

if it could it would be a straightforward mechanical agent—but it can utilise the mechanical properties both of rail and of engine ; it arranged for the rail to be placed in position so that the lateral force thereby exerted should guide all future trains to a desired destination, and it further took steps to design and compose locomotives of sufficient power, and to start them at a prearranged time. It “employs” mechanical stress, as a capitalist employs a labourer, not doing anything itself, but directing the operations. It is impossible to explain all this fully by the laws of mechanics alone, that is to say, no mechanical analysis can be complete and all-embracing, though the whole procedure is fully subject to those laws.

stress, like that exerted by a pillar or a watershed—does no work, and “generates” or transfers no energy ; yet the one sustains a roof which would otherwise fall, thereby screening a portion of ground from vegetation ; while the other deflects a rain-drop into the Danube or the Rhine. This latter is the kind of force which constrains a stone to revolve in a circle instead of a straight line ; a force like that of a groove or slot or channel or “guide.”