CHAPTER TWO

THE DISINTEGRATOR

This enthusiasm would have had but little justification had Mr. Edison done nothing more than invent a machine which could navigate the atmosphere and the regions of interplanetary space.

He had, however, and this fact was generally known, although the details had not yet leaked out--invented also machines of war intended to meet the utmost that the Martians could do for either offence or defence in the struggle which was now about to ensue.

Acting upon the hint which had been conveyed from various investigations in the domain of physics, and concentrating upon the problem all those unmatched powers of intellect which distinguished him, the great inventor had succeeded in producing a little implement which one could carry in his hand, but which was more powerful than any battleship that ever floated. The details of its mechanism could not be easily explained, without the use of tedious technicalities and the employment of terms, diagrams and mathematical statements, all of which would lie outside the scope of this narrative. But the principle of the thing was simple enough. It was upon the great scientific doctrine, which we have since seen so completely and brilliantly developed, of the law of harmonic vibrations, extending from atoms and molecules at one end of

the series up to the worlds and suns at the other end, that Mr. Edison based his invention.

Every kind of substance has its own vibratory rhythm. That of iron differs from that of pine wood. The atoms of gold do not vibrate in the same time or through the same range as those of lead, and so on for all known substances, and all the chemical elements. So, on a larger scale, every massive body has its period of vibration. A great suspension bridge vibrates, under the impulse of forces that are applied to it, in long periods. No company of soldiers ever crosses such a bridge without breaking step. If they tramped together, and were followed by other companies keeping the same time with their feet, after a while the vibrations of the bridge would become so great and destructive that it would fall in pieces. So any structure, if its vibration rate is known, could easily be destroyed by a force applied to it in such a way that it should simply increase the swing of those vibrations up to the point of destruction.

Now Mr. Edison had been able to ascertain the vibratory swing of many well known substances, and to produce, by means of the instrument which he had contrived, pulsations in the ether which were completely under his control, and which could be made long or short, quick or slow, at his will. He could run through the whole gamut from the slow vibrations of sound in air up to the four hundred and twenty-five millions of millions of vibrations per second of the ultra red rays.

Having obtained an instrument of such power, it only remained to concentrate its energy upon a given object in order that the atoms composing that object should be set into violent undulation, sufficient to burst it asunder and to scatter its molecules broadcast. This the inventor effected by the simplest means in the world--simply a parabolic reflector by which the destructive waves could be sent like a beam of light, but invisible, in any direction and focused upon any desired point.

I had the good fortune to be present when this powerful engine of destruction was submitted to its first test. We had gone upon the roof of Mr. Edison's laboratory and the inventor held the little instrument, with its attached mirror, in his hand. We looked about for some object on which to try its powers. On a bare limb of a tree not far away, for it was late in fall, sat a disconsolate crow.

"Good," said Mr. Edison, "that will do." He touched a button at the side of the instrument and a soft, whirring noise was heard.

"Feathers," said Mr. Edison, "have a vibration period of three hundred and eighty-six million per second."

He adjusted the index as he spoke. Then, through a sighting tube, he aimed at the bird.

"Now watch," he said.

Another soft whirr in the instrument, a momentary flash of light close around it, and, behold, the crow had turned from black to white!

"Its feathers are gone," said the inventor; "they have been dissipated into their constituent atoms. Now, we will finish the crow."

Instantly there was another adjustment of the index, another outshooting of vibratory force, a rapid up and down motion of the index to include a certain range of vibrations, and the crow itself was gone--vanished in empty space! There was the bare twig on which a moment before it had stood. Behind, in the sky, was the white cloud against which its black form had been sharply outlined, but there was no more crow.

"That looks bad for the Martians, doesn't it?" said the Wizard. "I have ascertained the vibration rate of all the materials of which their war engines, whose remains we have collected together, are composed. They can be shattered into nothingness in the fraction of a second. Even if the vibration period were not known, it could quickly be hit upon by simply running through the gamut."

"Hurrah!" cried one of the onlookers. "We have met the Martians and they are ours."

Such in brief was the first of the contrivances which Mr. Edison invented for the approaching war with Mars.

And these facts had become widely known. Additional experiments had completed the demonstration of the inventor's ability, with the aid of his wonderful instrument, to destroy any given object, or any part of an object, provided that that part differed in its atomic constitution, and consequently in its vibratory period, from the other parts.

A most impressive public exhibit of the powers of the little disintegrator was given amid the ruins of New York. On lower Broadway a part of the walls of one of the gigantic buildings, which had been destroyed by the Martians, impended in such a manner that it threatened at any moment to fall upon the heads of the passersby. The Fire Department did not dare touch it. To blow it up seemed a dangerous expedient, because already new buildings had been erected in its neighborhood, and their safety would be imperilled by the flying fragments. The fact happened to come to my knowledge.

