

Vol 30 cat. 6a

1908

# Crimped Steel Wire



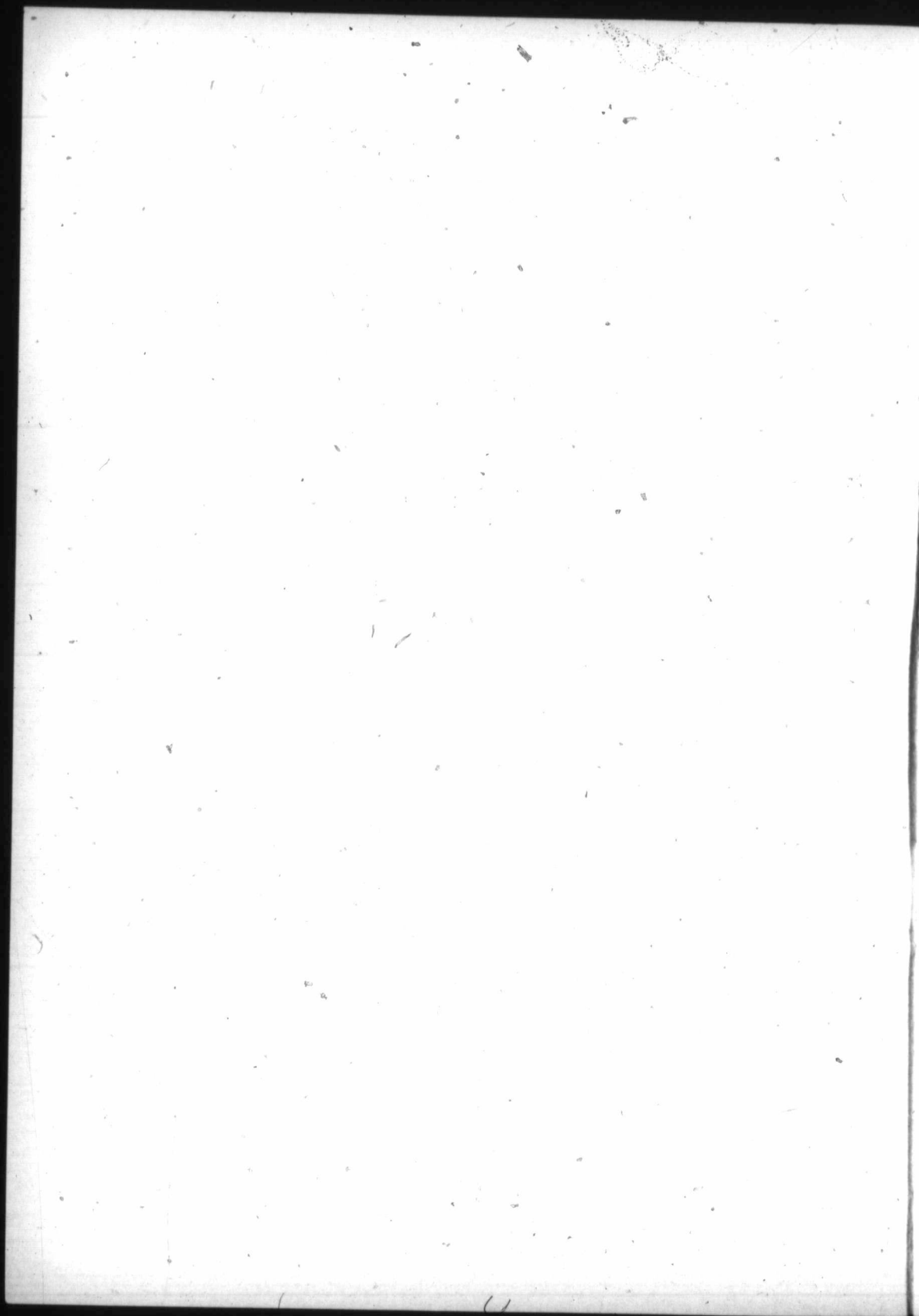
MANUFACTURED BY

THE B. GREENING WIRE CO., Limited

HAMILTON, ONT.

MONTREAL, QUE.

WINNIPEG, MAN.



# WIRE REINFORCING

— FOR —

Concrete Construction.



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## Wire Reinforcing



The progress made in the past few years by the use of concrete reinforced with steel, has been so rapid, and so many of the largest building operations of recent years have been carried to completion, in which this class of fireproofing has been adopted that at the present time, a system that combines fire-resisting qualities, with load-carrying capacity, is readily admitted to the specifications of the most eminent architects and engineers.

