

Millions in It!

Small Inventions That Have Brought Fortunes—Profits of the Copper-toed Shoe—A Fortune from Shipping Tags and Another from Railway Tickets—Value of the Lamp Chimney Fastener—The Pigs in Clover.

Washington, Aug. 16.—No better examples of the importance of small things can be found than among the records at the United States Patent Office in Washington. There are to be seen certain small objects which, by a lucky turn of affairs, or perhaps by the ingenuity of the inventors, have become known throughout the United States and even throughout the world, and have been the means of filling the pockets both of the inventors and of their representatives. In fact it would seem as if inventors of small objects have been far better paid than skilled mechanics and engineers who have spent months and years in perfecting elaborate mechanisms. Certainly, in proportion to the amount of work done, the lot of the inventor of small things is more to be desired than that of the man who spends the best part of his life over an elaborate machine, the merits of which are hardly recognized, not, perhaps, until the inventor, through worry and sickness, is in no condition to enjoy the fruits of his toil. It would seem also as if the inventors of small objects which have paid have not, as a rule, been inventors by profession. They have been for the most part persons who by sheer luck have stumbled upon an idea which somebody else has recognized as a good one. Without the suggestion of this "somebody else," who is usually the one who profits, the great idea, though born, would rarely grow to maturity.

A story current at the Patent Office is told of an old farmer up in Maine. The children of the old fellow, like many other children before and since, had a way of kicking the toes out of their shoes. The farmer was of an ingenious turn of mind, and he cut out a piece of copper strips for each pair of shoes, which were fastened over the toes and between the sole and the upper. The plan proved so successful that the farmer found that where he had been buying three pairs of shoes, one pair would suffice. There happened about about this time a man from the city with an eye to business. He prevailed upon the old man to have the idea patented. This was done, and between \$50,000 and \$100,000 was made out of it. How much of this the old man got is not known, but it is presumed that the promoter got the larger part. The record at the Patent Office shows only the drawing of the invention as patented on Jan. 5, 1853, by George A. Mitchell, of Turner, Me.

Another similar invention which made a great deal of money was the metal button fastener for shoes, which was invented and introduced by Heaton, of Providence, R. I. At the time it was considered a fine idea, but the old sewed button was continually coming off. It has gradually grown in popularity since its introduction in 1853, until now very few shoes with buttons are manufactured without the Heaton appliance.

By a comparatively simple arrangement the shipping tags in use all over the country today were made a possibility. The chief trouble with the tag was the almost unavoidable tearing out of the tying hole before the package arrived at its destination. A cardboard reinforcement, round in shape, on each side of the tying hole was all that was necessary to make the shipping tag a success. This was the invention of a Mr. Dennison, of Philadelphia, who has made a fortune out of a lucky five minutes of thought.

The division of the Patent Office which examines applications for patents on toys and puzzles receives more communications in regard to worthless objects, perhaps, than any other, except some of the divisions on mechanics, whose officials have to deal with crank inventors. The chief examiner of the division of toys cites in his instances where fortunes have been made on puzzles and similar objects. The pigs in clover puzzle had a curious history. The inventor, Crandall, put it on the market before he had been granted, or, in fact, even applied for. Other people, recognizing the value of the invention from a financial point of view formed companies and began manufacturing the puzzle in even larger quantities than Crandall's company could turn them out. Crandall, of course, contested for rights and prayed for an injunction. The claim was put into interference, which is a long process, and one which tries the patience of the department and that of the attorneys. The unfortunate part of it for Crandall was that the craze for the puzzle was over before the interference was settled. This is the same Crandall who invented the famous children's building blocks, with dove-tailed edges, which had such a run, and are popular even today.

