

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

VARIETIES OF CLAY.

When clays are formed from granite rocks they are usually white or yellowish white, and are very adhesive or plastic; when resulting from the decomposition of slaty rocks they are more or less colored and sandy, and when limestone mud gets intermingled their plasticity is greatly diminished. The plastic element consists of some combination of silica (quartz or flint in a peculiar condition) and alumina (one of the constituents of alum), with more or less water; but a perfectly pure combination of this kind rarely occurs in nature, there being always present various quantities of sand, iron, lime, magnesia, potash, &c. The less of these substances present the richer or fatter the clay, whilst clay containing a great deal is called poor. These substances not only exert an influence upon the plasticity of a clay, but also upon its relation to fire; the nearer a clay is in composition to a pure silicate of alumina, and the more silica it contains, the more infusible it is, but an admixture of iron or lime will give it the character possessed by a mixture for making bottle-glass, for when subjected to a heat depending upon the amount of these foreign substances it will melt. The finer clays, or such as are infusible and white, are very rare, while those which contain lime, such as ordinary clay marls, and those rich in iron, such as brick clays, are common. A clay may contain so very little foreign substances as to be infusible, and yet have sufficient iron to give it a color; for we may remark here that the color which a clay assumes on being burned depends upon the iron which it contains. The fine white clays (kaolin) are used in the manufacture of porcelain and are found usually in granitic countries; the inferior white clays (pipe-clay) are usually found in coal districts and are used in the manufacture of earthenware and pipes; at present we shall confine ourselves to the colored clays. These we conveniently divide into the infusible or fire-clays, which burn either of a buff or of a dark color, and the fusible or ordinary brick clays, which burn of various colors, especially of a pale yellow and bright red. The fire-clays are chiefly obtained from beds associated with coal, very frequently forming the underlying stratum, and hence called coal-seat, though they are also found under many other circumstances, and even on the surface. They are generally of a bluish black color and of a hard slaty texture, a good example of which is afforded by the well-known Stourbridge clay. The fusible clays are derived from various sources, but are very often superficial deposits, constituting the subsoils of large tracts of country. They usually contain a certain amount of carbonate of lime, and in some cases so much as to be true marls. They also frequently contain sand and pebbles; when, however, the proportion of sand amounts to one-fourth of the entire mass, it is not considered as clay in the strict sense of the word, although that substance may be separated from it by washing. Indeed there are few loose superficial deposits, such as soils and sub-soils, that could not be thus made to yield clay. The economical use of the fire-clays are chiefly for the manufacture of brick designed to withstand great heat, the construction of furnaces of various kinds, pots for fusing glass, retorts, &c. The fusible or common clays constitute the materials from which our usual building bricks, roofing and flooring tiles, draining pipes, garden pots, common

pottery are made. Both kinds are employed in the production of figures and ornaments in what is called terra-cotta.

DEBENTURES PURCHASED

Municipalities issuing debentures, no matter for what purpose, will find a ready purchase: by applying to **G. A. STIMSON, 9 Toronto Street, Toronto.** Any assistance required in computing calculations in connection with sinking fund, etc., will be gladly given. N.B.—Money to loan at lowest rates on first mortgage.

Imperial Trusts Company of Canada

32 CHURCH STREET, TORONTO

Capital, \$400,000.

The Company is ready at all times to purchase MUNICIPAL DEBENTURES, and has always such Securities on hand for sale. Allows 4% interest per annum on money, and takes charge of Sinking Funds on special terms. **J. S. LOCKIE, Manager.**

The London and Canadian Loan and Agency Co., Ltd.

Capital, \$5,000,000.00.

MUNICIPAL DEBENTURES PURCHASED. MORTGAGES PURCHASED. MONEY TO LOAN AT CURRENT RATES. 103 Bay St., Toronto. - **J. F. KIRK, Manager.**

MERRIFIELD & WESTCOTT . . .

ENGINEERS and CONTRACTORS
—FOR—

WATER WORKS AND GAS PLANTS

269 Front Street East, TORONTO.

DEBENTURES PURCHASED.

WE will pay the highest price for MUNICIPAL DEBENTURES. We tender our services to those not having books to make for them the calculations necessary when issuing debentures payable in annual instalments. **JEMILIUS JARVIS & CO.** (Member Toronto Stock Exchange), 23 King St. W., Toronto.

EUREKA CONCRETE () PAVING COMPANY

FOR SIDEWALKS,
STABLE FLOORS,
CELLAR FLOORS,
BREWERY FLOORS, ETC.

A. CARDNER & CO.

17 Yonge St. Arcade - TORONTO
Telephone 2147

W. McNALLY & CO.

Building and Contractors'
Supplies

SEWER PIPES & PORTLAND CEMENTS

PATENT WALL PLASTER—The hardest, quickest drying and cheapest material made.

Corner McGill and Wellington Streets, MONTREAL

THE THREE RIVERS IRONWORKS CO. ▯

THREE RIVERS, P. Q.

MANUFACTURERS OF

Cast Iron Water and Gas Pipes

of best quality, from 2 inches in diameter.

HYDRANTS, VALVES and GENERAL CASTINGS.

Drummond McCall Pipe Foundry Company,
MONTREAL

MANUFACTURERS OF

CAST IRON WATER AND GAS PIPES

WORKS: LACHINE, QUE.

PRICES ON APPLICATION.

Cast Iron Pipe • Special Castings

HYDRANTS AND VALVES

MANUFACTURED BY

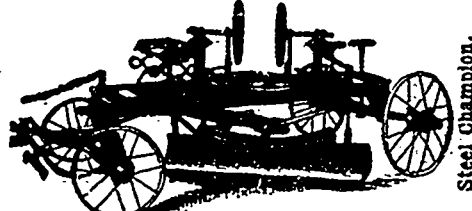
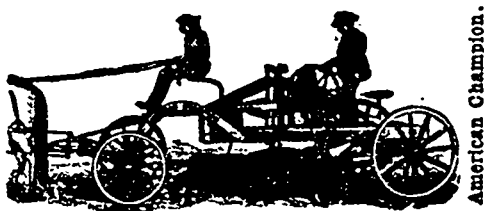
THE WM. CLENDINNENG & SON CO., Ltd.

Correspondence solicited.

Montreal and St. Henry.

THE COPP BROS. CO., LTD. Hamilton, Canada, Manufacturers of both

these Road Machines.



THE G. & J. BROWN MFG. CO.

Railway and Contractors' Plant.

BRIDGE BUILDERS

BELLEVILLE, ONT.