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Improvement in Glassware Presses.

In the construction of glassware presses it is desirable that the movement of the platen or presser toward the bed shall begin with a rapid, and terminate with a slow but powerful movement; and it is also desirable that this movement shall be effected by means which will operate with so little friction and side thrust that the press will work sensitively, or so that the operator can determine, by feeling, the resistance offered just when the pressing should be discontinued; if the pressing is continued beyond the proper point the mold is injured and the ware spoiled.

The press shown in the accompanying engraving has a peculiar combination of devices by which the moving parts of the machine operate to give the platen or presser a motion which changes from a rapid one at first to a slow but powerful movement at last, at the same time leaving the press delicate and sensitive in its indication, through the lever, of the resistance offered to a continued pressing movement.

In the engraving the parts are shown in the position which they occupy previous to making a stroke. The dotted lines show the position they occupy when the presser is brought to its lowest position in making an impression.

To the bed, A, are attached two uprights, B, in the top and bottom ends of which are formed guide ways, in which the ends of the crosshead, C, and crossbar, D, can be made to reciprocate simultaneously, being connected by the links, E. Toggles, made by links, F and G, on each side of the machine, are operated by the movement of the rocker lever, H, connected to the toggles by the links, I. Each link, F, of each toggle is pivoted to a fixed pivot in each upright, B; and the lower link, G, of each toggle is connected to the crossbar, D. The rocker lever, H, is fixed upon the rocker shaft, J, which carries, at the other end, a rocker lever, K, one of the links, I, being coupled to the rocker lever, H, the other to a rocker lever, K', said links being connected one to each toggle.

On the inner surfaces of the uprights, B, are guide ways, L, which guide the presser in its reciprocating motion, the presser being connected to the crosshead, C, by the screw hand wheels M, and screw, N, by which the platen can be adjusted toward and from the bed to suit various heights of molds. To counterbalance the gravitation of the moving parts, and thereby increase the sensitiveness of the press, chains, O, with a weight at one end, pass over the wheels, P, and are attached to the crosshead, C. It will be obvious that the first part of the movement of the lever toward the operator, will rapidly move the platen by straightening the toggles; and that the movement of the platen, proportionately to the movement of the lever, will grow less and less, and more and more powerful in effect as the toggles approach a straight line. The toggles thrust directly down upon the crossbar, which pulls through the links, E, in a direct line with the crosshead, C, thus avoiding all side thrust and strains on the crossheads and platen, so that the most delicate ware can be made on this press, as well as the heaviest. The friction, as in weighing apparatus, is reduced to a minimum by the system of pivots and centers. The springs for holding the mold in position, shown at Q, are of good length, four in number, and adjustable by the screw hand wheel, R.

This press was patented June 8, 1869. The presses are manufactured by the inventors and patentees, Messrs. Hawes & Hersey, well-known machinists and press builders, of South Boston, Mass., and are pronounced by those who have seen or used them, to be the best machine of the kind ever produced. For rights to build, or for presses, they can be addressed as above.

Harvester Cutter Bar.

Our inventors are latterly turning out a series of unusually practical and valuable improvements.

The one we now present to our readers, is a device that will save much time, trouble, and expense to farmers, and the convenience of which must be obvious upon even a cursory inspection. The cutter bar is made of the patent cold rolled iron of Jones and Laughlins, noticed at length on page 50, Vol. XX, SCIENTIFIC AMERICAN, and is made so that its cross

section is of the form made by the intersection of two equal circles. It has not a rivet hole in its entire length—a fact which will be significant enough to farmers, when they recall the points of fracture in the finger bars they have broken in their practice.

Upon this bar are slipped the cutters, made in the form shown in detail at the upper part of the engraving. The terminal knife being fastened by a screw, shoulder, or any other suitable means, and the cutter bar being thrust in and

The inventor informs us that although his patent bears date June 8, 1869, he has already received orders for twenty thousand of these bars. Communications should be addressed to G. L. Du Laney Mechanicsburg, Pa.

CHINA AND THE CHINESE.

