PART TWO. THE SUNDAY JOURNAL. PAGES 9 TO 16

PRICE FIVE CENTS. INDIANAPOLIS, SUNDAY MORNING, DECEMBER 30, 1894—SIXTEEN PAGES. PRICE FIVE CENTS.

GOOD-BYE, 1894.

To make the last day one long to be remembered by the Clothing buyers of Indianapolis we will continue our wonderful

MEN'S SUIT SALE

UNTIL TO-MORROW NIGHT ONE . . . DAY ONLY. . .

MEN'S All-wool Suits

$8.75

JUST THINK OF IT

THIS SALE POSITIVELY ENDS TO-MORROW NIGHT

It seems impossible, and we judge it is impossible to get such fine suits outside of our store. But they're here in Blue, Black and Oxford Mixed Cheviots; well made, stylish and serviceable. No such values can be found in the combined stocks of the city. Come see these suits. It will pay you.

SPECIAL SALE

The Progress

SPECIAL SALE

AUTOMATIC AIR BRAKE

A RAILWAY SAFETY DEVICE POSSESSING UNPARALLELED UTILITY.

How It Is Constructed, and How It Is Controlled and Operated by the Driver of the Locomotive.

Chicago Record.

No. 31 had been on the siding for half an hour, waiting for the limited to come over the brow of the grade. The train crew gathered around the stove in the caboose, smoked, chewed and growled because the limited was holding them so long. All but the rear brakeman. He had tilted his chair against the side of the car near the conductor's home-made desk, and was muttering to himself: "When the fulcrum C is between the force F and the weight W, it is a lever of the first kind. When the weight W is between the force F and the fulcrum C, it is a lever of the second kind——"

He broke off suddenly and exclaimed:

"Hang it all, what do I want to know of levers of the first kind and fulcrum C, and all of this tomfool business?"

The conductor looked thoughtfully over the bowl of his corncob pipe and said:

"Because orders is orders, and since air brakes have been put on freight cars you are supposed to know all about them. Here is the order: 'Every employe whose duties are connected in any way with the operation of the air brake will be examined from time to time as to his qualification for such duties.' That's why. The inspector may bring up levers, and he may switch off to triple valves and ask you the difference between the triple valve used on freight cars and those on passenger cars."

"He'd get his answer quick enough," retorted the brakeman. "The triple valve on a passenger car has the letter P cast on the outside surface." And then he bent his head over the instruction book and pondered over several examples which he found all worked out for him in the chapter on levers.

The railroads are rapidly complying with the law which provides that all passengers and freight cars shall be equipped with automatic air brakes. Over 400,000 freight cars now have the words "air brakes" stenciled on their sides, and every passenger car is fitted with air brakes as a matter of course. Every railroad has its instruction car, in which is a complete system of air brakes for freight and passenger service, and this car is sent over the road in charge of an instructor who schools trainmen and other employes in the use of the wonderful mechanism which has made railroad travel safer than a walk through the business center of Chicago. In the course of the year every railroad employe who has anything to do with the running of trains is examined on the air brake, and not only must he be able to give a technical and detailed description of the train system from the air pump on the engine to the conductor's cord in the rear passenger car, but he must tell the inspector what should be done in emergencies and break-downs. Just at present the trainmen in the freight service are receiving the special attention of the air-brake inspectors, and the boys are conning instruction books, dissecting triple valves and angle cocks and cramming up for the ordeal.

A VALUABLE INVENTION.

When George Westinghouse, jr., a score of years ago invented the automatic air brake, he gave the railroads that which enabled them to increase the speed of their trains fourfold and which reduced the dangers incident to railroad travel almost to the minimum. The first air brakes used on railroads were known as the "straight air," and were not automatic. The straight-air system had the air compressor, the storage tank on the engine and the train brake, but the brakes were put on by the direct pressure of the air through the train pipe from the reservoir on the engine. The system was woefully defective, for the engineer had no means of knowing that all the brakes were set, and the slightest break in the connections lowered the efficiency of the brake. It was a beginning, however, and led up to the present system of quick-acting automatic brakes, with which all the brakes in a train of fifty cars, two thousand feet long, can be set in less than three seconds by a simple twist of the wrist in the engine cab. With this system the engineer knows beyond peradventure of doubt that when he throws the handle of the engineer's valve to a certain position every brake in the entire train is set. There is no perhaps or chance about it, for any decrease of pressure in the main air pipe, which runs from car to car, conected by rubber hose, sets the brakes. It makes no difference how the air gets out of the pipe, the brake shoes hug the wheels just the same. The air may be released by the engineer or by a train breaking in two and parting the rubber connecting hose, or by the conductor pulling the cord of the conductor's valve or by a leak. The brakes will respond at once to the slightest decrease of pressure and the wheels will complain under the merciless squeeze.

