Soap, 7 bars for 25 cents, together with other goods tea, rice, etc. Position will pay \$15 weekly with few hours' work. Write for information to the Consumers' Association, Windsor, Ontario.

PACKING GOLD IN KEGS.

Care Taken in Preparing the Money Metal for Shipment.

When a gold shipment is to be made by ship the necessary number of kegs are taken in a truck to the assay office, where they are received at a dock in the rear. The gold bars, to be shipped, are placed on a hand truck and rolled to the kegs. In the presence of the agents of the shippers and of the officials of the assay office the bars are packed in the kegs, and sawdust is placed around them to prevent abrasion. When the heads of the kegs have been packed, the seal of the shipping house is then attached to the head and the bottom of each keg.

After sealing the kegs are rolled to the wagon and lifted on. It takes two men to handle each keg, as there are ten bars to a keg, with a total weight of about 100 pounds. It may be mentioned that \$100,000 weighs in gold about 39 pounds and \$1,000,000 weighs 390 pounds. An assay office official of an assay office explained figures showing how much gold a man could actually handle. The weight of gold that great difficulty is experienced in carrying gold for any distance. The weight seems to be more "dead" than that of other metals, although that may be an illusion.

For instance, the average man could carry 120 pounds of gold one mile without much discomfort. Its value would be about \$26,000. A strong man could actually handle it. It is a singular thing that great difficulty is experienced in carrying gold for any distance. The weight seems to be more "dead" than that of other metals, although that may be an illusion.

For instance, the average man could carry 100 pounds of gold one mile without much discomfort. Its value would be about \$26,000. A strong man could carry, say, 150 pounds a mile, reaching the end of his journey with just under \$40,000. A very powerful man might carry 200 pounds, or nearly \$53,000, a mile without exhibiting any signs of fatigue. It is almost as difficult as getting a Los Angeles Times.

Minard's Liniment for sale everywhere.

Seeds of Vegetable Plants.

Seeds may be saved from the best vegetable planting. Lettuce and radish go to seed if permitted to do so. The best corn ears may be left on the plant to mature. The best potatoes from the biggest hills may also be saved if they can be kept safely. Beans and beans allowed to ripen on the plants will supply seed for next year.

"So you have twins at your home?" said Mrs. Nabor to Little Jack. "Yes," said he, soberly, "two of 'em." "What are they going to call them, my dear?" "Well, I don't know for sure, but I think their names is Thunder and Lightning," cause that's the names papa called them when the doctor came in and told him about them."—Washington Star.

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