

A NOVEL TOBOGGAN.

HAIR-RAISING RID - DOWN PIKES PEAK RAILWAY TRACK.

The Device Consists of a Plank Three Feet Long and Twelve Inches Wide—The Assembling Speed That Is Developed—Friction Sometimes Stops the Machine.

Although there are many kinds of vehicles in service on railway track, perhaps few people ever thought of using such a thoroughfare for a toboggan slide, especially track with rack bars along its side; and besides, there are few steam railway trucks steep enough for the purpose. The accompanying illustration shows a device used by the officers and employees of the Manitou Pike Peak railway.



TOBOGGANING ON PIKES PEAK.

For coasting down the track, the average descent of which is 844.8 feet per mile. The toboggan is supposed to be used only for pleasure purposes, no employee being authorized to use it while in discharge of his duties.

The device consists essentially of a plank 12 inches wide and 3 feet in length, along the middle of the under side of which there is a cleat which runs between the rack bars and holds the toboggan thereon. On either side of the middle cleat there are brake shoes bolted to the plank at one end and bearing against the outside surfaces of the rack bars or cog teeth.

These brake shoes are applied by clamps bent over the sides of the plank and operated by a lever which, as appears in the illustration, the rider holds within his grasp.

The plank bears upon the upper edges of the cog teeth by steel runners, which consist of two straps bent over the ends of the plank. To hold the device in balance a bar or pole is bolted to the top of the plank, crosswise, extending over the track rail on either side. Across the front end of the plank there is bolted a rest for the rider's feet.

The method of operating the device is simply to place the toboggan on the track, sit down and attend to the brake.

The speed attainable with this toboggan depends upon the pleasure of the rider. A record of a fraction under a mile a minute has been made on the particular toboggan shown in this illustration, there being many of them in use on the road.

The entire stretch of track from the top of the peak, down to Manitou, nine miles, is used, except at four points where the track rails diverge at sidings. At these points the rider must come to a stop and carry his toboggan about 40 feet. It is officially stated that on one occasion an employee of the company made the entire trip over the nine miles in 11 minutes.

The high friction created by the contact of the runners with the rack rails causes the former to heat, and on the lighter grades of 8 to 12 per cent the heated runners have been known to adhere to the rack rail and stop the toboggan.

For the purpose of lubrication and to prevent the runners from unduly heating, the rider carries a bar of soap which he applies to the top of the rack teeth by reaching over in front of the toboggan. Even then the friction is so great that at very high speed on the long grades streams of fire follow the toboggan.

Hard on a Watch.

"It is bad practice to be continually setting a watch by the stem-setter," observed a watch repairer to a reporter, "for it has a tendency to wear out the hands that attach the hands to the pinion. The hands are tightened to the pinion as firmly as they can be, and every setting loosens them somewhat. There is a class of persons who set their watches every day rather than give a little attention to the matter of regulating them. They find that the watch gains or loses a minute or a few minutes in each twenty-four hours, and instead of curing this by the regulator, which is put in the watch for that purpose and no other, they force back or forward the hands by the stem-setter or by a key. If the hands pinion wears out, which it frequently does, it is considerable of a job to put in a new one or place new hands on it, and the work necessarily costs something, for watch repairers have to charge for their work. If a person knows that a watch gains or loses a certain amount in each day, it is better to calculate back or forward than to be continually setting it. A little study of the regulator will do the work much better, without the risk of wearing out anything."

England the Great Money Lender.

A statistician estimates that England has \$500,000,000 invested in land and mortgage in countries abroad. She lends to foreign Governments and municipalities an average of \$200,000,000 annually. She finances railways in India, Canada, the United States, Australia, South Africa and South America, her investments of this class aggregating \$2,100,000,000. English capital is invested in this country in water and gas companies, cattle and horse raising, breweries, flour mills, street railways, iron manufacturing and mining. In investments other than Government loans and railroads it is estimated that the enormous sum of \$9,250,000,000 of England's money has been lent outside of the "light little island."

Facts About Humanity.

Of the entire human race it is estimated that 500,000,000 are well clothed—that is, they wear garments of some kind; 250,000,000 habitually go naked and 700,000,000 only cover parts of their bodies; 500,000,000 live in houses, 700,000,000 in huts and caves, and 500,000,000 have virtually no shelter at all.

THE UNLUCKY DAYS.

The Ancients Had a Long List of Days to be Feared.