"Here is an opportunity," I said to Mr. Edison, "to try the powers of your machine on a large scale."

"Capital," he instantly replied. "I shall go at once."

For the work now in hand it was necessary to employ a battery of disintegrators, since the field of destruction covered by each was comparatively limited. All of the impending portions of the wall must be destroyed at once and together, for otherwise the danger would rather be

accentuated rather than annihilated. The disintegrators were placed upon the roof of a neighboring building, so adjusted that their fields of destruction overlapped one another upon the wall. Their indexes were all set to correspond with the vibration period of the peculiar kind of brick of which the wall consisted. Then the energy was turned on, and a shout of wonder arose from the multitudes which had assembled at a safe distance to witness the experiment.

The wall did not fall; it did not break asunder; no fragments shot this way and that and high in the air; there was no explosion; no shock or noise disturbed the still atmosphere--only a soft whirr, that seemed to pervade everything and to tingle in the nerves of the spectators; and--what had been was not! The wall was gone! But high above and all around the place where it had hung over the street with its threat of death there appeared, swiftly billowing outward in every direction, a faint bluish cloud. It was the scattered atoms of the destroyed wall.

And now the cry "On to Mars!" was heard on all sides. But for such an enterprise funds were needed--millions upon millions. Yet some of the fairest and richest portions of the earth had been impoverished by the frightful ravages of those enemies who had dropped down upon them from the skies. Still, the money must be had. The salvation of the planet, as everyone was now convinced, depended upon the successful negotiation of a gigantic war fund, in comparison with which all the expenditures in all of the wars that had been waged by the nations for 2,000 years would be insignificant. The electrical ships and the vibration engines must be

constructed by scores and thousands. Only Mr. Edison's immense resources and unrivaled equipment had enabled him to make the models whose powers had been so satisfactorily shown. But to multiply these upon a war scale was not only beyond the resources of any individual--hardly a nation on the globe in the period of its greatest prosperity could have undertaken such a work. All the nations, then, must now conjoin. They must unite their resources, and if necessary, exhaust all their hoards, in order to raise the needed sum.

Negotiations were at once begun. The United States naturally took the lead, and their leadership was never for a moment questioned abroad.

Washington was selected as the place of meeting for a great congress of nations. Washington, luckily, had been one of the places which had not been touched by the Martians. But if Washington had been a city composed of hotels alone, and every hotel so great as to be a little city in itself, it would have been utterly insufficient for the accommodation of the innumerable throngs which now flocked to the banks of the Potomac. But when was American enterprise unequal to a crisis? The necessary hotels, lodging-houses and restaurants were constructed with astounding rapidity. One could see the city growing and expanding day by day and week after week. It flowed over Georgetown Heights; it leaped the Potomac; it spread east and west, south and north; square mile after square mile of territory was buried under the advancing buildings, until the gigantic city, which had thus grown up like a mushroom in a night, was fully capable of accommodating all its expected guests.

At first it had been intended that the heads of the various governments should in person attend this universal congress, but as the enterprise went on, as the enthusiasm spread, as the necessity for haste became more apparent through the warning notes which were constantly sounded from the observatories where the astronomers were nightly beholding new evidences of threatening preparations in Mars, the kings and queens of the old world felt that they could not remain at home; that their proper place was at the new focus and center of the whole world--the city of Washington. Without concerted action, without interchange of suggestion, this impulse seemed to seize all the old world monarchs at once. Suddenly cablegrams flashed to the government at Washington, announcing that Queen Victoria, the Emperor William, the Czar Nicholas, Alphonso of Spain, with his mother, Maria Christina; the old emperor Francis Joseph and the empress Elizabeth, of Austria; King Oscar and Queen Sophia, of Sweden and Norway; King Humbert and Queen Margherita, of Italy; King George and Queen Olga, of Greece; Abdul Hamid, of Turkey; Tsait'ien, Emperor of China; Mutsuhito, the Japanese Mikado, with his beautiful Princess Haruko; the President of France, the President of Switzerland, the First Syndic of the little republic of Andorra, perched on the crest of the Pyrenees, and the heads of all the Central and South American republics, were coming to Washington to take part in the deliberations, which, it was felt, were to settle the fate of earth and Mars.

One day, after this announcement had been received, and the additional news had come that nearly all the visiting monarchs had set out,

attended by brilliant suites and convoyed by fleets of warships, for their destination, some coming across the Atlantic to the port of New York, others across the Pacific to San Francisco, Mr. Edison said to me:

"This will be a fine spectacle. Would you like to watch it?"

"Certainly," I replied.