It is now conceded by shrewd observers of current events, that the Chinese element is destined to become in the future an important part of our population, and to exercise a great influence on the destiny of this continent. It is not therefore to be wondered at that the periodicals of the time should find the discussion of anything which pertains to this remarkable people acceptable to their readers. So little have China and Chinese customs been understood, that now when the public mind is awakened to the importance of better information in regard to that ancient empire, it is surprised at the very erroneous ideas it has hitherto entertained. This surprise arises not only from the differences between our customs and those of the Chinese, but also from the fact that the Chinese have made very much greater advances in civilization than has been generally supposed by other civilized nations.

Some of these facts have been put in a very acceptable dress by a writer in the *Atlantic Monthly*, for September, from which we extract a portion:

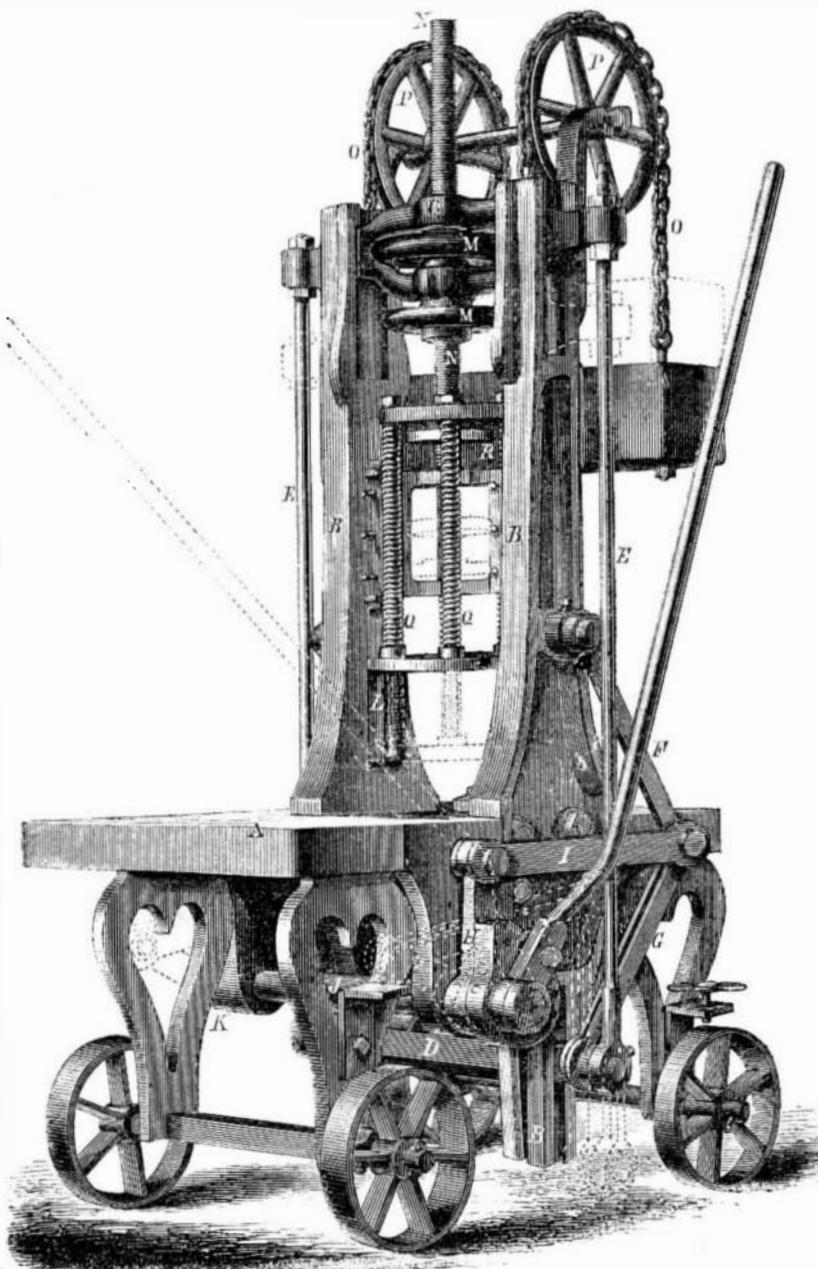
China is the type of permanence in the world. To say that it is older than any other existing nation, is saying very little. Herodotus, who has been called the Father of history, traveled in Egypt about 450 B. C. He studied its monuments, bearing the names of kings who were as distant from his time as he is from ours—monuments which even then belonged to a gray antiquity. But the kings who erected those monuments were posterior to the founders of the Chinese Empire. Porcelain vessels, with Chinese mottoes on them, have been found in those ancient tombs, in shape, material, and appearance precisely like those which are made in China to-day; and Rosellini believes them to have been imported from China by kings cotemporary with Moses, or before him. This nation and its institutions have outlasted everything. The ancient Bactrian and Assyrian kingdoms, the Persian monarchy, Greece and Rome, have all risen, flourished, and fallen—and China continues still the same. The dynasty has been occasionally changed; but the laws, customs, institutions, all that makes national life, have continued.

