cepted system of photography. He patented his invention several years previously in Great Britain, where he lived. Talbot's method was known at first as the "Talbotype," both here and abroad. The patent office took several years to decide whether it was constitutional or not to issue a patent to Talbot's credit, for the reason that several Americans experimented with the process. Hon. Edmund Burke, however, granted Talbot a patent in the year designated. Peasley's patent for improvements in the organ, issued in 1817, is yet more ancient and important, for the modern American organ sprang from this source. These are a few instances out of hundreds.—By DANIEL SPILLANE in *The Manufacturer and Builder.*

SLOW-BURNING CONSTRUCTION.

Edward Atkinson has an illustrated paper on this subject in the *Century Magazine,* from which we quote:

Strange to say, some of the worst examples of combustible architecture are to be found among our prisons, hospitals, asylums and almshouses; next, among college buildings, libraries and schoolhouses; to these may be added churches, hotels and theatres. In the year 1887, according to the tables compiled by the *Chronicle* of New York, there were burned, within the limits of the United States, 45 hospitals, asylums, almshouses or jails, being nearly four per month, in many cases accompanied by the loss of a large number of lives; 126 college buildings and libraries, being $10\frac{1}{2}$ per month; 146 churches, being $2\frac{8}{10}$ per week; 52 theatres and opera houses, being 1 per week; 515 hotels, being $1\frac{4}{10}$ per day.

The bad construction of these buildings is due mainly to habit, to fear of innovation, and to distrust of theory. These inherited faults in construction may readily be traced to their origin. In order to make this matter plain, the evolution of the modern factory will be fully described.

When the textile factory system was first established, water power only was applied to the movement of machinery. The larger factories were thus customarily placed in narrow valleys, or upon very limited areas of land below the falls of rivers and alongside the streams; it therefore became necessary to economize the area of ground covered by the factories, and to build them many stories in height. When other arts began to be conducted upon the factory system, the buildings were apt to be in cities or towns where the price of land forbade large areas being devoted to the purpose, and, again, buildings of many stories in height were constructed.

As time went on, however, steam took the place of water power, while cheap railway service or rapid transit made it possible to scatter the factories over a wider area. Factory buildings then began to be constructed in the open country, but apparently it did not occur either to the owner, the managers, the architects, or the builders, that the reasons for constructing a building many stories in height did not apply to places where land could be had at a very low price; therefore the customary bad and unsuitable form of construction was adopted, and is still practiced, where it is not only useless and unsafe, but less adapted to the purpose to which the building is to be put than a one-story or a two-story building would be. Moreover, the whole method of cutting timber having been developed with a view to the supply of material required in the ordinary unsafe and unsuitable method of construction, it was for many years difficult to obtain material cut in a proper way for what has been called the slow-burning use of timber. Hence it follows that the art of slow-burning construction is little known outside the limits of New England; and until very lately it was little known even there, except to those who had become accustomed to the construction of textile factories, paper mills, and other works which are customarily insured by the factory mutual insurance companies. It is only within a very short time that the methods which have been practiced for many years in the construction of textile factories—which are only the old methods of almost prehistoric time, when timbers were shaped by the axe or by hand, before the modern saw-mill had rendered the construction of a sham building possible—have been taken up by a few architects of capacity and responsibility to be applied to warehouses, churches, college buildings, and occasionally to dwelling houses.

AN AUTOMATIC ADDING AND RECORDING MACHINE.

A machine by means of which figures may be placed in tabular order with the rapidity of ordinary type-writing, and which at the same time automatically adds the amount as the figures are listed, with no possibility of a disagreement between the listed figures and their indicated total, is represented in the accompanying illustration. The machine is adapted to record and foot up eight columns of figures, while a similar machine is also made having a capacity reaching to ten columns. As will be seen, there are eight columns of keys, the first two columns to the right, in listing amounts of money, being used for the units and tens of cents, the next three columns for the units, tens, and hundreds of dollars, and the remaining three for units, tens and hundreds of thousands, the machine being thus adapted to all amounts under a million dollars.

To record the amount 179.63, shown at the bottom of the paper just back of the keys, the operator struck key 1 in the fifth column, key 7 in the fourth column, key 9 in the third column, key 6 in the second column, and key 3 in the first column, and then pressed the up-feeding spacer lever seen to the right of the key board. The amount recorded is thus presented in plain sight before the next figures are listed, the operation of which is proceeded with after the same manner, each separate amount being exposed to view by pressing on the spacer lever, before commencing upon the following amount. The total of any number of amounts printed can at any time be seen upon the type wheels behind the glass just in front of the keys; but to print the answer on the slip at the bottom of the column, the operator presses the knob standing at the left of the keyboard. The little thumb screw on the right of the machine is to clear the register, or reduce the machine to naught, another thumb screw farther back regulating the feeding of