idea is to obtain negatives of mimic scenery, etc., which has been previously built up from any materials that may suggest themselves as suitable. The annexed photograph will give the reader some idea of the necessary preparations. At *A* we have a movable background, upon which paper of different colors may be pinned at will, or masses of cotton wool, according to the nature of the "sky effect" that may be required. The stage marked *B* may be a table or upturned box—anything, in fact, that will provide a good steady platform upon which the scene may be arranged. The camera is set up opposite to the stage, as shown; and it should be furnished with a lens of fairly wide angle. In addition to the above apparatus, it will be found desirable to have at one's disposal a couple of screens, which may be fixed up on one side or on both sides of the stage, for the purpose of shutting out the light—a strong top light often being more effective than any other kind of illumination. Any odd pieces of stout card or board of the necessary size will be suitable for these screens.

A great advantage possessed by table-top photography is that it may be undertaken at any time—in dull, wet weather just as much as when the outdoor world is bright and smiling. A fairly long exposure is always necessary; and as one can safeguard one's mimic landscape from the slightest movement, there is virtually no limit to the time during which the lens may be kept open. Certain kinds of table-top photographs may also be taken at night, by means of magnesium wire. A good "fake" of this kind is "The Young Moon," shown in the accompanying picture. Costly apparatus and a vast experience of matters celestial would be required to get a genuine picture of this kind. But by means of a black cloth, a white tennis ball, and an inch or two of magnesium wire, a striking result may be obtained. The deed should be accomplished at night in a quite dark room. Use the black cloth for background, and drape it over a small box, upon which the tennis ball is to be placed. While focusing, get a friend to hold a candle close to the ball. This will enable you to get the rim of the "moon" quite sharp. When all is ready, blow out the light, take the cap off the lens, and burn your strip of wire, holding it in such a position that the strong light falls full upon one side of the ball. The resulting picture will be very puzzling to all who are not in the secret of its manufacture.

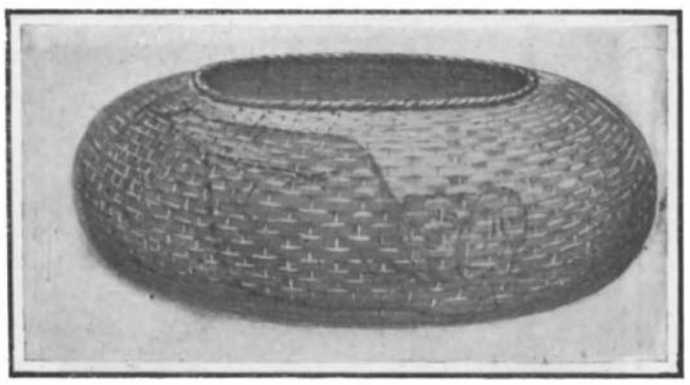
Quite a number of effects may be obtained in a similar manner, this kind of table-top photography being specially applicable as a winter evening pastime. Pile up a quantity of salt or alum to form peaks and ridges, drape a gray cloth to play the part of a "cloudy" background, and then make your exposure as before by means of magnesium wire. A very pretty picture, "Sunrise on the Mountains," will result. This kind of "fake" photography may be carried to almost any extent with surprising success. A few blobs of candle wax, deftly manipulated and arranged upon a sheet of looking glass, supplies a realistic ice floe; while a vessel, cut out in dead black paper, and launched so that she rides above the reflection of a towering berg, adds vastly to the effect These are a few hints. The imagination of the reader will enable him to produce a score of varied and equally striking results.

To make an imitation lightning photograph, first smoke densely a sheet of glass. This may be done most rapidly over the flame of an oil lamp, care being taken not to hold the glass so close to the flame as to crack it. Then, with the point of a sharp pencil, mark the track of the "lightning" upon the smoked surface, using as a copy, if you like, a genuine photograph of lightning. Now, by means of some boxes, prop up the glass so that a light behind it will shine through the transparent scratches. A candle placed behind the glass enables one to focus, and then the exposure is made by burning a strip of magnesium wire. By setting the glass upon, and at right angles to, another sheet, a good reflection, as though in the waters of the sea or a lake, is obtained.