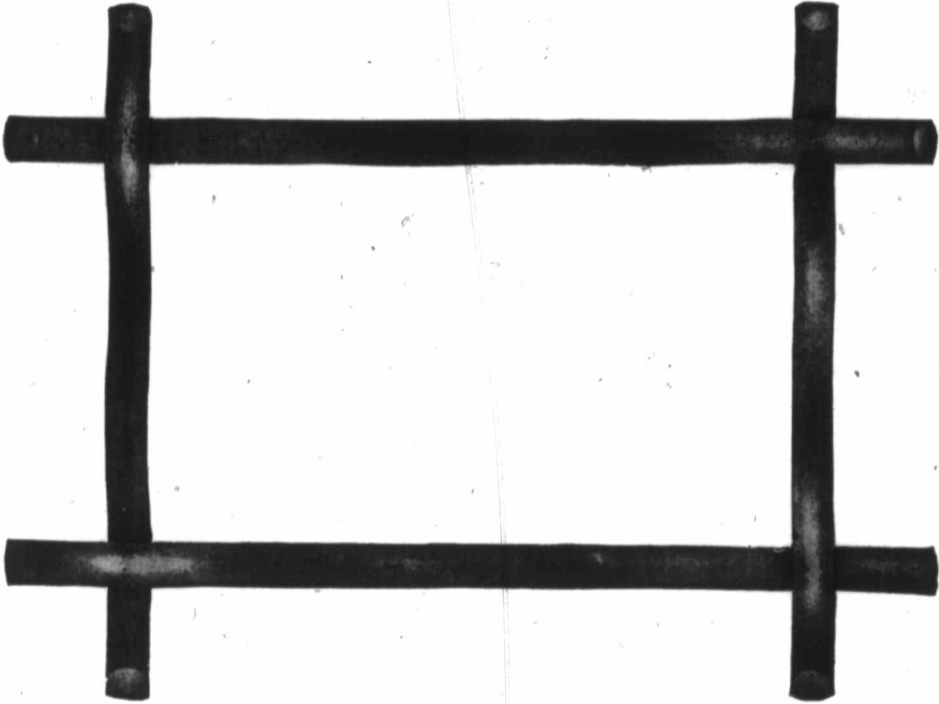
Greening's Wire Reinforcings are made of all strengths of material and in any lengths desired. Long lengths forming a continuous bond are features of our reinforcing. For roofs and floors of great length, the superiority of this feature is no longer questioned.

The superiority of concrete construction, of stone, or cinder concrete reinforced with one or other forms of steel embedded in the concrete, over any other system of fire-proof arch is now readily conceded.

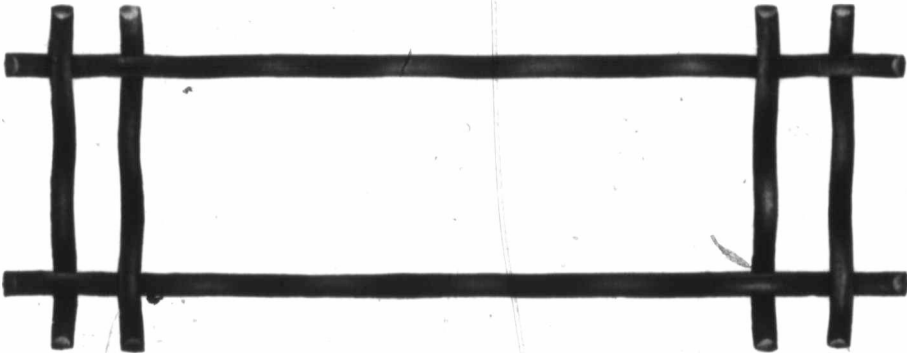
Other uses for reinforced concrete are floors of bridges, the construction of culverts, tunnels, shafts, sewers, retaining walls, footings, etc.

THE B. GREENING WIRE CO., LIMITED

## WIRE REINFORCING



2½ inch x 4 inch Mesh, made of No. 3 Steel Wire.  
CUT FULL SIZE.



2½ inch x 8 inch Mesh, made of No. 3 Steel Wire.

Cut half size, showing Construction of coarser  
and lighter meshes.

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## Wire Reinforcing—Continued.