In ancient times the heathen were so superstitious with regard to certain days that they were pointed out in their calendars with different colored characters to mark the lucky ones and the unlucky, and all classes arranged the details of their daily life with reference to these marks.

Of the present day claim to be free from all this, but many there are who will not begin a journey nor a piece of work on Friday, nor cut the hair in the last quarter of the moon, and who are very much frightened if the soft rays of Luna chance to fall upon the face while they are asleep.

Friday is even under a ban; even with regard to the weather, there is an old saying which declares that

"Friday's moon,
Come when it will, comes too soon."

In countries where capital punishment is in vogue Friday has nearly always been "hugman's day."

There are many superstitions connected with New Year's day, one of which is still firmly believed by many of the devout is that of opening the Bible at random and putting the finger on any chapter contained in the two open pages. It is believed that the luck or unluck of the coming year will in a greater or less degree be fore-shadowed by some of the lines.

Again, others believe that it is very unlucky to take anything out of the house on New Year's morning before taking something in; the old rhyme which expresses this belief runs as follows:

Take out, then take in,
Bad luck will begin;
Take in, then take out,
Good luck comes about.

Certain days for birth have generally some particular attribute given them which tell us that the child: Born on Monday is fair of face;
Born on Tuesday, full of God's grace;
Born on Wednesday, sour and sad;
Born on Thursday, merry and glad;
Born on Friday, worthily given;
Born on Saturday, work hard for your living;
Born on Sunday, you will never know what.

An Instrument to Hear You Think.

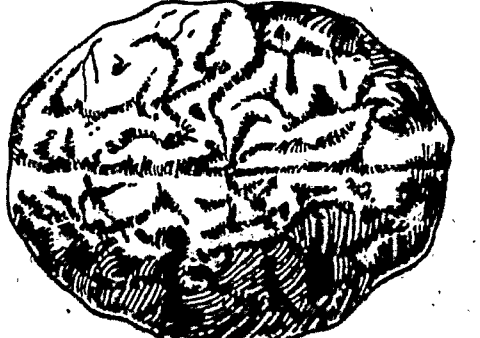
Dr. Verenz, the great German specialist, who has made a fortune and can afford to spend the rest of his life in study for the benefit of



THE PARENCHYMATOUS CELLS.

Humanity, is shocked that so little is known of the brain. He has discovered that the brain is in two halves—the interstitial and the parenchymatous cells—which have hitherto been treated as a whole.

He is at work on an instrument which will enable him to see and hear the brain, the heart and lungs are heard. Then he will know how to treat the patient, whether the ailment



THE INTERSTITIAL CELLS.

be brain fever or insanity. He will be able to detect whether the trouble is due to mental or physical weakness, and will treat and prescribe accordingly.

Devil Worship.

In Spain, Germany, France, Italy, as well as in the northern countries which had embraced the reformation, devil worship was believed to be practiced, orgies celebrated, malevolent tricks of revenge perpetrated by the votaries of the evil one on their neighbors. If a child was seized with epileptic fits, if a pig died suddenly, if a toad were found under the bed or a cat jumped in at the window, if a cross-grained old woman cursed a rude, ill-mannered man, and the child afterward suffered with any complaint, the witchcraft which must undoubtedly be at the bottom of such occurrences called for immediate investigation. Nor was it long before a victim was forthcoming. Denial was of no avail. The longer such denial was persisted in, the longer were the tortures inflicted. The accused was urged to confess to the usual charges, and encouraged to accuse others, in turn to suffer the same fate. And so the horrible business spread, until, like a prairie fire, it burned itself out for a time, only to start again from some fresh sparks of suspicion. The crime itself was held by all to be so enormous that no punishment could be too great for it.

A Clever Cat.

A family in Brooklyn was recently annoyed every morning by finding the bottle of milk left by the milkman on the front stoop knocked over and the contents gone. One night a member of the family volunteered to get up early the next morning and watch for the culprit. Soon after the young man had taken up his station he was rewarded by seeing a large black cat come across the veranda, knock over the bottle and calmly lap up the milk, which had been spilled. Now the family puts out a large tin can.

A Waterproof Paper Bag.

A Frenchman has just patented a paper-bag material impervious to water, the ordinary wrapping being coated with gas tar and the layer of tar covered with a thin sheet of tissue or similar paper, so that the tar does not come in contact with the contents of the bag.

EXTRAS IN THE NAVY.

THERE ARE MANY CHANCES ON A WARSHIP FOR EARNING MONEY.