Perhaps, however, the most fascinating kind of table-top photography is that which is done by daylight. As a typical example of how to set to work, the accompanying photograph of a "Scene in the Alps" may be taken. The mountains are specially selected pieces of coal. The snow is finely powdered alum. The sky or background is a rather dark piece of blue paper, chosen to produce a contrast with the snow-capped mountain top. To increase the effect of height and vastness, the tiny figure, cut out of black paper, was set up upon the "snow" in the foreground. Result, a picture scarcely distinguishable at first glance from some which men have risked their lives to obtain.

Even the eternal snow, the brow of the lofty mountain summit, may be photographed in the study or sitting room. Some cotton batting, pressed to the required shape between the hands, forms the basis. Upon it powdered alum is sprinkled liberally. To supply the necessary effect of vastness a little black figure is added, his footsteps being traced in the snow by means of a pin point. The light streaming from a window near at hand casts a strong shadow under the mountain brow. The cloud effect is rendered by means of some pieces of batting, pinned upon the background, which has been specially moved "out of focus," in order to secure the necessary softness of the mimic mists.

When one once takes up table-top photography as a serious hobby, it is surprising how many little ornamental objects (such as are to be found in every house) may be pressed into temporary service. In the annexed photograph of a Swiss scene, the little châlet is a model that was purchased in Switzerland.



The Indian Basket Trick.

It rested upon a shelf for a number of years, and then suddenly found itself among its native snows once more, owing to the craze for table-top photography which had invaded the house! Only the "snow" proved to be powdered alum, while the rock upon which its foundations rested was a lump of coal! Still, the model châlet added much to the effectiveness of the picture.

In "A Winter Scene" also there is a little china statuette which has been promoted in imagination until it plays the part of a full-sized garden statue, half covered with a drift of snow. The leafless tree is just a moss-covered twig. In this way, by permitting one's imagination to rove, and by adapting anything and everything that seems at all likely to prove effective, an almost endless number of pretty and interesting table-top photographs may be established.

The accompanying photograph entitled "A Mountain Lake" is of especial interest because, after being taken, the print was enlarged to cover an area of 7 by 10 inches; and this without loss of effectiveness. Indeed, the resulting picture framed and hung upon a wall would probably deceive everyone to whom it was shown, unless it were subjected to an unusually close scrutiny. Yet the mountain and its lake are "arranged" exactly after the manner described above. The clouds are just cotton, the mountain and its neighboring rocks and hills are so many pieces of coal, while the "snow" is so much sprinkled alum

The Diving Duck Trick.

HINDU MAGIC.

with a little white sand added to form the "shore" of the "lake." The lake is a sheet of glass having a strip of black cloth spread beneath it—a dodge, by the way, which is a decided improvement upon a looking glass, as a less brilliant and more natural reflection is obtainable by this means.

In conclusion, the writer commends the amplification of table-top photography to the reader, if perchance he is minded to try his hand at the pastime. The brief description which has been penned, together with the photographs which illustrate this article, should enable any amateur photographer soon to become proficient in the art.

The railways of Peru are run according to American ideas, and the rolling stock is according to American standard patterns, both as regards passenger coaches, freight cars, and locomotives.

HINDU MAGIC.

BY HEREWARD CARRINGTON.

Doubtless we have all heard of the tricks or feats of the Indian Hindu fakir; we have been accustomed to regard his powers as marvelous beyond compare—as performing marvels that no mere Occidental can equal. He can, we are told, make trees grow from the ground or the deck of a boat; he can throw a rope into the air and, causing it to be suspended without visible support, have his assistant climb up that rope, and his head and arms and legs falling to the ground, join themselves together, and finally form the original body and come up whole as at first! He can cause a stone to sink or swim at will, a boy to vanish from a basket, and a hundred other things, too marvelous to conceive. Let us examine some of these powers of the Indian fakir, and see how far they are genuine, and how far they are the result of trickery. We will first consider the famous mango tree trick. This has been the marvel of all oriental travelers from time immemorial, and the correct explanation of this trick has never been made public, to my knowledge.

