

SCIENCE AND INVENTION



UMBRELLA HOLDER IS HANDY

Leaves Both Hands Free to Attend to Other Things and is Convenient for Letter Carriers.

One of the things that has helped the popularity of the raincoat is the universal objection to carrying an umbrella. Indeed, people in some occupations find it impossible to carry umbrellas, and they will rejoice in the supporter designed by an Indiana man. Particularly will letter carriers find it a convenience, as it will hold an umbrella over their heads and leave both hands free to get mail from their bag and ring the doorbell. The



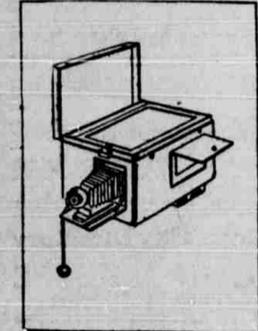
Umbrella Holder.

holder is attached to the user's coat and has a groove in it and hooks to engage whatever enters the groove. The handle of the umbrella is placed in the groove and clamped fast, holding the rain protector firmly above the owner's head. If the rain stops the umbrella can be closed and carried in the holder ferrule down, thus preventing it from being an embarrassment even then. Any person who has bundles to carry would find one of these devices useful.

DEVELOP PLATES IN CAMERA

Missouri Man Invents Contrivance Enabling User to Finish Pictures Anywhere He Wishes.

In taking photographs while traveling or on vacation trips it is usually necessary to bring all the plates or films home for development, owing to lack of darkroom facilities. A Missouri man has circumvented this by inventing a camera that is also a dark room and the owner of which can develop his plates practically anywhere he chooses. The camera proper is of the bellows type and is set in one end of a box much larger than would be required to hold it. It rests on a hinged door when extended. The box has a plateholder in the front end, but practically all of its interior is clear and near the rear end is a win-



Camera a Dark Room.

dow of colored glass, covered by a hinged flap. A flexible sleeve with an elastic mouth is fitted into the rear wall and the operator works through this. With such an apparatus a picture can be developed outdoors immediately after it is taken.

Visibility of the Earth.

As we look up through the transparent atmosphere on a clear night and see the moon beaming brilliantly down upon us, we may think, "What a wonderful sight the continents and oceans of the earth would present if we could view them from the moon!" But according to the conclusions of Mr. C. G. Abbot, the director of the Astrophysical Observatory of the Smithsonian Institution, a man on the moon would catch but fleeting glimpses of the outlines of our continents, says the Youth's Companion. "The true radiating surface of the earth, as a planet," says Mr. Abbot, "is chiefly the water vapor at an elevation of 4,000 meters (13,000 feet), or more, above the sea-level." In consequence, the man in the moon would see the features of the earth dimly outlined in the glare of light reflected from the atmosphere.

Air Bubbles Propel Boats.

Inventor Schroeder, an Australian, has devised a system of propelling boats by air bubbles. His idea is to force air through a system of holes in the bottom of the vessel, which are so arranged that there is practically an air cushion between the bottom and the water. Only small engine power is required, as the inventor does not rely on the forcible expulsion of air for his motive power, but on the lifting power of the air bubbles themselves. By shutting off the air from some of the holes near the stern, the bow can be made to rise so that the ship goes astern. The boats are expected to be able to travel at un- heard of speeds, and are non-capable. The invention has already been tested by the admiralty experts.

WONDERS OF MODERN CLOCK

Inventive Minds Shown in Ingenious Make-Up of Some of Automatic Timepieces Just Invented.

Grandfather's clock is outdone. It had a calendar hand which told the day of the month, also the day of the week. Sometimes a window was cut in the upper part of the dial through which could be seen a humanized moon face slowly moving across the opening and giving the phases of the moon. In most cases if the calendar mechanism was not out of order the moon mechanism certainly was, and in the evening one could rarely tell what date it was because the hand was about half way between.

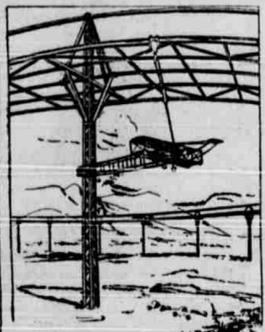
The first of the month the calendar hand had to be set for the correct number of days—thirty or thirty-one or twenty-eight. The modern calendar clock takes care of these matters automatically. Every four years it automatically adds another day to February. It needs winding only once a year.

