

steps by which those mechanics were led to the invention. The Egyptian wheel was a common machine all over Asia, and is still in use in the remotest corners, and was brought by the Saracens into Spain, where it is still very common under its ancient name *NORIA*. The Danish missionaries found in a remote village in the kingdom of Siam the immediate offspring of the *noria*. It was a wheel turned by an ass, and carrying round, not a string of earthen pots, but a string of wisps of hay which it drew through a wooden trunk. This rude chain-pump was in frequent use for watering the rice-fields. It is highly probable that it is of great antiquity, although we do not recollect its being mentioned by any of the Greek or Roman writers. The Arabs and Indians were nothing less than innovators; and we may suppose with great safety, that what arts we now find among them they possessed in very remote periods. Now the step from this to the pump is but short, though it is nice and refined; and the forcing pump of Ctesibius is the easiest and most natural.

Let *AB* (Plate XII. Fig. 1.) be the surface of the water in the well, and *D* the height where it is to be delivered. Let *DC* be a long wooden trunk, reaching as deep under water as possible. Let the rope *EF* be fitted with its knot of hay *F*. When it is drawn up through the

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a bucket or something similar. *Ἀντλος*, which is the primitive, is a drain, sink, or receptacle for collecting scattered water, either for use, or to get rid of it; hence it came to signify the sink or well of a ship; and *ἀντλεῖν* was synonymous with our verb "to bale the boat." (*Odyss.* O. 476. M. 411. *Euryp. Hecuba*, 1025.) *Ἀντλιον* is the vessel or bucket with which water is drawn. *Ἀντλια* is the service (generally a punishment) of drawing water. *ἀντλεῖν*, "to draw water with a bucket:" hence the force of Aristotle's expression (*Oecon.* 1.), *τω γὰρ ἡδὲ μὲν ἀντλεῖν τοῦτ' ἔστι*. See even the late authority of the New Testament, *John* ii. 8. ; iv. 7. 11. Here *ἀντλημα* is evidently something which the woman brought along with her; probably a bucket and rope.