The performer comes forward and proceeds to make a little mound of earth out of the soil and some water. This can be done anywhere, on the earth, on the deck of a ship, etc. The fakir usually wears next to no clothes, apparently making this trick—if it is a trick—all the more difficult. When the mound of earth is complete, the fakir inserts his seed of the mango tree, and waters it to make it grow. He then covers it with a cloth, and, placing his hands beneath the cloth, proceeds to manipulate the seed for some time. In a few moments he withdraws his hands, and makes passes over the cloth, outside it. A wait; then the conjurer removes the cloth, and the seed is seen to have sprouted. Two tiny shoots appear above the surface of the ground. More passes are made, and when the cloth is removed for the second time a tall mango tree is seen sprouting above the earth. This trick has probably mystified more people than any one that the Hindu fakir performs. It is accomplished in the following manner:

The seed that is placed in the earth is hollow, and within it is placed a branch of the mango tree, previously prepared and folded up. The leaves of the plant are specially adapted for the trick, and they are easily compressed into a small compass. The seed containing the mango shoot is placed beneath the earth, and when the conjurer places his hands underneath the cloth he works out a part of this folded-up branch, and leaves it sticking out above the surface of the mold. This is repeated several times, until all the branch is showing above the mold, when quite a respectable sized tree is seen to be sprouting. If the seed is examined before the trick is exhibited, the conjurer has previously exchanged the one examined for the trick seed at some convenient moment before placing it in the ground.

Sometimes, the seed is seen to grow into gigantic proportions—into a regular tree, bearing fruit, in fact! It is probable that much of this is exaggeration pure and simple; but there is a manner of working the trick, or rather extending it, so that a very large tree can be produced at the conclusion. It is this: The conjurer has the large tree concealed beneath a thick cloth—a duplicate of the cloth he uses to cover the seed at first. After uncovering the seed several times, and showing it grown more and more, he uncovers it for the last time, and, while the audience is gazing at the plant wonderingly, the conjurer takes occasion to exchange the cloth for the one containing the big tree underneath it. Now, he quickly covers over the plant with this cloth, and when it is removed, there is the tree, full grown. It may be several feet in height. It was compressed beneath the covering cloth. People do not think of asking to look under the cloth the last time, because they have often seen beneath it, and know it contains nothing They therefore assume that it contained nothing the last time the mold was covered over.

Now we come to the famous basket trick, which has also mystified thousands, and yet is simplicity itself. A large oval basket is shown, something the same shape as an egg, laid on its side, and an opening cut in the upper surface or top. It is first shown empty. Then a small boy is shown, wearing a jacket and turban. He is placed in the basket, and the opening is covered over with a blanket. The basket is so small that the boy apparently fills the whole of the basket. What is the surprise of the spectators, then, to see the fakir suddenly leap into the opening of the basket, and proceed to stamp about as vigorously as he can—treading on the ground, and apparently showing that the boy has disappeared, and is no longer in the basket! To make assurance double sure, however, he snatches up a sword, and proceeds to run the basket through and through in all directions. No sound issues from the basket.

There is an ominous silence. Evidently the boy has disappeared. But the conjurer turns around and shouts, and the boy, wearing the same jacket and turban, is seen in a neighboring tree. He descends. A tom-tom is beaten, and after a few incantations, the basket is seen to stir, and soon the blanket heaves up, and is thrown aside, and the boy is seen standing before us, as sound as ever. This trick, like the last, can be performed in any locality, on the deck of a ship, etc., thus showing that trap-doors have nothing to do with the result. How is it done?

