

## SIR HENRY BESSEMER.

On Wednesday, October 6th, a special meeting of the Court of Common Council was held at the Guildhall, London, under the presidency of the Lord Mayor, to present the freedom of the city to Sir Henry Bessemer, F.R.S., M. Inst. C.E. The Lady Mayoress and other ladies were present, besides a large number of the general public and members of the Court of Common Council. The master, past-master, and other members of the Turners' Company, of which Sir Henry is a member, occupied seats on the dais. The Town Clerk read the following resolution:—

"That the freedom of the city, in a suitable gold casket, be presented to Sir Henry Bessemer, F.R.S., M.I.C.E., in recognition of his valuable discoveries, which have so largely benefited the iron industries of this country, and of his scientific attainments, which are well known and appreciated throughout the world."

The gold casket presented, specially designed and manufactured, illustrates the process of the conversion from the raw material to the application of the steel. It is of solid English design, surmounted by a finely-modeled figure of Commerce, standing between a stack of pig-iron and the converter. She commends the invention on account of the impetus that cheap steel gives commercial enterprise. The overflowing cornucopia at the base signifies this success. On each side of the rounded cover are vignettes, in *repoussé* work, of a L. & N. W. Railway locomotive, entirely constructed of this steel, and standing on its steel rails, and of a steel-clad ship. The two curved ends contain the enamelled arms of the city, with the dragons modeled in high relief. On the centre panel is the medal which Sir Henry Bessemer gives annually to the Iron and Steel Institute. The inscription is on the reverse. Shields for the Bessemer arms and monogram complete the whole, which rests on a platform of Bessemer steel.

The following is the reply of Sir Henry Bessemer to the address of the City Chamberlain; cheers and cries of "hear, hear!" being freely interspersed:—

"My Lord Mayor, Mr. Chamberlain, and Gentlemen: It would have been impossible for me to have listened to the very kind and complimentary address of the distinguished Chamberlain, and at the same time to have received at the hands of this honorable Court the high honor that has just been conferred upon me, without a deep feeling of gratitude; for I am well aware that the honorary freedom of this, the greatest and wealthiest city in the world, has for generations been esteemed a fitting gift for princes, warriors, and statesmen, who have ever felt ennobled by the presentation. But this honorable Court, appreciating the importance of trade and commerce, has, on the present occasion, elected to pay this distinguished honor to one who can only claim to have devoted himself with some success to the study and improvement of one of the staple industries of this great commercial nation. Such a deviation from the beaten path, while it clearly shows that the intelligent appreciation of this honorable Court, adds, in my estimation, greatly, and I may say immeasurably, to the value of the honor thus exceptionally conferred, and also to the great pleasure it has given me. In the address of your honorable Chamberlain, some mention has been made of the advantages resulting from the employment of steel for railway and other construction purposes, and perhaps it would not be out of place if I were to explain to you as briefly as possible how it is that steel can be obtained in the short space of fifteen or twenty minutes, instead of requiring from two to three weeks, as formerly, and why it now costs only 6*l.* or 7*l.* per ton, instead of 50*l.* or 60*l.*" After a technical description of the mode of manufacturing steel under the old system, the speaker continued: "Under the process which I have had the honor of inaugurating, we dispense with every one of the intermediate processes formerly employed. We have no smelting of pig-iron; we have no puddling; we have no converting furnaces. You will readily understand that with a process that is so rapid, and which is so entirely devoid of the use of expensive fuel and of all those various skilled manipulations which were necessary at every stage of the old process, the cost of manufacture is now so exceedingly small as it has proved to be. I have lately seen in the large works of Sir John Brown 20 tons of crude cast-iron converted into 20 tons of cast-steel in the small space of 23 minutes. The value of that material, taken at 4*l.* per ton, would be 80*l.* at its commencement; its value, after conversion, at that particular time, could not be less than 100*l.* per ton, or 2,000*l.* altogether. That is, of course, an exceptional case; but it is a fact. At the time when my invention was introduced into Sheffield, the entire make of steel was