The authentic history of China commences some three thousand years before Christ, and a thousand years in this history is like a century in that of any other people. The oral language of China has continued the same that it is now for thirty centuries. The great wall bounding the Empire on the north, which is twelve hundred and forty miles long, and twenty feet high, with towers every few hundred yards—which crosses mountain ridges, descends into valleys, and is carried over rivers on arches—was built two hundred years before Christ, probably to repel those fierce tribes who, after ineffectual attempts to conquer China, traveled westward till they appeared on the borders of Europe five hundred years later, and, under the name of Huns, assisted in the downfall of the Roman Empire.

All China was intersected with canals at a period when none existed in Europe. The great canal, like the great wall, is unrivaled by any similar existing work. It is twice the length of the Erie Canal, is from two hundred to a thousand feet wide, and has enormous banks built of solid granite along a great part of its course. One of the important mechanical inventions of modern Europe is the Artesian well. That sunk at Grenoble was long supposed to be the deepest in the world, going down eighteen hundred feet. One at St. Louis in the

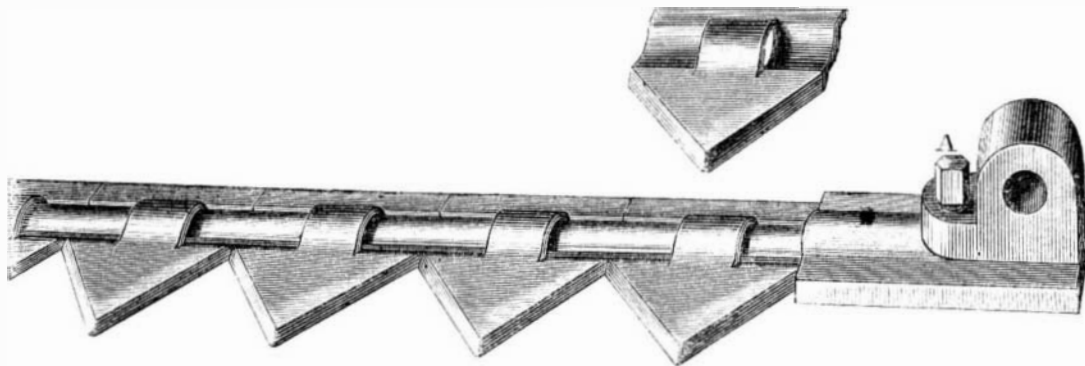
United States, has since been drilled to a depth, as has recently been stated, of more than four thousand feet. But in China these wells are found in tens of thousands, sunk at very remote periods, to obtain salt water.

The method used by the Chinese from immemorial time has recently been adopted instead of our own, as being



HAWES & HERSEY'S GLASSWARE PRESS.

held by the set screw, A, all are held firmly, yet any one can be reached and removed with the utmost facility, when occasion requires. Should a cutter bar break, all the knives can be removed, another bar inserted, and the knives replaced in five minutes. But as the shape of the bar and the absence of rivets give great strength with lightness, it is evident that



ADJUSTABLE HARVESTER CUTTER BAR.

not only will there be less liability to breakage, but the reciprocation of the bar will absorb less power than the old form of bar. The easy removal of the knives is also a great advantage in grinding, obviating any necessity for special appliances for this object. They can be perfectly and easily ground on the ordinary grindstone