First, as to the basket. It will be seen, when we think it over, that the peculiar shape of the basket renders it capable of being employed in the following manner: The small boy, as soon as he is placed in the basket, curls up, and wriggles his body, eelwise, around the edges of the basket. That is, he coils around the inner surface, just as a snake might coil up within it. Now it will be seen that it is possible for the conjurer to leap into the opening, stamp on the ground, etc., since the open space in which he treads is unoccupied by the boy's body. He steps in the middle of the circle of flesh. And when he runs the sword through the basket, he only runs it through those places where the boy's body is not concealed.

So much of the trick is plain: how about the disappearance and reappearance in the tree? There are *two* boys, dressed exactly alike. The first one never leaves the basket. He simply remains quiet until he receives the signal to show signs of life again. The second boy climbs up a neighboring tree at some convenient moment, and shouts when he sees it is the proper time to make his presence known. So much for the famous basket trick!

A very clever trick often seen is the following: It is known as the "dry sand trick." The fakir brings forward a pail which he proceeds to fill with water. He then shows some ordinary sand, quite dry. To prove its dryness, he takes up a handful, and blowing sharply upon it, scatters it in all directions. He then takes up another handful and drops it into the water. We can all see it lying in the bottom of the pail, under the water. Next, showing his hands empty, he places one in the pail, and brings out a handful of the sand. Blowing upon it, it still scatters in all directions—showing it to be as dry as ever. This is repeated several times, until all the sand is again extracted.

This is a very clever trick, and would never be discovered, unless its secret were told. It is performed in the following manner: Fine, clean sand is selected, washed carefully in hot water several times, and dried in the sun. Some of this sand is then placed in a frying pan with a lump of fresh lard and is cooked until all the lard is burned away. The result is that every particle of sand is covered with a thin coating of grease, so that when this sand is dropped into the water the sand is impervious to the water (owing to its coat), and so remains as dry as ever.

Another trick that Indian fakirs perform is known as the "colored sands trick." The conjurer eats several colored sands or sugars—blue, red, yellow, etc.—and swallows them. Nevertheless he can, at the request of any of the spectators, immediately blow out of his mouth any one of the colored sugars desired or called for. This is repeated until all the colors are blown out in turn.

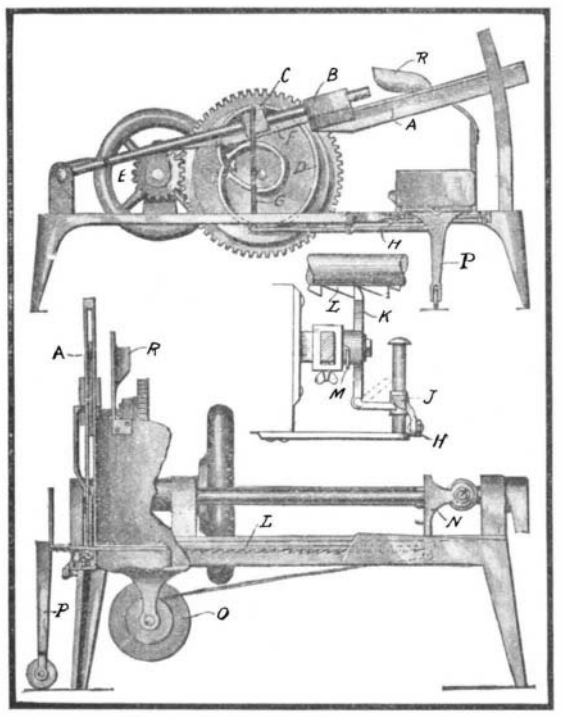
The conjurer really swallows the sugars, in the first case—to his detriment, be it said. But he has, concealed in his mouth, several little capsules, each containing one of the sugars of the same color as that eaten. These are concealed within the mouth, between the teeth and the cheek, in various positions around the mouth—in a certain order, which the conjurer knows. Now, when any color is called for, the conjurer simply works the capsule containing this color to the front of his mouth, breaks it with his teeth, and immediately blows out the sand. This is repeated until all the capsules are broken in turn.

