

To Answer Mars Signals with Three Terrific Sky-Shocks

Inventor Humphrey Is Planning for a Three-Dot "Flash" With "Skyscraper" Shells to Be Fired Toward the Planet From a Giant Gun.

Wireless experts the world over are watching with extreme interest the preparations now being made by Alexander Foster Humphrey, the Pittsburgh inventor, to communicate with the planet Mars. Ever since Marconi, Lodge, Schiaparelli, Lowell and other distinguished scientists expressed the conviction that Mars has been projecting signals and messages which we, on this earth, have been at a loss to interpret or even acknowledge, various costly and gigantic engineering schemes have been advanced to transmit an answering signal across the 35,000,000 miles of space which separates that planet from this earth.

Compared with some of these proposals, inventor Humphrey's plan is simplicity itself. It involves the construction of a cannon 377 feet in length and firing five projectiles all contained in one shell. The first shell explodes at an altitude of 100 miles with sufficient force to send the remaining four shells forward with renewed velocity. The last three shells, Mr. Humphrey estimates, will explode at an altitude of 3000 miles with three distinct vibratory flashes which, if observable by the Martians, as intended, may be interpreted by them as the earth's answer to the mysterious three-dot signal received here last January, presumably from Mars itself.

BY HARRY STANLEY.

IN THE early part of last January commercial wireless stations at New York, London, San Francisco, Hongkong and elsewhere reported the receipt of certain strange, undecipherable signals. The only character at all recognizable was a three-dot unit resembling the Morse letter S. Comparison of the records at the two stations, thousands of miles apart, revealed that the signals were heard simultaneously and with equal power, and that the messages, if such they were, had a regularity of form which dismissed the natural explanation that the signals were of a static or meteoric origin. The queer impulses were characterized by a wave-length of 100,000 meters, which is extraordinary, and the stations received them only because they happened to be tuned to that length at the time. Ordinarily for commercial work the length of wave does not exceed 24,000 meters.

As everyone recalls, the receipt of the signals set the scientific world agog. Guglielmo Marconi, the wireless wizard, gave it as his opinion that the signals originated at some point outside the earth and might signify efforts on the part of the inhabitants of Mars or Venus to communicate with us. Others held that wireless messages could not pass over the vast space of 35,000,000 miles between earth and Mars, and that there could be no life on any other planet but this. Many, however, held that there might be life on Venus if not on Mars. Dr. Charles G. Abbot, director of the astrophysical observatory of the Smithsonian Institution, is a supporter of the latter theory. He has stated that Mars' temperature is as much as 100 degrees lower than that of the earth, making it difficult to believe that creatures of the carbon-and-water constituency could exist there. On the other hand, he says, the temperature of Venus is about 130 degrees, making its proximity to the sun, and since this temperature is tempered by a perpetual cloak of clouds which overhangs Venus, he believes human habitation possible on that planet.

Meanwhile, scientific workers want to answer at once the strange signals—or at least to send some test signals of their own. For this purpose a number of interesting suggestions have been put forth. Among them are plans to install immense wireless apparatus with which to flash return signals. Others would make use of the light-ray theory by concentrating a large number of powerful searchlights, blinding them in one huge glare. Sir Oliver Lodge, the British scientist, proposes a geometrical figure of gigantic size to be laid upon the surface of the Sahara desert, made of a dead black or light-absorbent material. Geometry, he argues, is a science of the universe and such a figure would be both visible and intelligible to the Martians, and would perhaps induce them to attempt an answering signal.

"My plan," says Mr. Humphrey of Pittsburgh, "would be to pass a signal shell beyond the earth-screening atmosphere and far up into the pure ether, where the shell would emit three separate balls or masses of a highly illuminating and combustible matter which would burn to a predetermined time or a period of, say, 10 to 15 minutes' duration. These widely separate balls or rays would correspond to the three-dot unit received by the Marconi wireless stations."

