

# INDUSTRY & MECHANICS

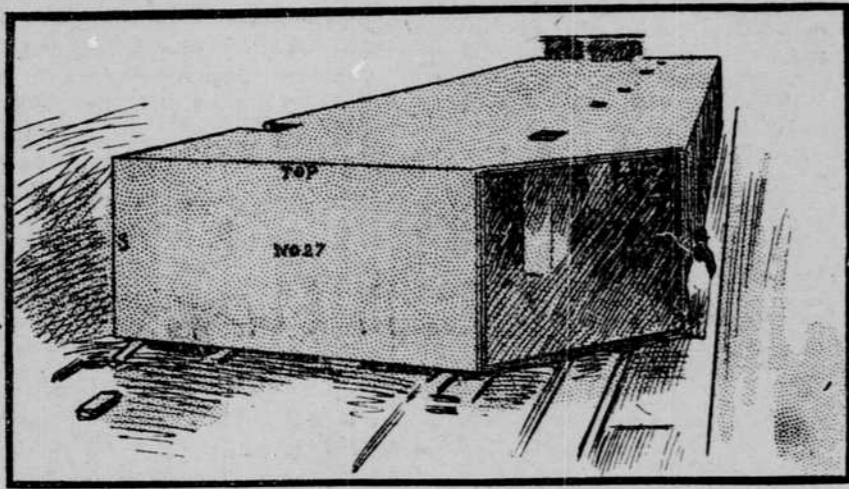
LARGEST STRONG BOX.

One of Two Stories Which Will Defy Any Sort of Violence.

A huge armor-plate storage vault, two stories high and proof against any sort of violence that might be brought to bear against it, has been constructed in Bethlehem, Pa., for use in a New York safe-deposit building. The building of armor-plate vaults, we are told by a writer in Machinery, is comparatively new, having sprung up in the past eight or nine years, and this particular vault is so much larger than anything else of its kind that an uninitiated mechanic would be perplexed

to be equipped on a scale of magnificence exceeding anything of the kind previously installed. The whole room is to be finished in solid bronze, with all the fittings of the same material. \* \* \* The vault is so large that it overflows the unobstructed floor of the sub-basement, and includes two rows of the columns of the building within its area. To take care of these, several openings, entirely cased in, are made through the vault from top to bottom.

"Besides being remarkable in its general features, this vault is unusually interesting in its design and construction. As stated, it is intended to be fire, burglar, mob, and earthquake proof. Danger from fire is obviated by the heavy 16-inch coating of concrete and fire-proofing material which surrounds the top, bottom and sides. The burglar's chances for success are small, as the walls of the vault are made of four-inch Harveyized steel armor-plate, of the same kind as furnished the government for



Lower Story of Vault on Erection Floor of Armor-Plate Shop.

to state the use to which it is to be put. The writer goes on to say:

"This armor-plate vault is a sort of glorified safe, to be filled with strong boxes. \* \* \* The advantage claimed for the armor-plate vault over all other types of construction is that it is fire, burglar, mob and earthquake proof. This one is built in two stories \* \* \* with a connecting passage between them carrying a stairway and a passenger elevator. The lower story is 9 1/2 feet high, 106 1/2 feet long, and 20 1/2 feet wide. The whole structure weighs about 1,200 tons. It is provided with an 'emergency door' in the right-hand corner of the foreground of the figure. The upper floor is 32 feet long, 9 feet high, and 19 feet wide, provided with two doors for regular service, one at either end.

