GLASS FOR WINDOWS

THE METHOD AND THE MATERIALS OF ITS MANUFACTURE.

Enough Arsenic In the Windows of an Ordinary House to Kill a Regiment of Men—Process of the Tankhouse and the Pothouse.

People who have glass windows in their homes do not know that the glass contains enough arsenic to make it a deadly poison. Glassmakers say that the windows of an ordinary home contain enough of this poison to kill a regiment of men. The popular supposition that glass is made of sand is a correct one, but a quantity of other articles enters into its composition.

Window glass factories are divided into two departments, a tankhouse and a pothouse. The process of glassmaking in one of these departments is practically the same as in the other. In the tankhouse the glass is all melted in immense tanks which will hold thousands of tons. In the pothouse the glass is made in pots.

After the fires are lighted and a tank is heated the glass mixture is shoveled in. It includes glass left over from the former season, glass refuse, sand and salt cake. Arsenic is not used in the tankhouse for the reason that the heat is so intense that the drug is volatilized and escapes into the air without entering the mixture. As one mixture melts and flows to one end of a tank fresh supplies are shoveled in at the other end.

The molten mass seethes and "works" in a manner similar to that of a mash in a distillery. From the salt cake comes a salt water that has to be separated from the mass, and the easiest way to remove it is to burn it out. This is done by throwing stove wood into the tank on top of the molten glass. The water is converted into steam, which is destroyed by the intense heat from the glass. The melted glass is then skimmed by an automatic skimmer, and it is ready for the gatherer.

A gatherer thrusts a long steel blowpipe into one of the rings at the lower end of the tank. He twists and turns it until a small ball of glass gathers on the end. This ball is partially cooled, polished by being turned in a box of sawdust and then passed on to the blower, who heats it again until it becomes like taffy. The blower swings the ball over a pit that is twelve feet deep and rapidly blows it into an elongated pear shape. When a blower is through, the melted glass becomes a perfect cylinder about 5 feet long and 2 feet across. It then passes to a "snapper," who takes it to a rack and breaks the roller loose from the blowpipe.

The snapper gathers a small lump of melted glass on the end of a rod and dexterously runs a narrow ribbon of the stuff around the ends of the roller, both at the blowpipe end and the closed end. The little ribbons of melted glass cool in a few seconds, when they are removed, leaving a narrow zone of almost redhot glass around the rollers at each end. Then, taking a tool that resembles a soldering iron, the snapper rubs it for a moment on his forehead, and when the point of it is moistened with perspiration he runs the iron around the rollers at the heated spot. The glass cracks and separates as cleanly as if cut with a diamond, the blowpipe is removed, and the closed cylinder has become a roller and is then ready to go to the flattener.

The flattener works in another part of the building, where are located the flattening ovens. These ovens are heated to a temperature sufficient to soften the glass so that it may be rolled out into sheets. A series of fireclay tables placed in a circle like the spokes of a wheel revolve in the ovens, and on these tables the rollers are flattened. They are placed inside, allowed to become hot, and then a cold iron is run along the inside from end to end. The contact of the iron cuts the glass, which is then straightened out upon the table.

The flattener has a number of billets of green wood attached to long iron handles, and with these billets, which are shaped in such a manner as to do the work expected of them, he "irons" the softened sheet of glass until it is perfectly flat and smooth. The tables inside the oven revolve, the flattened sheet is carried away, and another roller is brought into position before the flattener. As the flattened sheets cool they are lifted to a place on a long traveling rack, on which they are by stages removed from the ovens, being allowed to cool as they go. This is done in order that the glass may not be shattered by too quick an exposure to the air.

When the sheets are taken from the flattening ovens, they are covered with a greasy, dirty looking coat of chemicals—soda, potash, silicates of the different salts, etc.—which must be removed, and for this purpose the rough sheets are placed in an acid bath composed of hydrochloric and sulphuric acids more or less diluted. After their immersion in this bath the sheets are taken to the cutting room, where workmen cut them into sizes and make them ready for the packers. Hardly a scrap of the glass except the rough edges is wasted. In fact, none is wasted, as all refuse goes back to be melted. After the cutters have finished their work the glass is packed in boxes and is then ready for the market.—Indianapolis News.

Moved His Admiration.

Undergraduate (to chum)—That Miss Slick is the finest conversationalist I ever met. She knows all the track records for three years back.—Chicago News.

Life is only a brief lesson, and school's out 'fore we know it.—Atlanta Constitution.

GETTING AWAY FROM HOME

The Spirit of Restlessness and the Desire For Change.