The return ball, a wooden ball fastened to a thin strip of rubber, with a wooden ring at the other end, which was patented somewhere in the sixties, had a run of popularity which netted its inventor \$50,000, and it is sold widely today. The patent has now expired. The flying top, a round tin affair with wings, wound with a string and shot up into the air, made a fortune for its inventor. Several years ago a puzzle appeared which attracted considerable attention. It consisted of two double painters' hooks, which, when fastened together in a certain way, could not be taken apart, except by one who had seen it done. It is said that this invention came about by the merest chance. A painter was standing on his ladder scaffold across the front of a house. He had occasion to use a pair of the hooks, and plucking them up hurriedly, entangled them in such a manner that it was several hours before he could get them apart. He forthwith had drawings made and filed an application for a patent, which was granted. No figures are known at the Patent Office, but it is supposed that he made a large sum of money, for the puzzle was sold for 25 cents in all parts of the east, and it cost much less than a cent to manufacture.

A discovery which has been the means of bringing forth a number of inventions, both great and small, was that of Goodyear, the rubber vulcanizer. It was not until the Goodyear discovery of the vulcanization of rubber in 1844 that rubber could be used, except in a very primitive fashion. Then it was found that, by the use of sulphur at a certain temperature, rubber could be moulded, shaped and worked into any form. Immediately after this discovery, the application clerk at the Patent Office having charge of such matters was besieged by hundreds and hundreds of applications for inventions with the Goodyear discovery as a basis. They related chiefly to matters of form in

which it was desired to work rubber. After that time the rubber blanket, the rubber overshoe, the rubber shoe, followed one after the other in rapid succession, and since that time there has not been a month that some patent has not been granted for some new form of rubber. Now applications are coming in at the rate of four or five a month, involving many applications of the pneumatic tubing or cushioning principle. There are now pneumatic blankets, pneumatic pillows of all descriptions, pneumatic soled shoes for running and jumping, and pneumatic car fender guards.

A recent invention which has come into prominence within the last two or three years is the tin cap on the top of beer bottles. This appliance is steadily taking the place of the rubber cork with the iron thumb lever. It is found acted upon by the beer. An offer from the sulphur in the rubber cork is acted upon by the beer, with the result of causing the rubber to deteriorate and the cork to become porous. The whisky makers is attracting the attention of inventors. It is a reward of from \$25,000 to \$50,000 for an appliance on bottles which will prevent their being soiled. As it is now, all the great whisky and beer manufacturers of the country, and, indeed, of the world, are constantly getting letters from people who complain that they have received inferior qualities of liquid under well-known labels. Of course it is impossible without some such appliance for manufacturers to guarantee the contents of bottles. All appliances so far fashioned in view have been unsatisfactory. The chief difficulty seems to be to make the invention practical and cheap enough for commercial use. The problem has been solved by a number of inventors, but at too great an expense, for it has seemed up to the present impossible to get the cost below \$2 a bottle. Completed the appliance must not cost more than two or three cents a bottle.

Several years ago a patent was granted for an addition to tin cans which made the opening of them a very easy matter, and did away with the old-fashioned iron can opener. The can had a small rim just below the top, bent by machinery at an angle just below the breaking point. By a blow on the top of the can around the rim the top would be broken off with a smooth edge. This did not cost the inventor one cent a thousand above the regular price of the cans. Armour, the Chicago meat man, was soon as he heard of the invention, ordered 10,000,000 cans to pack meat in for an order for the German army. The inventor of this can made a fortune in six months. His cans are now sold all over the United States for oysters and fruits.

The ordinary wood screw, patented Aug. 20, 1846, by T. J. Sloan, is recorded among the simplest inventions that have made the most money. The screws were cut by machinery, some of which is still used by the American Screw Company, of Providence, R. I. But the patent has expired, and the new method invented by C. D. Rogers has many advantages over the old. Under the Sloan system, the skin of the metal was removed and the screw consequently weakened; now there is a die which rolls the screw threads.

