

the undoubted success of the undertaking should entitle the managing committee to the hearty thanks of the union.

It can be safely predicted, with the experience gained this year, should a picnic be held on any future occasion all noticeable defects of this season would be remedied and every detail perfected, so that their guests would be royally entertained to the full measure of their expectations. Without being invidious in personal reference, too much praise cannot be awarded to President Albert H. Brown for his contribution in making the entertainment a success.

HISTORY OF MACHINE TYPE CASTING.

To get a full appreciation of the revolution wrought by the invention of machine type casting, it should ever be borne in mind that all printing types, from Gutenberg in 1440 downward to the year 1827 — nearly four hundred years — were cast by the pouring process or hand or spoon dipping, at the laborious rate of from twelve to fourteen per minute. This process was followed by all the typefounders throughout Europe and by Messrs. Binny & Ronaldson of Philadelphia. It is true the ingenious Mr. Binny had made several improvements, but these related to the still used hand molds.

In the year 1804 Mr. Elihu White, of Hartford, Connecticut, in conjunction with William Wing and David Isham of that place (all only theoretically conversant with the casting and manufacture of printing type), conceived the idea of a machine capable of casting whole alphabets at a single dash. It was a plausible conception. The result, however, too plainly showed their ignorance. They had totally overlooked the laws of unequal expansion of metals. As it was, a patent was issued to William Wing, of Hartford, Connecticut, August 28, 1805. Mr. White took the model to England and in exchange received much practical insight into the ordinary methods of type casting, and brought back with him a few punches and matrices, with which rude materials he commenced type founding in Hartford in the usual way, but removed to New York City in 1808. This feeling of improvement lay long suppressed with Mr. White until it was revived by Mr. William M. Johnson, a resident of Long Island, in 1831. The outcome of all of Mr. White's costly experiments, amounting in the aggregate to \$50,000, was the complex machine of Messrs. Mann and Sturdevant. This machine was certainly encouraging in speed, accuracy, and labor-saving; but alas! there was an odium of porosity or instability which its uniform sharpness of face, lighter weight and accuracy could scarce overcome. True, this light weight was urged upon printers as so much in its favor — twenty-five per cent — *vide* Mr. White's specimens of those days, 1832-1839. But it was slow of sale. Whatever merit any machine may have, Elihu White was the first to substitute the force pump for the sluggish natural gravity used by all the followers of Gutenberg.

It was a reckless resolve in the writer to wrench himself as it were from a prospective lucrative partnership with Messrs. George Bruce & Co., in the year 1834, to construct, if possible, a more perfect type casting machine than had yet been produced by his predecessors. But such was his prevailing weakness, and for the next five years he resided on his father's farm on the banks of the Delaware river, in New Jersey.

The year 1840 found him in New York City boldly attempting to establish a foundry operated by his machinery. But he found that however superior his type might be, the fixed odium and unreliability of machine-cast type was a powerful obstacle against him also; and with the exception of his old schoolmates, the brothers James and John Harper, he almost stood alone. Timid printers listened, shook their heads and no doubt inwardly pitied him.

But his uncle, Mr. George Bruce, after due examination of the product of his machine, noting its accuracy, solidity and speed, became its possessor, giving for the patent and machines a liberal compensation, with the proviso that should the inventor devise another machine, to give him the first examination and choice of purchase. It was not long ere machine-cast type in his extensive

foundry displaced that made in his hand molds, without any depreciation in the selling price.

Acting on his encouraging suggestion of improvement, it was not long ere the inventor invited Mr. Bruce to call over at his workshop and examine a working model of the present machine, one capable of being worked, as at present, by wind, steam or water power. Unfortunately for himself and the inventor he did not come personally, but sent instead his machinist and his partner, Mr. P. C. Cortelyan, to whom the capabilities of the invention were explained, and its advantages over any other preceding invention pointed out.

The indifference of Mr. Bruce to its adoption when the inventor called upon him subsequently was a perfect staggerer to the inventor's ambition, and his working model stood for the space of nearly two years in a corner, in quiet and gloomy silence.

It was indeed a bold step for the managers of the "Boston Type and Stereotype Foundry" to enter again into the arena and struggle for improvement, after having once been almost brought to the verge of ruin through the costly experiments of Messrs. Starr and Sturdevant, workmen in their employ. But the now popularization of the once tabooed machine-cast type, through the boldness of Mr. George Bruce, was a strong financial argument. Something must be done to hold their position as manufacturers. Hence learning through my friend Mr. Dalton of my rejected model, they invited the inventor to give it a trial in their own foundry in Boston, under written stipulations defining weight, accuracy, speed and continuity of action; and the writer must be permitted to say that the written agreement allowed him very little margin.

In due time the trial came off. The tests were every way satisfactory and were what may be called crucial. In fact the product, speed and continuity of casting rather exceeded the specified requirements, and both parties were fully satisfied. The "Boston Type and Stereotype Foundry" purchased an exclusive right to manufacture in the six New England states.

And the new invention fell into good hands, and now from the once slow and laborious Gutenberg process of spoon dipping and pouring, of fourteen or fifteen per minute, type casting by the power of steam has been increased to from one hundred and fifty to two hundred types per minute.

That the invention has not to the inventor been a financial success he blames none but himself, as he is not the first inventor who has failed to profit from ideas which have enriched others.

All inventors should be ever cognizant, however, of the fact that most, if not all of our prominent inventions are at best but the outgrowth of some humble predecessor, as the wheel-barrow was the forerunner of the locomotive, or Franklin's electric kite was the predecessor of the ocean telegraph or telephone. Wonderful as are the developments that daily occur, the world is still an unexplored domain, but by the agency of the press and machine-cast type the world is ever ready for further unfoldment. — *David Bruce in the Printers' Review.*

THE WAYZGOOSE.

With the advent of summer the London printer, even more than his provincial brother, looks forward with almost boyish delight to a day in the country, when the wayzgoose and all its pleasant associations release him from labor. Until recent years, this one day of the year was often the only one in which he wandered far beyond the stuffy streets and miles of brick and mortar of the metropolis. But, thanks to improved times, we have altered all that. In addition to the annual outing, many of the leading houses now give their employés a holiday every summer, so that a change of scene can be obtained without any pecuniary loss. But, notwithstanding all this, the glory of the "goose" has not been dimmed, and the social gathering of masters and men once a year has done much to bring about and cement the good feeling which exists today. The old-fashioned "goose" had little to recommend it beyond the slender one of "custom." Generally it took the form of riotous revelry, leaving nothing