"The plan would be to fire these

shells once every 24 hours and at a certain time each day for a period of three days; then omit for three days and so on for a month or so. The strict regularity of these signals would no doubt attract attention upon Mars and they would attribute it to human agency. Also the three-dot unit would correspond to one of their own or Venus' wireless signals. To accomplish this purpose I have planned a monster gun or cannon of special design, and a shell or projectile of special design to meet requirements. The shell may be called a vacuum bottle, multiple shell.

"The gun would be 377 feet long and would weigh perhaps 45,000 tons, without mountings. In the drawing I have made it has a bore of 5 feet 10 inches and throws a shell of feet 5 inches in length. The main charge of smokeless powder is 10 tons, with four auxiliary charges of one ton each, or, in all, 14 tons for one discharge. "Ordnance makers know that the length of a gun is automatically set by the strength of the tube of steel. If the cannon is too long its own weight would depress its muzzle and tend to make it curve. Therefore, it is obvious that to have its muzzle held up, adequate supports of some kind must be provided. This I have done by means of huge girders.

"Another peculiarity of the cannon I have designed is that there is no perceptible atmospheric pressure upon the nose of the shell as it passes through the cannon's bore. This atmospheric pressure is always reckoned with in other ordnance. Artillerymen know that when a shell passes through the bore of a gun it compresses the air before it and therefore creates a great amount of resistance to its passage.

"In my cannon a state of vacuum exists in the bore. After the explosive charges and shell are placed in position a cap is inserted in the muzzle of the gun which closes the bore. The air is then exhausted by means of tubing and the power house plant. The gun is now ready to be discharged. If the cap were placed in the muzzle and the air were not exhausted, the gun would burst. The cap contains a safety plug also. As the shell passes through the muzzle it easily ruptures the vacuum cap and passes on.

"To keep up a tremendous pressure on the shell's base as it passes through the bore, there are five distinct explosions in its rear. When the primary charge of 10 tons is ignited

it causes the shell to move forward and as the shell does this each of the four auxiliary one-ton charges is ignited in succession by the flame or burning gas in the rear of the shell.

"The shell acts as a cork in front of the burning gases and as it passes beyond the auxiliary charges the burning gases explode all four charges. The projectile therefore receives five distinct impulses, the vacuum in the bore could be termed another, making in all six impulses instead of one, as usual in the ordinary piece of ordnance.

"Now, in reference to the shell itself. Its velocity would have become so great that as it passed through the atmosphere it would perhaps become overheated and the secondary and signal shells would prematurely explode. To overcome this condition the shell as a whole is covered by an outer casing, with a vacuum between it and the shell's actual body. By the time the shell has passed above the atmospheric belt, 100 miles or so away, the first shell explodes and projects upward the secondary and signal shells. The outer casing then is no longer necessary. Later on, at a predetermined time, the secondary shell explodes and again the signal shell is projected farther upward. At its extreme height the signal shell ejects the three balls of combustible material, spreading them out so they may be distinctly seen in the light-ray interpretation of the wireless three-dot unit.

Launching the Projectile.
"A projectile discharged from a gun, if given enough impetus, would pass up through the earth's atmosphere and far into the ether; but no human being would be able to travel in it for the simple reason that a certain condition exists which would make this impossible. When the gun is fired what artillerymen call the 'set-back' occurs in the projectile or shell, and this applies to any loose body in the interior, which would be hurled with terrific force to the base and remain there until the shell or projectile had come to rest. At that instant the body would be hurled forward with the same terrific force toward the nose of the shell. If it were really to happen that a man-carrying projectile or shell should land upon Mars and the Martians were to open the shell, the condition of the human body within would be so gruesome that the Martians would conceive us to be of such an odd shape and construction as to belong to the jellyfish

order. This is not a pleasant thought, but it is based on facts."

Science is so deeply interested and takes the subject so seriously that the French Academy of Science has offered a prize of \$20,000 for the most suitable means of making a sign to a heavenly body and receiving an answer.

What the exact cost of a gun such as he describes would be the inventor does not know. It probably would

cost \$500,000 to build the first one. So delicate would its mechanism be that only the finest machining could be permitted on it. And the projectiles alone, weighing an unbelievable number of tons, would have to be placed in the gun by means of hoisting machinery. Mr. Humphrey has made allowances for use of a huge electric crane to do this work.