Judging by a good deal of the conversation of the present day, there are a large number of people who have a positive horror of home. This curious revulsion of feeling is taken by many persons as a sign of social deterioration. For our own part we find it difficult to take it quite seriously or to see in it anything more than a passing whim.

Nobody nowadays likes monotony. Change is what people desire—not perhaps any great change, but lots of small change; not necessarily for the better, but for its own sake. Now, there is a great sameness about one's own four walls, be they ever so handsome. We all feel at times an overpowering desire to look at something else. We cannot change the patterns or the pictures on them every day, and neither they nor the home furniture ever seems to alter in expression.

Again, there is a terrible sameness about one's own cook. Experience enables us to foretell the taste of everything at home, from the soup to the savory if we are rich and from the mutton to the cheese if we are poor; whereas if we dine at a restaurant everything down to the salt is different, and the restaurant is refurnished daily with new faces.

Then, again, the music and stir going on around one avoid the necessity for much conversation, and conversation in the home circle is sometimes difficult and sometimes dull. It does not do always just to say what one thinks, it is such bad practice for dining out, and, this being the case, it is not easy sometimes to think what to say.

Nowadays we get, socially speaking, tired of our friends and even of our acquaintances. We want them to pass continually before us like a street procession. Instead of that they rather resemble a stage crowd and keep coming up again. There is a limit to those we know, a limit even to those we should like or should be likely to know even by sight, and at a restaurant this latter limit is disregarded. The barrier of good manners which forbids that those who are acquainted with one another should speak is sufficient to protect our station or our dignity, but it is not a very high fence, and it is one which it is amusing to look over.—London Spectator.

SOME PUZZLERS.

How many teeth have you?

How high (in inches) is a silk hat?

Which way does the crescent moon turn, to the right or left?

How many toes has a cat on each fore foot? On each hind foot?

What color are your employer's eyes? The eyes of the man at the next desk?

In which direction is the face turned on a cent? On a quarter? On a dime?

How many steps lead from the street to the front door of your house or flat?

What are the exact words on a two cent stamp, and in which direction is the face on it turned?

Write down, offhand, the figures on the face of your watch. The odds are that you will make at least two mistakes in doing this.

What is the name, signed in facsimile, on any dollar, two dollar, five dollar or ten dollar bill you ever saw? You've read dozens of those names. Can you remember one?

Your watch has some words written or printed on its face. You have seen these words a thousand times. Write them out correctly. Few can do this. Also what is the number in the case of your watch?—Washington Times.

The Boy and the Farm.

How often we hear parents discourage the boys who wish to stay on the farm! They refer to farm work as drudgery and that which tends to make them slaves to work rather than independent men. The biggest boys are educated for professional men and in many instances excel, but the vast majority of these, with a good practical education such as can be gained in our schools of agriculture, would become wealthy, progressive farmers, with fine farms and beautiful homes, if they had been encouraged and advised to stay by the old farm and make it a success.—Maxwell's Talisman.

Alert For an Angel.

Mr. Stormington Barnes and his leading man were passing a village church.

"Listen!" exclaimed the eminent tragedian.

"Does the music of the choir carry you back to your boyhood days?"

"No; but you know how long we have been looking for some one with money who was willing to back the show."

"Yes."

"Well, I think I hear some one inside there singing 'I Want to Be an Angel.'"—Washington Star.

Alarm That Worked.

First Office Boy—What's Johnny hurryin' fer? Looks like he heard a fire alarm.

Second Office Boy—He did. De boss said if he wasn't back from dat errand in ten minutes he'd lose his job!—Cincinnati Commercial Tribune.

She Spoke Too Early.

Lady (with awfully painted cheeks)—My portrait is very good, but don't you think that the a—cheeks—are a trifle pale?

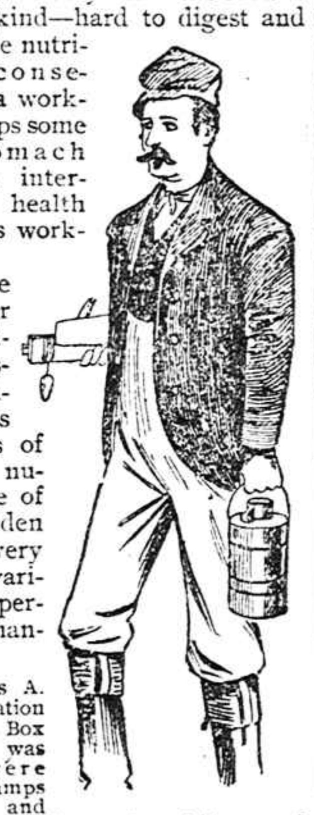
Artist—Yes, they are not done yet. I leave that to the last.—Fliegende Blatter.

