



LIFTING WITH MAGNETS.

Attractive Force Is Now Used for Great Commercial Tasks and Delicate Optic Operations.

One of the practical uses of a magnet, but to those immediately concerned a highly important use, is that in which it is sometimes employed to withdraw small pieces of iron from such out of the way places as the human eye. Another use of the attractive force of magnetism on a much larger scale was that to which it was put by Edison in his magnetic ore separator, in which the ore, previously crushed to a fine powder, is dropped down a chute past the poles of powerful electro-magnets, in passing which the iron particles of the ore are deflected to one side, while the non-magnetic stone dust continues undeflected down the chute. Still another instance of the employment of magnetism in a small way is that in which a magnetized tack hammer is used in the manufacture of strawberry baskets on a large scale in conjunction with a mechanical device which presents the tacks, one at a time and head up, to the operative, thereby greatly facilitating his work.

It is a far cry from lifting a tack by means of magnetism to the lifting of massive iron and steel plates weighing four, six and twelve tons by this same force, which is now being done every workday in a number of large steel works. Electro-magnetism, of course, is utilized, the form of the magnet being usually rectangular for this work and presenting a flat surface to the plates lifted. The magnets are suspended by chains from cranes, and pick up the plates by simple contact and without the loss of time consequent to the adjustment of chain and hooks in the older method. It is also found that the metal plates can be lifted by the magnets while still so hot that it would be impossible for the men to handle them.—Cassier's Magazine.

HOW TREES GROW OLD.

Their Age Can Be Told by Number of Thin Layers Just Under the Rough Outer Bark.

Unless the date of planting is known a tree can keep the secret of its age as long as it lives. Only when it is cut down and the rings that then show on this cut surface are counted can its exact age be told. Especially when a tree is saved down, leaving the stump with a smooth, flat surface, it is easy to count its years. Trees such as the oak, chestnut, pine, etc., add a thin layer just under the rough outer bark each year. These layers harden into tough-woody fiber, and one after another make the tree bigger and bigger around. When the tree is cut down these layers show just as the layers in an onion cut in half. As each layer counts for a year, the age of trees that have grown straight and tall is very easy to determine, while in gnarled, wind-twisted trees the rings run into each other, and can scarcely be distinguished, and thus some of the famous old sentinels on the mountain tops hide the secret of their age forever. As the trunks of trees grow larger layer by layer, the rough outside bark which lasts from year to year cracks wider and wider in its efforts to fit the big round body it was not made for, and great fissures and furrows appear, such as are seen in the oak. Some trees, like the birch, change their bark from year to year. The birch bark that peels off is almost as thin as paper and split in a thousand places with the swelling of the live new wood just beneath it.—N. Y. Tribune.

Signs of Life in Hen's Eggs.
An electrical test, at first proposed as a means of determining whether life is extinct, has been used to show when life begins. No reaction is produced if the matter is lifeless. Applying this method to hen's eggs, Augustus Waller has found that signs of life begin in 24 to 63 hours after the beginning of incubation, and that only when development fails or is arrested does the reaction continue to be absent.

California's Oranges.
California produces more dollars' worth of oranges than of gold—over \$18,000,000 and gold \$17,000,000.

WHY BIG BANKS MERGE.

Cause of the Tendency Toward Consolidation in Large Financial Transactions.

Banks of enormous capitalization are needed primarily, one of their most important officers says, "for the purpose of financing great enterprises." This means ability to raise a \$5,000,000 loan at one hour's notice without outside assistance; to supply a railroad with \$10,000,000 or \$15,000,000 whenever it wishes to increase its capital; to underwrite new flotations in heavy amounts; to finance syndicate operations in foreign bonds; to be ever ready to further the projects with which interests affiliated with the bank are connected; in various ways to do at short notice what a dozen different banks were formerly required to accomplish, states the New York Post.

Some of these banks admit frankly that they do not care to do business with "the small man." That is to say, accounts showing an average balance of \$10,000 or \$25,000 are not desired. The officers say that they are in the wholesale business, and have no time to throw away on the "little fellow." For that reason one of the banks already declines personal accounts, cultivating principally such corporations as can show balances of \$100,000 or more. Fifty thousand dollars is its average balance.

These banks require peculiar managerial ability. Men of small scope or narrow experience cannot cope with the difficulties. Officers of such institutions usually gain the reputation for being cold-blooded, because of rigid adherence to certain fixed rules. The chief difficulty, however, lies in knowing when to say "Yes," rather than "No," for as one banker put it the other day, "any fool can turn down a proposition." Not long ago one of these banks was asked to loan \$500,000 in a lump on single name paper. It was a big transaction, involving heavy liability, but the customer got his money. Another instance occurred where a bank received word an hour before its doors closed for the day that a check for \$5,000,000 had just been drawn against a large account. There was a little skirmishing, but the situation was met in a few minutes.