The man who invented the brass spring fingers one sees on lamps for holding the chimney in place got for a long period a royalty of \$50,000 a year. William A. Thrall, a former official of the Chicago and Northwestern Railway, patented June 1, 1866, a thousand-mile ticket which possessed so many advantages that it has been adopted by many Western roads. Several years ago Mr. Thrall resigned his place and is now living on a royalty of \$20,000 a year. Within the last two weeks a patent has been granted on a new whistle, made principally by bicyclers, and made on the principle of the siren or fog whistle. It has been largely pirated throughout the country, but will not be put into interference, for the patent has been granted. It is manufactured by a firm in the East, and they have only been able to supply the Eastern trade. The inventor has received for some time past \$5,000 a month. Among musical instruments for general use the autoharp has perhaps made the most money. The first one was patented in 1882. Now they are sold very reasonably, and manufacturers report increasing sales every month. The autoharp, with perforated paper sheets, is another of the money-making musical instruments.

Breathe Through the Nose

A Few Remarks for the Purpose of Preventing Throat Trouble.

"If only people would remember to breathe through the nose; if only they would think for a moment of the functions of the nose, I would have saved a great deal of trouble in my profession," said a well-known throat and ear specialist to a New York reporter the other night.

"Free nasal breathing is the essential of a healthy throat. The nose is the medium made by nature to transmit the air to the lungs; its passages are provided with a slight growth of hairs which acts as a sieve in purifying the air we breathe. These hairs collect the dust particles, and because of the natural supply of moisture in the nose the air is sufficiently dampened in passing through not to irritate the lungs and throat."

"On the other hand, people who breathe through the mouth will always have a dry, parched throat, and are soon or later will suffer from lung troubles."

"It is the natural outcome of the misuse of nature's organs of respiration. It is true that singers breathe through the mouth, but it is only while singing that they resort to this method of breathing, and it is only done and solely because sufficient breath cannot be taken into the lungs at a single inspiration. The cause for mouth breathing lies in defective nasal passages. This nasal obstruction is known as adenoid. It is a kind of vegetation growth at the point where the nose and throat join. It is the cause of that common malady known as nasal catarrh. It will also cause chronic laryngitis, which is a source of untold annoyance. To remedy any such trouble it is necessary to have the obstruction removed. The old method was to burn, but the phy-

sicians of today consider this dangerous. It is a simple process to remove them with the trepan, saw or knife. "It takes but a few minutes, and is almost painless. This bony growth often the cause of earache among children. This is due to the pressure upon the eustachian tube, which leads to the ear, and often results in complete deafness. It is advisable, therefore, to attend to any such growth as soon as it becomes noticeable. The first symptoms are those of breathing through the mouth and "snoring" while asleep. The special remedy is to make the patient breathe through the nose and to save the throat from all irritants, cold, sponge baths, and far from the use of cologne and alcohol in the bath. Clear cold water and friction will do more to make the body healthy, the throat and chest strong and the skin clear than any known process. The Greeks and Spartans never used anything but clear cold water for the bath, and they have always been recognized as the perfection of strength and health. "Just here it will be well to add that bicyclists must have free nasal breathing if they enjoy the greatest benefit from this sport."

The Assassination of Lincoln.

The afternoon and evening of April 14, 1865, were cold, raw, and gusty. Dark clouds enveloped the capital, and the air was chilly with occasional showers. Late in the afternoon I filled an appointment by calling on the President at the White House, and was told by him that he "had a notion of sending for me to see the theatre that evening with him and Mrs. Lincoln; but he added that Mrs. Lincoln had already made up a party to take the place of General and Mrs. Grant, who had somewhat unexpectedly left the city for Burlington, New Jersey. The party was originally planned for the purpose of taking General and Mrs. Grant to "Our American Cousin," at Ford's theatre, and when Grant had decided to leave Washington, he (the President) had "felt inclined to give up the whole thing," but as it had been announced in the morning papers that the distinguished party would go to the theatre that night, Mrs. Lincoln had rather insisted that they ought to go, in order that the expectant public should not be wholly disappointed.