An Interesting Book.

"I've had great pleasure today in reviewing a book that is entirely new to me," said the literary editor.

"What's that," inquired the snake editor, "a bankbook?"—Philadelphia Record.

The Dinner Pail



Of the American working man is generally well filled. In some cases it is too well filled. It contains too many kinds of food, and very often the food is of the wrong kind—hard to digest and containing little nutrition. As a consequence many a working man develops some form of stomach trouble which interferes with his health and reduces his working capacity.

Where there is indigestion or any other indication of disease of the stomach and its allied organs of digestion and nutrition, the use of Dr. Pierce's Golden Medical Discovery will almost invariably produce a perfect and permanent cure.

Mr. Thomas A. Swarts, of Sub Station C, Columbus, O., Box 103, writes: "I was taken with severe headache, then cramps in the stomach, and my food would not digest, then kidney and liver trouble and my back got weak so I could scarcely get around. At last I had all the complaints at once, the more I doctored the worse I got until six years passed. I had become so poorly I could only walk in the house by the aid of a chair, and I got so thin I had *given up to die*, thinking that I could not be cured. Then one of my neighbors said, 'Take my advice and take Dr. Pierce's Golden Medical Discovery and make a new man out of yourself.' The first bottle helped me so I thought I would get another, and after I had taken eight bottles in about six weeks, I was weighed, and found I had gained twenty-seven (27) pounds. I am as stout and healthy to-day, I think, as I ever was."

FREE. Dr. Pierce's Common Sense Medical Adviser, paper covers, is sent *free* on receipt of 21 one-cent stamps to pay expense of mailing *only*. Address Dr. R. V. Pierce, Buffalo, N. Y.

High Temperature.

Tommy had had pneumonia, so had been for some time in hospital, where they treated him so well that he was much averse to the prospect of being discharged as "cured."

One day the doctor in charge was taking his temperature, and while Tommy had the thermometer in his mouth the doctor moved on and happened to turn his back. Tommy saw his chance. He pulled the thermometer out of his mouth and popped it into a cup of hot tea, replacing it at the first sign of the medico turning.

When that worthy examined the thermometer, he looked first at Tommy, then back to the thermometer and gasped:

"Well, my man, you're not dead, but you ought to be!"—London Chronicle.

Nature His Hired Man.

It was in the far south.

"How's times?" asked the tourist.

"Pretty tolerable, stranger," responded the old man who was sitting on a stump. "I had some trees to cut down, but the cyclone leveled them and saved me the trouble."

"That was good."

"Yes, and then the lightning set fire to the brush pile and saved me the trouble of burning it."

"Remarkable! But what are you doing now?"

"Waiting for an earthquake to come along and shake the potatoes out of the ground."—Chicago News.

Darned Stockings.

Tender feet are often made so by the use of much darned stockings. Wear light woolen stockings, and let them be of the cheap kind, that you will not mind discarding directly they become worn. To harden the skin it is a good plan to rub the soles of the feet with methylated spirits every day or to wash them over with salt water.

Happily Not So Sure of It.

Raynor—This fortune telling business is all humbug. One of these professors of palmistry told me a little while ago to look out for a short, blond man.

Shyne—I don't know about it's being all humbug. I'm blond and I'm short. Lend me a ten, old fellow, will you?—Chicago Tribune.

English kings called themselves kings of France till a century ago, and French kings called themselves kings of Jerusalem until the revolution.

The Best Liniment for Strains.

Mr. H. F. Wells, a merchant at Deer Park, Long Island, N. Y., says: 'I always recommend Chamberlain's Pain Balm as the best liniment for strains. I used it last winter for a severe lameness in the side, resulting from a strain, and was greatly pleased with the quick relief and cure it effected." For sale by J. E. Kaufmann.

In a Higher Position.

"Me darter Nora is goin' to marry Casey, that wurrucks in the basemint iv thot buildin', but Oi do be tillin' her that she moight hev looked higher!"

"Indade?"

"Yis. She cud hov hod Murphy, that wurrucks on the top story iv that same skoiscraper."—Baltimore Herald.

Putting It Gently.

"But is she pretty?"

"Well, I don't believe in talking about a girl's looks behind her back. Her father's worth about $20,000,000, and they've taken her to Europe twice without bringing back any titles, so you can form your own opinion."—Chicago Record-Herald.

