HIRAM STEVENS MAXIM.

A GREAT CAREER.

BY A. KINNEAR.

We get, instinctively, something of Gambetta in the personality of Sir Hiram Stevens Maxim The facial resemblance is there, coupled also with the subtle and commanding forces of great ardour, splendid conceptions, eloquence, wit, and that charm of manner which seems to be the leavening of the comforting consciousness of success.

Sir Hiram Maxim might say, with the old classic "I came, I saw, I conquered." He has the juggler's mastery of mechanics, to which he has added a mastery over the hidden forces of the air and the applied science of the laboratory.

One of the best uses to which that twentieth-century badge of the chivalry of invention—a knighthood—has been put was when King Edward commanded the inventor of the Maxim gun to rise Sir Hiram Maxim. One may say this at the risk even of being accused of rodomontade. Yet Sir Hiram is a plain man, with plain ways. He does not climb to fame to keep himself in evidence by such titular hall-marks as Doctor or Professor. He styles himself Hiram Maxim, C.E., M.E., and it is good enough for him to be known as a member of the firm of Vickers, Sons and Maxim, mechanical and electrical engineers.

Maxim fell out as a young man with the light of his youth. The classical "dip" and its improved contemporary—the oil lamp—were displeasing to his senses of fitness of progress with the advance of time. He said, "Let there be light," and there was light, and to this we may say that we owe all that has followed, up to the high explosives and automatic firearms.

Sir Hiram Maxim is the Edison of Autonoma. He is something more even than that, because, in a sense, he anticipated Edison, or at least made it possible for Mr. Edison to make his own discovery workable.

That is sometimes the irony of invention The man who made what we now know as the hansom cab had the principle of the "rickshaw" carriage, but drawn by a horse, the driver being where we now see him. But when a man mounted to his "dicky" he raised the horse by his own weight. The contrivance failed, until a stranger, seeing the plight of the inventor, struck the centre of gravity, patented it, and carried off the spoils of the gondola of London.

But we anticipate too much Sir Hiram Maxim is a product of the land of wooden nutmegs. He was born at Tangersville, in the State of Maine, U S A on February 5th, 1840, so that he is nearly two years the senior of His Majesty King Edward He comes of an early Puritan stock, who founded Plymouth Conn. Cy., Mass Such education as existed in 1840 in the State of Maine young Maxim of course obtained. But his thoughts were less on the three R's than on the "making of things"

His bent was in a mechanical direction, and odd were the strange contrivances of his brain, his penknife, and a ball of twine. Tools were the joy of his youth, and hours stolen from the Sabbath conventicle and the damnatory homilies of the pulpit yielded gently to the cunning mind and the deft fingers of the young truant.

He taught himself science, and thus became equipped for the trade and mystery of a worker in iron. From the large machine works of his uncle, Levi Stevens, he gravitated to Boston, where he became skilled in the manufacture of gas machines and philosophical instruments. At the age of twenty-eight we find him in New York City as draughtsman in a large shipbuilding establishment. He here constructed and brought out a gas locomotive head light which attracted attention and was soon in general use.

Thus encouraged, he attacked domestic luminants by perfecting a system of automatic gas machines for lighting private houses. Thus further encouraged, he turned his attention to the resources of electricity, and, in 1877, was, with a small knot of similar students, amongst the first to make practicable dynamo electric machines and electric lamps.

All this still in the United States, from which Mr. Maxim had not yet travelled. He is declared to have been the first to make incandescent lamp carbons by the process known as flashing, heating them in an atmosphere of hydrocarbon vapours Of this useful, if not remarkable and initiative, invention Mr. Maxim lost the monopoly.

But in 1881 he made his *debut* in the Old World by exhibiting in Paris the first electrical current regulator ever invented for reducing the atmosphere to the utility of the electric lamp. Paris was delighted, excited, charmed. Here was a genius born unto a world which knew how to reward ingenuity. That has ever been the wit and spirit of France and Frenchmen, and Mr. Maxim for this invention was made a Chevalier of the Legion of Honour by President Grevy.

Confident that he was on the right course, that electricity was to be the true handmaiden of the new light, Mr Maxim applied himself with fresh energy to the subjugation of this mysterious force of mechanical power To every old moon wasted he had a new invention to which electricity was the slave.

In 1883 he applied his mind to a new sphere of application, and brought out his automatic gun. "Kill quickly and kill largely" was Mr Maxim's principle, and, after traversing the entanglements of many conceptions, we received the Maxim gun.

Here was something that would snuff out the "needle gun" and the Chassepot, which, though famous as quick- firers, were not automatic English artillerists went wild with astonishment at the product of a gun which, in the language of the time, "performed automatically by its beautiful little self all the functions of loading and firing" If the expert in the street had hitherto run with the artillery to see the guns rattle by, he now applied all his store of wonder for the mysterious looking brass tube which loaded itself, and maintained almost indefinitely a chain service of car-

SIR HIRAM MAXIM

nage. It was a Jingo age, and the military thirst at the time for gore was not slaked but deepened by this wonderful slayer.