The Ship of Space was immediately at our disposal. I think I have not yet mentioned the fact that the inventor's control over the electrical generator carried in the car was so perfect that by varying the potential or changing the polarity he could cause it slowly or swiftly, as might be desired, to approach or recede from any object. The only practical difficulty was presented when the polarity of the electrical charge upon an object in the neighborhood of the car was unknown to those in the car, and happened to be opposite to that of the charge to which the car, at that particular moment was bearing. In such a case, of course, the car would fly toward the object, whatever it might be, like a pithball or a feather, attracted to the knob of an electrical machine. In this way, considerable danger was occasionally encountered, and a few accidents could not be avoided. Fortunately, however, such cases were rare. It was only now and then that, owing to some local cause, electrical polarities unknown to or unexpected by the navigators, endangered the safety of the car. As I shall have occasion to relate however, in the course of the narrative, this danger became more acute and assumed at times a most formidable phase, when we had ventured

outside the sphere of the earth and were moving through the unexplored regions beyond.

On this occasion, having embarked, we rose rapidly to a height of some thousands of feet and directed our course over the Atlantic. When half-way to Ireland, we beheld, in the distance, steaming westward, the smoke of several fleets. As we drew nearer a marvelous spectacle unfolded itself to our eyes. From the northeast, their great guns flashing in the sunlight and their huge funnels belching black volumes that rested like thunder clouds upon the sea, came the mighty warships of England, with her meteor flag streaming red in the breeze, while the royal insignia, indicating the presence of the ruler of the British Empire, was conspicuously displayed upon the flagship of the squadron.

Following a course more directly westward there appeared, under another black cloud of smoke, the hulls and guns and burgeons of another great fleet, carrying the tri-color of France, and bearing in its midst the head of the magnificent republic of western Europe.

Further south, beating up against the northerly winds came a third fleet with the gold and red of Spain fluttering from its masthead. This, too, was carrying its King westward, where now, indeed, the star of empire had taken its way.

Rising a little higher, so as to extend our horizon, we saw coming down the English channel, behind the British fleet, the black ships of

Russia. Side by side, or following one another's lead, these war fleets were on a peaceful voyage that belied their threatening appearance. There had been no thought of danger to or from the forts and ports of rival nations which they had passed. There was no enmity, and no fear between them when the throats of their ponderous guns yawned at one another across the waves. They were now, in spirit, all one fleet, having one object, bearing against one enemy, ready to defend but one country, and that country was the entire earth.

It was some time before we caught sight of the emperor William's fleet. It seems that the Kaiser, although at first consenting to the arrangement by which Washington had been selected as the assembling place for the nations, afterwards objected to it.

"I ought to do this thing myself," he had said. "My glorious ancestors would never have consented to allow these upstart Republicans to lead in a warlike enterprise of this kind. What would my grandfather have said to it? I suspect that it is some scheme aimed at the divine right of kings."

But the good sense of the German people would not suffer their ruler to place them in a position so false and so untenable. And swept along by their enthusiasm the Kaiser had at last consented to embark upon his flagship at Kiel, and now he was following the other fleets on their great mission to the Western Continent.

Why did they bring their warships when their intentions were peaceable, do you ask? Well, it was partly the effect of ancient habit, and partly due to the fact that such multitudes of officials and members of ruling families wished to embark for Washington that the ordinary means of ocean communications would have been utterly inadequate to convey them.

After we had feasted our eyes on this strange sight, Mr. Edison suddenly exclaimed: "Now let us see the fellows from the rising sun."

The car was immediately directed toward the west. We rapidly approached the American coast, and as we sailed over the Allegheny Mountains and the broad plains of the Ohio and the Mississippi, we saw crawling beneath us from west, south and north, an endless succession of railway trains bearing their multitudes on toward Washington. With marvelous speed we rushed westward, rising high to skim over the snow-topped peaks of the Rocky Mountains and then the glittering rim of the Pacific was before us. Half-way between the American Coast and Hawaii we met the fleets coming from China and Japan. Side by side they were plowing the main, having forgotten, or laid aside, all the animosities of their former wars.

I well remember how my heart was stirred at this impressive exhibition of the boundless influence which my country had come to exercise over all the people of the world, and I turned to look at the man to whose genius this uprising of the earth was due. But Mr. Edison, after his wont, appeared totally unconscious of the fact that he was personally

responsible for what was going on. His mind, seemingly, was entirely absorbed in considering problems, the solution of which might be essential to our success in the terrific struggle which was soon to begin.

"Well, have you seen enough?" he asked. "Then let us go back to Washington."

As we speeded back across the continent we beheld beneath us again the burdened express trains rushing toward the Atlantic, and hundreds of thousands of upturned eyes watched our swift progress, and volleys of cheers reached our ears, for everyone knew that this was Edison's electrical warship, on which the hope of the nation, and the hopes of all the nations, depended. These scenes were repeated again and again until the car hovered over the still expanding capitol on the Potomac, where the unceasing ring of hammers rose to the clouds.