Few persons consider the clock as a piece of machinery, especially when gotten up in the cheap forms which are now so universal. But the principal clock builders employ skilled engineers, electrical and mechanical, whose inventive minds are shown in the ingenious make-up of some of the automatic clock devices which are becoming more and more commercially popular in the effort to provide uniform standard time throughout the country. If simultaneous actions in different parts of a large establishment are dependent upon the clock, all the clocks in the different departments must tell exactly the same time. By the old way there were used many high grade clocks, each expensive and even these liable to vary from each other. The modern way is to install one high-grade master clock, which automatically regulates any number of secondary clocks throughout the establishment, so that all exactly agree.

BUILD UNIQUE AERIAL WAY

Berlin Company Formed to Construct Track for Safe Operation of Machines by Amateurs.

A company has been formed in Berlin to construct a unique aerial way for the safe operation of the machines



Unique Aerial Structure.

of student airmen, says Popular Mechanics. The plans call for a track or trolley-way erected on standards 60 feet high. There are to be two tracks, the outer one about 35 feet from the standards, and the inner one about 45 feet, and from these the aeroplanes will be suspended by wire cable.

Ventilating Fans Harmful.

A test of ventilating fans in Brussels has shown that in many places they do more harm than good by stirring up germ laden dust. In the restaurants and cafes investigated, the number of bacteria in each cubic meter of air ranged from 10,000 to 22,000 before the ventilators were started, from 17,000 to 48,000 after they had been running an hour, and from 27,500 to 85,000 after two hours' running. In a laboratory where remedies for tuberculosis were prepared, the bacteria increased from 8,500 before the ventilator was started to 45,000 after one hour's running and 75,000 after two hours'. In a private parlor the bacteria numbered 650 before the starting of the ventilator, 2,500 in one hour and 4,000 in two hours, and then the ventilator being stopped—diminished to 700 in two hours.

Variation of Temperatures.

The variation of the temperature of the water at the Equator and at the Poles varies less than 10 degrees in the course of the year, but between these points the variation sometimes reaches 40 degrees.

NOTES OF SCIENCE AND INVENTION

An average woman requires but nine-tenths as much nourishment as an average man.

A miniature safety razor has been invented by a Frenchman for trimming finger nails.

A tribe of wild Indians has been hiding for 40 years in the northern part of California.

To trim the edges of lawns easily, a New Hampshire man has invented a rotary sod cutter.

The colors of butterflies are influenced by the temperature of the air in which they live.

The deepest part of the Atlantic ocean is between the West Indies and Bermuda, 4,662 fathoms.

For many years in the operation of China's oldest newspaper a mistake was punishable with death.

The use of muslin in dairy windows instead of glass is said to lessen the danger from disease germs.

The prices of polished diamonds are controlled by prices of the rough stones and are really made in London.

A fountain marking brush, somewhat resembling a huge fountain pen, has been patented by a Michigan man.

New News of Yesterday

By E. J. EDWARDS

Echo of Hayes-Tilden Affair

Intimation of Former President of Telegraph Company Was That Messages Existed Proving the Case of the Democrats.

The late Dr. Norvin Green, who succeeded William Orton as president of the Western Union Telegraph company in 1878 and whose brilliant management of that great corporation until his death in the early nineties justified the selection of this quiet Kentucky physician for that post, was one of the most unassuming and modest of men. Moreover he was an entertaining story-teller, relating his anecdotes in a quiet, sometimes whimsical way—for he had a keen sense of humor—and at other times speaking with real dramatic force. In a conversation which I had with him one evening in the spring of 1884 he spoke guardedly of one of the great secrets of the Western Union under Mr. Orton's management.

"You may remember," said Dr. Green, "that William Orton and his very warm and close personal friend, Senator Roscoe Conkling, were among the few conspicuous Republican leaders in 1876 who were convinced that Samuel J. Tilden had been lawfully elected president that year. Senator Conkling was so thoroughly convinced of this that he would take no part in the tactics adopted by congress by means of which an electoral commission was appointed as a sort of umpire or arbitrator to decide the disputed point as to whether Tilden or Hayes had received a majority of the electoral votes; and I have always strongly suspected that Senator Conkling's belief that Tilden had received a lawful majority of the electoral vote was based upon information which he obtained from his friend, William Orton.

"A short time before Mr. Orton's death he and I were speaking of the presidential controversy of 1876. Mr. Orton remarked that he could not understand why a more thorough investigation into the election had not been made by those who had charge of the controversy for Mr. Tilden up to the time of the establishment of the electoral commission in January of 1877.

"Mr. Orton," I said, "you, as a Republican, are sincerely convinced that Mr. Tilden received a legal majority of the electoral vote. Of course I, as a Democrat, have never had any doubt of that."

