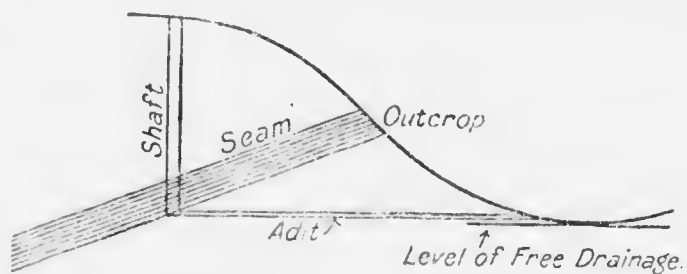


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free drainage. Thus, in the figure shown, it was impossible under this system to work down the seam, for then the water would flow on to the workings. It was consequently early found necessary to supplement this natural mode of drainage by the artificial raising of water, and as early as 1486 the sum of £9 15s. 6d. occurs in the accounts of the Finchale monks in respect of the cost of setting up a pump which was probably of the wheel and bucket type worked by horses.



These or similar simple methods of drainage were the only ones available for centuries until, indeed, the invention of the steam engine in the eighteenth century rendered it possible to lift water for almost an unlimited height and at a great rate. As a result many of the early mines were, in a short time, drowned out and had to be abandoned. Many attempts to overcome this difficulty were made, notably that of Captain Savery, whose steam suction plant for pumping water was patented in 1698. All failed, however, owing to the fact that the power obtainable was