51,000 tons in the year. Last year, we had 830,000 tons of Bessemer steel, being sixteen times what was the produce twenty years ago. It is anticipated that on the continent of Europe, this year's make will reach 2,000,000 tons, and our own 1,000,000. The value of these 3,000,000 together may be taken at 10*l.* per ton, or 30,000,000*l.* sterling; and if this metal had been made by the old process, it would have been impossible to have brought it into the market under 50*l.* a ton, or 150,000,000*l.* sterling. Gentlemen, I have again to thank you for the great kindness with which you have received me, and for the honor which you have conferred upon me this day."

In the evening, the Lord Mayor and Lady Mayoress entertained Sir Henry and Lady Bessemer and about 300 other guests at the Mansion House. The following is what Sir Henry Bessemer said:—

"When I reflect, gentlemen, on the events of the day, my mind is instinctively drawn to the contrast between my own lot and that of the great pioneers of old, whose labor and talent laid the foundation, and whose energy and perseverance reared the mighty fabric of the British iron trade. If we look back to the days of Queen Elizabeth, we find that Sussex was the chief seat of the iron manufacture of this country. Numerous small furnaces were scattered over Sussex, Kent, and Surrey, and, although the production at that period did not exceed 17,000 tons annually, the vast forests that previously existed had been cut down to supply fuel for these numerous furnaces. So great, indeed, was the destruction of timber that the government, in alarm lest the supply of oak for ship-building should become exhausted, passed the most stringent laws for its protection. No tree of over one foot in diameter was allowed to be cut down under severe penalties, and no timber of any kind whatever was allowed to be cut within twenty miles of the city of London. These and other restrictions greatly discouraged the manufacture and reduced the production of iron. While at this low ebb, a most important invention was made in 1640 by Dud Dudley, of Tipton, by means of which iron was successfully smelted with mineral fuel. It is impossible to over-estimate the advantages which the world has gained by that important discovery, but poor Dudley did not rest on a bed of roses. The whole trade rose up against him as their natural enemy, who they said was bringing ruin and destruction on their already declining industry. His works were pulled down by a riotous mob. His patents were evaded, while sums of money were expended in attempts to secure his rights, and he was at last cast into prison for debt. How many of the hundreds of intelligent and persevering men, to whose inventions we owe the highly-developed state of the iron manufacture, have shared with Dudley the misfortunes of being an inventor, while comparatively few have reaped a rich reward for the services they have rendered to their country! It has been my lot to come on the scene when the iron trade of this country had reached almost its highest attainable extent of production, and, as a system, a degree of perfection in its various branches which seemed to leave no room for any but the most trifling ameliorations. But this is just the condition when all great changes in the mechanical arts take place. Thus, it was not until the high-roads of this country and our mail-coach system had by degrees attained the highest state of perfection, and had become the admiration and envy of every other nation, that the iron road and the steam horse came and swept it away forever. So it has been with the hand-printing press, which was gradually and steadily improved, from the days of Caxton to those of Applegarth and Cowper, during which time it became so perfect an instrument that nothing more could be expected from it. Then came the steam printing-machine, with its type cylinder and miles of endless paper, before which the printing press quietly disappeared. It is ever thus with the advancing tide of scientific research and mechanical improvement, which inaugurates new systems as the old ones ripen and die out. It has been my good fortune to assist in one of these great and quiet revolutions, which is as surely inaugurating the age of steel, as that of iron succeeded to the age of bronze. I can only but congratulate myself, my Lord Mayor and gentlemen, on having in better times than poor Dud Dudley, when the intelligent sympathies of every citizen are with and not against those who devote their lives to scientific studies and the advancement of those manufactures to which this country is so greatly indebted for its wealth and position. My Lord Mayor and fellow-citizens, I cannot sit down without again thanking you most warmly and cordially for the great honor which has been conferred upon me by you. I have received so high a mark of your confidence and esteem to-day that it is to me the greatest pleasure which has ever fallen to my lot."