"If Mr. Tilden's representatives," replied Mr. Orton, "had properly managed that part of their investigation which brought in the Western Union company, I have not the slightest doubt that the country would have

been speedily persuaded that Tilden was lawfully entitled to the presidency."

"But, Mr. Orton," I said, "in the records of the company examined under subpoena nothing was found to justify, or legally to justify, the claim that telegrams had been sent by Republican leaders in New York to the returning boards in Louisiana and Florida practically offering bribes to the members of those boards for the delivery of the majority vote of those states to the Republicans."

"Mr. Orton looked at me queerly for a moment, and then he said: 'Ah, the trouble was that they didn't look for evidence in the right place; the subpoenas simply called for telegrams sent to the returning boards of Louisiana and Florida. It was not the business of the Western Union to deliver any records excepting those that were called for by the subpoena.'

"Mr. Orton said not another word; he left me in infer that, while no telegrams were sent direct to the returning boards offering bribes, still such telegrams were sent, but to persons who would convey the messages to the parties most interested by word of mouth. However that may be, there are now no records in the telegraph office, so far as I know,

True Premonition of Death

Col. Alford B. Chapman Felt He Would Be Killed on First Day of the Battle of the Wilderness, and He Was.

The bravest soldiers sometimes acknowledge that they are possessed by superstition or that there come to them premonitions of what their fate is to be in battle. Although General Hancock was not a believer in these mysterious warnings, there was one incident in which he had a share that caused him at times to wonder whether there might not after all be a whispering voice unheard by any but those to whom the message was addressed, telling what their fate in battle was to be. This incident was associated with the death of Col. Alford B. Chapman, who, during the Civil war, was in command of the Fifty-second New York regiment, which took part in all the campaigns Grant made from the Rapidan to the Appomattox in 1864 and 1865.

Colonel Chapman was not a superstitious man. He was a born soldier, taking with perfect coolness all the chances of war, seeking only to do his duty. For example, his regiment

was engaged in laying the pontoon bridge at Fredericksburg, in December, 1862, just before General Burnside, who was in command of the Army of the Potomac, ordered the advance to be made upon the Confederate position on the hills back of Fredericksburg. Although the bullets flew thick and fast, Colonel Chapman was utterly without fear, nor did he at the time he received a bullet know that he had been wounded. The ball passed through a memorandum book and some papers which were in his left vest pocket. The bulk of paper was sufficiently thick to cause the bullet to become practically spent when it reached his flesh. But for this interposition he would have been killed instantly, since the bullet was arrested directly over his heart.

General Hancock's attention had been called to Colonel Chapman and he had decided to place him in charge of a brigade and to recommend his appointment as brigadier general. In fact Hancock had so much confidence in Chapman that he assigned Chapman's brigade to a forward position in the first day of the fighting in the battle of the Wilderness.

Shortly after the brigade went on to the skirmish line Colonel Chapman met General Hancock. The colonel's bearing was very soldierly. There was no doubt of his keenness or of his courage, but he said to General Hancock:

"General, this will be my last battle."

"Why do you think so, Colonel?" asked the general. "We must all take the chances of battle."

"I know that is a soldier's duty," Colonel Chapman replied. "But the feeling I now have is something unlike any I have ever experienced since the war began. Something tells me that this is going to be my last battle, but the warning does not disturb me in the least."

"Oh," Hancock replied, "you're simply a little over-excited. Don't pay any attention to it. I have no faith in premonitions."

Colonel Chapman smiled, gracefully saluted General Hancock, and said: "After this battle is over, general, you will find that my premonition was genuine."

Within an hour Chapman was leading his troops through the woods to form a skirmish line. At the first volley from the enemy he fell, mortally wounded. His brigade passed on over his body.

After his men had moved on Colonel Chapman with feeble movement took a note book and pencil from his pocket and with trembling fingers, wrote first his father's name and address and then these words: "Dear father, I am mortally wounded. Do not grieve for me." Here the fingers seemed for a moment almost palsied, but again, as though by desperate effort they wrote these words: "My dearest love to all. Alford."

The pencil dropped on the paper. With that brief message the soldier passed away. This communication is now held by relatives of Colonel Chapman.

"I suspect that's the reason why they have not admitted you yet as a member of the house," remarked the general.

"I nodded acquiescence.

"Well, now, brother Scotchman," Senator Cameron declared, "I have a little influence in the house and I am going to use it. You needn't give yourself any further anxiety about your admission to it. You'll be admitted in the course of a day or two. I'll see to that. As Scotchmen we'll stand together; but as Republican and Democrat we'll fight to the death."

