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IMPROVED PLASTIC BRICKMAKING MACHINE.

The process of brickmaking by the machine we illustrate from *Engineering* is divided into four stages, viz., mixing, pugging, moulding, and pressing. The mixing process is performed in a long trough in which there revolves a shaft fitted with peculiarly shaped knives or stirrers. The clay after it has gone through a preliminary preparation of grinding to reduce it to a powder, or to crush any stones it may contain—this preparation being carried out by a perforated grinding pan or horizontal crushing rollers, whichever machine is most suitable to the clay to be worked—enters the end of the mixer furthest away from the machine. There it is met by a spray of water, if the clay is not damp enough in its natural condition; the rotation of the knives incorporates the clay and water, and a substance of uniform consistence is delivered to the pug mill of the machine.

The pugging and moulding processes follow immediately after the mixing, and these operations are completed by the pug mill; the clay, after it has been kneaded or pugged, is propelled by the action of the pug mill knives into moulds on the rotating table of the machine, which come in succession under the mouth of the pug mill. At this stage we have accurately formed bricks contained in the table moulds; the table rotates to a position directly opposite the powerful press shown in front of the machine, when the bricks are ejected from the moulds by a lever worked in connection with the rotating gear; during the time the moulding table is making another partial rotation, the pair of bricks which have just been lifted

out of the moulds are pushed into a cage or receptacle designed to turn them upside down, the object being to reverse the side of the brick on which there has been the greatest pressure on the pug mill, so that both sides of the brick get an equal pressure. The next pair of bricks, entering the turning-over cage, push the pair just turned over into the finishing press, by which the final process of pressing is performed.

By the operations just described we have a brick of a plastic nature, densely moulded, well pressed, and highly finished, and one that contains the minimum amount of water to obtain plasticity, and therefore capable of being placed immediately in the kiln for burning.

It will be readily conceived by those acquainted with brickmaking that if a brick can be made in the above manner from the crude clay in the space of a few minutes, there is a great saving in labor. It was to this kind of machine that the inventors gave the term "stiff plastic." The makers of this machine, Messrs. Bradley & Craven, of Wakefield, have adhered to this system of brickmaking, which they claim to have originated, for a period of thirty years.

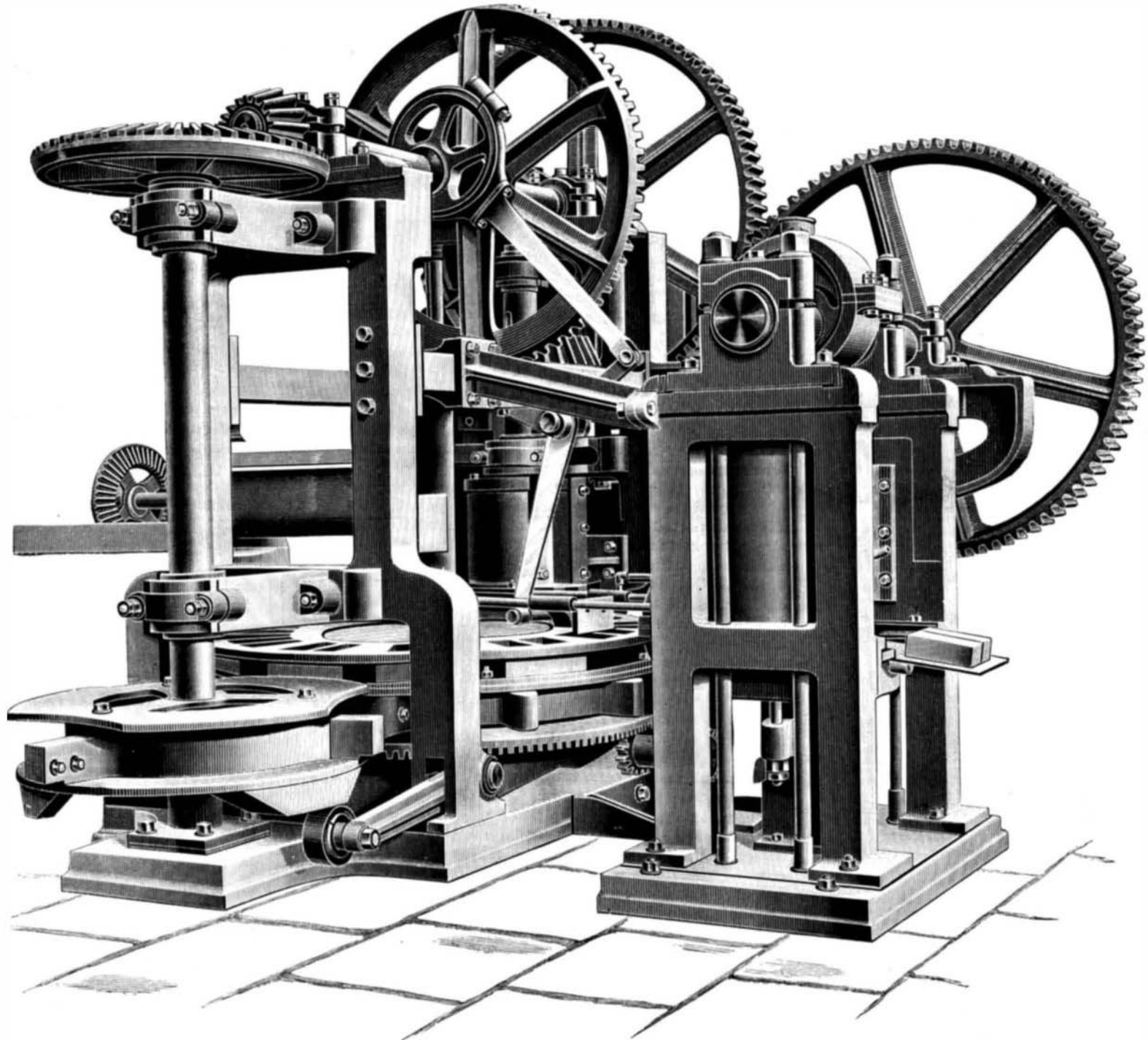
The machine described weighs 21 tons, but it can be taken into pieces of convenient size for shipment. It is capable of producing 18,000 to 20,000 bricks per day, but it is made in a smaller size producing 10,000 to 12,000 per day.

A WRITER in the *Boston Evening Transcript* declares that the plantations made by the Boston and Albany Railway Company around its suburban stations have

had a decided influence in improving the horticultural taste of the people living along its lines, and that good plants, like *Forsythia fortunei* and other hardy shrubs, have been made common and popular in this way. The scheme under which these plantations are made has already been described in these columns. The station grounds are decorated with trees and the best hardy shrubs, preference being usually given to native species, as being more hardy and generally more satisfactory than exotic plants; no bedding or tender plants whatever are used, the effect being obtained from well kept lawns, skillfully arranged shrubberies, in which it has been aimed to secure a succession of flowers, handsome fruit and brilliantly colored autumn leaves.

A Mountain Railway.

The most recently completed high mountain railway in Switzerland is that up the Rothhorn, 7,240 feet high, from the lake and town of Brienz, not far from Interlaken. The road was completed so that a locomotive reached the summit October 31, and will be opened the coming season. The Rothhorn will command a magnificent view of the Jungfrau, and the other mountains south and southeast of Interlaken. The material through which the eleven tunnels of this line were excavated consisted of *debris* which had slipped down the mountain, and which seemed disposed to go on sliding when disturbed. Subterranean springs also made the work difficult, and in places new beds had to be made for mountain streams. The work was done by contract for £70,000.



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