Mr. Humphrey's idea is that there are plenty of men of wealth in the United States who would freely aid a valid attempt to promote the researches of science in its investiga-

IRISH, BOLSHEVIC, HIGH COST AND OTHER TOPICS CROWD WOMEN QUESTION INTO OBLIVION

War Gave Fair Sex Magnificent Opportunity and They Used It—Feminist Advocate of Sex Equality Was Out to Fight Against Judgment, Not Opinion—Position Believed Established.

BY GEORGE A. BIRMINGHAM.

THE woman question seems to have disappeared. Of all the problems which annoyed us—and made life interesting—before the war it is the only one that seems to have got itself settled. The others, after a brief rest like trees in winter, have blossomed out again into fresh and vigorous life. Ireland is with us still. There was, indeed, one brief period when the Irish question ceased to trouble, when Ireland was, according to some statesmen, "the one bright spot." But that did not last long. The Irish problem had become acute again long before the armistice was signed. It is just as insoluble and just as pressing now as ever it was. The labor question did not trouble us much during the war. We knew it was there and we knew it was not settled. The moment the war was over it came up again. Like a giant, not soothed but charged with fresh vigor by its brief, uneasy sleep.

But the woman question has not come up again. It was pressing enough, heaven knows, before the war, quite as pressing as any other problem. We all remember the activities of the militant suffragettes; the burnings, the breakings and hunger-striking which used to form a regular part of our daily news. Many of us recollect still more vividly the way in which ladies, otherwise charming, used to tease us in private life, insisting on dragging in their feminist theories on all sorts of unsuitable occasions. The woman question was in some ways worse than any other. Ireland threatened civil war. Labor muttered about class war. But the sex war which

some women seemed to have in mind was far more vexatious to the ordinary man. It was always possible to keep clear of enthusiastic Irishmen and earnest social reformers. No one could make certain of escaping the ardently feminist woman. She caught us everywhere, at the dinner table, in railway carriages, in church. And there was no way of knowing beforehand whether any particular woman was devoted to the cause or not. The most unexpected women developed the enthusiasm, and not even a profession of conversion saved us from being bored. I have known men who were whole-hearted feminists who would have cheerfully given women two or three votes each, who even made public speeches in support of the cause. But they did not escape. Friends or enemies of the sex, we all suffered; though the friends, I think, suffered most.

Now these sufferings are remembered only as a bad dream. We are harassed no longer. It is interesting to try to find out why. What balm was there in the war which soothed and healed this irritating sore? Of course women, or some of them, have got votes. But that can scarcely be the reason why they have ceased fussing. No other people ever stopped agitating merely because they got the thing they were agitating for. Agitating is like walking along a strange road. There is always a corner a little further on, and we feel that we cannot possibly stop until we have seen what lies beyond it. Besides, the cleverest and most far-seeing of suffragists always knew and said that the mere vote was a small matter, little more than a sym-

bol; that they wanted much more. It is not at all likely that these ladies have settled down quietly because they have got something so unimportant as the vote. And they have only half got the vote. For they are by no means on an equality with men in this respect.

Cynical people used sometimes to say that women only agitated for votes because they had not got husbands and children. But this was never in the least true. Marriage was plainly no cure for feminism, and even that old-fashioned Shakespearean remedy, "a brace of lusty twins," did not mitigate the disease of suffragism. If indeed it was a disease. Also, if want of husbands were the cause of sex agitation, it would be more violent now. There are certainly fewer possible husbands since the war and more women must go without them. What ever else the war did it did not increase the number of marriageable men. Are we not perpetually reminded in our daily papers that there are in these islands a million or more "superfluous" women? There ought, therefore, according to the theory of the cynics, to be a million or more ardent or dangerous agitators working up a sex war. But the fact is that women have stopped agitating altogether.