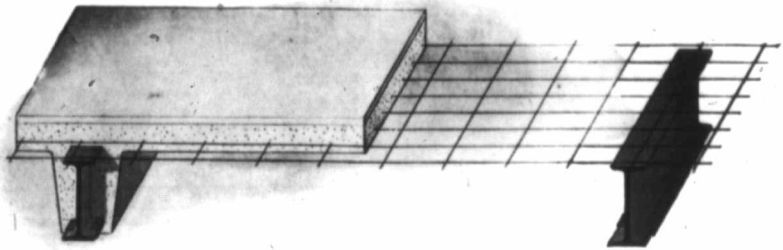


Figure 1 represents fire-proof construction of floor, reinforced with our Crimped Steel Wire Reinforcing, stretched on the top of I beams near the bottom of floor-slab.

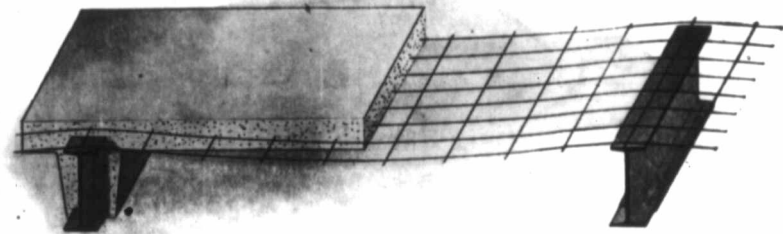


Figure 2 is the same as No. 1, excepting that the reinforcing is placed near the top of floor over the I beams and deflected to near the bottom of the floor slab in the centre, between the bearings.

For Table of Breaking Strains. etc.. see page 10.

## Wire Reinforcing—Continued.

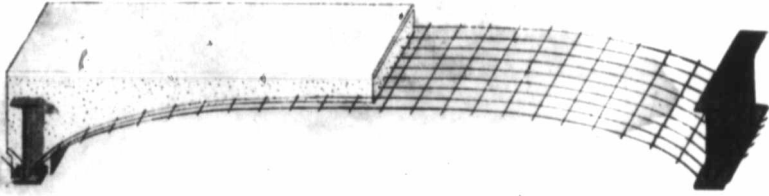


Figure 3 shows a light construction with spans as wide as 15 feet centre to centre.

Our Crimped Steel Wire Reinforcing of 2 inch x 4 inch mesh, made of No. 3 Steel Wire, would be suitable for this construction.

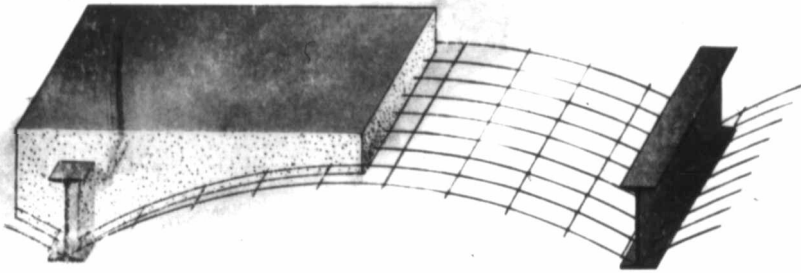


Figure 4 shows a heavy construction with spans of 6 feet centre to centre.

Our Crimped Steel Wire Reinforcing of 2½ inch x 4 inch mesh made of No. 6 Steel Wire, would be suitable for this construction.

For Table of Breaking Strains, etc., see page 10.

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## Wire Reinforcing—Continued

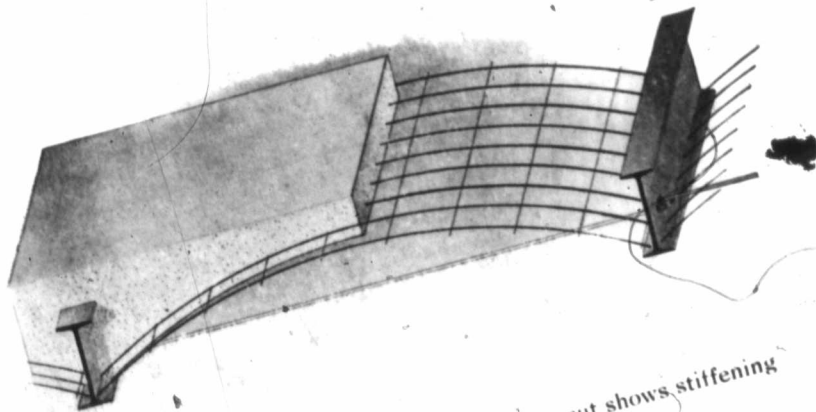


Figure 5 is the same as No. 4 excepting the cut shows stiffening rods to brace the I beams.