Bankers who have studied the proposition point out that the bank of great capitalization would probably contribute stability in times of financial disturbance. Its influence might be exercised through efforts to relieve the strain of an overburdened money market, or by breaking money rates when they reached panic level.

ARMY SERVICE NOT EASY.

Only Those Endowed with Energy and Pluck Can Hope to Reach Places of Honor.

Those young men who entered the military service from civil life following the war with Spain, believing that a commission in the army was a "soft snap," are discovering that a mistake was made and that in order to remain in the service and go forward in regular promotion they must prove themselves to be worthy of advancement, says a Washington report. The law requires that before being advanced to a grade above that held the officer must pass a professional and physical examination and demonstrate his fitness for advancement. Failing either physically or professionally, the officer is "conditioned" for one year, when he is again sent before an examining board, and, in case of a second failure, he is honorably discharged from the army with one year's pay. In case, however, of physical disability resulting from the service, the candidate is advanced to the higher grade and placed on the retired list.

Several of the young men appointed to the grade of second lieutenant under the army reorganization act have failed to pass examination for promotion to first lieutenant and have been honorably discharged in accordance with the requirements of the law. In some of the failures the cause was found in the lack of mental preparations for the duties to be performed, and in others the failures were attributable to the indifference and indolence of the delinquents, who seemed to entertain the belief that the same influences that were potential in securing their original appointment would be able to retain them in the army regardless of professional delinquencies.

Recently at Fort Leavenworth several student officers who failed to meet the requirements of the school examination were ordered before a court-martial evidently for exhibiting deliberate carelessness to prescribed studies and indifference to duties in the classroom in the school of practical application. These happenings indicate that the war department authorities are determined that the younger officers of the army must work to win their promotion in time of peace in order that they may be the better prepared to "win their spurs" in time of war.

Cruel Joke.

Edith—Yes, last night Jack said he was going to change my name.
Ernie—How your heart must have fluttered. Did he promise to marry you?
"No; the mean thing just took out a pencil and wrote Edith, instead of Edith."—Chicago Daily News.

Southern Sea Elephant.

A southern sea elephant captured by a whaling vessel on an island in the Antarctic circle has been received by the National museum at Washington. It is an amphibian with but the suggestion of a trunk which has no prehensile power.—Albany Argus.

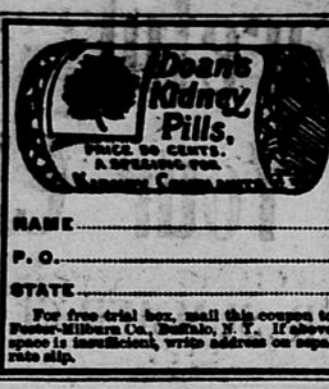
No Chance for Them.

A number of capitalists sent a man down to a little town to report on the advisability of introducing gas there. "Well, queried one of them, 'what do you think of it?'" "None," responded the agent. "Wouldn't you pay the salary of the superintendent, let alone the expense of putting in the plant?" "Why? What's the matter?" Citizens too poor?" "No; they're rich enough." "Old-fashioned? Prefer kerosene or candles?" "No; that's not it." "Well, what is the matter, then?" "To many engaged couples. Wouldn't burn gas at all."—Brooklyn Eagle.

Its Status—Tourist—"What is the size of this place, uncle?" Colored Citizen—"Dis town hab got about 2000 popularity, sah!"—Puck.