"The upper vault, in particular, is

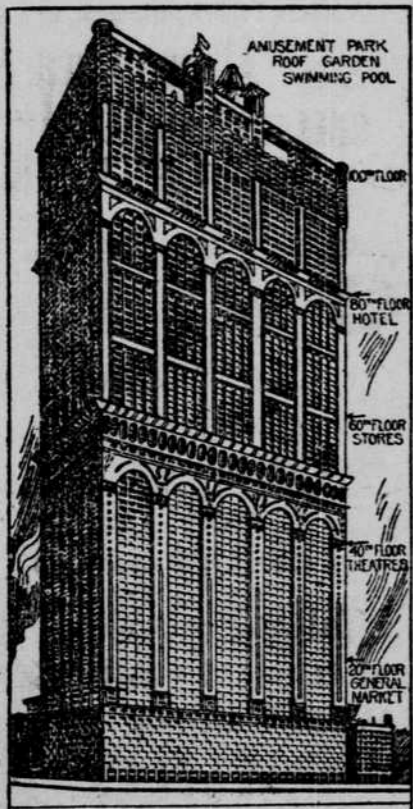
war vessels. Not only would the burglar have to perform the task of getting through this case-hardened surface, but to even reach the armor-plate he would have the re-enforced concrete to reckon with. The vault is made of separate steel plates, with numerous joints; but these are all dovetailed together and held in such a way as to make their separation impossible from the outside, and the fitting is so finely done that the joints are impervious to nitroglycerin.

"Barring those for the doors, the armor-plate walls are free from openings of any kind, which a burglar might use in beginning his vault-breaking operation. There are no holes through the doors for the locking mechanism. The automatic time lock is the sole means of opening the vault once it has been locked."

## BUILDING POSSIBILITIES.

Skyscrapers 100 Stories High Possible, But Drawbacks Are Many.

Reinforced concrete buildings, 100 stories high, towering 1,000 feet into the air, may yet be seen by people now living, according to a prominent



The 100-Story Possibility.

New York engineer and builder. Before such a feat can be accomplished, however, two great obstacles must be overcome. The lack of adequate fire protection at such a height is one, and the other is the impossibility of providing elevator service under the present systems. Even now in 30-story buildings the weight of the cables supporting the cars is enormous, and buildings of over 40 stories would pass the safety line in this respect.

"The 100-story building is sure to come," says one New York architect. "We may not be ready for it yet, but the larger and higher buildings we are certain to have in the near future. The next stage in the development will be the 50 and 75-story building constructed of steel and concrete."

Already the 40-story building has been reached and passed in the completion of the Singer building. The 50-story goal is practically here with the construction of the Metropolitan Life building, which, when completed, will be 48 stories high.

Less than a dozen years ago a 20-story building was a world wonder. Now it is insignificant. The census of skyscrapers in New York, not taking into account the Singer building, gives a total number of 22 buildings more than 20 stories in height, and 405 buildings ranging from 10 to 20 stories high.

## ACETYLENE GAS GENERATOR.

How You Can Make One Yourself for Use at Home.

A simple acetylene gas generator used by myself for several years when out on camping trips was made of a galvanized iron tank, without a head, eighteen inches in diameter and 30 inches deep, B, as shown in the sketch, writes a correspondent of Popular Mechanics. Another tank, A, is made the same depth as B, but its diameter is a little smaller, so that inverted it will just slip easily into the tank B. In the bottom, or, rather, the top now, of tank A is cut a hole and a little can, D, is fitted in it and soldered. On top and over can D is soldered a large tin can screw. A rubber washer is fitted on this so that when the screw top, E, is turned on it, the joint will be gas-tight. Another can, C, which will just slip inside of the little can, is perforated with a number of holes. This can C is filled about half full of broken pieces of carbide and then placed in the little can D. A gas cock, H, is soldered on to tank A, as is shown, from which the gas may be taken through a rubber tube. Fill tank B with water and set tank A into it. This will cause some air to be inclosed, which can be released by leaving the cock open until tank A settles down to the point where the water will begin to run in the perforations of the little tank. The water then comes in contact with the carbide and forms gas, which expands and stops the lowering of tank A. Then the cock must be closed and tubing attached. It is dangerous to attempt to strike a match to light a jet or the end of the cock while air is escaping and just as the first gas is being made. Wait until the tank is well raised up before doing this.

On this very day it happened that Mrs. Van Maurice, of Advanced Thought fame, was unexpectedly deprived of a housekeeper. She was in the midst of a round of engagements and social duties, and this defection filled her with momentary consternation. She visited the intelligence office and the young lady who rode home with her—"Esther Geraldine," as she called herself—suited her very much.

