

liable to *slip* before the knives, but is cut through and through, and *thoroughly* mixed; so that by the time it reaches the small end of the tempering case it is ready to be formed into bricks.

On the end of the tempering shaft is secured a conical screw, which revolves in a cast-iron conical case, the inside of which is pitted, checked, or ribbed, so as to prevent the clay from revolving in it, and is chilled, to prevent wearing.

The screw being *smooth* and very hard, the clay slides on it, thus becoming, as it were, a *nut*; the screw revolving, and the clay thus not being allowed to move backward, it *must* go forward.

This operation further tempers the clay, and delivers it, in a solid, round column, to the *forming die*, which is of peculiar construction and form, and so designed as to reduce the round column to a rectangular one, whose breadth and thickness is the *proper breadth* and *thickness* for a brick, while at the same time *the clay is forced into the corners* of the finishing part of the die, so that the angles of the bar of clay are made full, solid and sharp. This column of moulded clay, as it issues from the die, is conducted by an endless belt, supported on rollers, to the cutting device, which consists of a thin blade of steel, secured to the periphery of a wheel, passing through the bar of clay, and being guided by steel plates, so arranged as to move with the clay while the knife is passing through it, and so as to support the under-side and edge of the bar while being cut.

The bricks are then dusted with fine sand, and are conveyed on cars or barrows to the packing-floors or drying-chambers.

One of these machines will make from twenty-five thousand to thirty-five thousand bricks regularly, in ordinary clays, per day of ten hours; or from fifty to eighty bricks per minute.

Messrs. Chambers & Brother made some experiments to determine the crushing pressure of bricks made by this machine out of New Jersey and Philadelphia clays, with the following results:—