but the claims of Anglezark rest on a more shaky foundation than those of Alston Moor.

The reference to Werner in Dana's *System* reads, '*Bergm. J.*, **2**, 225, 1790': it should be '**2**, 379, 1789'. Dunham and Dines (1945) date Watt's paper as 1789 on p. 29 and 1787 on p. 30: it is certainly of 1790, not having been read until 30 November 1789 and an 'Advertisement' to the volume states that it 'has been detained an unusual time in the press'. Recognition of the location of Anglezark and neighbouring mineral veins on the one-inch Geological Survey map (Sheet 75, Preston: Solid, 1958) is hampered by the omission of the customary gold lines. They are shown, however, on 6-in. Sheet Lancashire 78 (1869).

Dept. of Geology, J. SELWYN TURNER
The University, Leeds.

References.

DUNHAM (K. C.) and DINES (H. G.), 1945. Barium minerals in England and Wales. Geol. Survey Wartime Pamphlet no. 46. London.

HOFFMANN (C. A. S.), 1789. Mineralsystem des Herrn Inspektor Werners mit dessen Erlaubnis herausgegeben von C. A. S. Hoffmann. Bergmännisches Journ., Jahrg. 2, Bd. 1, p. 311.

MIERS (H. A.), 1902. Mineralogy. London (Macmillan).

PALACHE (C.), BERMAN (H.), and FRONDEL (C.), 1951. Dana's system of mineralogy, 7th edn, vol. 2. New York (Wiley) and London (Chapman & Hall).

WATT (J.), 1790. Mem. Manchester Lit. and Phil. Soc., vol. 3, p. 598.

WITHERING (W.), 1783. Outlines of mineralogy, translated from the original of Sir Torbern Bergman, Knight of the Order of Wasa, professor of chemistry at Upsal, &c. Birmingham (Cadell and Robinson).

—— 1784. Phil. Trans., vol. 74, p. 293.

A simple rock-crusher.

IN order to speed the operation of crushing rock samples a standard engineer's 'Fly Press', normally employed in production work for stamping out thin metal blanks, has been adapted as a rock-crusher.

The press illustrated is a standard (British) no. 3, which may be purchased from any reputable tool merchant for less than £30, and was adapted for crushing rock samples to a coarse powder by fitting two steel plates in place of the stamping tools and a plastic washing bowl to collect the crushed material. The plates were machined from 5 in. $\times 1\frac{1}{2}$ in. forged blanks of tool steel (ZN32), and the crushing surfaces case hardened to maximum hardness. The specimen for crushing is placed between these surfaces, which are brought together by a swing of the

long arm. One swing will break quite large samples. Two-inch cubes of medium-grained granite are simply dealt with, while extremely fine-grained samples of igneous rocks need to be roughly about half this size.

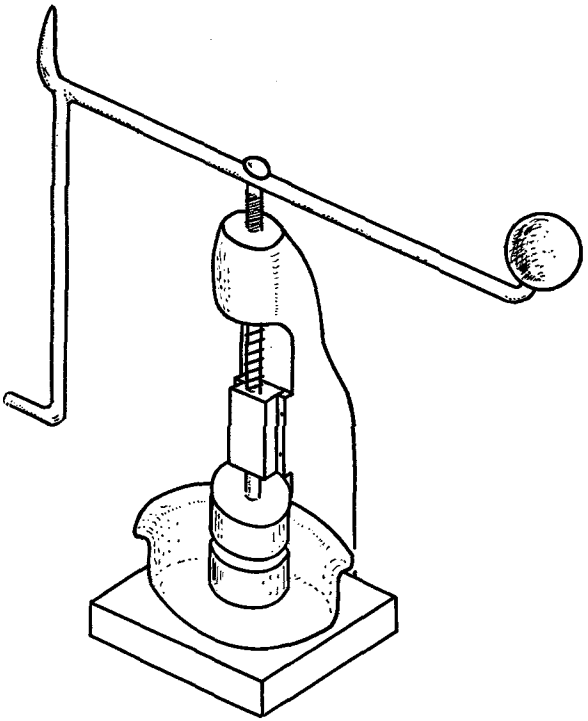

FIG. 1. Diagrammatic representation of the press with the steel crushers and plastic basin in position.

The action is a direct crushing action which reduces the chances of contamination and there is practically no visually discernible dust loss.

One kilogramme of a medium-grained granite, previously broken in a hydraulic rock splitter into roughly two-inch cubes, can be reduced to a coarse powder capable of passing through a B.S. $\frac{3}{16}$ in. mesh sieve in a matter of two to three minutes. This product is entirely suitable for passing through the coarse side of a roller crusher.

King's College,
London.

E. O. ROWLAND