Before the end of the second day she had all the details of the ménage at her command, and Mrs. Van Maurice was already congratulating herself on her acquisition, the only drawback to her satisfaction being that said acquisition refused to engage herself for more than two months.

One morning Esther was in the music room arranging some folios on a table when she heard quick, approaching footsteps. Thinking it was Mr. Van Maurice, she went on quietly with her work.

"I beg your pardon, I didn't know Aunt Lisa had company," said an eager, almost boyish voice. "A servant told me she was up here."

"Mrs. Van Maurice just went into the library," and Miss Esther turned toward him quietly. It was a very handsome, athletic young man she saw, and as their eyes met, a puzzled expression of dawning recognition appeared on each face.

"Thank you. But—excuse me—haven't I seen you somewhere?"

"Why, on board the Aurora, of course!" cried Miss Esther, suddenly, as she stepped forward with outstretched hands, and then for some time they exchanged reminiscences of the trip.

The next day the young man called on his Aunt Lisa again, and again in the evening. And the next day and the next and the next, and after that two or three times each week. Aunt Lisa was pleased with his devotion, and gave him small errands to execute, and allowed him to turn her music when she played; and chess-loving Uncle Van Maurice grew more and more urbane, and actually told him one evening that he really played a fair game.

The young man went through it all heroically, and never even by a change of expression indicated that he was bored. And for reward he saw Miss Esther several times in the distance and once actually spoke to her as he passed through the hall.

# THE NEW HOUSE-KEEPER

By FRANK H. SWEET

"Well, that is too bad!"

She was sitting on the floor of one of the rooms of a Fifth Avenue hotel, anxiously examining the contents of a small traveling valise, which were presently scattered in a semi-circle before her. That the search was unsuccessful was apparent from the gathering frown on her face. At last she thrust the various articles back into the valise and walked impatiently to a window.

Several minutes of silent consternation, then the frown vanished in a clear, ringing laugh.

"Sure, this is one on you, Miss Flighty Head," she cried, merrily. "Wouldn't Reggie reign triumphant if he knew! But he shall not find out. No, indeed!" with a grimace. "He would never let me hear the last of it if he did. But what shall I do? Three thousand miles from home, with only five pounds in my purse, and not the remotest idea in what part of this burry-scurry New York Reggie is to be found, well, nil desperandum, as papa says. A Fitzgerald never gets to his wit's end. But what a ninny to lose that address!"

She remained for a long time gazing abstractedly at the kaleidoscopic tides of humanity in the street below, then a sudden flash came into her eyes.

"Why, of course," she said, as though she had come to the one natural conclusion; "I will earn my living until I can get the address from papa. He will be up at Ballyshannon with his guns and dogs before this, and it will take at least six weeks to hear from him. I have often read letters to the servants from their people in America, and they always go to an intelligence office. I will go to one myself."

The hotel clerk was experienced in his profession, and prided himself on an intuitive recognition of breeding. He had been rather impressed by the young lady when she put her name on the register, an hour before, and he now bowed very low as she approached.

Did he know of an intelligence office? Certainly, several of them. And he wrote the addresses for her with ceremonious courtesy, and even told her at which place she would be likely to find the best servants.

When she thanked him and turned away he reversed the register and stared meditatively at her signature.

"Esther Geraldine Fitzgerald, Ireland." "Name suits her," he muttered. "Some of the old nobility, most likely."

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"Why don't you bring your friend

with you occasionally, Harold?" asked Mrs. Van Maurice, one morning. "He must be a remarkable young man. Your mother was telling me about him the other day."

"He is a remarkable young man," answered Harold, warmly. "Just now he is absorbed in a new invention, and can hardly be dragged away from it. But perhaps I can bring him out to-morrow."

The next evening they were all gathered, in Mrs. Van Maurice's cosy music room, when the hostess suddenly turned to her guest.

