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The Ballard Pavement.

Wood pavements being in public favor, we look upon the invention, represented by our engraving, as of much importance. The foundation for this pavement is prepared in the usual manner, with a covering of plank of suitable thickness, and in sections of the country where gravel is abundant and easily obtained, a concrete foundation of proper thickness, well rolled, may be used if desired.

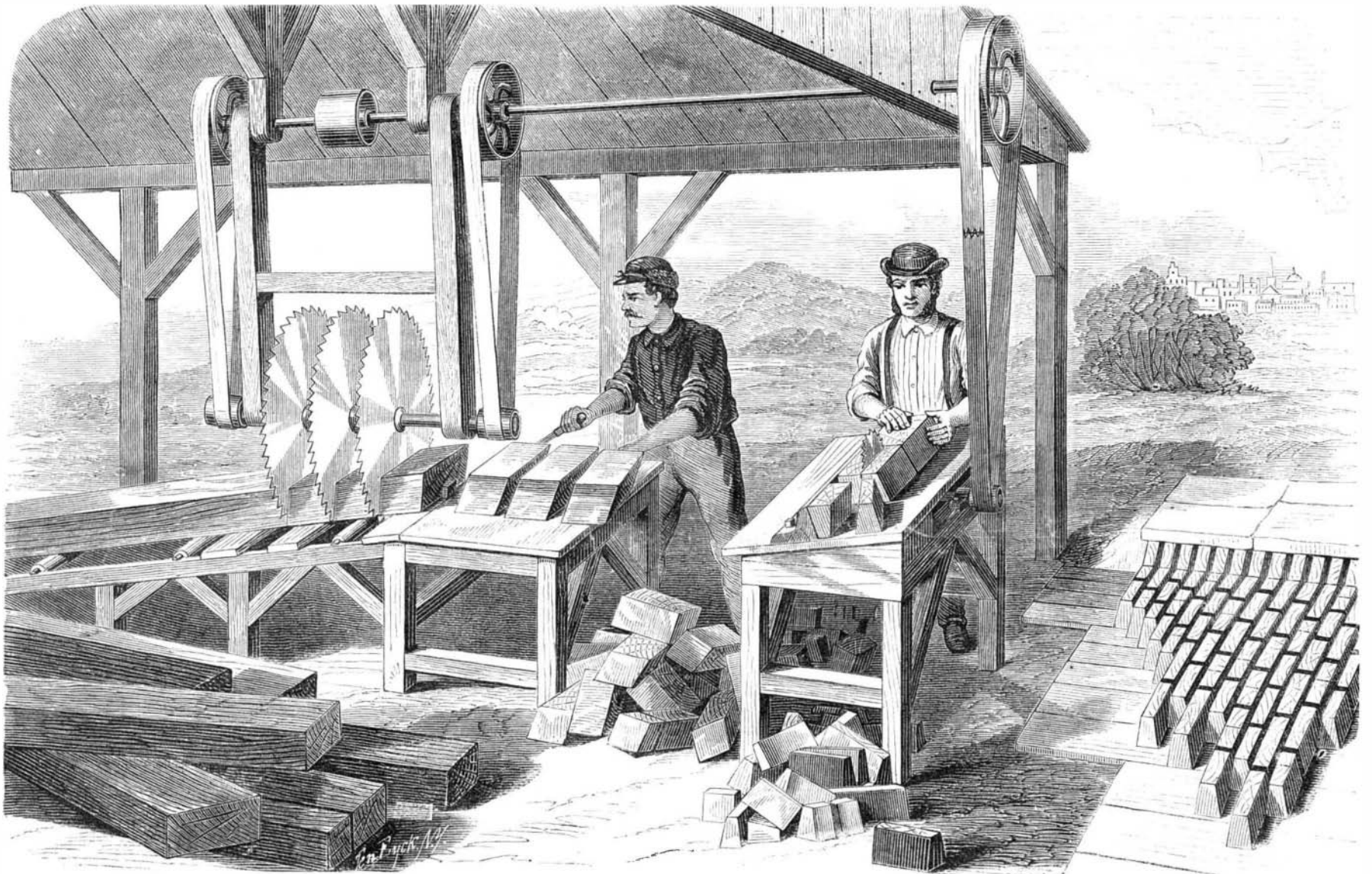
The broad-based, wedge-shaped blocks are placed upon the foundation, in rows across the street, the rows touching each

broken or displaced by heavily-loaded teams, and the constant wear and pressure of travel.

Nails are not necessarily used in putting it down. No bands, strips, or fastenings, which tend to early decay, are used in its construction. The blocks cannot work upward or laterally. Sand and gravel cannot work underneath them. Few or many blocks may be taken up and replaced, without in the least disturbing those remaining. The strips or pickets used in other pavements, and found objectionable by their frequently working upward, loosening the concrete filling, and

saw may be fed with rollers. It will also be noticed that this form is secured without waste of material, or extra sawing, and that the use of pickets is obviated, thus lessening the amount of sawing required in the construction of other wood pavements.