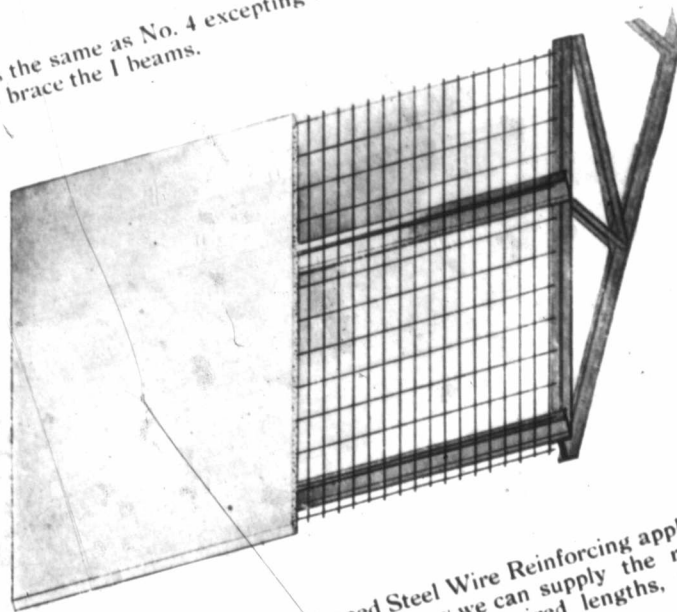
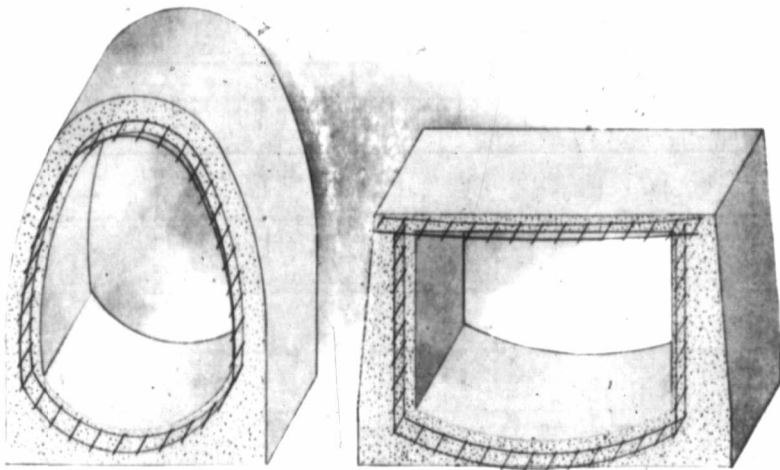


Figure 6 illustrates our Crimped Steel Wire Reinforcing applied to pitched roofs. For this purpose we can supply the reinforcing as wide as 10 feet and in any desired lengths, thus insuring an unbroken bond for hundreds of feet. For Table of Breaking Strains, etc., see page 10.



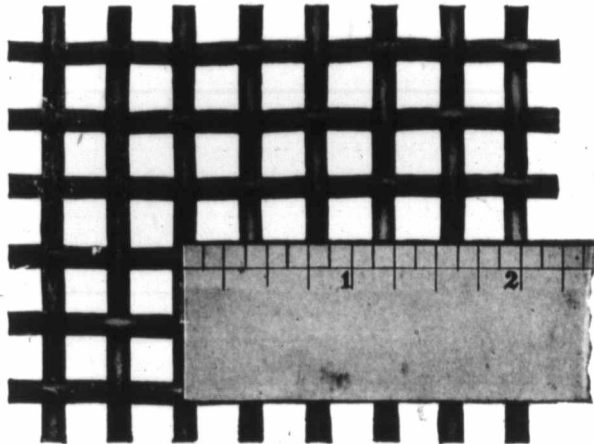
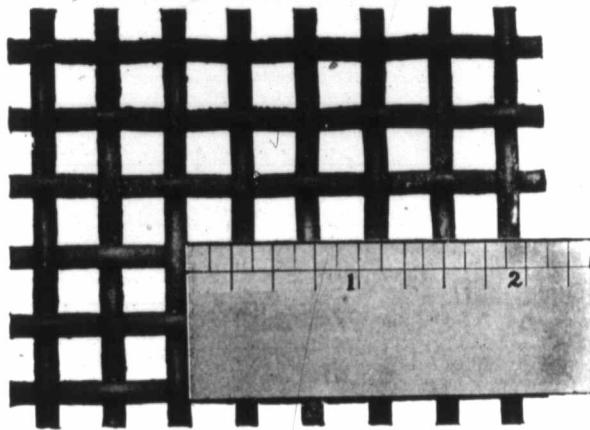
## Wire Reinforcing—Continued.