"Would you mind telling us something about yourself, Mr. Fitzgerald?" she asked. "Something about your meeting with Harold, I mean. It must have been very romantic."

The young man looked embarrassed. "It was nothing," he demurred. "I just pulled him out of a hole."

"Hole!" echoed Harold, indignantly. "Do you call a crevasse like that a hole? And is my life nothing? Look here, Fitz, if you can't tell a better story than that, just keep still. I will do the yarning myself. Hole, indeed!"

He settled himself comfortably in his chair, and then looked across at his friend.

"You don't mind my giving the whole yarn, do you, Fitz?" he asked. "Aunt Lisa is getting interested in you, and will not be satisfied with less than the whole story. Well, then, here goes."

"In the first place, and as a sort of preface, I wish to say that I am an honorary member of Fitz's family. He has told me so much about his people that his brothers have become my brothers, and his sisters my sisters. I have never seen any of them, but am going across some day and put in my claim. His father is a gentleman of large estate and colossal mortgage, and numerous children. Cornac, the oldest, was given a fine education, and two years on the continent; and then he joined the Royal Engineers, where he is now a shining light. Reginald Cuan Fitzgerald, the second son—our friend here—with a low bow—"early displayed signs of mechanical genius. He received the customary education and tour, which was somewhat curtailed by an unfortunate stringency of the family purse. It was on this tour that he pulled my unworthy self from a hole, and thereby endangered his neck and broke an arm. Naturally we vowed eternal friendship and continued the trip together. When it was finished, I induced him to cross the Atlantic with me. My father was an extensive manufacturer, and it seemed to me that this was a golden opportunity for the encouragement of fallow genius. Time proved I was right. Reginald Cuan Fitzgerald among machinery was as dry gunpowder in a burning building. Before we could collect our dazzled senses he had flashed across the horizon of inexperience into a position as superintendent of the works."

He paused a moment to sip the tea which Mrs. Van Maurice handed him, and then went on:

"The third scion of the family is Miss Essie, a musical genius, who was obliged to assume charge of the household on account of her mother's invalidism. Stress of finance and this duty have hitherto kept her genius somewhat in abeyance, but now," waving his hand toward Reginald, "this young Croesus comes forward with his savings of four years, beseeches her to cross the big pond and avail herself of all the musical advantages offered by our proud city. There is a family consultation, in which it is decided that Elizabeth Tara Fitzgerald, the fourth aspirant, is competent to assume the family dictatorship, and that suppressed genius, in the shape of Miss Elsie, shall find its natural expansion in America—and—er—I believe that brings us down to contemporaneous history?" glancing at his friend.

"Yes, I suppose so," answered Reginald, with a wry face. "When I have occasion for a biography I shall certainly apply to you." Then his face grew serious. "It seems strange that I have not heard from home. Essie wrote that she was all ready to start, and at least five or six steamers have been in since then. But at this season father usually goes up to Ballyshannon for a few weeks' hunting, and perhaps she concluded to wait until his return."

"It is all right, undoubtedly," said Harold. "From what you have told me of her, she is like the traditional pussy—or, more happily, like her illustrious brother—when she strikes America she will be on her feet."

"During the conversation Mrs. Van Maurice had occasionally regarded her guest with a puzzled, inquiring expression. She had never seen him before, but somehow his features seemed familiar; and that peculiar way he had of throwing back his head—why, she had seen it dozens of times.

Suddenly a mirthful gleam of recognition swept the uncertainty from her face, and she rose quickly. With her a thought was to act.

"I suppose you and your sister resemble each other, Mr. Fitzgerald?" she asked.

"People used to say so, I believe; but Essie appropriated all the beauty and grace which rightly ought to have been divided between us."

"Those attributes naturally go to the sister," said Mrs. Van Maurice, smiling. "But would you mind going downstairs with me a moment? I have something to show you."

As they left the room, Mr. Van Maurice rose with the remark that he would go into the library after the chessmen. Hardly had he disappeared when Harold heard a slight rustle at the door.

"Is Mrs. Van Maurice here?"

