

Marvels of Everyday Science

Competent Scientists Apply Their Skill to Problems of Agriculture, Housekeeping, Schools, Business and Governmental Activities.

A PERPLEXING problem was quickly solved by a New Orleans contractor recently when a 54-inch drainage pipe was being installed beneath a concrete bridge and the pipe could not be lowered into place. The



pipe weighed four tons, but the contractor noticed that it was sufficiently curved on the under side to float like a boat on the water. One man was able to steer it around into position and the upper end was then raised with a hoist and bolted into place.

Rack for Hammock.

Sometimes it is impossible to find trees that will support a hammock well. The rack shown in the illustration is a good substitute and costs but little. It



is made of 2x4-inch timber, the uprights being seven feet high, the crosspieces twelve feet and the corner pieces three feet long. The rack has an advantage over trees, for it may be moved where ever the owners want it.

INTERESTING INVENTIONS.

A novel vacuum cleaner for use in houses where electric power is not available has a bellows, which straps on a person's back, and is operated by a handle at one side, to provide the suction.

For fastening metal to wood there has been patented a galvanized steel nail with a lead head, the latter spreading to exclude moisture from the hole the nail makes.

A Virginia inventor's respirator for persons entering smoke or gas filled rooms is in the shape of a vest, the pockets containing oxygen tanks that are connected with a nose and mouth piece by tubing.

Celluloid wings for aeroplanes that are said to be so transparent as to be invisible 300 feet in the air, have been invented by a German engineer.

Among the new electric cigar lighters for automobiles is one inclosed in a watch case, which can be hung up by the ring.

An ash can to which a handle can be attached to convert it into a lawn roller has been patented recently.

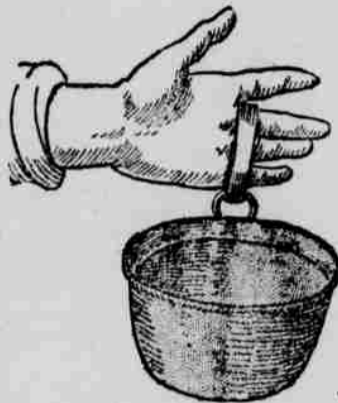
An Iowa man has patented a liquid to be poured into automobile inner tubes to dissolve the sulphur and make the rubber softer and more elastic and thus less liable to puncture.

Cement Shelter for Signal Men.

Protection from winter's cold and summer's heat is afforded the signal men of one northern railway by means of snug houses constructed of concrete. Built in octagonal form, with windows all the way around, these shelters give ample light and air, with adequate protection against weather conditions. They are eight feet 2 inches in diameter and eight feet high. The walls are four inches thick and a 6-inch floor gives solid foundation for the structure. Floors, walls and roof are solid concrete, forming a substantial, economical and neat shelter.

Aids Cherry Picking.

A Missouri man has invented the contrivance to help in picking cherries which is shown here. The basket part is of cloth held in shape by a wire ring six inches or less in diameter, and a small ring is fastened to the edge. A strap is placed around the last three



fingers of the hand and through the ring. This contrivance is light, and, being on the left hand, the one usually holding the limb of the tree, is always in reach of the right hand.

Home-Made Filter.

A large, common flower pot is covered over at the bottom, the opening and all, with a piece of clean flannel or of zinc gauze. Over this put a layer of coarse gravel about three inches deep and over the gravel a layer of white sand of the same depth. Above the sand put four inches of charcoal, broken in fragments. If possible, use animal charcoal. Lay over the top a clean, fine sponge that covers it, or if you have not a sponge a layer of clean flannel. The top layer, whether of flannel or sponge, is to be made sterile by frequent washing and boiling. Set the filter in a wooden frame and under it put a clean vessel to receive the water as it comes through the filter.

Citizens Build Concrete Dam in Forty-Four Hours.

Across the Mississineva River, citizens of an Indiana town have built a concrete dam for the purpose of making a lake and pleasure resort. It is 125 feet long with two 10-foot wings on each side; the base is 12 feet wide and the top, used as a sidewalk and promenade, is 4 feet in width. Spillways are placed at intervals along the top, and in the center an opening is made for a fish ladder. The entire work was done in 44 hours by a large force of public-spirited citizens as a matter of civic pride.

Work of an Engine Belt.

A leather belt in an English factory has been running at a speed of 1,800 feet a minute from nine to twelve hours a day for more than thirty-two years.

THE HUMMING BIRD.

Little green Hummer
Was born in the summer;
His coat was as bright
As the emerald's light;
Though his bill was long,
Short was his song.
And his weight, altogether,
Not more than a feather.
From dipping his head
In the sunset red,
And adding his side
In its fiery tide
He gleamed like a jewel,
And swift darted round.
'Twas sunlight and starlight
Without touching the ground;
Now over a blossom,
Now under, now on it,
Now here and now there,
All in a minute.
Ah, never he cared
Who wondered and stared!
His life was completeness,
Of pleasure and sweetness;
He revelled in lightness,
In fleetness and brightness,
This sweet little Hummer
That came in the summer.

—Florence E. Winslow in Youth's Companion.

There were fourteen fewer medical schools in the United States in 1913 than in 1912, and 1,200 fewer students and about 500 fewer graduates.

More than 400 patents have been issued by the United States for devices intended to harness the power of sea waves.

Recent developments seem to indicate that the first newspaper in English was printed in 1620, in Amsterdam.

Health and Sanitation

BY A PHYSICIAN.

IT SEEMS to be the consensus of opinion among medical men and those who have made a special study of the anatomy and physiology of the body that there are advantages gained by sleeping back-upward—or nearly so. Let us consider the subject in its various relations as regards health—and health means longevity.