A little trick sometimes shown is known as the "diving duck." A bowl is shown empty, and then filled with water. In the water is now placed a small artificial duck. Upon command of the fakir, it dives quite naturally of its own accord; then it rises to the surface, and this is repeated several times. At the conclusion of the performance, the duck is taken out and handed to the spectators, who can examine it. No amount of examination will reveal the secret, however. It is this: A fine silk thread passes up through a small hole in the bottom of the bowl, and when the conjurer places the duck in the water, he manages to slip this thread around the duck. Now, he has only to pull this thread, when bowl is filled, and the duck dives. At the end of the performance, the thread is broken, and the duck may be examined as much as desired.

Patent Department

MACHINE FOR SLICING BREAD.

Although the machine which is here illustrated has been specially designed for slicing bread, it may be used with equally good results for slicing vegetables



A BREAD-SLICING MACHINE.

or any other articles capable of being cut with a knife. The special advantages of this machine are that it is light-running, compact, and of simple construction, and that a draw-cutting action is continuously imparted to the knife while the machine is in operation. The action of the knife and the feed of the material to the knife is automatic, and capable of adjustment for cutting thick, medium, or thin slices.

In the accompanying engraving the knife is indicated at *A*. It is attached to a block *B*, mounted to slide on a bar which normally holds the knife in its upper position under tension of a spring. This bar is connected to a cam roller *C*, which engages a cam rib *D* formed on the face of a gear wheel. Meshing with this gear wheel is a pinion *E*, to which is affixed a crank. A rod *F* connects this crank with the carrier *B*. When the gears are turned, the crank causes the knife *A* to be drawn back and forth, while at the same time the cam *D* alternately depresses and releases the knife. The bread to be sliced is supported on a carriage, which is automatically fed under the knife after each stroke. The feed mechanism is operated by means of a connecting rod *G*, attached to the lever *H*, which rises and falls with the bar on which the carrier *B* is mounted. When the rod *G* is raised, the bar *J* is lowered, and coming in contact with a pawl on the latch *K*, serves to swing the latter out of engagement with the ratchet teeth *L* formed on a bar under the bread carriage. The latter is then drawn forward by a coil spring *O*, operating a drum on which is wound a cord that connects with the rear end of the bread carriage. As soon as the latch *K* disengages the rack, the bar *J* slipping past the pawl releases the latch, and permits it to return under action of the spring *M* and engage the next tooth *L*. There are three sets of bars formed with ratchet teeth and the teeth are of different lengths on the several bars so that by adjusting the latch to engage one or another set of teeth the slices will be cut correspondingly thick or thin. The bread is held in the carriage by means of prongs formed on the rear wall, as indicated at *N*. The forward end of the carrriage is supported on a roller *P*. While the bread is being sliced, the operator may hold it down on the carriage by pressing down on the spring plate *R*. The inventor of this slicing machine is Mr. Edward A. Seaburg, of Seattle, Wash.

SOME RECENT TOYS AND TRICKS.