Often in reports of railroad accidents the story ends with "the cause of the accident was the failure of the brakes to act." The probabilities are in ninety-nine cases out of a hundred accidents for which fickle air brakes are held responsible that the true cause was that the brakes were not allowed to act in time. They are there, always on duty, with at least ninety pounds of air in the storage tank on the engine, with seventy pounds in every auxiliary storage tank under the cars, with the train-pipe charged, everything ready to work but useless unless the engineer releases the air in time.

HOW IT WORKS.

When a locomotive hauling a train comes to a stop at a station it seems to be panting after a long run. The sound of rapid breathing begins as soon as the big drivers come to a rest, and gradually the panting grows slower and slower until it stops. The engine has filled its lungs with air again and is ready for another run, for the breathing was the noise of the exhaust from the air pump, standing upright just in front of the cab. A strong, compact, neat-looking arrangement is this air pump. It has two cylinders, one steam and the other air, and as the piston moves up and down the air is compressed into the large air tank under the front end of the boiler, just back of the cowcatcher. From this main storage reservoir a pipe leads to the engineer's valve in the cab, under and to one side of the throttle, where the engineer can lay his hand on it at a second's notice. From this important valve, which controls the air pressure and by which the air brakes are set and released, the air passes through another pipe to the train pipe. This pipe runs under each car and is connected between cars by rubber hose so that when the connections are made the pipe is continuous from one end to the other. Through the train pipe the air is admitted to the auxiliary air reservoirs under the cars, one pipe to the car reservoir through the triple valve, and it is this triple valve which makes the system automatic.

The air is pumped into the main reservoir on the locomotive until a pressure of about ninety pounds to the square inch is secured. When the engine backs up the train and is coupled on the brakeman connects the train pipe of the tender to the pipe of the baggage car, or whatever the front car is, and by this connection the entire train is connected with the main reservoir. Then the engineer charges the train pipe and through it the reservoirs under the cars, which, through the triple valves are connected with the brake cylinders. The engineer's valve is a composite valve operated by one handle. It has five positions, but three of these only are commonly used. By this valve the air is let from the reservoir tank on the engine into the train pipe, and thus the reservoirs under the cars are charged; this same valve also lets the air out of the train pipe, slowly or rapidly at will, thus decreasing the pressure in the pipe and setting the brakes. When the handle is moved to set the brakes the port through which the air enters the train pipe from the main reservoir is closed, so that no air is released from this tank while the brakes are being set. A governor on the pump shuts off the steam and thus stops the pump when the maximum air pressure has been accumulated in the train pipe and reservoirs. About seventy pounds of air are kept in the auxiliary reservoirs, for experience has shown that a higher pressure sets the brakes so hard that the wheels slide. The air in the main reservoir is kept at about ninety pounds pressure, so that the engineer always has an excess of pressure at his command.

ADDITIONAL DETAILS.

The triple valve is the controlling mechanism of the system after the air gets past the engineer. It is called the triple valve because through it the auxiliary reservoir is charged from the train pipe; the brake cylinder is charged from the auxiliary reservoir and, in an emergency stop, from the train pipe, and the air is released from the brake cylinder after the brakes are set and the train is ready to move on. These triple functions are secured by an arrangement of valves within the casing of the triple valve. When the engineer opens the port in his valve, which permits the air from the main reservoir to escape into the train pipe, he holds it open until the pressure gauge before him tells him that the train pipe has seventy pounds of air. The air passes from the train pipe into the triple valve and through a small opening on the rim of the seat of a large valve into the auxiliary reservoir. Until the auxiliary reservoir is fully charged the pressure on this large seated valve is greater on the side next to the train pipe, but when the reservoir is fully charged the pressure is the same and the valve is balanced. In this condition there is no pressure in the brake cylinder, and, in fact, by means of a port or opening in the triple valve, the brake cylinder is open to the outside air. When the engineer approaches a station he moves the handle of his valve to a certain position and allows some of the air in the train to pipe to escape. The instant this is done the pressure in the train pipe is lowered, and the broad-seated valve in the triple valve is pushed out by the compressed air in the auxiliary reservoir. As this valve moves back, it first closes the port which connects the brake cylinder with the outside air and lets the air from the tank under the car enter the brake cylinder. The opening is small, but compressed air is elastic, and the air rushes through this opening and forces the piston in the brake cylinder forward. The piston in turn pushes the piston rod out of the cylinder, and this rod, connected with the brake levers, sets the brakes.