On my way home I met Schuyler Colfax, who was about leaving for California, and who tarried with me on the sidewalk a little while, talking about the trip, and the theatre which he knew in San Francisco and Sacramento whom he wished to meet. Mr. Lincoln had often talked with me about the possibilities of his eventually taking up his residence in California, and the term of office should be over. He thought, he said, that that country would afford better opportunities for his two boys than any other of the older States; and when he heard that Colfax was going to California, he was greatly interested in his trip, and said that he hoped that Colfax would bring him back a good report of what his keen and practical observation would note in the country which he (Colfax) was about to see for the first time.

The evening being inclement, I stayed within doors to nurse a violent cold with which I was afflicted, and my room-mate McA— and I played away the time chatting and playing cards. About 10:30 our attention was attracted to the great hall of the White House, where the mounted patrol had the house which we occupied on New York avenue, near the State Department building. After a while quiet was restored, and we retired to our sleeping-room in the rear part of the house.

As I turned down the gas I said to my room-mate, "Will, I have guessed the cause of clatter outside tonight. It is one of those cavalry regiments in the mountains of Virginia. Now, my theory of the racket is that he has ridden Washington and has pounced down upon the President, and has attempted to carry him off." Of course this was said jokingly and without the slightest thought that the President was in any way in danger, and my friend replied, "What good would it do the rebels unless they carry off Andy Johnston?" The next morning I was awakened in the early dawn by a noisy and hurried knocking on my chamber door, and the voice of Mr. Gardner, the landlord, crying, "Wake, wake, Mr. Brooks! I have dreadful news."

I slipped out, turned the key of the door, and Mr. Gardner came in, pale, trembling and woe-begone, like him who "drew Priam's curtain at the dead of night" and told his awful story. He said that he had just heard that President, Mr. Seward, Vice-President Johnson, and other members of the Government had been killed, and this was the burden of the tale that was told to me by the man who had just left his bed in another part of the room.

When we had sufficiently collected ourselves to dress and go out of doors in the bleak and cheerless April morning, I found in the streets an extraordinary spectacle. They were suddenly crowded with people—men, women and children, thronging the pavements and darkening the thoroughfares. It seemed as if everybody was in tears. Pale faces, streaming eyes, and now and again an angry, frowning countenance, were on every side. Men and women who were strangers to me, and other with distressed looks and hurried inquiries for the welfare of the President and Mr. Seward's family. The President still lived, but at half-past seven o'clock a warning signal, the tolling of the bells announced to the lamenting people that he had ceased to breathe. His great and loving heart was still. The last official bulletin from the White House stated that he died at twenty-two minutes past seven o'clock, on the morning of April 15.

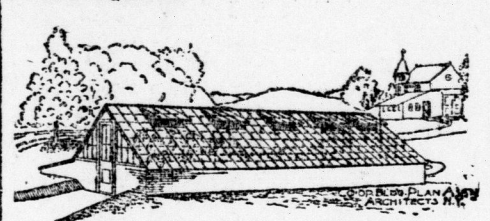
Instantly flags were raised at half-mast all over the city, the bells tolled solemnly, and with incredible swiftness Washington went into deep, universal mourning. All stores, Government departments and private offices were closed, and everywhere, on the most pretentious residences and on the humblest hovels, were the black badges of grief. Nature seemed to sympathize in the general lamentation, and a cold rain fell from the moist and somber sky. The wind sighed mournfully through the streets, crowded with sad-faced people, and broad folds of funeral drapery flapped heavily in the wind over the decorations of the day before.

Wandering aimlessly up F street toward Ford's theatre, we met a tragical procession. It was headed by a group of army officers, armed and bandaged, and behind them, carried tenderly by a company of soldiers, was the bier of the dead President, covered with the flag of the Union, and accompanied by an escort of soldiers who had been on duty at the house where Lincoln died. As the little cortege passed down the street to the White House, every head was uncovered, and the profound silence which prevailed was broken only by sobs and the sound of the measured tread of those who bore the martyred President back to the home which he had so lately quitted full of life, hope and courage.—Noah Brooks, in the Century for May.

