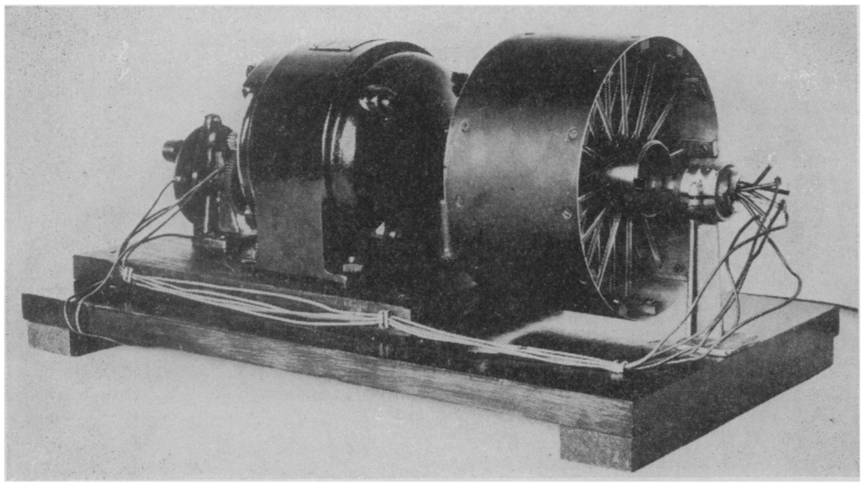
Rods of Quartz for Radio Movies

Radio-Photography



JENKINS HOME RADIO MOVIE RECEIVER with the cover removed. The neon tube is in the center of the drum to the right. The rods of quartz carry its light to the top of the drum. On the cover is a mirror to make the image appear vertical, and a lens to magnify it, so that it seems about six inches square

Rods of quartz, through which light is transmitted like water through a hose, make possible the latest method of television—the radio movies demonstrated by C. Francis Jenkins, Washington inventor. As a result he is able to substitute a seven-inch drum for the two or three foot disc that previous methods of television have employed.

If light is allowed to shine into one end of a rod of fused quartz, it is reflected back and forth as it goes through it. Practically none is lost by leaking out the side, but all emerges through the end.

In the Jenkins home radio movie receiver, which may soon become a common attachment to radio sets, the current from the set, instead of operating the magnets of a loud speaker, causes a glow of a small metal plate sealed in a bulb containing the rare gas neon. Such a neon lamp glows immediately, as soon as the current is turned on, and is extinguished as soon as the current is turned off. The ordinary filament of the incandescent lamp continues to glow for an instant after the current stops, and so cannot respond to the rapid changes required by the television receiver.

In previous methods of seeing by radio, either of movies, or actual objects, the person viewing the received image gazed directly at the surface of a neon lamp. A revolving disc with a spiral row of holes obscured all but the proper spot of the neon glower. These spots of light, seen in rapid succession, were built up into the complete picture seen by the observer, just as the successive pictures of a movie film shown in a theater merge together into a continuous view on the screen.

Mr. Jenkins employs a cylindrical glass tube, in which there is a row of small neon glowers. This is at the center of a revolving drum, seven inches in diameter. Around the surface of the drum is a helical row of small holes. Extending from these holes, inside the drum, to an inner cylinder, almost in contact with the neon lamp, there are a number of the quartz rods, about two inches long, somewhat resembling the wire spokes of a bicycle wheel. (*Turn to next page*)

Household Chemical Has Aliases

Chemistry

Tri-sodium phosphate, one of the most valuable household chemicals ever discovered, apparently has no press agent and so far has escaped the notice of madam housekeeper. If she uses it, at least she does not know it. A survey of the wholesale chemical market, however, shows large quantities of the phosphate going out quietly, soon to emerge under a variety of fancy labels, with various colors and at enhanced prices. Much of this material is adulterated with cheap washing soda.

As a washing powder tri-sodium phosphate has proven to be a remarkable preparation. Its degree of alkalinity is distinctly higher than that of common washing soda, but not high enough to cause damage to dry paint.

The main alkaline strength of the phosphate lies in reserve, due to the unique chemical constitution of the substance. It is the reserve feature which makes it equal in many situations to caustic soda as far as dirt riddance is concerned. For steam-cleaning of automobile chassis; cleansing of greasy hands of mechanics and of furniture subject to much public handling; riddance of scum on lavatories and tubs, and for water-softening the phosphate is proving very effective.

In view of the current American wholesale price of four to six cents per pound (according to location) it is thought that tri-sodium phosphate should find a place on the grocer's shelf under its own name. It is not patented or subject to private control. It is not poisonous or offensive, and requires no chemical skill in handling. There seems to be no good reason why it should appear solely under meaningless trade-marks any more than salt or sugar.

Science News-Letter, May 19, 1928

Edison to Receive Medal

General Science

Thomas Edison will receive the gold medal for science of the Society of Arts and Sciences, New York, on May 24, it has been announced. Walter Russel, president of the society, will preside at a banquet at the Hotel Astor, at which the medal will be bestowed, while Dr. Edwin E. Slosson, director of Science Service, will be toastmaster.