The inventor has had large experience in laying wood pavements of the kinds most in use, and he brings this experience to bear upon the construction of the improved pavement he has devised with a view to the correction of their radical defects.



THE BALLARD PAVEMENT AND MODE OF CUTTING THE BLOCKS WITHOUT WASTE OR EXTRA SAWING.

other at their base, forming wedge-shaped interstices across the street; and square spaces (on a line with the street), one inch in width, are left between the ends of every two or more blocks, as may be desired; these spaces breaking joints with those in the adjoining rows; and the spaces between the sides and ends of the blocks are then filled with fine, clean gravel, cement, and coal tar, thoroughly rammed into them.

Such end filling, running in irregular lines, at right angles to the continuous regular lines of the side filling, interrupts the surface of the pavement both ways, thus affording an excellent and sure foothold for horses' feet. The continuous bearing surface of the broad-based, wedge-shaped blocks, combined with the wedge-shaped interstices running across the street, and also in combination with the square spaces at irregular intervals lengthwise of the street, filled with concrete thoroughly rammed into them, not only firmly wedges the pavement both ways, forming an unbroken keyed arch of great strength and firmness, but also renders it impervious to water, which would enter between the ends of the blocks, were they set with their ends contiguous, without any filling so rammed between them.

The more wear upon this pavement the more compact it becomes. Both blocks and filling being wedge-shaped from top to bottom, every shrinkage will be supplied by a downward movement of the filling. The effect of travel is to constantly produce this downward movement of the concrete filling, wedging the pavement tighter and tighter with each movement; whereas, without the wedge-shape form of block and filling, the spaces are the same in size from top to bottom and a movement does not tighten but loosens, there being no principle of the wedge involved as in this Ballard pavement; The Ballard block being broad-based, the foundation is not

thereby weakening the general structure, are not used in this pavement. The flooring and blocks may be treated by any known process for preserving wood from decay.

The construction of this pavement, in all its parts, is so simple, that any portion of the work may be performed by common laborers, and the pavement laid with great rapidity. Its cost is no more, well laid, than that of any patented wood pavement in which a suitable and like quality of lumber is used.

We believe that a pavement, well laid, of the broad-based wedge-shaped blocks, to stand but four inches high, keyed with the well rammed concrete filling, as above, will make a stronger and more lasting pavement than made of any other blocks in use to stand the usual height—six inches.

The lumber for the blocks may be sawed at the lumber mills, any convenient length, any size from three inches to the full size of the log or timber one way, and should be seven inches the other way. The feed table of the machine for sawing off the blocks, is inclined at right angles to the line of the cut of the saws, which gives the top and bottom of the blocks the proper angle to form the bevel to two sides of two blocks; as represented under the gang of swing saws in the engraving; and the splitting saw table has a like inclination, giving the same bevel to the other two sides of two blocks when split, also represented in the engraving. So that with the feed tables at an inclination of one inch to the foot, by one sawing and one splitting, two finished blocks are produced, wedge-shaped, to stand six inches high, four inches wide at the base, three inches at the top, and of a length equal to the width of the lumber, either side of each block having the same inclination, one side leaning with the fiber, and the other slightly oblique to it. This splitting

This invention is covered by a number of United States patents, issued in 1869 and 1870, embracing the wedge-shaped blocks, wedge-shaped interstices, and wedge-shaped key, or filling, among the claims. Patents have also been issued, through the Scientific American Patent Agency, in England, France, and other foreign countries. Further information can be had at the office of the "Ballard Pavement Co.," No. 117 Broadway, New York.

CANDLE STAMP.—It is marvelous, writes the *Scientific Review*, to observe what trifling articles may form the subject of a useful invention; the stamping of candles, for example, would appear to be a very unimportant matter, yet Mr. Schleidner, of Paris, has designed a special machine for the purpose. The candles are placed on an inclined plane, from which they successively slide into the notches of two similar wheels, or rings, which, at each revolution of the driving pulley, bring a candle under the stamp. This stamp, suitably engraved, is heated to an unvarying temperature, by steam or otherwise, so that upon pressing lightly upon the candle it melts the fatty matter, leaving the candle stamped with a very clean impression, obtained without shock or stain. The candle then leaves the notches, falls upon another inclined plane, and passes thence into a box.

BAUR or chrome steel is not only one-third stronger than any other steel, but can be produced at small cost, from the fact that when worn out, as in a steel headed rail, it has a market value, as it can be made over again, which is not the case with Bessemer or any other cast steel. It will also weld without borax or flux, and when burnt can be redeemed on the next heat