A Greenhouse.

(Copyrighted, 1895, by the Co-operative Building Plan Association.)

Greenhouse, hothouse and conservatory are often accepted as synonymous terms, but there is an important distinction. The definition of the latter is a place for preserving and exhibiting plants—never a place for rearing and cultivating them. Formerly greenhouse had about the same restricted meaning, but custom now fully warrants for it as broad a definition as that given to hothouse—a house kept warm to shelter tender plants and shrubs, a place where plants of warmer climates may be reared and fruits ripened.



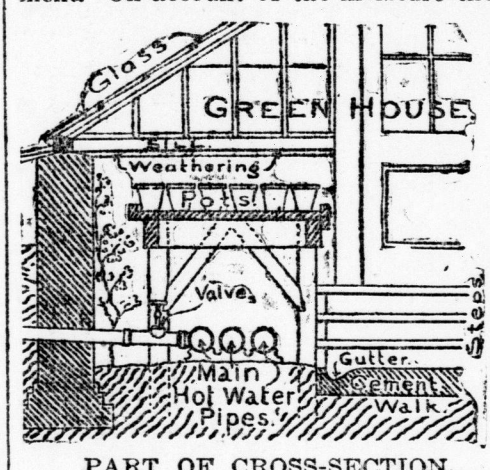
PERSPECTIVE VIEW.

Hothed is a bed of earth heated by fermenting substances, intended for raising early plants, but the same term is applied to beds of earth heated by other means.

The best heat for a greenhouse or hothouse is that furnished by hot water, although this preference is not universal. One of the most successful rose-growers uses a furnace, which heats a horizontal brick flue running from one end of the greenhouse to the other.

The design shown here is generally approved by professional florists. It makes a satisfactory display, being high enough for plants of considerable size. All vegetation is kept close to the glass, which promotes growth. No patented appliances are used, and a builder of ordinary skill may do the work.

The foundation walls should be built of the best hard-burned brick, laid in cement mortar and topped with cement. On account of the moisture the



PART OF CROSS-SECTION.

bricks will crumble after a time, unless they be of the best quality. The top of the wall should have sufficient wash, or "weathering," to carry off water, otherwise there is danger of rotting the sills on which the sashes rest.

The section of sash muntin shows clearly how the water gathered by condensation on the under side of the glass is carried to the walls and thence to the ground. This does away with the drippings that visitors find so unpleasant in some greenhouses.

The building should extend north and south, but where this is impossible the ridge of the roof should be near one side, so that the sash will receive the greatest sun exposure.

The building may be any length desired, one that is 30 feet long and 12 feet wide, inside dimensions, has been found to answer the requirements of quite an enterprising amateur, who cultivates for pleasure, not profit. The cost of a building of the dimensions stated, with hotheds on one side and the whole heated by hot water, is about \$40.

Hotheds may be placed at both sides of the greenhouse, or at one side only, or they may be left off altogether. They are useful in protecting the side walls. The extra heat required is very little. The hotheds are formed by posts set in the ground at short intervals, with planks spiked to the posts to form the sides, and ordinary hothed sash placed on top. The planks should be coated with tar or some other good preservative.

The Co-operative Building Plan Association, architects, 108 Fulton street, New York city.

The Hothed Flush!

"When his thin cheek assumed a deadly hue, And all the rose to one small spot withdrew;

They called it hectic! 'twas a fiery flush More fixed and deeper than the maiden blush."

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My Baby

was a living skeleton; the doctor said he was dying of Marasmus and Indigestion. At 13 months he weighed only seven pounds. Nothing strengthened or fattened him. I began using Scott's Emulsion of Cod-liver Oil with Hypophosphites, feeding it to him and rubbing it into his body. He began to fatten and is now a beautiful dimpled boy. The Emulsion seemed to supply the one thing needful.

Mrs. KENYON WILLIAMS, May 21, 1894. Cave Springs, Ga.

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