Figures 7 and 8 show our Crimped Steel Wire Reinforcing as applied to sewers, drains, tunnels, tanks, silos and work of a similar character.

We can supply the reinforcing in a continuous length sufficient to make the entire circumference of the work being done and by securing the ends of the meeting wires the full strength of the fabric is obtained.

For Table of Breaking Strains, etc., see page 10.

**HOW TO ORDER****Wire Cloth and Wire Screening**Showing  $2\frac{1}{2}$  x  $2\frac{1}{2}$  mesh, No. 10 WireShowing  $\frac{1}{4}$  inch space of No. 10 Wire.

In ordering Wire Cloth or Screening, always be particular to mention the length and width wanted, also mesh or space and number of wire on Imperial Wire Gauge, or decimal size of wire.

**Note.** The mesh in Wire Cloth is the number of openings per lineal inch, measured from centre to centre of wires.


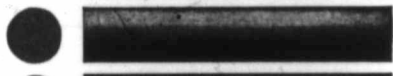


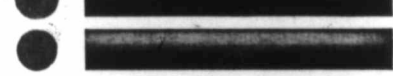
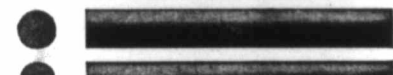
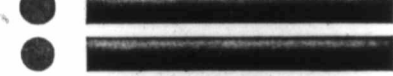


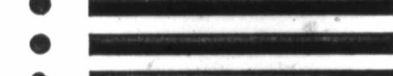


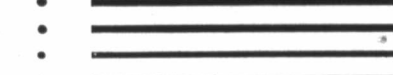




The space or hole is the actual size of opening measured between the wires

The above cut shows, first, a piece of Wire Cloth with rule on it, measuring  $2\frac{1}{2}$  x  $2\frac{1}{2}$  meshes to lineal inch; second, a piece of same fabric with a rule on it measuring  $\frac{1}{4}$  space.

Wire Reinforcing is measured from centre to centre of wires.

### Comparison of Dimensions

Expressed in Fractions and Decimals of one Inch, and Imperial Wire Gauge.

No.	Decimal Imperial Gauge	FULL SIZE OF WIRE.	Fractions of an inch.	Decimal of an Inch.
00	.348		$\frac{11}{32}$	.348
0	.324		$\frac{21}{64}$	.328
1	.300		$\frac{19}{64}$	.297
2	.276		$\frac{9}{32}$	.281
3	.252		$\frac{1}{4}$	.25
4	.232		$\frac{15}{64}$	.234
5	.212		$\frac{7}{32}$	.219
6	.192		$\frac{3}{16}$	.188
7	.176		$\frac{11}{64}$	.172
8	.160		$\frac{5}{32}$	.156
9	.144		$\frac{9}{64}$	.141
10	.128		$\frac{1}{8}$	.125
11	.116		$\frac{7}{64}$	.109
12	.104		$\frac{1}{10}$	.1
13	.092		$\frac{3}{32}$	.093
14	.080		$\frac{5}{64}$	.078
15	.072		$\frac{1}{16}$	.063
16	.064			
17	.056			
18	.048			.047
19	.040			
20	.036			
21	.031		$\frac{1}{32}$	.031

Size on Wire Gauge	Diameter in Inches	Weight per Foot of One Wire	Tensile Strength of One Wire	Tensile strength of longitudinal wires only in one foot of the width of wire reinforcing when spaced as follows:—				
				2 Inch Centres	2½ Inch Centres	3 Inch Centres	3½ Inch Centres	4 Inch Centres
3	.252	.164	3990	23940	19152	15960	13685	11970
4	.232	.139	3381	20286	16228	13524	11597	10143
5	.212	.116	2824	16944	13555	11209	9686	8472
6	.192	.095	2476	14856	11885	9904	8493	7428
7	.176	.080	2136	12816	10253	8544	7326	6408
8	.160	.066	1813	10878	8702	7252	6219	5439
9	.144	.054	1507	9042	7234	6028	5169	4521
10	.128	.045	1233	7398	5918	4932	4229	3699
11	.116	.035	1010	6060	4848	4040	3464	3030
12	.104	.028	810	4860	3888	3240	2778	2430

