

## HOW TO MAKE A TELEPHONE.

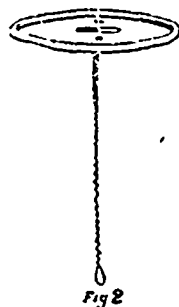
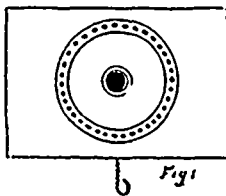
BY R. B. WILLIAMS.

The telephone which I am about to describe has been a source of great pleasure to me, and as I think it too good to keep, I will give my readers the plans for its construction.

The materials you will require are two pine boards ten by thirteen inches, and half an inch thick, two fresh beef bladders, one box of four-ounce tacks, two large gutta-percha overcoat buttons, some strips of thin leather one-quarter of an inch wide, and lastly, some flexible wire. The best wire for the purpose is that used in book-binding machines, but any soft flexible wire will do.

Prepare the bladders first by blowing them up tightly, and leaving them so for a day or two until they are thoroughly stretched, but do not let them become dry and hard. While the bladders are stretching you can obtain the other materials. To begin, take one of the boards, and having brought it to the required dimensions, draw a circle in its centre eight inches in diameter, which saw out, taking care to keep on the line, for if the opening is not round and even, the instrument will not work satisfactorily.

Next take one of the bladders, and after cutting the neck off, cut away about one-third of it from end to end; then soak it in warm water, but not too hot, until it becomes white and soft; after which stretch it loosely but evenly over the opening, letting the inside of the bladder be on top, and tack temporarily all around one inch from the edge of the opening.



Now test it by pushing the centre with your finger: if it stretches smoothly and without wrinkles, it will do; but if it does not, you must change its position until it does so. Next take a strip of the leather and tack completely around the edge of the opening, putting the tacks closely together, and taking care to keep the bladder stretch evenly while doing so. When you have it tacked properly, take your knife and cut away that part of the bladder on the outside strip. (Fig. 1.)

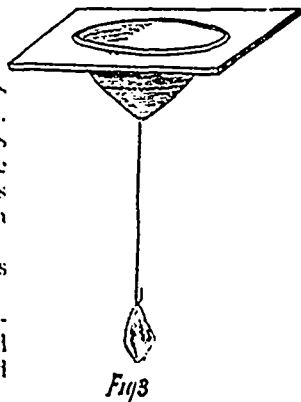
This done, break off three feet of the wire, and after attaching it to one of the buttons (Fig. 2), pass the free end through the centre of the bladder until the button rests on its surface. Then fasten a weight of eight pounds to the end of the wire, and set in the sun two hours or more until thoroughly dry. (Fig. 3.)

Proceed with the other materials in a like manner, and when you have both drums well dried, place one at each end of the line, and connect the button wires with the main wire by loops, and stretch it as tightly as possible. The course of the main wire should be as straight as possible, and with few sharp angles.

Wherever a support is needed, make a loop.

To call up, strike the button with a lead-pencil, and the one called will respond in a like manner.

This is no toy, but a good serviceable telephone, and will work from five yards to five miles.



## AN UNWELCOME POST-BOY.

Don Miguel de Alencar was an old Brazilian grandee, and a well-known figure in the society of Rio de Janeiro. He was the most dignified old fellow you can imagine, and wouldn't have quickened his pace beyond what he thought becoming if a wild bull had been after him. It is said that when a robber got into his study one night as he was sitting there alone, old Miguel sternly ordered him to take his hat off, and asked him how he had presumed to come into the presence of any gentleman uninvited.

Regularly every day he used to drive into the city from his house, pass into certain streets, find his way to the shore, and always go home by the same route. His carriage, with its four brown horses, its painted panels, and its blinds drawn down to keep the common people from staring at him, was well-known all over the town. But the sight of the whole turn-out was the negro coachman, Blas, who was quite as solemn and dignified as his master. As he sat there on the box, in all the splendour of his gold-laced crimson livery, never going faster than a walk, he looked as grand as the Archbishop, and felt every bit as great a man, you may be sure.

On a certain day it is the custom to burn wickerwork figures of some great historical criminal, and you can't go through a single street of the town without finding one of those things lying in the roadway or hanging from a roof, crackling and blazing away like a firework. The servants of a large house had just hung an image out of the third-floor window, dressed up in rags, and all covered with little bells, and were just going to set it on fire when Don Miguel's carriage came along, at its usual solemn pace. It was just passing under the window where the dummy hung, when the cord broke, and down came the scare-crow, rags, bells, and all, with a ting-a-ring-ring fit to wake the dead, right astride of the near leader's back. Without the bells it was enough to frighten any horse alive. Away tore the four beasts round the corner, knocking over fruit-stalls, upsetting old women, smashing trucks and wheelbarrows, while the shouts and cries of the people, the rattle of hoofs and wheels, and the jingling of the dummy's bells, made an uproar worse than Bedlam itself. Poor Blas, with his black face perfectly livid, and his eyes starting out of his head, tugged fruitlessly at the reins, till there came a tremendous lurch, and he went flying, head foremost, through a shop window. But the dummy kept his seat like a post-boy, the wickerwork having caught somehow in the harness, and went bobbing up and down ringing his bells with all his might, as if enjoying the fun.

By this time the top of the carriage had got torn off, and the whole town could see poor Don Miguel's fat figure jammed down between the two seats, like a big baby in a small cradle, with his head up on one side; and his feet up on the other. But just as all seemed over with him, a hay-cart crossed the road, and the horses, unable to stop, ran their heads right into the hay, and came to a stand-still.

The old gentleman was soon released, but he was not to be consoled by any attention. The idea of having made himself a show for the whole city, and the sight of the dreadful scare-crow that had ridden postillion for him, were more than he could bear. When they pulled him out, he just sat down on a stone and wept for half an hour from pure chagrin. The offending horses were sold next morning, and so long as he lived, Don Miguel never drove again.