

# A Famous Yorkshire Stone

## Production by Modern Quarrying Methods

By W. T. MORRISON



Section of Cromwell Quarries.



Another section of Cromwell Quarries.

Quarrying is one of the most ancient industries in existence. In the Old Testament there are numerous references to quarrying definitely showing that it was pursued by the ancients thousands of years before the Christian era. In our country, too, there can be little doubt regarding its great antiquity. Some few years ago, for instance, a vast stone factory was discovered at Penmachwr, Wales, and from the description of the thousands of implements brought to light it may be safely assumed that quarrying was being carried on in the British Isles at least 5,000 years ago.

In days gone by, the methods of quarrying and working stone were very laborious. The cutting and splitting of the rock was done by means of wood wedges, and it is believed that the chisels and drills used were made of bronze. Holes were drilled into the rock with the aid of bronze drills and wood mallets, wood wedges then being inserted into the holes, which were subsequently filled with water, the water causing the wood to expand and burst the stone. This somewhat primitive method of stone quarrying has been in force in some parts of Yorkshire right up to recent times.

The quarrying and working of stone in the Halifax district of Yorkshire has been carried on for several centuries, and stones of varying degrees of hardness and texture have been obtained, from those of extreme softness to those as hard as granite. One of the most famous of the Halifax stones is that geologically

known as "Elland Edge" flag rock, so named because it is produced on the hilltops around the ancient township of Elland. This is a very special class of material, and was first produced many hundreds of years ago. It is exceptionally hard, and slates made from "Elland Edge" stone have been taken off buildings 500 to 600 years old and put on to roofs of recently constructed buildings.

Prior to the use of mechanical equipment for quarrying, the work was carried out in Yorkshire by the farmers and their helpers. Stone was frequently found on the surface, and this had to be cleared away before the land could be tilled. This stone was used for the building of the houses and also for fences dividing the fields. The farmers also sold the stone to their neighbours for building and road construction purposes, and as time went on, and the population increased, they found it paid them to employ special labour to delve deeper into the ground and produce larger quantities of stone.

In the early days of stone quarrying in Yorkshire, men were employed to quarry and work the stone, but it was the women who conveyed it in baskets to carts, some distance from the quarry. The baskets were carried on their heads and backs. Then a wheelbarrow was invented, which greatly facilitated this work. The stones, however, still

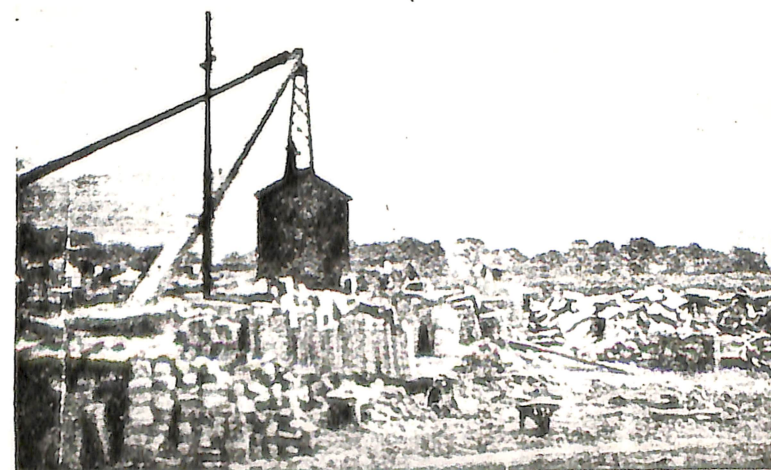
had to be conveyed from the bottom of the quarry on men's backs. At a later date hand cranes were invented for hauling stones to the surface, and then came the steam cranes to which cumbersome iron



Section of Grange House Quarries.



Stock of Pavement Stones at Cromwell Quarries.



Stock at Grange House Quarries.



Mining operations.

chains were fitted. Wire ropes eventually replaced iron chains and these enabled the quarry owner to work at a greater depth than had hitherto been possible.

So far as the delving or getting of stone is concerned the method used in a large number of quarries today is the same as it was hundreds of years ago. On the other hand, there are numbers of quarries where full advantage has been taken of modern plant and equipment, and the costs of production considerably lowered as a result. In this connection, outstanding enterprise has been displayed by the late Mr. Yorkshire Quarry owner, St. Marshall & Son, Ltd., of Southowram, Halifax, who carried out an extensive scheme of electrification at their workings some six years ago.

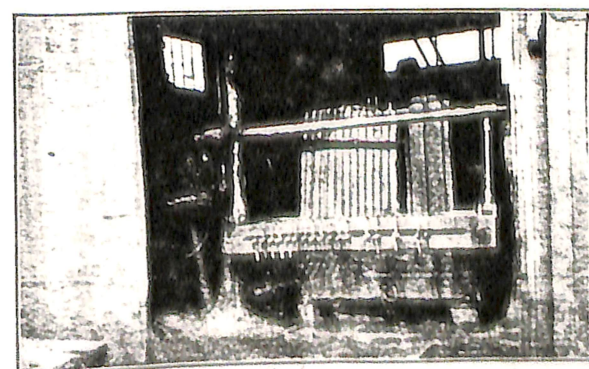
This firm was established 48 years ago by the late Mr. Solomon Marshall, and was formed into a limited company in 1904. The present directors are two sons and two grandsons of the founder, and they are all practical men who have had a long experience of the industry. Seven workings are quarried by the Company at Southowram, including those known as West Lane, Grange House,



Cutting with Compressed Air Drill. Mr. Hanson Marshall and son are shown in foreground.

Cromwell and Grove, and the total output amounts to about 25,000 tons per annum.

The stone is the noted "Elland Edge" flag rock referred to on other



Front of Saw Frame.



Compressed Air Drilling at Quarry Face.

side, and it is used chiefly by London and provincial public authorities, for paving footpaths and similar work. It also has many uses in connection with building operations, and for landscape gardening. It exists about 60 feet below the surface of the ground at the Southowram Quarries, and is obtained by means of compressed air drills and lifted to the surface by electric cranes.



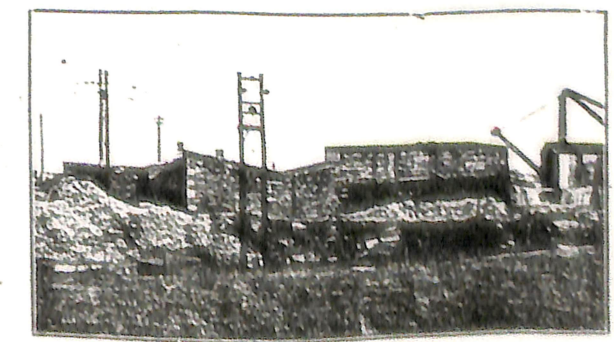
Part of the Stock of Pavement Stones.

A Diesel oil excavator, supplied by Thomas Smith & Sons (Rodley) Ltd., of Rodley, Leeds, is in use, while Ingersoll-Rand double-stroke compressors, driven by 40 h.p. motors each supply compressed air for five rock drills, two diggers, two chipping hammers and a drill sharpener, thus



Trimming Paving Stones.

enabling the stone to be obtained with speed, efficiency and economy. Southowram Quarry, it may be added, was the first of its kind to be completely equipped with electrical plant and machinery. Altogether, 150 hands are employed.



Sub-station at the Southowram Quarry.

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