pendence of the Hamilton and Northwestern Railway Co., and that the plaintiffs by certain dealings with the latter company had waived their right to object to the amalgamation complained of. The court unanimously affirmed the judgment of the courts below and agreed with the reasons given. Appeal dismissed with costs.

PERSONAL.

The death is announced c' Mr. D. G. Mackenzie, who for nearly nineteen years efficiently discharged the duties of Clerk of the County of Middlesex.

The disposal of city refuse is no more profitable in Edinburgh than in other large cities, notwithstanding the glib talk of some who find great profit—theoretically—in disposing of it to farmers. The Edinburgh Councils lately sent out 1,521 circults to farmers in their vicinity, inviting tenders for about 51,900 tons of refuse, and manure, or about one-half of the yearly product. Only 47 tenders came in, and these under such conditions that practically required the city to pay all expense of transport, and even, in some cases, to pay the farmers so much a ton for accepting it.—Engineering News.

A machine for breaking up frozen ground, rotten ledges, and similar material frequently encountered in excavating for water-pipes and sewers, has been patented by the executor of the late Richard Fobes, Superintendent of Sewers at Worcester, Mass. The machine consists of an upright frame about 30 feet high, mounted on a car with a hoisting engine and boiler. A pair of guides is attached to the upright frame, and swing back and forth in front of the end of the car. In these guides a heavy bar, carrying a cutter bit at the end, is worked up and down as in an artesian well-drilling apparatus.

It is evident that in every community where a large part of the water consumers is of the tenant class, and especially such as are found in tenement houses, says the Engineering Record, there is no way of enforcing payment for water but to withhold the supply. Yet, since this penalty creates a condition of affairs that becomes a nuisance, which must be abated by the sanitary authorities, it would seem that the only practicable way to deal with this matter is to make the owner of the property in every case responsible for the payment of the water rates for all the water consumed on the premises. This is, in fact, the manner in which these rates are laid in New York City, where all charges for water are deemed to be included in the regular tents, constitute a lien upon the property, and, if unpaid, are returned as arrears and are collected with interest by the same process as the general taxes.

Details of a steel water main 5 feet in diameter are given in Le Genie Civil. The total length of this conduit is 8,445 feet, and it will be used in bringing water from La Vigne and Verneuil to Paris. It is constructed of mild rolled steel. The thickness is calculated so that the strain in no place exceeds 3.8 tons per square inch, and the actual thickness has been increased beyond this amount to allow for oxidation, the actual maximum thickness being 0.235 of an inch. The rivets are of mild steel, and the tubes are lap-jointed. The supports are of cast iron and spaced sufficiently close to prevent sag. The elbows are of cast iron and the cramps of wrought iron. Five manbeles per mile

are provided, and there will be two discharge tubes closed with sluice valves at the lowest point of the conduits.

A novel method of thawing frozen earth for making street excavations was described by H. H. Kelley, Superintendent of the Waltham, Mass., Gas Works, in a paper read before the New England Association of Gas Engineers. Stone lime is spread several inches deep over the place where it is desired to excavate, and is thoroughly wetted and covered with straw. A piece of canvas or tarpaulin is spread over the heap, and it is left for 12 hours more or less. In two cases in which Mr. Kelley has tried this method recently, frost 18 in. to 26 ins. was removed from the ground. In ordinary cases the expense of the lime would be too great to permit this plan to be adopted, but gas companies can use the lime afterward in their purifiers.

DEBENTURES WANTED.

Me nicipalities issuing debentures, no matter for what purpose, will find a ready purchaser by applying to G. A STIMSON, 9 Toronto Street, Toronto. N.B.—Money to loan at lowest rates on first mortgage.

ALAN MACDOUGALL,

CIVIL AND SANITARY ENGINEER, 32 ADELAIDS STREET EAST,

. TORONTO.

THE CENTRAL BRIDGE WORKS

Peterborough, Ont.

WM H, LAW, Proprietor and Engineer.

NANUFACTURER OF

RAILWAY AND HIGHWAY BRIDGES

Viaducts, Piers, Roofs, Turntables and Girders in Steel and Iron.

Tension members forged without welds. Riveting done by hydraula, or compressed as machines. Sp cialties Good workmanship and strict adherence to specifications and drawings.

CAPACITY 2,000 FONS PER ANNUM.

R. E. H. BUGKNER,

32 Adelaide St. East, - TORONTO.

PATENT CAST IRON GULLIES, Vurnfied Clay Sewers - Dust Bins - Sewer Pipe Cements - Steam Road Rollers - Stone Breakers - Street Scrupers Horse Brushes, etc,

ISAAC USSHER & SON THOROLD, ONT.

Manufacturers of

QUEENSTON CEMENT

Write for prices, &c. See Government tests.

HAMILTON and TORONTO SEWER PIPE CO.



HEAD OFFICE AND FACTORY, HAMILTON, CANADA,

SEWERS,

- FOR -

WATER PIPES.

INVERTS
Por Brick Sewers

Write for Discounts.

CANADIAN BRIDGE & IRON CO.

Architectural Ironwork a specialty. Pleased to furnish estimates.

M UNICIPAL Officers, Contractors and others are requested to mention the CONTRACT RECORD in correspondence with advertisers.

GOWER & CO.

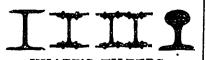
204 St. James St., MONTREAL.

Rivetted Girders,

Iron and Steel Rolled Beams,

Columns and Stanchions,

Roofs and Trusses.



HYATT'S FILTERS,

CROWN, EMPIRE and Nash

Cast Iron Pipes and Specials,
VALVES, HYDRANTS,
SEWER PIPES, ETC.