In the first place, the circulation is certainly better with the viscera downward and the weight thereof off the great aorta artery, which carries the blood from the heart, and the large venacavas, which carry it back to the heart again. These large vessels lie against the vertebral column and behind the heart, stomach, liver, intestines, uterus and bladder. Therefore, when lying on the back, these heavy organs press upon these vessels and naturally retard the circulation, and throw more work on the heart all night.

For many years I have cautioned my pupils about going to sleep on the back whether at night or in the daytime, and more especially soon after eating a hearty meal. In many cases it has proved fatal. It is likely to cause nightmare in consequence of the interference with the circulation. A nightmare is nature's last resort to save you. This it does by making the dream as hideous as possible; otherwise you might not awaken and change your position. The next time you awaken as the result of the nightmare, thank God for the nightmare. Were the dream a pleasant one you might pass on to your eternal sleep.

Restful Relaxation.

A short rest on the back when very tired—a few minutes of complete relaxation—is very restful without being harmful. Did you ever notice a horse after a long drive or a hard day's work, how, after the harness has been removed and he is allowed the freedom of the barnyard or the pasture, he will lie down and try to roll over? He will make several attempts, although not always successful, but once over and he is satisfied. And a mule—well, a mule will not get up until he does roll over, usually two or three times. That's the nature of the mule. The temporary pressure on the vertebral column probably removes the nerve pressure, thus relieving the tension. I suspect that would pass as a satisfactory chiropractic explanation.

Man is the only animal that sleeps on his back. If you survey the whole field of the lower animals having a vertebral column of bones the same as man, you will not, I think, find one that sleeps on its back—except the sloth, which sleeps clinging to the branches of the trees with its back downward; in fact, this is hardly an exception, as it does not have any pressure on the back. The dog, the cat, the horse, the cow—all of them sleep on the right abdominal side. They never fail to seek this position every time they seek repose.

Sleep is nature's provision for rest and repair; hence the importance of correct position. It has been remarked by physicians that old people when lying on their backs a few days prior to their death do not, as a rule, die of the disease that brought them to their bed, but in consequence of an effusion of serum from the blood into the dependent cavities, due to a retarded circulation of the blood. You may have observed that in hospitals, under intelligent management, such patients are made to change their positions frequently, when practicable to do so, to avoid this stagnation of the blood.

The Correct Position for Sleeping.

The body should rest on the right side of the chest and abdomen, with the left arm extended at full length along the upper side of the body, the right arm and the left leg both half flexed and acting as braces to the body to take the tension from the neck, which would become very tired. The head rests on the right cheek, and the right leg should be fully extended. When tried it will be found to be the most restful position that one can possibly take, and

no one will experience any discomfort whatever in lying in this position for a number of hours. This is the position to which I once referred as lying on one's liver—your own liver. There is no harm to change for a short time to the left side, but it will usually be of short duration, as the anatomical structures in the chest and abdomen call for sleeping on the liver, or right chest and abdomen, and thus, also, avoid crowding the heart. Therefore, to comply with the demands of nature, we should attempt to assume those positions at all times that will allow of the greatest freedom of each organ to perform its functions with the least possible restriction, friction or hindrance.

As a rule, patients recover more rapidly if allowed to sleep face downward as described. When they assume this position I am informed that they rest easier, have less pain and recover sooner. This recalls to my mind the case of a doctor who had typhoid fever. He claimed that by resting on the right side of his chest and abdomen—on his liver—he had less aggravated symptoms in the bowels, and in many other respects was benefited, and his return to health was more speedy.

Other Benefits Gained.

Better digestion is also assured when sleeping face downward, especially if one retires with undigested food in the stomach. When sleeping on the back, the full stomach or partially filled stomach is resting upon the great solar plexus that lies just back of it. When this large mass of nerves—nearly as large as one's hand—is pressed upon or irritated, digestion is disturbed, retarded and, in some cases, stopped. Sour stomach, gas and heart-burn usually result, to say nothing of insomnia and bad dreams.

Sounder sleep is also the result of the correct position. Why? Because with the face downward, the blood, in coming from the brain, all collects at the back of the head just inside of the skull, at a place called torcular herophili. But when sleeping face downward, the flow of the blood from this point is downward and, therefore, freely drains the blood from the brain; hence, the sleep is sound, restful, recuperative, and the dreams, if any, are pleasant.

The prevention of snoring, also, may be considered under the benefits to be derived from a correct sleeping position. This nocturnal songster—sometimes songstress—which never receives an encore from a listening audience of one or more, may be—and should be—eliminated from the program.

As snoring is caused largely by the tongue falling back into the pharynx during sleep, thereby filling the pharyngeal space so that the air has difficulty in getting into the lungs, lying with the face downward prevents this, because the tongue will naturally gravitate away from the pharynx, leaving it open and free for the admission of air.

During colds or any nasal or pharyngeal troubles that produce discharges, sleeping with the face downward gives a freer outlet to the secretions from the nose and mouth, without first going back into the throat to irritate the membranes there and thus disturbing the sleep; or by drying out the mouth and thus inducing mouth-breathing. While on the back the turbinate bodies in the nose swell more than they do when lying on the face. This is an important item, for everyone knows that the most disagreeable feature of a cold is the closing of the nose at night so that mouth-breathing results.

The public press owes to the citizens of every city a rigid support of all measures provided by the health officer for the prevention, isolation and segregation of communicable diseases.

Second to none of the health officer's duties should be public sanitation.

Health officers who neglect the food supply neglect the community.

The average government salary in Washington is \$1,079, and the average all over the country is \$948.