Good Cooks Always in Demand and Pick Up Odd Dollars—Some Ship's Barbers Have Made \$100 a Month Above Their Regular Pay.

If anything is needed to prove that each warship in commission is a regular community in itself—a village apart with all that pertains to such an economic institution—the fact that barbers and trade and manufacture is carried on would suffice. The money paid out by Uncle Sam to his naval defenders is not the only income derived by those on board a vessel of war.

When it is understood that many a blue-jacket occupies a position classified at from \$18 to \$24 a month, is paid off at the end of a three-year's cruise with \$2,000 and \$3,000 safely tucked away in his "munk bag," it will be easily seen that trafficking on warships is not unremunerative.

There are no trained cooks in the naval service, so when it happens that a landsman or coal passer develops skilled knowledge of the culinary art, he is eagerly snapped up.

The chief mogul of the galley or man-of-war kitchen, must not be passed over. The naval pay table confers on the messman, brewer, a rating termed "ship's cook" of the first, second, third and fourth class. The pay ranges from \$35 to \$50 a month, according to the size of the vessel, and the incumbent is supposed to tend the galley coppers and range.

As in other cases, the ship's cook does not depend on his salary alone. He is in a position to do many favors for the berth deck cooks and there are very few who do not pay him at least \$1 a month.

In addition to this source of income, a thrifty ship's cook can find ample opportunity to use the range in the making of a pastry which can be retailed to the crew.

One cook, several years ago, cleared a comfortable sum by selling dried apple pies at 25 cents each.

The same yearnings for things eatable which causes Jack to buy these pies also sends him to the cabin, wardroom or storeroom, where, on most ships, does a land office business in the sale of jam, pickles and fancy canned goods. Some also keep in sale tobacco, cigars and cigarettes, which they retail at enormous prices.

Next to the creature comforts of his inner man, the naval sailor thinks most of his personal appearance.

On each ship will be found a gunner's mate, quartermaster, seaman, sailor or even a fireman who has served an apprenticeship in the naval tailoring art on board some other vessel. Such a man is permitted to maintain a small hand-sewing machine on board, and during odd times of watch, he sets up his shop in the corner of the berth deck or in the superstructure and stitches away industriously.

There is money in it for the man who does good work. The price for making a suit is \$5, and there are many suits to be made on the average man-of-war. The tailor also does odd jobs in mending for the officers' staff, who pay according to their official dignity.

Being out still further the similarity of a warship community to a village ashore, there will be found in the service not only the small tradesmen, but one peculiar man who is the capitalist and boss money maker of the ship. He is the ship's barber. The ship's barber flourishes, and he has on his list at \$125 a quarter a goodly share of the crew. For the sum mentioned he will give two shaves a week and a hair cut once a month.

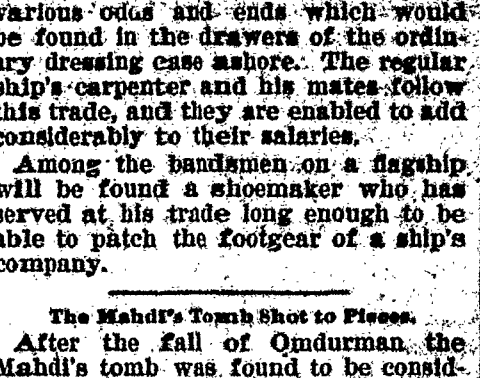
He also has his customers aft who pay him at the rate of \$2 a month. At least two-thirds of the crew on an average patronize the barber, which means, on a vessel of the Columbia class, an additional \$100 monthly to the regular pay of \$18. Few barbers ashore make this sum.

One of the peculiar trades practiced in the service is the manufacture of ditty boxes. A ditty box is a small wooden chest which serves the blue-jacket as a repository for his comb and brush, tobacco, writing paper and the various odds and ends which would be found in the drawers of the ordinary dressing case ashore. The regular ship's carpenter and his mates follow this trade, and they are enabled to add considerably to their salaries.

Among the handmen on a flagship will be found a shoemaker who has served at his trade long enough to be able to patch the footgear of a ship's company.

The Mahdi's Tomb Shot to Pieces.

After the fall of Omdurman, the Mahdi's tomb was found to be considerably damaged by the shell fire from the victorious army. The interior of the building was completely gutted, and portions of the dome and the subsidiary cupolas were falling in. The mausoleum is constructed of stone,



with walls six feet thick, thirty-six feet square and thirty feet high. From hexagonal walls above the square springs the great dome, forty feet to the present summit. The interior is rudely ornamented. A wooden sarcophagus with glass panels stands in the centre beneath the arched roof.