Nor can we suppose that the chorus of praise which greeted women's war activities melted the hearts and, like the soft answer in the book of Proverbs, turned away the wrath of the militant suffragette. The fact seems to be that at the back of the old suffragette agitation for the vote lay a feeling that women were regarded by men as inferior creatures, useful, under proper control, for certain inferior kinds of work, but valuable chiefly as playthings or ministers of comfort. It cannot be pleasant to any one, it certainly was not pleasant to self-respecting women, to feel that they must be either dolls or tea cosies, or both. The thing was the more acutely galling because there was a great deal of truth in it. That is very much what women were. The feminist advocate of sex equality was out not only to fight against an opinion, but a judgment of women. She wanted to alter the fact on which the judgment was based.

The war gave them a magnificent opportunity and they used it. Whether men now respect women more than they did is an arguable question. I think they do. But it is quite possible, in spite of all the praise of women's war work, that men think of them very much as they did before. But women certainly respect themselves more. And that is the essential thing. They have proved beyond all shadow of doubt that they can do serious work of the kind previously done by men and can do it well. They have established their position as fellow-workers with men.

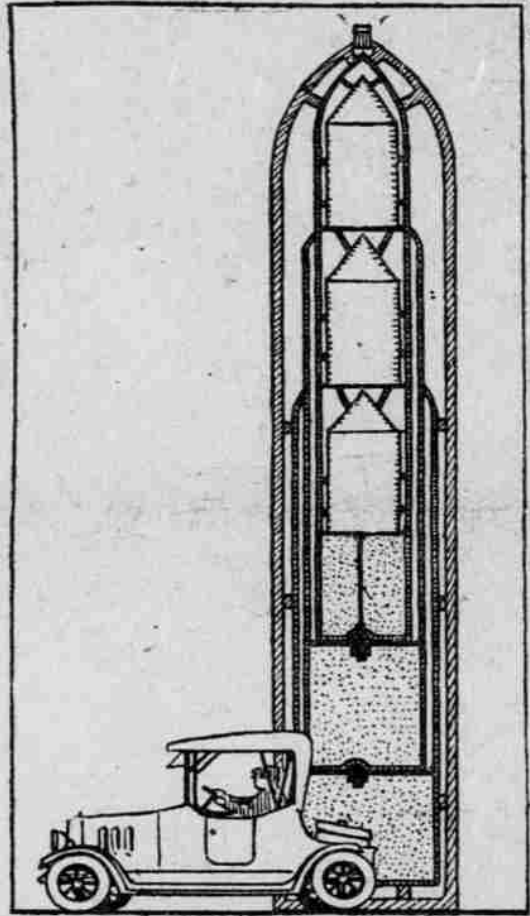
Just the proper pace to receive the full impulse of each at the right second. By means of the vacuum tube he makes a 377-foot tube equal that of the ordinary 900 or 1000-foot one. And his plan to return the three-dot signal with its counterpart in the light-rays is being favorably received by other scientists of the country.

Chinese Labor Employed.
PEKING.—As a practical relief measure for the famine district, the Chinese government has elaborated a plan to construct highways from Peking to Honan, to Shantung and to various parts of Chihli province for the purpose of giving employment to the sufferers in those districts. It is estimated that part of the work to be started as soon as possible will give employment to 600,000 to 1,000,000 men. The necessary funds are to be raised by supplementary collections of salt tax and increases in post and telegraph rates.

Joker Is Startled.
Life.
Contributor—"I have here an original joke which I—"
Editor—"My dear man, you don't look that old."