	Weight per square foot of longitudinal wires only when spaced as follows:—					Weight per square foot of transverse wires only when spaced as follows:—				
	2" Centres	2½" Centres	3" Centres	3½" Centres	4" Centres	2½" Centres	4" Centres	5½" Centres	7" Centres	8½" Centres
3	1.1100	.9000	.7500	.6600	.5400	.9000	.5400	.4200	.3300	.2700
4	.9455	.7666	.6389	.5622	.4600	.7666	.4600	.3577	.2811	.2300
5	.7811	.6333	.5277	.4644	.3800	.6333	.3800	.2955	.2322	
6	.6372	.5166	.4305	.3789	.3100	.5166	.3100	.2411	.1894	
7	.5344	.4333	.3611	.3178	.2600	.4333	.2600	.2022		
8	.4522	.3666	.3055	.2689	.2200	.3666	.2200	.1711		
9	.3700	.3000	.2500	.2200		.3000	.1800			
10	.2877	.2333	.1944			.2333	.1400			
11	.2261	.1833				.1833				
12	.1831					.1500				

EXAMPLES—The longitudinal wires No. 4 gauge spaced on centres of 2½ in. weigh .7666 of pound to square foot, and the transverse wires No. 4 gauge spaced on centres of 5½ in. weigh .3577 of pound to square foot. Therefore a reinforcing 2½ in. x 5½ in. of No. 4 wire would weigh approximately 1 lb. 2 oz. per square foot of reinforcing.

The longitudinal wires No. 8 gauge spaced on centres of 3½ in. weigh .2689 of pound to square foot, and the transverse wires No. 8 gauge spaced on centres of 5½ in. weigh .1711 of pound to square foot, therefore a reinforcing 3½ x 5½ in. centres of No. 8 gauge wire would weigh .44 pounds to square foot.

Longitudinal wires may be spaced on centres of two or more inches in steps of ½ inch. Transverse wires may be spaced on centres of 2½ or more inches in steps of 1½ inches as per above table. We can supply the reinforcing in any of these meshes as wide as 120 inches and in any length desired excepting those fabrics that are too stiff and heavy to be made into a roll.

Select a mesh and size of wire suitable to your requirements, giving quantity, when we shall be pleased to quote you prices.

It is considered good practice to use a reinforcing sufficiently strong to carry the desired weight without reference to the added strength of the concrete.

A factor of safety of ten should be observed.

A generally accepted mixture is that of cement 1, sand 2½, stone 5.

The stone should be broken so as to go through a ¾ or 1 in. diameter ring.

The nearer the reinforcing is to the underside of cement slab the more effective it becomes to carry the load.

WE HAVE SUPPLIED REINFORCING TO THE FOLLOWING FIRMS:

Barnett & McQueen Co., Port Arthur, Ont., for Atikokan Iron Co., 2½" x 4" x No. 6 Gauge Wire; J. B. Smith & Sons, Callendar, Ont., for roof of Saw Mill, 3½" x 4" x No. 10 Gauge Wire; J. H. Tromanhouser; Goderich, Ont., for Elevator, 2½" x 4" x No. 10 Gauge Wire; City of Winnipeg, 4" x 4" x No. 8 Gauge Wire; R. Forbes Co., Hespeler, Ont., for Woollen Mill, 2" x 5½" x No. 7 Gauge Wire; Town of Orillia, for Dam; Otis Fenson Elevator Co., Hamilton, Ont., for Roof of Works, 2" x 8" x No. 8 Gauge Wire; Jos. Crevier; St. Annes De Bellevue, Que., 4" x 2" x No. 3 Gauge Wire; for Bank of Montreal; Christie Bros., Owen Sound, Ont., 2" x 4" x 3/16 Gauge Wire; Hamilton Bridge Co., for Bridge Flooring, 2" x 4" x No. 6 Gauge Wire; Township of Trafalgar Oakville, Ont., 2" x 4" x No. 6 Gauge Wire, for Bridge Flooring.

## WIRE LATHING

Before introducing the Metallic Lathing we are now making, we wish to point out some of the advantages obtained by using a metal lath, instead of the wooden one. These advantages are common to most of the metal lath on the market, but pre-eminently so in ours, as an investigation will prove.

The perfect key formed, and the absence of all shrinking and warping, prevents the cracking of the plaster that is to be seen in almost every building where wood lath has been used, and for this reason it is invaluable for use on walls and ceilings that are to be frescoed.

The mortar cannot become detached from the lath, because when the plaster is applied it clenches on both sides of the metal and forms a double surface of plaster. It is, therefore, especially adapted for use in stores, factories and warehouses, where the vibration of machinery or the moving of heavy weights is likely to shake off the plaster.

