to the repulsion referred to, and then acts as a bridge over which the rain water passes on and down the roadway.

When thoroughly sanded, or supposed to be, to all appearances, the paving is opened to traffic. Then a slight tremor of the bricks causes the sand to settle in the joints and the sanding process is repeated to satiety; the sand requiring to be screened fine and absolutely dry (sun or fire dried), without which it will not run into the narrower interstices. It is said, though I was not long enough in New York to notice the thing, that under traffic the edges or arris of the brick gives, due to its plastic nature, and that thus the joint becomes filled in and absolutely impermeable to water.

The cost of the blocks is some $60 per 1,000, delivered at the mill or factory. Thus for transportation to Canada, some $2 per ton has to be added for freight, or $17 per 1,000, the blocks weighing about 8½ tons to the thousand. Again, there is 20 per cent. duty to pay, a toll at Rouses Point of say $1 to $1.50 per large load, wharfage, harbour dues, etc., cartage to site of paving at say 100 blocks or 4 yards sup., per cart load (1,700 to 1,800 lbs. with us). Now add taking up and removing old pavement, grading, levelling, concreting, sand foundation and laying, and a minimum is arrived at, allowing 10 per cent. profit, of about $3.37 per yard sup. of finished paving; while the tenders for the work ranged up to $4.27 per yard.

Certain precautions are to be observed in the delivery or rather before delivery, or until the blocks have sufficiently cooled down to allow of handling, piling and rough usage in barging and unloading. The bricks to prevent sticking or adhering should be sanded between the layers, and especially on board the barge, where during the hot weather of July and August, and due to superincumbent weight, they are liable to cling together, but can be easily separated with the chisel and hammer. I have also found some of the blocks (very few) to be slightly curved, as if under pressure of overlying load, urged to hug the curved outline of the containing vessel.

The blocks, to save handling and hauling, are piled along the sidewalks on either side. It requires about three or four laborers, according to width of street, to keep the pavers or layers supplied. The brick cuts well, and square, and easily under a blow or two of the hammer, with a chisel 4 inches wide on edge, or wide enough to cover the whole breadth of block.

Between the track rails a row or course of bricks is first laid longitudinally within the rail on each side. This border course is laid to enter an inch, or as far as it will go under the upper flange or projecting head of the rail; tilting it the while to about the camber required (a quarter of an inch), when four stretches just fills the remaining space between the opposite border courses, and the underlying sand bed is, by the use of a mold or template run along the track, resting upon the rails, cambered up in a way to cause the paving between the rails to crown at level, or a quarter or half inch over it, as may be desired; while the border courses so tilted and put in under the top of rail afford the space necessary for the car wheel flange to run in; and again, the sloped groove or depression thus left along the rail, instead of being square, which would catch and hold the wheels of vehicles, allow the wheel to move out sideways without, as in the case of the square groove, tending to haul the paving after it.

Where the fish plates and connecting wires occur (at every 30 feet or length of rail), some of the border bricks inside the rail have to be cut longitudinally, which is easily and neatly done by jumping the chisel along the brick, back and forth, as in splitting a stone parallel to its length, or along the line of proposed fracture.

When the roadway is double tracked, the space between the tracks is filled in flush with top of rail, or, as outside the tracks, a quarter of an inch higher to allow of settling by ramming and under traffic; and as laid here, it takes just three and a half bricks or stretches to reach from rail to rail. This space is also cambered up by a sand template to half an inch additional above the concrete; as any pavement laid flat always looks hollow, and any such hollow in a roadway looks as bad as would a hollow floor or deck, instancing at the same time a want of forethought by the engineer or architect against settlement. To ensure uniformity of curve or camber in cross section of roadway from the curb to curb or curb to rail, when the paving goes on along one side of the street, while the other remains open to traffic, the best, easiest and quickest mode is to measure down from a line held taut across the roadway and resting on curb and curb or curb and rail. It requires two hands to hold the line, but where only one is available, the string at one end can be tied to a peg or to a brick left hanging in rear of curbstone, or in rear of rail before the track is paved or sidewalk laid. This line is successively held at distances of 3 to 4 feet along the roadway—when ordinates or vertical offsets are measured down from it to level of top of concrete—the ordinate along the rail being 4½ inches, or the thickness of the brick plus that of the sand-bed (less, if you wish, a quarter of an inch to allow for settlement by ramming and traffic); at or along the curb, the ordinate is say 9 to 10 inches, including depth of paving and height of curb there; over half way or thereabout (the eye will do) between these extreme points another or third offset is taken, and two more, a fourth and fifth at points again half way (by eye) between the others.

To regulate height or level of pegs to be driven for top of concrete, Mr. Watson has an ingenious mode of offsetting by means of a stick with a notch in it at 4½ inches from level of string, one at 9 inches, and three others at intermediate heights as required and calculated in advance, or measured from a template cut to camber of roadway. He then sets and drives his peg home, or until top of it is just at proper level to suit offset. These five offsets have of course to be repeated for as many pegs on the other side of the roadway, when in turn that side is being paved, and the paved side handed over to traffic.

To form the sand-bed, strips or templates ½-inch thick are laid at distances along the road of 8 to 10 feet; when two men, one at each end of a straight edge, move it and the sand with it along the templates in a direction parallel to rail and curb and back and forth until the sand is worked down to proper level. I had omitted to say that the paver or layer, instead of, as usual, standing on the unpaved portion, keeps on the portion already laid; as standing on the sand-bed when prepared as above stated would altogether jeopardize the regularity of the work.

This asphalt block pavement is certainly an improvement on the sheet asphalt as far as durability is concerned, it being 4 inches thick, while the sheet is but one to one and a quarter inch. Again, the grit in it suits it to ordinary grades where the sheet would prove slippery and dangerous. Neither will this asphalt block be suitable for heavy traffic or for quick or steep grades or inclines, where nothing but granite setts should be used. The sheet has been laid, against my advice, in such narrow and trafficy streets as St. Paul and St. Peter, Quebec, where on account of wheels travelling constantly in same line, the asphalt will soon be worn into ruts and hollows. The sheet is suitable for residential streets, and especially where there are no rails, as in some of the streets at Westmount, Montreal, where, after, they say, nine years laid, it shows no sign of failure; but in St. James, Notre Dame and other streets, where the traffic is comparatively heavy and tracks exist, the asphalt begins to give a quarter of an inch at a time along the rails under the erosive action of the wheels of vehicles, and then it goes on crumbling, a fraction of an inch at a time, until wide ruts are formed, which have to be repaired.

The Hastings Company also manufacture hexagonal blocks for sidewalks. They make them about 2¼ to 2½ inches thick, which is too heavy and expensive. I have advised the company to reduce these to 1¾ inch, or even 1½ inch, as sufficiently thick to stand foot passenger traffic for years to come. We are about laying a quantity of sidewalks in Quebec with these, which on account of the greater measure of grit in them will prove preferable to the "mastic," as laid hot and rolled or smoothed with wooden pallets. The latter becomes somewhat disagreeable to walk on during hot weather, and especially while the sun shines hot upon it, when it almost instantaneously softens to the consistency of putty or of soft or kneaded clay puddle, and the foot actually sinks into it, perceptibly, or say a sixteenth of an inch or so, though it immediately hardens again the moment the sun is obscured.