The experienced engineer can handle his valve so that the pressure is gradually applied. When he wishes to release the brakes he opens the port which allows air to pass from the main reservoir to the train pipe, and as the pressure in the pipe is now greater than the pressure in the car tanks the broad seated valve is moved forward again, closing the port between the reservoir and the brake cylinder and at the same time opening the port between the brake cylinder and the outside air. The compressed air in the cylinder thus escapes, and as the pressure is reduced a coiled spring in the brake cylinder reacts and shoves the piston back to its original position, thus releasing the brakes.

When the engineer sees danger ahead and knows that he must bring every brake shoe on the train against the wheels in the shortest possible time and as hard as air can move them he throws the handle of his valve to the emergency stop. This opens a large port, and the air in the train pipe is suddenly released in great volumes and this as suddenly lowers the pressure. Then the stored pressure in the reservoirs under the cars act more promptly, and the broad-seated valve is thrown back against a stiff spring suddenly and moves further than when the service or graduated stop was applied. This sudden movement not only lets the air into the brake cylinder from the car reservoir, but from the train pipe as well, so that the pressure applied upon the piston of the brake cylinder is more sudden, and it moves its full travel instantly.

The same result would be secured should the train break apart, and the brakes would be set on both sections at the same time, although the rear section would not be in communication with the locomotive.

The Japanese and Foreigners.

Prof. G. T. Ladd, in Scribner.

The real and predominating attitude of the popular mind toward "the foreigner" is still the same unreasoning sentiment that it has ever been. A few, and only a very few, even of the educated Japanese, have any intelligent and sympathetic knowledge of that type of mental life which has been developed by a Western, and Christian civilization. Among the people of all classes, uniformed, unreasoning feeling toward all foreigners still underlies the crust of enforced or selfish and conventional politeness. This sentiment is a mixture of surprise and admiration with repulsion and contempt. A well-principled, or even a cosmopolitan, feeling toward all humankind, an "enthusiasm of humanity," is a rare and difficult thing to find in Japan. What but the knowledge of this mental attitude of his countrymen could have influenced an intelligent native preacher to say, in extremest praise of the power of divine grace "It can make you love even a foreigner?"

Lovely Woman.

Detroit Tribune.

A large company was gathered at the table d'hote, as is usual in the modern romance. The large lady had just troubled the bald gentleman for the vinegar.

"No," she was saying, "women will not go backward."

"Except when she gets off a street car," observed the cynic, who had been hitherto silent.

The youth with the blonde mustache got choked with his soup, but said nothing.

NEW YEAR IN CHINA

THE HOLIDAY OF THE CELESTIALS AND HOW THEY CELEBRATE IT.

They Pay Their Debts and Paint the Empire Red—New Year Calls and How the Emperor Receives

(Copyrighted, 1894, by Frank G. Carpenter.)

The Chinese will celebrate New Year day this year with quite as much enthusiasm as they ever have in the past, notwithstanding their terrible punishment by the Japanese troops. The majority of the Chinese people, in fact, hardly know that a war has been going on, and nothing could make them give up their New Year celebration. It occurs later than ours, and comes on the edge of the spring. It is, however, the great festival of the year, and it is a sort of Fourth of July, Christmas, birthday and Sunday mixed up together. It is the birthday of the whole Chinese people. Every man, woman and child in the empire is a year older on New Year day, and all trot about and wish each other "many happy returns." It is the only Sunday that the Chinese have throughout the year. The working people labor from ten to twelve hours every day, and they put in thirty solid days every month. At New Year all lay off for a rest, and for about two weeks they do nothing but call, eat and amuse themselves. For ten days before the New Year the country goes wild in preparation. The stores all have low prices and new goods, and the bargain counters are thronged quite as much as they are in America. Every one buys presents, and all who can get a new suit of clothes for the occasion. Those who can't buy borrow or rent, and the Chinese on New Year dress in satins, furs and silks. It is about the only day in the year when the whole Chinese people are comparatively clean. Every person is supposed to take a bath the day before, and this for the majority of the people is the only time they get bathed during the year.

New Year is the national pay day. All accounts must be squared up at that time, and the man who can't raise enough to pay his debts has to go into bankruptcy. The laws are such that the creditor can enter the debtor's house and take what he pleases if there is no settlement, and families club together and make all sorts of compromises to keep up the business reputation of the clan. I was in China just after New Year this year, and I found lots of bankrupts. It is a great day for the pawnbrokers, and their shops are crowded with people who want to pay their debts and redeem their best clothes in order to get them out of pawn before New Year. There are crowds who want to pawn other things in order to get money to pay their debts, and the Chinese probably patronize the pawn shops at this time of the year more than any other people in the world. Pawnbrokers receive very high rates of interest, and they are protected by the government. Speaking of bankrupts, they are not permitted to begin business again until some settlement is made, and when I wanted to buy some pictures in Shanghai I was told that the artist who kept them was a bankrupt, and that he could not open until he got more money.