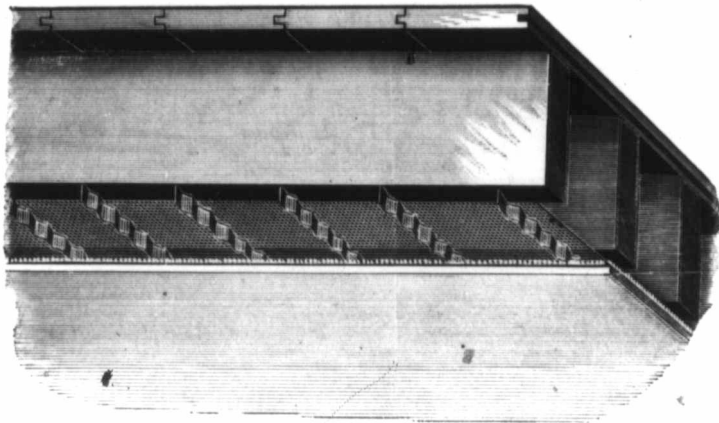
Its advantages from a sanitary point are obvious, the avoidance of imperfect plastering in tenement houses, hospitals, or any building where the interiors are exposed to impure atmosphere, being of the greatest importance.

Another good point in its favor is that it is rat-proof.

With regard to its durability it stands the test of time better than any other lath. We have seen it stated that the French Government, during the reign of the first Napoleon, used wire lath in constructing some of the public buildings in Paris; that lath remains intact to-day. In 1853 wire lathing was used in the Boston Theatre, and when examined in 1873 was found as perfect as when first put on, the iron lath showing no signs of corrosion. This is owing to the fact that lime mortar is a perfect protection to iron against corrosion.

We shall be pleased to forward samples of our laths to anyone interested.