"His words proved true. A few days later I was received into the house of representatives."

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Cameron Stood By the Scot

Pennsylvania Senator Used His Influence to Gain Admission to House of Representatives After Close of War.

In 1866, the year that James Burnie Beck, who from 1876 until his death in 1890 represented Kentucky in the United States senate, was first elected to the national house of representatives, General Simon Cameron of Pennsylvania, who had been sent to the senate in 1845 as a Democrat and in 1856 as a Republican, for the third time in his political career became a member of that body.

"Of course Senator Cameron was instantly received into the senate on the day that the new congress was organized," said Senator Beck to me, "but it was far different with me. I had come to congress a swager from a border state—and the war was just a year closed, and the passions and demoralizations of the war were not over. There was a great deal of suspicion as to the sincerity or loyalty of members of congress from the border states and the tests of loyalty put upon them by the northern members of congress were severe. I was fully prepared to take the test oath, but my credentials were held up nevertheless, and when congress organized I was left out in the cold."

"A few days later I chanced to meet for the first time in my life General Cameron at the home of a common friend. He looked at me intently for a moment, as though he were trying to read me through and through. Then he asked me if it were true that I had been born in Scotland, as he had heard."

"Yes, senator," I replied. "I am a native of Dumfriesshire."

"You know that I, too, am Scotch,"

A Convent Supper.

I think, perhaps, our town-bred Jeremiah might not have "fried us, so, of course, we were denied meat; there was 'choux blanc,' cooked as only a French cook can, and a succession of dainty vegetable dishes that our British boiled-potato-trained intelligences could not classify. The repast finished with slices of home-made bread and 'confiture.' Nursery bread and jam, none other, yet it had a savor all its own, nevertheless. The fruit 'grace' ripened on the long extent of gray wall that enclosed the vast conventional establishment, with its spacious gardens, wings, cloisters, quiet quads, and shady courtyards.

The convent made a little world of its own, and, like all worlds, probably held such within itself again; but the aspect, to its visitors, was peace personified, and its atmosphere an unbroken tranquility that penetrated to one's very bones after the hurly-burly of London.—Harper's Bazar.

It's easier for a woman to talk on any subject than it is for her to stop.

not by birth, but by descent," he replied. "I am as ardent a member of the clan Cameron as any of that clan that ever lived."

"Then the senator took me by the arm and led me aside. We began to chat about Scotland. I told him that he knew more about Scotland than I did."

"We Scotchmen are, after all, of one national clan," he responded. "We may fight among ourselves, but we stand with a united front against the world."

"I saw that the senator was still studying me, taking my measure, while at the same time our common Scotch blood had kindled a recent acquaintanceship into something like friendship. At last he asked:

"You were a law partner, were you not, of John C. Breckenridge when he was vice-president and when he was the south's candidate for president in 1860?"

"Yes," I said, "I was General Breckenridge's law partner at that time."

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To Make a Vacation Pay

Must Be of the Right Kind and Taken With the Proper Idea in Mind.

The best investment that many men make during the year is represented by the expense of their vacation. They are paying out money and earning nothing, but they are putting themselves in superb condition for great business on their return. They are overhauling their physical and mental machinery, renewing, restoring, lubricating, polishing the delicate bearings and putting them in a condition to run smoothly and noiselessly for the balance of the year.

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The right kind of a vacation multiplies the power and effectiveness of all the faculties; it increases courage, confidence, self-respect; in fact every

success and happiness faculty. Could there be a better investment?—Orison Swett Marden in Success Magazine.

Where the Blind Ride Free.

Blind people are now permitted to ride free on the street cars of Glasgow, Scotland. The local town council has distributed a supply of brass tokens among the various institutions for aiding the blind, and an ordinary car ticket is given in exchange when a token is presented by a blind person desiring a free ride.—Popular Mechanics.

Hurt in Queer Accident.

An astonishing accident occurred lately at Hobart, Australia. A man named Critchley was riding a bicycle, and when passing an omnibus the driver swung his whip, catching him around the neck. The cyclist was helpless, and before he could save himself he was jerked under the vehicle and sustained serious injuries.

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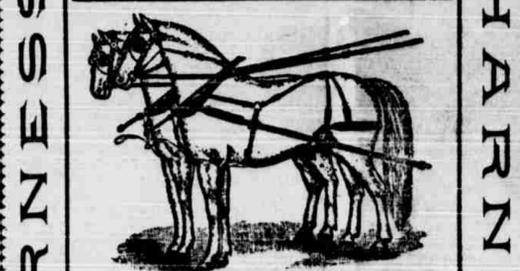
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