Test for Naval Divers.

Divers in the British Navy, before being passed as proficient in their craft, have to be able to work in twelve fathoms of water for an hour, and twenty fathoms for a quarter of an hour.

ODD NAMES IN MECHANICS.

Englishmen Have Many Words Translated from English Words.

The English language has been enriched by many words drawn from other tongues to facilitate direct and comprehensive expression on all subjects.

Within the language itself a similar principle has prevailed, and old words of well-established meaning have been adopted in the sciences and arts to designate certain things or operations that seemed to resemble those from which the names were taken. In their new relations these words have strictly technical meanings.

Their suitability is often obvious enough in English, but they rarely are rendered in their exact technical sense into their actual equivalents in foreign tongues.

A number of words drawn from the animal kingdom for use in the mechanic arts are enumerated by a writer in Straps and Buckles. The machinist employs a dog on his lathe; he takes a hog out, if the tool will stand it; the castings are made from pigs of iron, which in turn were fed from a sow.

Work is set upon a horse or buck, and punched or bent by a convenient bear. Holating is done by a crab, and a convenient cat is a part of the outfit of a shop crane, and a kit of tools is ever on hand.

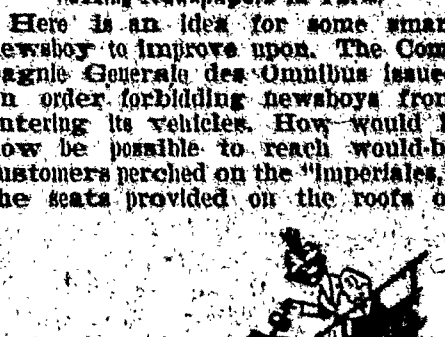
A crow helps to straighten work, a jack to lift it, a mule pulley aids in driving machinery that a donkey engine lacks. A fish connects parts and to cut or strengthen a broken bearing shells are used all over; a worm does powerful but quiet work.

A cock shuts off the water; one kind of a ram raises it, and another does heavy work. A printing press has a fly; the first locomotives had a grasshopper valve motion and drive, and butterfly valves are common.

Herring-bone gears are used by the best builders; turtles in printing press cylinders, and fly wheels are running all over the world. In drilling, even an old man is called into service and doctors prevent faulty lathe work.

Selling Newspapers in Paris.

Here is an idea for some smart newboy to improve upon. The Comptoir General des Eclairages issued in order forbidding newboys from entering its vehicles. How would it now be possible to reach would-be customers perched on the "imperial," the seats provided on the roofs of



SELLING NEWSPAPERS IN PARIS.

The street cars and omnibuses. The problem was soon solved, for one fine day a man selling papers appeared near the Madeleine with a peculiar apparatus. He had a stick seven or eight feet long, with which he listened to the sides and papers struck in them. On the top there was a small metal cup with a hole in the bottom. The hole was a very important part of the apparatus, for it reached all the way down through the stick and through it came the copper coins of one or two sous, according to the price of the paper selected by the patron.

Curious Test for a Husband.

Both in the northern and western islands of Scotland the natives have some peculiar customs unfamiliar to the dwellers of the mainland. One of these, known as the "marriage test," is practiced in the island of St. Kilda, where the population barely exceeds a hundred. The desire among the islanders to increase their number does not seem to be exceptionally strong, and every man, before he is deemed suitable for a husband, has to perform an evolution with no little bodily risk. The St. Kildians are, of course, adept rock-climbers, and the aspirant for matrimony is therefore subjected to the test of balancing himself on one leg on a narrow ledge overhanging precipitous "boulding" his body at the same time in order to hold the foot of his other leg in his hands. If found lacking in courage the maiden withdraws her betrothal, and should the man fall over the ledge it is presumed that, in his case, he will be disqualified.

Modern Coats of Arms.

Many people associate chain armor shirts and mail with medieval times, and do not suppose for a minute that any such suits are made to-day, but such is the case. This mail armor is manufactured by a firm in Walsall, England, who supply the English Government with mail chain jackets for use by India Central and South America, etc. These mail jackets, which weigh from fifteen to eighteen pounds, are worn by army officers, and are made of steel rings, three-eighths of an inch in diameter. It takes about 3,000 rings to make a square foot of armor.