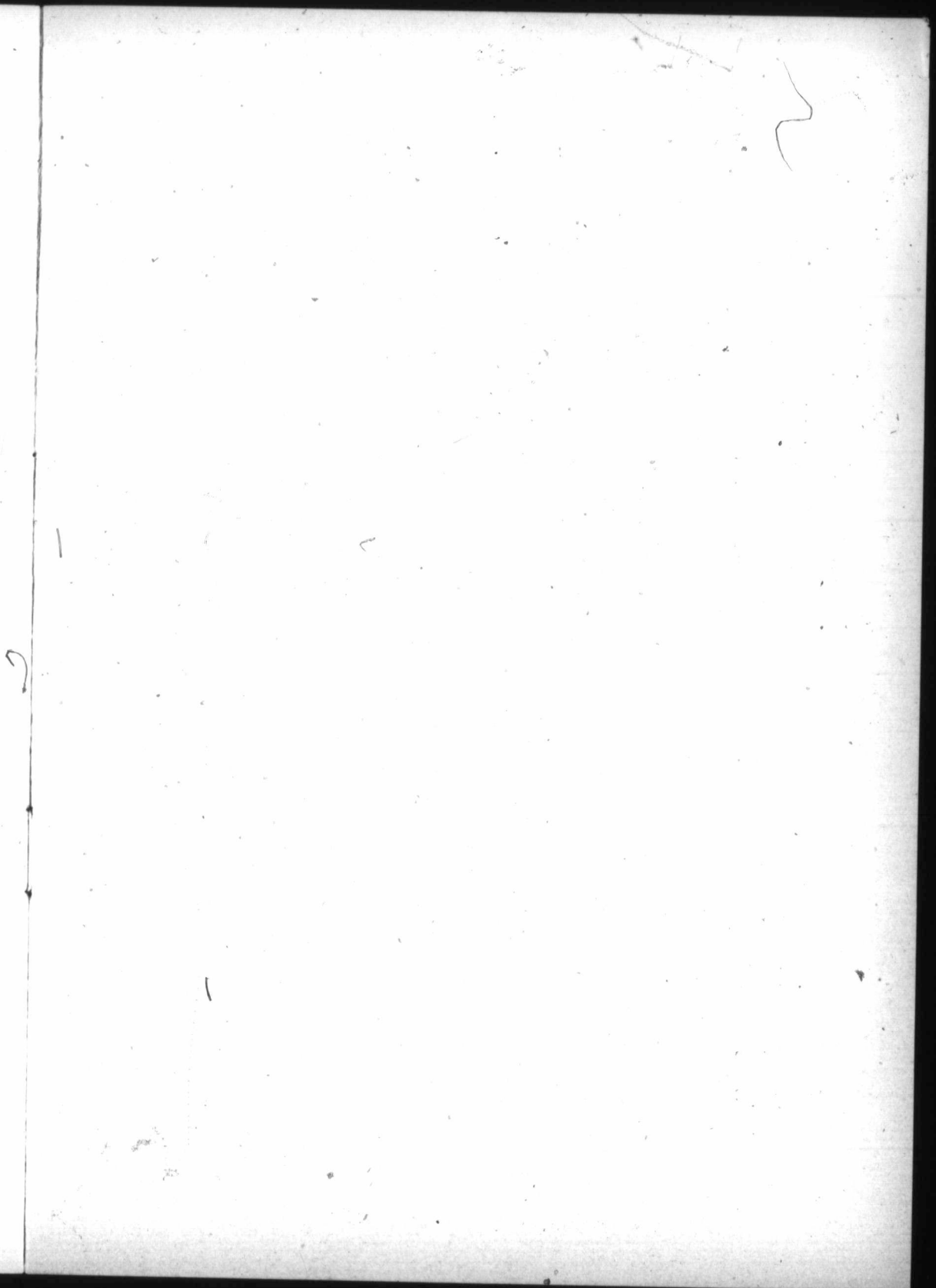
## Greening's Patent Fire-Proof Lathing



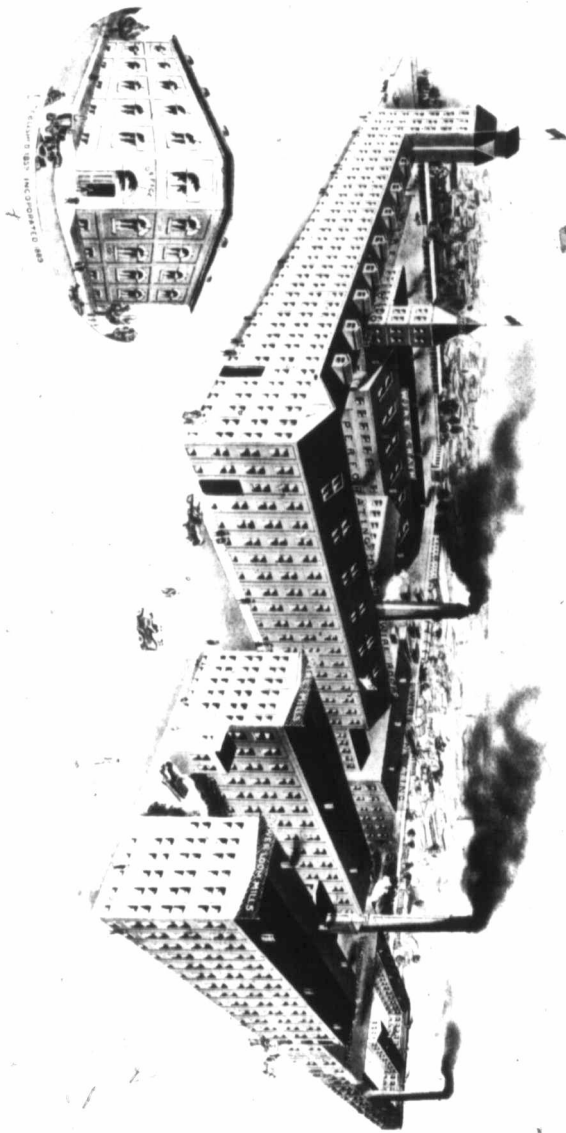
This lathing consists of a combination of wire cloth,  $\frac{3}{8}$  in. mesh, made of No. 18 steel wire, and a crimped iron furring varying from  $\frac{3}{8}$  to 1 in. wide. In applying, the furring strips are first stapled across the joists every nine inches, the cloth being then stretched over and stapled and tied to the furring giving great strength and stiffness to the fabric.

The advantages we claim for our new lathing are, that it has fire-proof qualities not possessed by any other make on the market. By the use of our patent corrugated iron strips the mortar can be kept clear of the joists a sufficient distance to insure perfect protection against their firing, even if the mortar becomes red hot.

The fire that occurred in our wooden painting tower on August 3rd last supplies a splendid practical example of the fire-resisting qualities of plaster on wire lath. The interior of the tower to the roof was wire lathed and plastered, and although the fire raged for  $1\frac{1}{2}$  hours the only damage to the building was the burning of the superstructure and the contents of the building consisting of paints, oils, varnishes, etc. Had the walls not been fire proofed, as above, the fire would in all probability have spread to the surrounding buildings, causing a great destruction of property. As it was the loss did not exceed one thousand dollars.



THE B. GREENING WIRE COMPANY, Limited.



HAMILTON, ONT.

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