Even if a boy is always whistling "I Want to Be An Angel" it is just as well to keep the raspberry jam and cheese cakes on the top shelf of the pantry.

CHAMP CLARK STORIES

Freaks of Fortune Which Land Men In Congress.

How Some Statesmen Achieved the Goal—De Armond of Missouri Won When He Swapped—Aspired to Be a Supreme Court Judge—General Clark Was a Compromise Candidate. Luck Better Than Riches Sometimes—Garfield's Political Start.

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Of course, in the very nature of things, there are many ways of getting to congress. If each member would truthfully write out his own particular method and if all these various expositions of ways and means could be gathered together and printed in a book, it would be an exceedingly interesting and readable, perhaps an instructive and surprising, volume.

How Judge De Armond Got In.

Take the case, for instance, of Judge David A. De Armond of Missouri. He was now entered upon his sixth consecutive term and appears to have a long lease on his seat. He has come to like congressional life, yet originally he did not hanker after the position he now holds. His tastes lay in the judicial line. He was a circuit judge and commissioner of the supreme court, which was a sort of brevet supreme judgeship. He aspired to be a real, full fledged supreme judge. In 1888 Judge De Armond, Judge James B. Gant and the then Congressman William Joel Stone, since governor and national committeeman, all lived in the same district. That year De Armond ran for supreme judge, and Gant tackled Stone for the congressional nomination. Man proposes, but God disposes. Gant was defeated for congress and De Armond for the supreme judgeship. In 1890 either by accident or design Gant and De Armond swapped horses, so to speak—that is, Gant was a candidate for supreme judge and De Armond for congress. Both won. Not long since I asked De Armond, "If you could turn the clock back to 1890 and were offered 20 years on the supreme bench of Missouri or 20 in congress, which would you take?" After some study he replied, "With the feelings I then had I would select the supreme judgeship; with those I entertain now, the congressional career."

How General Clark Went to Congress.

The congressional career of young General John B. Clark of Missouri illustrates the truth of the ancient adage, "Better be born lucky than rich." In 1865 he was a Confederate brigadier. In 1868 and 1870 he was elected sheriff and collector of Howard county, Mo., a good fat office in those days. In 1872, while still holding that position or those positions, his father, the brilliant and renowned "Old General John B. Clark, and General James Shields, a major general in two wars, the only man that ever represented three different states in the senate of the United States and whose effigy in bronze honors Statuary hall, and other Democratic warhorses locked horns—if warhorses may be said to have horns—for the congressional nomination. The fight was fast and furious. A prolonged deadlock ensued. Young General John B. was at home discharging his duties as sheriff and collector with no more idea of going to congress than any reader of this has of ascending the throne of Russia. Somebody suggested him as a "compromise candidate." He was acceptable to all, was nominated in a jiffy, was elected and served ten years as a representative and six as clerk of the house.

General Garfield's Political Start.

James A. Garfield was first elected to congress while he was serving as a major general in the army in 1862, partly because of his personal prominence and partly because the old Joshua R. Giddings guard in the Western Reserve wanted to even up things with the opposing faction, which had knocked out their chief at the election of 1860, and they took up General Garfield as the most available man in sight whom they could use for purposes of revenge. Thus he entered upon that long and brilliant congressional career which landed him in the White House and filled the world with his acclaim.

His first entrance into political life, however, was purely accidental. In 1859 he was president of Hiram college, then a small institution, now a large one, and on Sundays preached in the neighboring churches. He seemed fated to spend his life in the pulpit and the classroom, but "there's a destiny that shapes our ends." It so happened that there was a vacancy in the state senatorship from that district. Young Garfield attended the Republican senatorial convention as a delegate. A deadlock ensued. One day in preparing to go to dinner another delegate by accident got hold of Garfield's hat and clapped it on his own head. It was so big that it slipped over his ears and rested on his shoulders. The astonished delegate shouted gleefully: "Eureka! I have found the man for state senator! Any man who has as large a head as Garfield carries around is fit to be state senator!" The other delegates agreed with him, and that afternoon Garfield was nominated in a jiffy.

A Valuable Proofreader.