AN EMPIRE PAINTED RED.

The Chinese paint their whole country red, figuratively speaking, on New Year in more senses of the word than one. Red is the color with them which denotes good luck and prosperity, and all the New Year cards and invitations are on paper of this color. Every child gets its New Year's present wrapped in red paper, and red inscriptions are pasted over the doors of the houses. These inscriptions bear characters praying for good fortune, wealth and happiness, and they are posted on each side of the outer doors of the houses. New pictures of Chinese generals are put on the front doors, and the houses are scoured and made clean. Among other things, eggs are dyed red and are offered to the gods, and dinner parties are gotten up in bright vermillion. The red used is that which you find around our firecrackers, and the Chinese spend more in firecrackers on New Year than we do on the Fouth of July. The night before every one is firing off packs of crackers, and there are all sorts of fireworks, including birds and fishes and scenes of all kinds in fire. The firecrackers are used to scare off the evil spirits, and hardly any one goes to bed the last night of the old year. The Chinese say that the man who sits up the last night of the old and sees the first sunrise of the new year for ten years in succession will certainly have a long life, and there are all sorts of New Year superstitions.

The children of China all expect to get something on New Year, and they generally receive presents of money in the shape of copper cash wrapped in red paper. On the last night of the year they run through the streets shouting out good resolutions for the next. One says: "I want to sell my laziness," and another says, "I am ready to sell my folly in order that I may be wiser next year." They go out with their fathers to make New Year calls, and, where families can afford it, they give their children new clothes in honor of the occasion. They carry lanterns through the streets, and they have balloon-like fishes of paper, which are tied to sticks over their houses in honor of the occasion. All men who have had children during the year buy lanterns and hang them up in sign of rejoicing over their good luck. There are games of all sorts, and many of the boys come out with new kites. There is dancing in the streets, and there are jugglers and dime museum shows and all sorts of theatrical entertainments. The people have festivals and there are family reunions. The rivers are covered with oiled paper, which is set on fire, and the harbors become flaming masses. Everywhere there are shrines, with burning joss sticks before them, and the people fairly go wild.

CHINESE NEW YEAR CALLS.

All people receive visitors on New Year day, and the relatives who call are taken into the ancestral hall and they worship the ancestors of the family. After this the young people go in and pay homage to their parents and elder brothers, and then go to their schoolmasters and teachers. The Emperor has a New Year reception in Peking, and it may be that the foreigners will be received this year, although they have not been in the past. The Emperor sits on the dragon throne and the princes and all the officers go in and get down on their knees and bump their heads on the ground before him. The day after New Year the officials all go to the temple to worship, and for about ten days afterward there are all sorts of New Year ceremonies. The second day is called ladies' day, and if the weather is good the women go out into the country to picnics. They dress in the brightest of silks, their faces are painted in honor of the occasion and their little feet are in costly shoes. They wear a great many clothes, and it is wadded cotton and not coal and wood that keeps China warm.

The winter is now at its worst in the Chinese empire, and the whole northern country is frozen solid. This means a great deal more there than it does here. The rivers which form the only means of travel outside of dirt roads are frozen, and the only conveyances are rude Chinese carts. Tien-Tsin is fifty miles inland, and Peking is about eighty miles north of it, and is shut off from the rest of the world about four months of the year. It is reached by the winding Peiho river, which flows into the Yellow sea near the Taku forts. Letters which go to Peking in the winter have to travel overland several hundred miles after they reach China, and they first go to Shanghai and are carried by pony express.

Nearly all the northern Chinese dress in sheepskin during the winter, and coats of this kind and jackets and pantaloons of quilted cotton make up their clothes. The colder it gets the more garments they put on, and a girl who in the winter looks like the fat woman of the circus may slowly fade into the ethereal type of the living skeleton as she sheds jacket after jacket when the warm weather approaches. Clothes of this kind can not be washed, and those of the poorer classes are dirty in the extreme. The richer people wear magnificent garments of wadded silk lined with fur, and I saw one man's wardrobe which contained at least $1,000 worth of costly fur garments. The furs used are of all kinds, and you can get magnificent cloaks of Thibetan goat, such as our ladies use for opera cloaks, for about $10 in gold. They have fine sables, but they are costly, and a number of Li Hung Chang's nobles had silk gowns lined with mink. The fur markets of China are as fine as any in the world. There are long streets in Tien-Tsin which are filled with fur stores, and there is a square in Peking which is devoted to a fur market. Every morning about 4 o'clock you may find there several hundred wholesale fur dealers with their goods spread out on the ground, and you can buy all sorts of skins from the cheapest of squirrels to the finest of seals. There are lots of second-hand fur stores, and old furs are bought and cleaned and resold.

