

Mr. John Anderson, LL.D., C.E., contributes an exhaustive paper on machines and tools for working metal, wood, and stone. Of the machinery tools he says that they have never, as a collection, been equalled either for quantity or for quality or for fitness. But the greatest display, which dwarfed all others, was that made by the celebrated firm of William Sellers and Co., of Philadelphia. This is the company whose "turn-tables" for locomotives I described in my "Observations on American Railroads," five of which have been ordered by one of the Australian Governments, and they deserve the attention of our authorities.

Mr. Frederick A. Paget, C.E., who laboured with tireless energy in describing the relative merits of the numerous varieties of sewing machines, speaks in the highest terms of the following: Wheeler and Wilson, Singer, Wilcox and Gibbs, Howe, Wilson, and Grover and Baker. He draws special attention to the friction-belt gearing for obtaining varying speed on sewing machines, which was exhibited by Howard, of Philadelphia; to Walter's hide-sewing machine, and also to Baker's; to Eickemeyer's hat-blocking machine; and to a button-hole machine of great merit; also to a cloth-cutting and many other similar machines.

Mr. John Coleman's report on the agricultural section is eminently worthy of study by our farmers. Machines for reaping, mowing, planting, hay-making, ditching and draining, &c., are all described by a practical hand.

Sir Sydney H. Waterlow, Bart., M.P., reports on printing and book-making, and says after the most critical tests the palm was given to the Walter printing press, which runs with less loss of time in changing the rolls of paper and restoring the broken web than any of the others, which perhaps may be accounted for by its greater strength.

The Hon. James Bain, Lord Provost of Glasgow, whose paper treats on the hardware section, acknowledges that it is but fair to the manufacturers of the United States to say that in beauty of design, artistic finish, and varieties of pattern, they surpassed all European exhibitors in that department.

Major W. H. Noble, R.A., presents a report on American firearms, which deserves much attention. Amongst other things, he describes the improved Gatling gun, its ordinary rate of rapid firing being 700 rounds a minute, making in deliberate practice a score of 660 hits out of 1,000 shots at a range of 1,000 yards.

Every other section of the great Exhibition finds a master to explain the worth or demerits of its different articles; and if there was space I could fill your journal with extracts from the reports worthy of perusal. The publication of these papers, which are contained in 332 octavo pages, cannot fail to prove of great benefit to American manufacturers, and they may well feel gratified with the treatment they have received from their brethren of the "mother-country."

There is a most valuable paper on education in the United States by Sir Charles Reed, F.S.A., LL.D., which cannot wholly be passed over, as it will be of great use in discussing the subject in this colony.

The following figures are so grouped as to be exceptionally striking:—

"The territorial area of the Union is 3,250,000 square miles, of which 2,265,625 are public land. One-sixteenth of this public land in the several townships is set apart for educational purposes, and called the School Lot or Sixteenth Section. This land has in most cases been sold, and the proceeds invested for school purposes, giving, with endowments, an annual sum of 5,175,166 dollars. Adding 58,855,507 dollars, arising from State and local taxation, we have the entire school income, irrespective of special funds, like that established by Mr. George Peabody, and now amounting to 2,000,000 dollars.

"No part of the school income is derived from children's fees. It is enough here to say that the free system is not unchallenged. Many of the best teachers affirm that the parents who pay nothing care nothing, and that to this cause must be ascribed much of the indifference which so largely prevails among the parents in the States."

The fact that the New England and Northern States are more advanced in education than the West is cited, and regret is expressed at the slow progress made in the South. He then continues:—

"As a matter of fact every Northern and Western State, except Maryland, has adopted a compulsory law of school provision. Each has its own Board of Education, to which it is left to provide the funds and organize the schools; but the bureau at Washington has no power beyond that of collecting and tabulating statistics. One disadvantage of this is that there is no uniform standard of teaching, or inspection, or examination throughout the Union; while a yet graver defect is that sufficient check is not exercised over the more ignorant districts. Mr. Wickersham impresses, as the first lesson of the Exhibition, 'that the policy of placing so much power in the hands of local School Boards, as is done by our laws, has its weak as well as its strong points. Among intelligent citizens, alive to the interests of education, it is worthy of all praise; but where an ignorant people, or a people in public spirit, elect School Boards like themselves, no policy could possibly be worse.'"

The subject of compulsory school attendance, and the separation of the races in the schools, are touched upon, and Sir Charles Reed adds this important testimony:—

"America has reaped the advantages of education in the quickened intellect, widely-diffused information, general sobriety, and trained mechanical skill of her citizens. This it is that has supported her in every department of commerce and art, and given backbone and fibre to her national life."

On the whole, Sir Charles thinks that England has nothing to fear in fair competition with America. There are excellencies in the systems of both countries worthy to be copied by each.

In contrast to the marvellous triumphs of invention and industry so enthusiastically portrayed in the reports of the British Commission, it will be useful for us to study the picture drawn by so distinguished a man and eminent patriot as Mr. Henry C. Carey, in a letter addressed to the President of the United States in June, a copy of which he kindly sent to me by the last mail.

In describing the disastrous effects of the Resumption Act, passed by Congress some two and a half years ago, by which it is enacted that gold shall in less than eighteen months hence be the sole legal tender in the United States, he says:—