St. George's Patent Sectional

Vitrified Clay Sewer

- AND-

CAST IRON STREET GULLEY.

Over 5000 Gulleys are now in use in the following towns. Montreal, Joronto, Ottawa, Quebec, 5t. Cunegonde, 5t. Henri, Peterbore, Owen Sound, Samia, Cote St. Antonne. A saving of \$22 on each gulley over the brick culleys.



LEWIS SKAIFE,

New York Life Building, - MONTREAL AGENT.

THE STANDARD DRAIN PIPE CO.

OF ST. JOHNS, P. Q. (LIM.)



Manufacturers of

Salt-Glazed, Vitrified

SEWER PIPF

Double Strength Railway Culvert Pipes, Inverts, Vents,

Toronto. Montreal.

AND ALL KINDS OF FIRE CLAY GOODS.

Prices of Building Materials.

LUMNER.

CAR OR CARGO LOTS.

	•	ти. \$	MOTII	roai.
14 to a clear picks, Am. ins. 15 to a three uppers, Am ins 15 to a, pickings, Amins 3 inch clear	.30 00/	00 esh		. 4 5 as
1% to a three uppers, Am ins		37 00	40 00	45 (4)
inch clear		27 00	27 (X) 12 (x)	10 00
I A TO AND 12 dressing and	1			(0)(1)
better. LX to and 12 mill run	.18 00	\$0.00	18 cm	A) OO
t x to and tadressing	13 00	14 0U 16 00		10 co
t x to and 12 common.	. 12 00	13 00	8 cm	Ιυαο
t x to and to spruce culls .	.10 00		10.00	11 00
t inch clear and picks	28 DO	30.00	34.70	9 0.1 15 00
t inch dressing and better.	18 ∞	\$0.00	18 ta	20 00
t inch siding, mill run	14 00		14 190	1600
t inch siding, common. t inch siding, ship culls	11 00	12 00	11 00	14 00
t inch siding, mill culls	8 00	9 00	8 (2)	11 00 9 00
Cull scautling	8 ∞	ပွဲ ထ	5 .x	9 00
plank	33 00 b	25 00	22 (1)	
t inch strips, 4 in to 8 in mil	1	•, ~	22 (4)	si a
inch etrice	14 00	15 00	14 00	15 au
i inch strips, common 'Y inch flooring 'S inch flooring	.11 00 14 00		11 00	15 00
1 % inch flooring		15 00	34 (10) 34 (10)	t€ce 15co
XXX shingles, sawn, per A	1			
16 in. XX shingles, sawn	2 30 1 30	2 35	3.70	3 34
DID GEAL	TATIO	1 35 No.	1 10	1 15
Mill cull boards and scantling				
Shipping cult boards am	_	10 00		10 00
miscuouswidths		13 00		1300
Shipping cull boards, stock Hemlock scantling and jois	•	16 ac		16 00
up to 16 ft	1100	10.00		
up to 16 ft	1			10 00
up to 18 It	12 00	13 00	12 (2)	13.00
Hemlock scantling and joist up to 20 ft		14 00	•	
Scantling and joist, up to 16 f	ì	14 60	13 on	14 00 14 00
	ì	15 00		15 00
11 11 20 1		16 ∞		10 00
		17 00		17 00 19 00
· · · · 261	ì	31 00		31 00
1 1 38 (ţ	33 OC		23 co
// // jol	, }	25 00 27 00		25 00
** ** 341	ì	30 (0		27 to 29 50
" " 361	ì	31 60		31 00
" 10 10 44 f	ţ	33 00		33 (0
Cutting up planks, 1 and	i	36 00		36 vo
		a6 oo	25 20	26 00
Cutting up planks, 21/4 and thicker, board				
		33 00	19 01	33 00
cord Cedar for Kerbing, 4 x 14 per M		5 00		100
ner M	•			
		14 00		14 00
13 in flooring, dressed, F.M. 13 inch flooring, rough, B.M. 14 dressed, F.M. 15 undressed, B.M.			_	
1% inch flooring, rough, BM	18 00	33 00 31 00	18 00 18 00	31 (x)
134 dressed, F.M.	27 00	30 00	47 70	30 00
1% " undressed, B.M.	18 00	19 (0	18 00	19 00
11 undressed		22 OO	18 00	12 00 33 03
eaded sheeting, dressed	22 00	35 00	22 00	35 00
Clapboarding dressed		13 00		13.00
tó in	260	2 - 6		
Sawn lath	200	275	2 00	3 50 3 CO
Cedar		3 ço		3 60
White	30 00	40 00 45 00	30 cm 15 00 18 m	40 00
Basswood, No. 1 and 2	33 ∞		18.00	4\00 2~00
Cherry, No. 1 and 2 White ash, No. 2 and 2 Black ash, No. 2 and 2	70 00	70 ∞	70 00	80 co
Black ash, No. 1 and 2	25 00	30 ∞	10 00	35 90
Dressing stocks. Picks, American inspection	16 00	35 00	16 00	30 00
Picks, American inspection		49 00		40 ∞
Three uppers, Am. inspection		50 00		59 00
BRICK	₹ 31			
Common Walling.		7 50		600
Good Facing	8	90		8 50
	8 50 -	900	8 50	900
Pressed Brick, Per I		_		
Plain brick, f. o. b. at Milton		18 00		
" " and quantry		14 00		
Hard Building		8 00		
aroulded and Ornamer, al, per	·			
Roof Tiles	3 ∞	10 00 24 00		
Diamond locking tile		16 00		
First quality, f.o.b. at Camp-				
bellville		18 00		25 ∞
and quality, f.o.b.		14 00		30.00
3rd "" ";		11 00		1700