

Much of the repair work has been done in the past with hot bituminous material. The cold patching products now on the market offer a great range of usefulness, and require less care and equipment. When a hot patch is to be made, the patrol gang must be provided with a suitable portable kettle for heating the tar, and with fuel sufficient for the day's work. "Cold patch" requires neither of these.

In using a tar cold patching material, several points should be observed:—

Don't use wet stone; don't use dirty stone; don't use too much tar (about 12 to 15 gals. of tar to the cubic yard of stone is about right); don't leave a freshly made patch of stone and tar uncovered in the rain (in wet weather it should be protected for a day); don't heat a tar cold patching material (if heat is necessary, warm the stone instead).

Mix one cubic yard of a mixture of one part coarse clean sand and three parts of $\frac{3}{4}$ -in. stone, with 12 to 15 gals. of tar. Mix tar and stone first, then add sand. Let this mixture cure, or season, for a few days before using.

Clean out the hole to be patched; paint the sides of the hole with tar; deposit the mixture in the hole and tamp well; leave the patch slightly higher than the surrounding road metal (it will settle after a while); sand the top.

When the patch has set up hard, sweep it and give it a light seal coat of tar, and cover with sand or screenings. Do the painting with a brush. Do not pour a bucketful of tar on a patch; only a very light coat is required.



FIG. 4—PAINTING BOTTOM AND SIDES OF HOLE

Traffic will iron out the patch into a smooth surface. Some engineers prefer to use only tar and stone, with no sand. If the stone contains much fine material, the result will be satisfactory, but with a graded stone from $\frac{1}{2}$ -in. to $1\frac{1}{4}$ -in., and no fines, the mix will be too open to make a good patch, and sand is necessary.

The value of training the patrol gang cannot be over-estimated. Get them to do the work right from the start and much worry and trouble is eliminated.

And patch! Patch *every* hole, large or small. The earlier you can catch them, the less there is to do. Patch breaks in bituminous or cement-concrete surfaces as soon as they appear. Often a paint coat of tar with a coating of clean chips or gravel will prevent the formation of a hole.

Be sure to clean thoroughly the surface to be painted. Don't attempt to apply tar to a dusty, mud-caked pavement, for the tar will not stick, nor will it retain its characteristic properties. By using care and judgment, skin patches of considerable area and thickness may be built up. Use clean stone chips or $\frac{1}{2}$ -in. gravel for covering material instead of sand, because sand is likely to cause the material in the patch to wave or bunch; chips or gravel prevent this.

Follow up every complaint; determine the cause, and supply the remedy then and there.

Patrol maintenance means perfect roads every day of the year. It means lowered cost of maintenance. It also means putting off reconstruction indefinitely, and that means lower taxes.

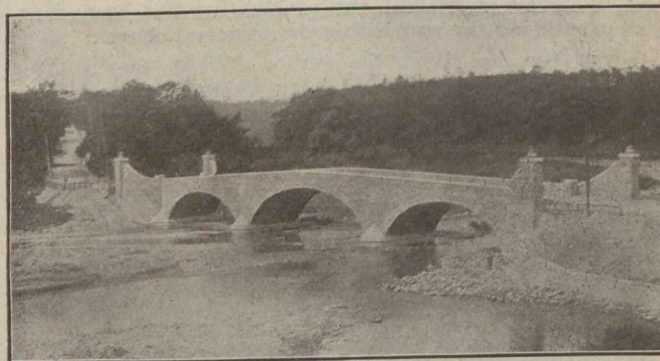
TORONTO'S MARGINAL BOULEVARD

BY REGINALD B. EVANS

Engineer of City Parks, Toronto, Ont.

FOR some years a survey has been under way for a marginal boulevard surrounding the city of Toronto. Plans and profiles have been plotted, costs of grading estimated, some work done along the south or lake-front side, and three miles of road built along the west margin of the city up the picturesque valley of the Humber river.

The latter section is much used by automobiles, as it connects the Hamilton highway with Dundas street and lies

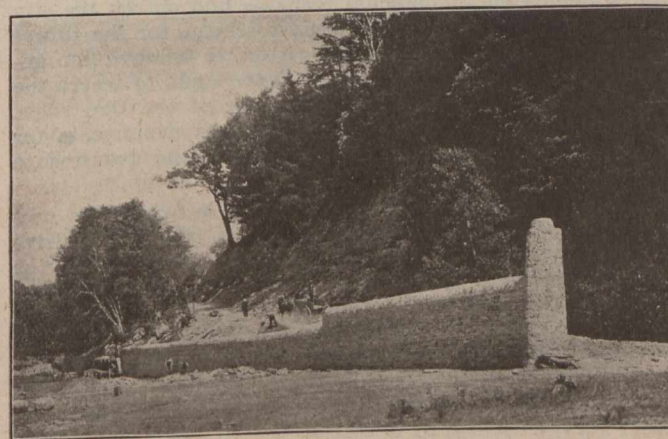


A PICTURESQUE PART OF THE BOULEVARD

through more than one hundred acres of park land owned by the city. This part of the boulevard has grown from an early trail used by our forefathers to carry grain from Lake Ontario to the old mill at Bloor street on the Humber river.

The first pavement was laid some ten years ago of concrete and is still in good repair, although it has been widened from 16 ft. to 30 ft. The road from the lake to Bloor street for the most part follows the top of the ridge of land lying between the Humber river and the ravine to the east. Little or no drainage was required on this part; some heavy clay cuts were made, however, and for several years trouble was experienced in these from heaving with frost and flooding. Finally weeping tiles were put along the side of the road and no difficulty has arisen since.

Where the road descends into the valley, a $5\frac{1}{2}\%$ grade is used for 1,300 ft. This hill is not paved with concrete but with tar macadam, as are all the steep hills. At Bloor street the boulevard crosses the Humber river on a hand-



HUMBER SECTION OF BOULEVARD DURING CONSTRUCTION

some stone bridge built jointly by the county of York and the city of Toronto. This point is about one and a half miles from the lake and is the head of navigation for small boats. During the summer and well on into October, canoes ply this river in great numbers and small boys bathe along its shores.