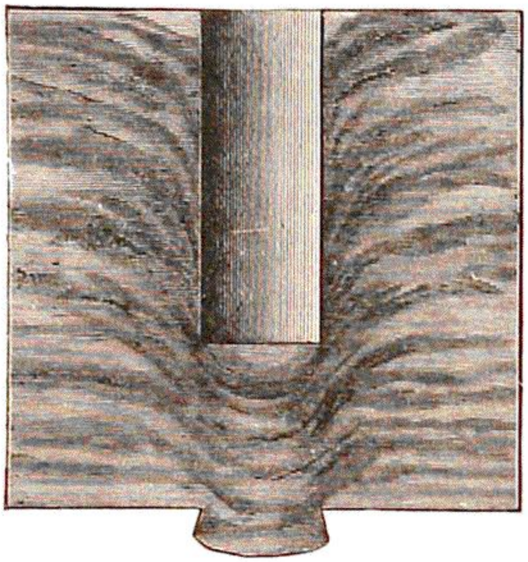
erally, or in the direction of the width and length of the block; and this lateral movement or flow had bulged the sides much more at bottom than at top, and most about the middle. At bottom the block was increased $\frac{1}{25}$ in width and $\frac{1}{50}$ in length. The block had been made of plates of iron welded together, and these were bent downward as the punch passed in, the lower ones the least; and Fig. 322 shows the appearance of the surface, after polishing and etching with acids, of a section through the middle, when the punch had entered $1\frac{1}{4}$ inches, and the core projected an eighth of an inch.

322.



Punch at a depth of $1\frac{1}{4}$ inches.

323.

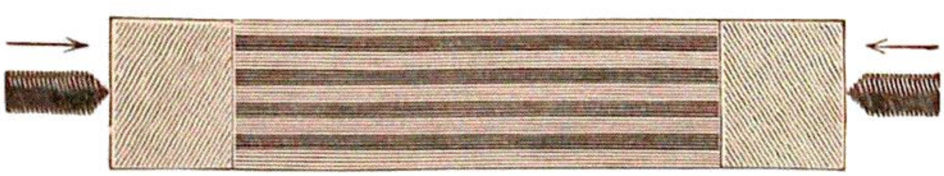
Core out. Townsend.

Such facts, together with those relating to the heat developed by friction, take the mystery out of the process of flexing rocks.

3 *Fractures and displacements under pressure.* — The production of fractures through lateral pressure has been experimentally illustrated by Daubrée. In one of his experiments he used an oblong square prism consisting of layers of beeswax, and applied the force at the middle of the two ends after protecting them by small blocks or plates of the same cross-section. Fig. 324 represents, half the natural size, the prism ready for the experiment. One of the results, after applying the pressure, is shown in Fig. 325 ; and another, after using a stronger pressure, in Fig. 326.

In both, a flexure becomes the course of a fracture, and also of a fault; and in 326 it is shown that the flexure-fault is not at the axis of the flexure, but beyond it, between the anticline and syncline. In Fig. 327 are shown

324.



Prism made of layers of wax of different colors. (× ½.) Daubrée.

two oblique fractures and faults, obtained in another trial. The fractures have *their planes parallel* as well as *very oblique;* and the faults were made by a *shove up* along the oblique surface. So the greater fractures of mountain regions usually have like obliquity as well as parallelism, and