

POPULAR · SCIENCE & MECHANICS SUPPLEMENT

WIRELESS IN AUSTRALIA

THE Australian Commonwealth government has taken hold of the wireless telegraphy business and made a national matter of it. There are numerous outfits in the several States, of course, but the big thing is being done by the Commonwealth government. In suitable locations stations are being constructed to link the extreme east with the extreme west, and great masts raise their heads into what was short space till the secret of air wave carriage was discovered. One of these installations has just been made on the brow of a hill a few miles back from the sea front. The district is known as Penrith Hills, and lies a short distance to the north of Sydney, New South Wales. It is orchard land, and the journey to the wireless station is made

through delightful country, orange groves and cherry and plum orchards appearing on either hand. The station is on elevated land, and the huge mast, which runs up some four hundred feet is visible for miles around.

Viewed from a distance the great column appears as a piece of towering lattice work. Close inspection reveals the immensity



AN OPERATIC PERFORMANCE IN THE SHADOW OF THE SPHINX.

The photo shows the performance of Verdi's *Aida*, which took place recently under the shadow of this Sphinx, near Giza, a few miles from Cairo. A large number of people were present at this unusual performance.



A GLANCE UPWARD.

THE BASE OF THE WIRELESS
MAST.

and strength of its proportions. There are several buildings, including the operators' cottages, engine room and storage battery, an operating room, and other structures. The station occupies nearly forty acres, nearly all of which has been cleared of the timber which has flourished undisturbed for so long.

The mainmast is the central feature of the installation. It is made of steel and comprises three legs, each built up of two pieces of angle-steel in sections of twenty-seven feet, the whole being braced with a framework of steel. At the base the legs turn inward to a pivot, which is stepped in a glass insulator embedded in a foundation of concrete. At the point where the legs converge they will be supported by three six-foot pillars of the same material. Inside the framework a ladder runs the length of the mast.

By way of precaution against its being blown down, now that the builders have gone to the trouble of putting it up, the mainmast is stayed with six lengths of linked steel rod. These stays are one and a half inch in diameter, and are each secured in a stout bed, or anchorage, of which there are three, composed of two hundred and fifty tons of concrete. Three of these stays lead from the mast at a height of 320 feet, and the other three from a height of 160 feet. Ten smaller masts are of wood, built up in sections of a square



HUGE NEW WIRELESS STATION NEAR SYDNEY, AUSTRALIA.

frame work. The height varies on account of the rise and fall of the ground. When in position four of them will be 150 feet, and the remainder one hundred feet high, each.

From the summit of the great main mast to the smaller masts an immense aerial will spread like the framework of an open umbrella, with a span of nearly 2,000 feet from the base of the main mast.



WAITING FOR A NICKEL
IN THE SLOT.

PAY-AS-YOU-ENTER PARK BENCHES

IN order to assure those persons having the necessary nickel a bench in parks and public resorts, a coin controlled settee has been devised to be occupied by dropping a nickel in the slot. As the first illustration shows, the bench is adjusted at such an angle that one cannot sit on it until a lock is released by the coin. Then it can be pushed into an upright position,

forming a comfortable rocking seat for two persons. When the occupants leave it, the settee automatically resumes its first position and locks until released by another nickel. A canopy is provided for those benches that are set in the sunny parts of the park or on the beaches.

It is not the intention of the inventor to replace the free seats but to place his device in operation along with the regular allowance of benches,

as even on days when the parks are not crowded, there are many people who prefer to have a comfortable, shaded bench for "just two" at the slight cost of five cents.

The first of these odd benches have been placed in the San Jose, Cal., parks, where their novelty has attracted much favorable comment.



THE NICKEL PAID.

SILO UNDER GROUND

THE silo which is all above ground is a very familiar sight to those living on Middle West farms, but a silo that is wholly within the ground is unusual. A farmer living in southwestern Nebraska finding that he would be short on feed through the cold season decided to dig a silo.

The excavation was sixteen feet in diameter and twenty feet deep. This hole was filled with corn stalks from twenty-five acres of poor corn.

When the farmer began to feed ensilage to his stock he found it had spoiled to a depth of but six inches, although there had been no covering over the plant. Instead of the fodder, while in a dry form, lasting but two months, he now found that his feed would stretch over seven months and keep the stock in better condition than they had been in several years past.

Falling rain has little effect upon the ensilage but water that runs in spells ruin. Horses, cattle, hogs and chickens thrive upon this green feed.

This underground silo cost seventy dollars to dig, cement up and fill—less than a third the cost of an above ground silo.

BODY MARVELS

SOMEONE has taken the trouble to compile figures concerning the respiratory and circulatory systems. The full capacity of the lungs is about 320 cubic inches. About two-thirds of a pint of air is inhaled and exhaled at each breath. The weight of the heart is from 8 to 12 ounces. It beats 100,000 times in 24 hours. A man breathes 18 times a minute and 3,000 cubic feet or about 375 hogheads of air an hour.