Many men know many things in a dim, hazy sort of way. Few know anything accurately. I had this imprinted on my mind during the short session of the Fifty-sixth congress. In the heat of debate on the river and harbor bill I undertook to make a quotation from the Bible and said, "It is written in a very old book, 'He who careth not for his own household is worse than a heathen.'" When I had concluded my remarks, my friend John Sharp Williams of Mississippi, one of the finest scholars and most brilliant men in the house, having graduated at or from the universities of Virginia and Heidelberg, came along and said, "Champ, you got your Scriptural quotation wrong." I asked him to write it out for me, which he did, as follows: "He that provideth not for those of his own household is worse than an infidel." Supposing that he knew what he was talking about, when the reporters gave me the notes of my speech for revision, having no Bible at hand to verify the quotation, I wrote it in as Williams had it. Next morning when The Record appeared I was greatly surprised to discover that he did not know much more about it than I did and that we each had made a bad stagger at quoting the book of books, for the Argus eyed proofreader had changed it so as to read, "If any provide not for his own and especially for those of his own house, he hath denied the faith and is worse than an infidel."

Hepburn's Inflammable Condition.

Colonel William Peters Hepburn of Iowa in debate is "savage as a meat ax." In private he is amiable and likes to borrow the words of sweet Robbie Burns, "a rousing whid at times to vend."

In the Fifty-sixth congress, when one of Loud's postoffice bills was "dragging its weary length along," Mr. Gardner of New Jersey, Colonel Hepburn and myself fell into conversation. Gardner claimed me as one of his constituents because my father was born in his district, county and township. Hepburn said he thought I was a native Missourian. I replied: "No. I was born in Kentucky and was never out of that state or saw a mosquito or a steamboat until I was 22." The word mosquito stirred his memory, and he said: "When I was in the army in August, 1863, I was detained for a week in a Mississippi river bottom down in Arkansas. The mosquitoes nearly ate us up. I rubbed coal oil on myself as a preventive till I was so thoroughly saturated with it that I was afraid to blush for fear of taking fire!"

Pleasantries of Debate.

It may appear strange, but it is nevertheless true, that members who are personally friendly take more liberties with each other in debate than do those who are unfriendly.

When the river and harbor bill of the Fifty-sixth congress was under discussion, Mr. Hepburn propounded the theory that boating on the Missouri river had dwindled to the vanishing point by reason of what he denominated the great and unusual "slope" of that stream. To that theory I responded as follows:

"Does the gentleman from Iowa (Colonel Hepburn) believe that there has been any notable change in the conformation of the earth's crust in that part of the continent within the last 50 years? Is the source of the Missouri river any farther above the level of the Mississippi now than it was when Robert Fulton invented the steamboat? Have the mountains of Montana lifted their lofty heads any nearer to heaven or has the bed of the Father of Waters sunk any closer to the center of the earth within his recollection or even within human memory? Does he think that the 'slope' of that river is any greater now than when steamboating was in its palmy days and when hundreds of thousands of passengers and countless tons of freight went up and down from St. Louis to Fort Benton in those gorgeous 'floating palaces' which were the pride and glory of the western country?

"Does he believe that the Missouri river 'slopes' both ways? While I listened to his annual speech—pleasant because an old acquaintance, familiar to the ears as household words by reason of its frequent iteration—I concluded that he must harbor that wild hallucination; otherwise his theory of 'slopes' sinks into repulsive nothingness, as Rider Haggard's 'She,' for it stands to reason and to nature that if the 'slope' of the Missouri river forbids boating up stream it expedites it down stream, ex necessitate, and in that way exactly evens up the whole thing.

"The learned gentleman's theory as to 'slopes' is about on a par with Mark Twain's mathematical demonstration that if the Mississippi river continues to shorten itself for a given number of years at the rate it has been proceeding on that line for the last 150 years Cairo and New Orleans will be jammed together as one city and the Mississippi river will stick out several hundred miles over the gulf of Mexico."

Hepburn came back at me in this pleasant fashion:

"Mr. Chairman, I venture a suggestion or two to the gentleman from Missouri (Mr. Clark) with a great deal of diffidence. I see that he has studied the question of navigation and hydraulics and understands it thoroughly. He has overcome a difficulty that engineers have never yet been able to overcome to their satisfaction. He has discovered that the slope of a river and the extraordinary currents that may result from an excessive slope do not interfere with navigation, because, while it may be difficult to get up, yet you can slide down so much easier that the thing is balanced.

"As boys we used to think there was a great deal of delight in sliding down hill. We would even draw a sled back for the pleasure of the swift motion downward. But that plan has never yet been adapted by men to transportation, as I understand. According to the gentleman's theory, Niagara falls are not an impediment to the navigation of the Niagara river. It might be very difficult to get up, but you would come down so fast that the thing would be equalized."

CHAMP CLARK.

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