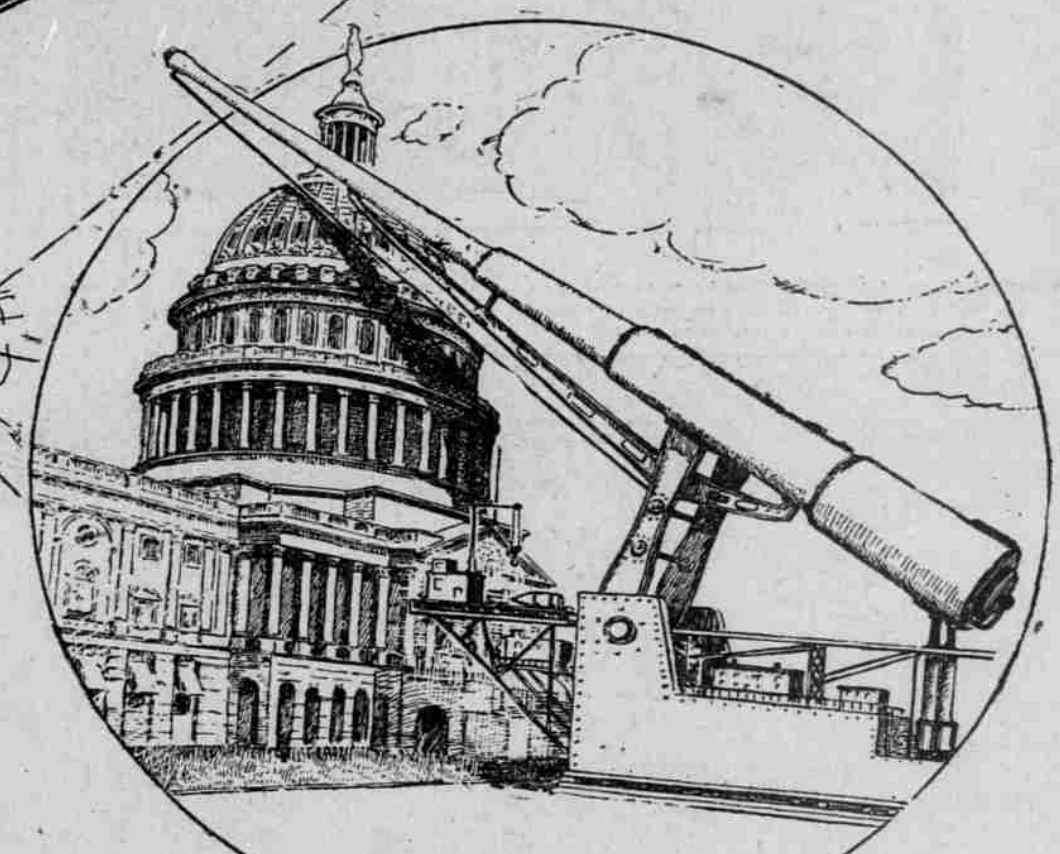
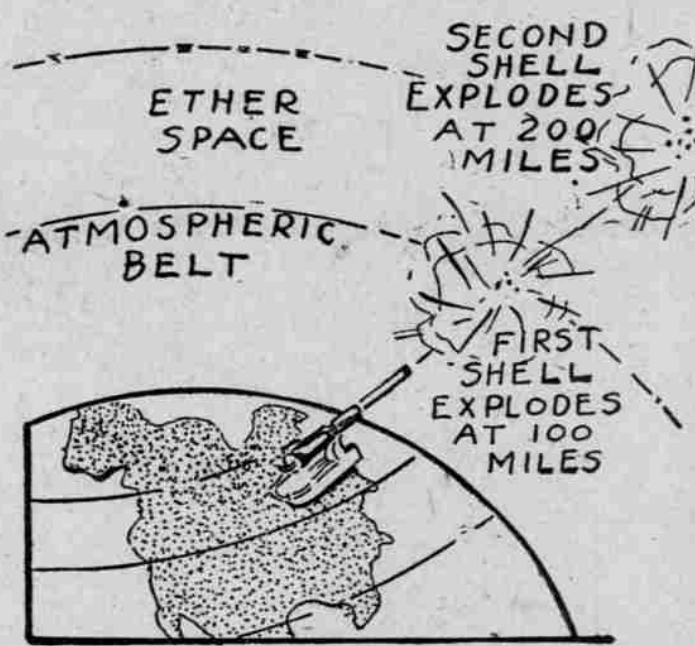


Alexander Foster Humphrey, whose stolen plans are said to have enabled Germany to build super-submarines for war service.



Sectional view of projectile showing how it compares in size with an automobile, and also the arrangement of inner shells.

The Planet Mars, from drawing made by Professor Schiaparelli, showing the polar caps and Martian canals.



The 377-foot gun designed by inventor Humphrey would overtop the dome of the capitol at Washington, D. C.