CHINESE FUEL.

The Chinese do not use fire to keep warm, and it is only in the rarest of instances that you will find well-heated houses. Fuel is remarkably scarce, and everything is carefully saved. I saw hundreds of women pulling up stubble and gathering straw and old weeds in order to make fires, and one of the chief businesses along the Yangtse-Kiang is the cutting the reeds which grow on the low shores and tying them up in bundles to be carried into the cities for sale. I saw no iron stoves in China, and the rooms which they pretended to heat were furnished with what are called kangs. These are ledges or platforms of brick about two feet high, which fill one side of the room. They are heated by flues and a fire of straw is started under them and is kept burning until the bricks are hot. The people sleep on the kang, but the trouble I found with them was that when they were fired up they roasted me, and as soon as the fire went out the kang became as cold as a stone. I slept on them many nights during my interior trip and was continually afflicted with a cold. Had the fuel been wood or coal they might be better, but with straw they were worse than no fires at all. The stoves of China are usually of clay, and charcoal is largely used for cooking. There is said to be coal in nearly all parts of the empire, but only a little is mined. All of that brought into Peking is carried on the backs of camels, and I saw many coal merchants who sold nothing but coal dust. They mixed the powdered coal with dirt and molded it up into lumps of about the size and shape of a baseball. It was sold by the basket and it brought high prices.

Still, China has some of the largest coal fields in the world, and a German geologist who has examined into the matter says that the extent of the workable coal beds of China is greater than that of any other country. There is coal right near Hankow which is now being used in the making of iron, and every province in the empire is said to have coal in it. There is, however, only one mine which is being operated on anything like scientific principles. This is at Tong Shan, about eighty miles from Tien-Tsin, and the Chinese have been mining about two thousand tons of coal a day here for years. I visited the works last summer and took a look at the miners. They receive about 63 cents a week, or 9 cents a day, and the mines pay very well. The coal is bituminous, and is was about the only source of supply which China had during the trouble with the Japanese. The railroad runs right through this region, and it was first built to carry this coal to the sea. There is said to be good anthracite coal in the hills near Peking, and when China is covered with railroads coal will be the cheapest of fuel.

HOW THE RICH FREEZE.

I was surprised at the way the richer Chinese suffer from the cold. I almost froze during my talk with Li Hung Chang, and he wore a fur gown during my interview. In some of the Chinese homes which I visited there were little bowls of charcoal in the best rooms, but there were no signs of open fires anywhere, and the Chinese know nothing of the joys of the fireside. Their buildings have many draughts, and the windows and doors seldom fit well. When they get out of order they are allowed to remain so, and nearly all of the old houses are shabby and dilapidated. I took a trip over the great plain from Peking to the mountains of Mongolia on the edge of the winter, and I nearly froze to death in the hotels. During this time I passed many of the Mongols riding on the great woolly camels which are common to north China, and which you find, I think, nowhere else in the world. These camels have wool about a foot long, and it hangs down in great fringes from their necks and their bellies. They have two humps and they are usually of a tan color. The Mongols upon them were all dressed in furs, and both men and women wore pantaloons. Both sexes rode astride, and they were very insolent and rough in their greetings. They are dirty and greasy, and they eat all sorts of fats. They carry great quantities of brick tea from Peking into Mongolia, and they make a tea soup which they strengthen with mutton tallow. Some of them have on robes of sheepskin with the wool of the sheep turned inward, and these fall from their necks to their ankles. They wear shaggy fur caps with earlaps, and they sometimes put their feet into bags of wolf skin or other fur to keep out the cold.

A great deal of sympathy is being wasted on the Japanese soldiers who are now in China. Many suppose that they have come from a warm country, and that they can not stand the rigors of a Chinese winter. There was never a greater mistake. Japan is a land of many climates. If I remember correctly, the country is about thirteen hundred miles long from one end of it to the other, and the north is very cold in the winter. You find snow all over central and northern Japan, and Tokio has severe snowstorms. The climate of Japan is moist, and a damp cold is much more trying than the dry cold such as you find in China and Corea. The Japanese are used to cold weather, and the daily baths which they take