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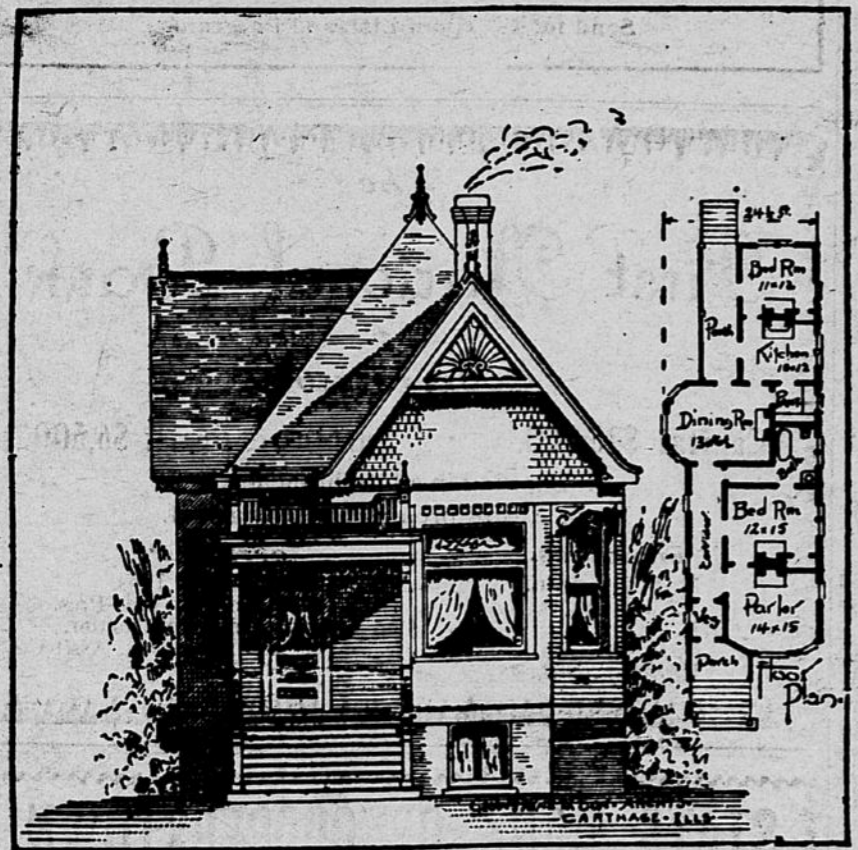
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About Sanative Antiseptic Cleansing
And about the Care of the Skin, Scalp, Hair and Hands.
Too much stress cannot be placed on the great value of Cuticura Soap, Ointment and Resolvent in the antiseptic cleansing of the mucous surfaces and of the blood and circulating fluids, thus affording pure, sweet and economical local and constitutional treatment for weakening ulcerations, inflammation, itching, irritations, rashes, eruptions, discharges, pains and irregularities peculiar to females. Hence the Cuticura remedies have a wonderful influence in restoring health, strength and beauty to weary women, who have been prematurely aged and inviolated by these distressing ailments, as well as such sympathetic afflictions as anemia, chlorosis, hysteria, nervousness and debility.
Women from the very first have fully appreciated the purity and sweetness, the power to afford immediate relief, the certainty of speedy and permanent cure, the absolute safety and great economy which have made the Cuticura remedies the standard skin cures and humors remedies of the civilized world.
Millions of the women use Cuticura Soap, assisted by Cuticura Ointment, for preserving, purifying and beautifying the skin, for cleansing the scalp of crusts, scales and dandruff, and the stopping of falling hair, for softening, whitening and soothing red, rough and sore hands, for annoying irritations, and ulcerative weaknesses, and for many sanative, antiseptic purposes which readily suggest themselves, as well as for all the purposes of the toilet, bath and nursery.

Art in Architecture

Designed and Written Especially for this Paper

THERE are many things to be taken into consideration in the designing of houses for different parts of the country. A low house of good outline is always attractive, no matter how simple the design may be. It seems to fit into the natural surroundings of a landscape much more appropriately than a lofty structure. There are other advantages in a home of this description. It is warmer and more comfortable in the winter time and requires less fuel to heat it. In summer it is usually shaded by foliage, which shuts off much of the intense heat of the sun. Rich ornaments and details are of necessity

wishing an average amount of room. There are five rooms, all of good size, in addition to the hall, bathroom, pantry and closets. The house is heated by fireplaces in each room. From the front porch you pass through the front vestibule into a corridor, from which you can enter the parlor, front bedroom, bathroom or dining-room.
The parlor and dining-room are each octagon shaped at one end, giving more light and ventilation and better view. A door from the dining-room communicates with the kitchen at the back. The pantry is placed so it may be entered from either the dining-room or kitchen and is fitted



PRETTY HOUSE FOR NARROW CITY LOT.

prohibited in the small and inexpensive cottages, and really do not belong there, but it is a natural propensity in most of us to strive to get as much as possible for our money, and in house building, perhaps more than in any other undertaking, are found opportunities to judiciously expend or senselessly waste money.
Here is a pretty little house designed to be erected upon a narrow city lot. The building itself is 24 1/2 feet wide, and should have an open space or passage way of at least four feet on each side, although if it suited the taste of the owner better it could be placed nearer the lot line on one side. This little house is designed to meet the requirements of a person of moderate means and small family,

up with the usual number of shelves, drawers, pastry table and flour bins. A cellar extends under the entire house, eight feet in depth. The height of ceiling above is 12 feet. The foundation walls are of brick. The building above foundation is of wood. The walls are sheathed and papered and weatherboarded with half-inch siding, and the gables shingled. The roof is shingled with cypress shingles. All inside woodwork is of cypress, filled and hard oiled in natural color. All outside woodwork is of white pine, painted three coats in stone gray body color, trimmed with white, with moldings picked out in black. This house is very cozy and attractive and would make a comfortable home, at a cost of \$1,200 to \$1,500. E. A. PAYNE.

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