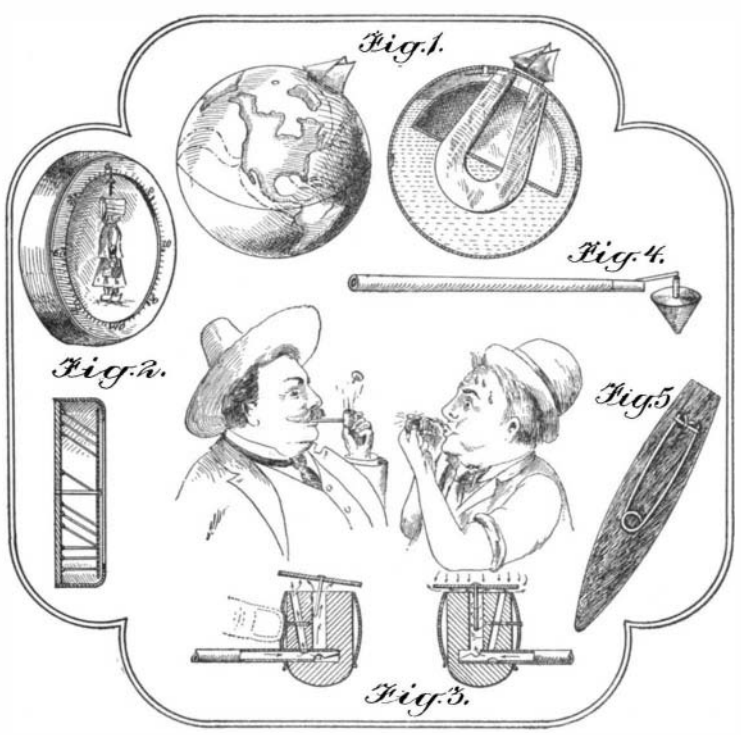
He learns best who is taught unawares, and hence when a toy illustrates a scientific principle, or serves as a means of instruction, its value is more than doubled. Most of the toys in the following collection are of the educational class. The boy who owns a geographical globe, such as illustrated in Fig. 1, will doubtless develop a great interest in geography and navigation. The globe is partly filled with water or oil, which supports a float. The latter carries a magnet with the poles touching the inner surface of the globe. On the face of the globe a small ship with an iron keel is placed. As the globe is turned about, the magnet is moved to different positions, and the ship, owing to magnetic attraction, is made to sail to different ports. The principal lines of navigation are marked on the globe, and the game is to move the globe so that the ship will sail along these lines.

The device shown in Fig. 2 is called a "sound motor." It is adapted to be placed on the sounding board of a piano or other musical instrument, and when the instrument is played, the dial of the motor slowly rotates. The secret is shown in the cross-sectional view. The dial is pivoted on a central pin, and its periphery is supported by a series of bristles. The sound serves to vibrate the dial, and the intermittent flexing of the bristles causes the dial to turn on its axis.

In Fig. 3 we have a trick pipe, based on a well-known scientific principle. The exhibitor produces a pipe, places a paper disk over the bowl, and putting the stem in his mouth, blows the disk off with a sudden puff. Then he hands the pipe to a friend, asking him to do likewise. Strange to say, the latter is unable to blow off the disk, and even when the pipe is turned over while he is blowing, the disk hugs the mouth of the bowl. The reason is that the air which is blown through the pipe, on reaching the disk spreads out in all directions in a thin sheet, and produces a partial vacuum under the disk, so that the latter is held to the pipe by the pressure on its outer surface. The opening in the bowl is of much smaller diameter than usual, and a central pin on the disk serves to hold the latter in proper position on the pipe. The pipe is provided with a secret passage in the wall of the bowl, and there is a hole in the stem, which may be turned to register with this passage. The exhibitor turns the stem so that when he blows, the air passes partly through the bowl and partly through this passage. Hence the disk is tipped up on one side, so that the partial vacuum is not formed, and the paper may readily be blown off. As a precaution, the secret passage is provided with a valve connected to a flexible sleeve placed on the outside of the bowl. The exhibitor, by flexing this sleeve, opens the valve. The advantage of this is that in case he should forget to turn the stem when handing the pipe to his friend, the valve will still prevent the latter from performing the trick.

Few people realize that a steel ball will freely roll around the end of a magnet pole, from which it may be pulled off only with the greatest difficulty. The property is utilized in Fig. 4. It consists of a blowpipe fitted with a magnetic needle at one end. A light top provided with a steel stem is suspended from the needle by magnetic attraction. On blowing through the pipe, the top is spun by the stream of air issuing from the pipe, but the rotation of the top does not cause the spindle to fall off the needle.

The trick cigar illustrated in Fig. 5 can hardly be classed as an educational toy. However, it is such a vast improvement upon the ordinary trick cigars, which explode when they are partly consumed, that we have included it in this list. Its operation hardly needs any explanation. A stiff wire spring with the ends tied together under tension is placed in the cigar. As the cigar is smoked the string is burned, and the spring flies open, much to the astonishment of the smoker, and yet without endangering his eyesight.



SOME RECENT TOYS AND TRICKS.