"Esther!" Harold's face was in a glow as he stepped eagerly toward her.

"No, don't go," as she drew back. "I— I must speak to you, dear. I have been coming here for weeks, and have only just been able to catch glimpses of you as you fitted through some distant door. I cannot endure it any longer. Uncle Van Maurice and the others will be back in a moment, and I want this settled before they return. Darling, will you—"

She raised her hand quickly. Her face was in a glow now. She had not been prepared for this precipitous denouement.

"Why—I—" Then she burst into a merry peal of laughter. "What absurdity! We do not even know each other's names."

He looked blank, but only for a moment. Something even in her raillery gave him courage.

"What of it?" he asked, boldly. "Names don't signify. We know each other. And, besides, the names can be easily remedied. I am Harold Allyn Ferrers, at your service."

"What?" The glow faded from her face, and then came back in a quick flood of eager questioning. "Not my brother's friend?"

It was his turn to look surprised.

"Your brother? I—don't—understand."

"Reginald Fitzgerald. He is my brother."

"O—h!"

There were sudden footsteps, then: "Here you are, Esther. We have been looking for you everywhere. I wish to introduce you to my friend, Mr. Fitzgerald."

An hour later, Reginald and his sister were standing in the hall, waiting for the carriage that was to take them home.

"It has come out all right, Essie," he said, a little soberly, "so perhaps it will be as well to say no more about it. But why did you not look in a city directory?"

Her hands went up with a quick gesture of dismay.

"Reggie, I never once thought of it."

Harold remained half an hour longer. When he left, his aunt followed him to the door.

"By the way, Harold," she said, as she reached up to brush a stray fleck of dust from his coat, "you must allow me to congratulate you."

(Copyright.)

## NOVICE GOT THE MONEY.

Twice-Told Tale of the Noble American Game.

"One thing is certain, and will never be disputed; I will never play poker with a beginner again."

The man wiped a perspiring forehead and then took up his tale in awestruck tones.

"I sat in a little game last night. Two of the players were old friends of mine and old hands at the game. The third man was a stranger to me and a novice at poker. All of us older hands said we would show the green man how to play, so after telling him the principles we stacked the chips and started the game."

"Never in my life before did I see a man hold such hands, and never did a man have such a continuous run of luck. That novice fairly chewed us up. He didn't play the game. He didn't need to, he simply held his hand and raked in the pots."

"I remember one time I had two pairs. Well, I opened the pot, and everybody but myself, including the novice, discarded three cards. It was a cinch that nobody had anything higher than two of a kind. I didn't draw anything on my own discard, and everybody but the novice dropped out. He bet against me and kept on raising the pot no matter how high I went. I thought that he was bluffing me at first. Then I began to get scared, so at last I threw in three chips."

"I call you," I said. "What have you got?"

"He didn't say a word, and words, heaven knows, were idle things then, for he held up four face cards of a kind. He had drawn four of a kind on a discard."

"Well, sir, the bunch of us got cleaned out after awhile. Just to try his luck I dealt three hands."

"Throw out the face cards and count the spots," I said.

"The novice had just twice as many spots as any of the rest of us."

"No, sir, I don't play cards with greenhorns any more. If anybody says to me in the future: 'Come, I have got a young friend here who wants to learn the game,' I am going to tie my pocketbook in my trousers pocket, and hike out."—Washington Post.

## Troubles Endured by Austria's Ruler.

As to Francis Joseph, the man, it has been always the same. Blessed with the most beautiful and gracious lady in all royal Europe as his consort, he early suffered estrangement from her, which, although an effect rather than a cause, brought him the consciousness that as a husband, in the eyes of his empress and queen, he was amenable to the same rules which governed the hearth of the humblest of his married subjects. He saw their only son grow up a reflection of his own weaknesses, unredeemed by his own worldly honesty and mental and physical strength; and he saw this son die a tragic, mysterious death. His beloved brother, Maximilian, found an unquiet grave in Mexico. One of his wife's sisters, the queen of the Two Sicilies, lost her throne in vanity and strife; another, Duchess d'Alencon, lost her life in the horrible Charly Bazaar fire of Paris. And then, at Geneva, September 10, 1899, came the hardest blow of all—the death of his saintly consort by the knife of an assassin.