Sir H Maxim made his first automatic gun in 1885 in Hatton-garden. It is a most romantic story, not to be told in the space of a single article. Hatton garden is commonly associated with Jews and diamonds Perhaps the American inventor was at home here because, at least, he came of the family of Israel But no one walking through Hatton-garden, a region of peace, would believe that here was perfected in a cellar a weapon which has revolutionised warfare, and but for which British columns in action would have been in many an additional tight corner

The invention was a 'nine days wonder,' to quote a story of the time The Prince of Wales, now King Edward, was amongst the sceptics who at least could not understand how a gun could "load and fire itself without anyone touching it" It is right, however, to say that the Prince was the least of the sceptics, because he had made it a rule—now more than ever a governing principle of life—never to limit the possibilities of a man He is himself a potentiality, with a firm faith in the potentialities of others

Of course the War Office looked with doubt upon the gun, and certainly would not secure it for the British Army. That is a little way that Pall Mall has. But Sir Hiram, speaking of his invention, well described it's terrible energy in the words "Six hundred rounds per minute from a single barrel is rather too deadly a fire to stand up against." In fact, referring to an experiment of the Maxim fire in the Matabele campaign, which was a private company affair, "the slaughter was so great," remarks Sir Hiram, with almost pardonable cheerfulness, "that the matter was seriously discussed in Parliament as to whether the English were justified in slaughtering the natives in such numbers."

We also owe to this facile inventor the best brand of smokeless field-powder, compounded from gun-cotton of the highest degree of nitration—commonly called tri-nitrocellulose—and nitro-glycerine, with a small percentage of a suitable oil. From smokeless powders Sir Hiram turned to the skies, and attacked the impalpable air as the disciple of aerial navigation. Thus we obtained the aeroplane.*

Sir Hiram is the inventor also of melinite, and has conducted critical experiments in modified forms of pycric acid and other high explosives of the lyddite type.

Sir Hiram once visited the editor of a London paper; he chatted, he tossed in his hand three or four black cubes that looked like lead pencils. Incidentally he alluded to the fact that these were explosives which he carried in his waistcoat. "Are they dangerous?" asked the editor wistfully. "Yes, oh yes! But not so dangerous as this" replied Sir Hiram as he took from another pocket something about the size of a filbert nut "Now that," he continued "if I threw that at your fender it would just blow up Tudor street"

The editor smiled bravely but the interview speedily terminated

Sir Hiram's life is a record of triumphs not unattended with danger He tells remarkable, many dramatic, some tragic, stories of the pursuit of the practical and practicable powers derived from the fusion of high explosives.

It is said of the German chemist that he can compound out of the laboratory any wine called for. The grape is the last thing wanted or even desired He would indeed be seriously handicapped if he found himself or his studies within a hundred miles of a bunch of grapes whilst engaged in the manufacture of a high grade Champagne or Moselle.

Sir Hiram Maxim has learnt all that is to be known of chemistry, and his search after more has resulted in his having been blown up many times. He, however, always succeeded in falling upon his feet

The wonder is that he did not invent the motor-car. He cannot be said, however, to have precisely struck at the aerial locomotive. Sir Hiram brings joy daily to crowds of the rising generation, and their elders at the Crystal Palace where his mechanical air cars are at work

Sir Hiram is a man of the world, who prefers to live in the unbridled ease of a hotel, and at "Bailey's" he is to be found when not concerned with his business interests. The Society of Arts, the Society of Mechanical Engineers, and the London Chamber of Commerce, in addition to Paris, have done him honour. France bid hard for his preference, but he gravitated to the hub of mechanical genius—London.

If any twenty-million millionaires there be who would, for fun, not for the love of God, precipitate this planet into smithereens, by instantaneous action, Sir Hiram Maxim would doubtless produce the means, if he declined to provide the will to use it.

Let Englishmen, therefore, honour the old scientist who has made the old country his home.

Sir Hiram will tell you that he has had only two holydays in his life. The first was when his father gave him ten cents for fireworks to celebrate the fourth of July The second was when he took Lady Maxim on their honeymoon. "But that," he gently observed, "cost more than ten cents."

The Future of the Milking Machine.

What promises to revolutionise the motive power of milking machines has lately been thoroughly and practically worked out by Mr. G. Hutchinson, of Kapuni (says the "Waimate Witness") That it is practical is shown by the fact that about twenty orders for the motor have already been received at £50 each. And this is the total expense, apart from the milking machine, no vacuum pump or engine of any sort being required And when once installed the machine costs absolutely nothing to run and is unbreakable. Like all really good inventions, it is the very essence of simplicity. A very moderate quantity of water is required to work it, no great head or fall of water being necessary. It is simply the water and not the fall that does the work.

*Mr. Kinnear here departs from his accustomed accuracy.—Maxim did not invent the aeroplane: he only failed to make it fly. (Ed. P.)