Many Big Cities in Japan.

Japan, with a population of 45,000,000, has 220 towns that have more than 100,000 inhabitants. In 1890 the number of such towns was 117. Osaka has increased from 300,000 to 510,000 inhabitants, in ten years. Yokohama from 200,000 to 350,000, Kobe from 80,000 to 185,000. Tokio has now a population of 1,500,000.

Saving and Hoarding.

An Atchison man whose wife received 128 wedding presents because she was a lovely character, is now compelled to attach his suspenders to his pantaloons with a nail.

THE COBRA'S FANGS.

PROOF THAT THEY ARE NOT IN THEMSELVES POISONOUS.

How the Deadly Snake and the Effect of the Blow—Arrows in Nigaland and South Africa—A Lightning Flash—Attack in Usually Fatal.

Now, the so-called poisonous fangs are not in themselves poisonous—that is, they are not coated with poison, nor even have they a capillary tube running inside along their length, through which the cobra injects the poison into the wound. If that were the case, the cobra could not seize its food without infecting it with the poison. The real fact is there is a fine tube running from the base of each of the two fangs backward under the eye to an almost imperceptible pore, which contains the poison. This gland is constantly secreting the poison, with a small supply for immediate use. Hence, if the tube connecting the gland to the base of the fang were kept open, the poison would be constantly running out into the mouth of the cobra, and thus wasted to no purpose. To prevent this a circular muscle binds the tube somewhere about the middle. But when the cobra strikes its prey, this muscle is relaxed, and another one squeezes the poison bag, and thus injects the poison.

But let us describe the whole process of striking, and see what the cobra does when he means mischief. He expands his head and rears at least a third of his length in the air, with the rest of the body coiled in the form of a spiral. This spiral form gives him sufficient anchorage to rear his body by sheer muscular effort, and also the necessary leverage in dealing the blow. His eyes glister like obsidian, his forked tongue darts in and out with a low, hissing sound. Suddenly he throws back his head in a low curve, and as swiftly darts forward to his victim, partly as a plunger and partly as a spring, unfolding a portion of his coil to increase his range. It looks as if the cobra sprang into the air, but, as a matter of fact, his body usually touches the ground at the moment of striking, in order to afford him sufficient leverage to lunge his fangs firmly in the body of the victim.

The action is magnificent, and yet swift as a lightning flash. The tongue is withdrawn, the mouth wide open. The fangs fall on the victim as a stab, the lower jaw closing in beneath the blow; nay, in a case where the cobra was inordinately roused to fury, the victim was shot out by a strong muscular effort while the cobra was still in the act of plunging—and in such cases he would be victim, who was ready out of range, escaped the blow, but had the poison squirted all over him.

Still, however, in most cases the poison is injected after the blow—though it be not half a second after. That half a second has saved many a life—for instance, where the blow, not being struck full in the body, but only on the edge of it, the cobra slipped off the body by the mere impetus of the blow, catching the fangs to scratch along the skin in two thin lines.

Assuming, however, that the blow has been struck full on the body of the victim, the cobra immediately after the blow wriggles his head either to the right or to the left. This act of wriggling helps to squeeze the poison gland situated on that side to which the cobra has turned, and thus to insure the poison over the puncture on that side. After this discharge the cobra usually drops off the limb in an instant, as if considerably, though temporarily, weakened by the loss of the precious fluid. These many, of course, be sufficient to secure a fatal result, but to give a second bite immediately after, but that the wound was not necessarily be fatal.

A Curious Railway.

An Indian line, the Darjeeling Himalayan railway, is one of the most remarkable in the world, and is also the highest. Its Darjeeling terminus being situated on a giddy eminence 2,000 feet above the level of the plains.

At many points it is possible to see the curves above and below the train, no fewer than seven trains being

A Curiosity in Engineering.

Visible at one place. The sharp curves are in a place well named "Agony point," where the train on two occasions almost describes a circle in its own length. One of the most striking features of a journey up the Darjeeling Himalayan railway is the sharp transition from the burning heat of the plains to the cold air and the snow of this great high.

Clocks Without Hands and Faces.

In Switzerland they are making clocks which do not need hands or faces. The clock merely stands in the hall and you press a button in the stomach, when, by means of the photographic internal arrangements, it calls out "half-past six" or twenty-five minutes to eleven. As the case may be.

The Chameleon.

When a chameleon is frightened it loses all power of changing its color, and its entire body assumes a uniform tint.

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