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Did you ever study Venus by the glory of the moon's light? While the silver-laden voices of the night were all in tune? Did you ever seek Orion and the Little Dipper, too, In the brown eyes of a woman you have striven long to woo?

Have you sought to read her answer in the glimmer of the stars? Have you stared your eyes to aching at the Pleiades and Mars? Have you found the meadows studded with forget-me-nots of love As you gazed into the grandeur of the firmament above?

Have you striven, man, to girdle 'all the earth' within your arm As you note the constellations dart and shimmer with alarm? Have you seen the misty vistas of a night within her die? As you win her faintest answer to be yours for aye and aye?

Have you felt the rocking motion of the universe that dips As you press her closer, closer, sipping honey from her lips? If you have, O happy lover, you have seen the system right—For the way to heaven opened to astronomy that night!

## Eddies.

In some editorial sanctums poetry is not recognized as a gift. The trouble with a good many fellows who would share their last crust with a friend is that they never have the crust.

Impressionism is what you feel when you see the girl you thought you loved, chewing gum.

A Wisconsin woman told her neighbor that her husband had a new cat down at the office. The night before in his sleep he had told her "to keep out something for the kitty."

A Milwaukee humorist said: "One nice thing about balloon racing is that pedestrians don't have to dodge." And the next day a bag of ballast hit him on the "coco" and made him sorry that he didn't.

A neighbor of mine planted a lot of string beans this spring and has been wondering all summer why they didn't sprout. Recent developments show that the man forgot to open the tops of the cans before planting.

Some one wants to know how hot the hereafter is? I don't know. Ask that fellow down in Georgia who has been married seven times.

If there is anything in the transmigration of souls, I hope mine won't pass through the medium of a Chicago horse.

The difference between a bat and some men is that the bat isn't a tank.

The married man always can have buttons on his nice overcoat—but the trouble is he hasn't the overcoat.

A friend of mine, in looking through my new house, spied a barrel stave in the cellar. "Ah, how that reminds me of mother's biscuits," he said sadly, brushing away a tear from his eye. P. S.—He was watching me fix the furnace.

One nice way to make lemonade is to let your best girl hold the lemon while you squeeze 'er.

## Pie.

The editor of the Farmland (Ind.) Enterprise does not desire to earn the title of "yellow journalist," though he is free to confess that he fairly deserved that title on a certain afternoon not long past. He says:

After purchasing from Miss Lizzie Hill, at the church market, one of the most toothsome cream pies that mortal ever tasted, made by one of Farmland's most accomplished cooks, the editor strode up the street like a drum major, looking neither to the right nor left, and most unfortunately, not below. John Mendelhall, who stood in front of Basch's restaurant, spied the newspaper man and began waving his arms frantically, while he yelled something about a "spilla." The editor had always entertained the idea that John was a humorist and thought the latter had "something up his sleeve" in displaying such remarkable interest in the editorial movements. He was convinced to the contrary, however, on coming up to John, who scornfully pointed to the pie being carried so tenderly, from which a yellow stream had been steadily flowing over the waistcoat and pantalons of the unhappy newspaper man, who looked like a walking advertisement for the "Square Deal" tobacco, but who felt as though he had received a very "raw" deal.

## Been Busy.

Editor C. O. Robertson, publisher of The Benjamin (Tex.) Post, has his own ideas about newspaper editorials, as expressed in the following from his newspaper of recent date:

We haven't much to say editorially this week. The editorial column is but a place for the editor to express his views, anyway, and he might as well express them at the corner grocery. Besides, we haven't had much time to think this week, which is a sign that we have been pretty busy, for we had much rather sit down in an easy chair and exercise our thought manufactory than to roll up our sleeves and go to work. Next week we will try to think some.

Byron Williams