Science News-Letter, May 19, 1928

Movies Now Retouched

Inventions

Motion picture film can now be retouched, like studio portrait negatives, with the aid of an apparatus just patented in France by L. H. Burel and H. Debain. Instead of looking directly at the negative, as in ordinary retouching, however, the image of the film is projected to a screen, along with the image of the end of the retouching pencil, so that tiny details can be treated.

Science News-Letter, May 19, 1928

Radio Movies—*Continued*

An ordinary electric motor, which is arranged to run in synchronism with the motor at the transmitter, spins the drum around at a speed of 3,600 revolutions a minute. A revolving contact, or commutator, attached to it serves to connect the separate glowers in the neon tube, and so enables the current from the radio receiver to light them at the proper time. The light from the glowing neon tube is carried by the quartz rods out to the round surface of the revolving drum, where the picture is actually seen. Thus a small neon lamp is made to serve the purpose of a much larger one, one as large as the drum itself. The drum turns on a horizontal axis, so a slant mirror, and a large magnifying lens, enables the persons viewing it to see the picture vertically, as on a movie screen.

In his demonstration Mr. Jenkins used a motion picture film as the original object, and this was reproduced both by wire, in another part of his laboratory, and by radio, in his home some miles distant. However, he claims, the apparatus is just as applicable to the broadcasting of views of actual persons or objects. The received picture is a silhouette, and does not show gradations of light and shade. This, he thinks, is not a serious objection, but it is one which he expects to overcome. "At present," he says, "the apparatus is in the 'crystal set' stage." Future developments, he promises, will bring it to the perfection of present day radio or movies.

Science News-Letter, May 19, 1928

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The Cost of Indifference

Medicine

WILLIAM GEORGE LEE, in *Childbirth* (University of Chicago Press):

Childbirth, experienced as it is by every inhabitant of the globe, is a phenomenon surely of fundamental and primary importance to mankind, and a consideration of it should have a prominent place in any rational attempt to improve human conditions by education; and yet, because it antedates the development in the individual of all mental processes, it has received surprisingly scant attention. Even those who have had immediate charge of its conduct and care too often belong definitely to that immense group who only passively accept, but never originate or inaugurate change. The paradox is seen, therefore, that the most eventful moments that any of us ever pass through — moments fraught with the most far-reaching consequences—receive only slight notice because it is not realized what a high spiritual and material toll is directly and indirectly paid by the whole public through the disability or death of babies who have already during fetal life imposed many hours of restricted activity or emotional strain upon their parents. Most of us know of particular individuals, either babe or mother, so damaged by the act of birth that they always remain among those seriously handicapped people who constitute a large and permanent burden upon the community. It is not realized surely how much of this damage, which is occurring daily, might be prevented if greater advantage were taken of methods and knowledge already at hand.

Science News-Letter, May 19, 1928

British Radio

Radio

ROBERT A. MILLIKAN, in *The Atlantic Monthly:*

In a comfortable English home out in the country in North England a small group is seated, sipping after-dinner coffee, enjoying conversation, and interrupting it now and then to listen to something particularly fine that is coming in over the radio. The technique of the reproduction is superb, but no more so than that with which we are familiar in our American homes, for the whole broadcasting idea, as well as the main part of its technical development, is American in its origins. But the programme that is on the air in England is incomparably superior to anything to be heard here, for the English Government has taken over completely the control of the radio. It collects from each owner of a receiving set twelve shillings a year, and then, with the large funds thus obtained—for there are many radio fans in England as in America—it provides the radio-land public of England with the largest return in education and in entertainment for eight mills a night ever provided, I suspect, anywhere in the history of the world. For it employs only high-class speakers, musicians and entertainers of all sorts, so that the whole British nation is now being given educational advantages of the finest possible sort through the radio, at less than a cent a family a night, collected only from those who wish to take advantage of them.

Science News-Letter, May 19, 1928

Antarctic Climate

Exploration

PROFESSOR MECKING in *The Geography of the Polar Regions* (American Geographical Society):

The ban of the ice is hardly broken even in summer. It is noteworthy that the mean temperature of the warmest month is practically always below freezing. Whereas in the Arctic only two small areas, one at the pole and the other in Greenland, are enclosed by the O° C. isotherm of the midsummer month, here the whole great continent is so enclosed and the various sledge journeys to the pole revealed individual temperatures of -50° even at the time of the year when insolation is continuous. Thus a continental climate with cold summers is the most characteristic attribute. There is very little thaw; no flowers blossom in the landscape; there is no sound of rushing torrents; there are no swarms of insects nor of bees and butterflies, as is the case even in northernmost Greenland. Otto Nordenskjöld even found that the snow cover increased in summer. Only where volcanic sand and dust fall on the ice does thawing become of any consequence. The main reason for the cold of the summer is the glacier ice, which down to a depth of one meter proved to be at least 3° colder in summer than a soil layer of the same depth. Solar radiation is, however, intense—so much so that it can burn the skin. "The weather sides of the ponies were quite dry, but their lee sides were frosted with congealed sweat" (Shackleton).

Science News-Letter, May 19, 1928