A patent was lately obtained for an apparatus for this purpoſe by a tin man in London ; we think of the name of Tate. They are made on a much more effec­tive plan by Gregory, an ingenious tradeſman in Edin­burgh, and are coming into very general uſe.

It is well known to the philoſopher that the ſteam of boiling water contains a prodigious quantity of heat, which it retains in a latent ſtate ready to be faithfully accounted for, and communicated to any colder body. Every cook knows the great ſcalding power of ſteam, and is diſpoſed to think that it is much hotter than boiling water. This, however, is a miſtake ; for it will raiſe the thermometer no higher than the water from which it comes. But we can assure the cook, that if he make the ſteam from the spout of a tea-kettle paſs through a great body of cold water, it will be condenſed or changed into water; and when one pound of water has in this manner been boiled off, it will have heated the maſs of cold water as much as if we had thrown into it ſeven or eight hundred pounds of boiling hot water.

If, therefore, a boiler be properly fitted up in a fur­nace, and if the ſteam of the water boiling in it be con­veyed by a pipe into a pan containing victuals to be dreffed, every thing can be cooked that requires no higher degree oſ heat than that of boiling water : And this will be done without any riſk of ſcorching, or any kind of overheating, which frequently ſpoils our diſhes, and proceeds from the burning heat of air coming to thoſe parts of the pot or pan which is not filled with liquor, and is covered only with a film, which quickly burns and taints the whole diſh. Nor will the cook be ſcorched by the great heat of the open fire that is necessary for dreſſing at once a number of diſhes, nor have his perſon and clothes ſoiled by the ſmoke and soot unavoidable in the cooking on an open fire. In­deed the whole proceſs is ſo neat, ſo manageable, ſo open to inſpection, and ſo cleanly, that it need neither fatigue nor offend the delicacy of the niceſt lady.

We had great doubts, when we first heard of this as a general mode of cookery, as to its economy ; we had none as to its efficacy. We thought that the ſteam, and conſequently the fuel expended, muſt be vaſtly great­er than by the immediate uſe of an open fire ; but we have ſeen a large tavern dinner expeditiouſly dressed in this manner, ſeemingly with much leſs fuel than in the common method. The following ſimple narration of facts will ſhow the ſuperiority. In a paper manufacture in this neighbourhood, the vats containing the pulp into which the frames are dipped are about six feet diameter, and contain above 200 gallons. This is brought to a proper heat by means of a ſmall cockle or furnace in the middle of the liquor. This is heat­ed by putting in about one hundred-weight of coals about eight o’clock in the evening, and continuing this till four next morning, renewing the fuel as it burns away. This method was lately changed for a ſteam heater. A furnace, having a boiler of five or six feet dia­meter and three feet deep, is heated about one o’clock in the morning with two hundred weight of coals, and the water kept in briſk ebullition. Pipes go off from this boiler to six vats, ſome of which are at 90 feet distance. It is conveyed into a flat box or vessel in the midſt of the pulp where it condenſes, imparting its heat to the sides of the box, and thus heats the ſurrounding pulp. Theſe six vats are as completely heated in three hours, expending about three hundred weight of coals, as they were formerly in eight hours, expending near 18 hundred weight of coals. Mr Gregory, the inven­tor of this ſteam-heater, has obtained (in company with Mr Scott plumber, Edinburgh) a patent for the inven­tion ; and we are perſuaded that it will come into very general uſe for many ſimilar purposes. The dyers, hatmakers, and many other manufacturers, have occaſion for large vats kept in a continual heat ; and there ſeems no way ſo effectual.

Indeed when we reflect ſeriouſly on the ſubject, we ſee that this method has immenſe advantages conſidered merely as a mode of applying heat. The ſteam may be applied to the vessel containing the victuals in every part of its ſurface : it may even be made to enter the vessel, and apply itſelf immediately to the piece of meat that is to be dressed, and this without any riſk of ſcorch­ing or overdoing.—And it will give out about 799/800 of the heat which it contains, and will do this only if it be wanted ; ſo that no heat whatever is waited except what is required for heating the apparatus. Experience ſhows that this is a mere trifle in com­panion of what was ſuppoſed necessary. But with an open fire we only apply the flame and hot air to the bottom and part of the sides of our boiling vessels : and this application is hurried in the extreme ; for to make a great heat, we muſt have a great fire, which requires a prodigious and moſt rapid current of air. This air touches our pans but for a moment, imparts to them but a ſmall portion of its heat ; and, we are perſuaded that three-fourths oſ the heat is carried up the chim­ney, and eſcapes in pure waſte, while another great portion beams out into the kitchen, to the great an­noyance of the ſcorched cook. We think, therefore, that a page or two of this work will not be thrown away in the deſcription of a contrivance by which a ſaving may be made to the entertainer, and the providing the pleaſures of his table prove a leſs fatiguing talk to this valuable corps of practical chemiſts.

Let A repreſent a kitchen-boiler@@, either properly fit­ted up in a furnace, with its proper fire place, aſh-pit, and flue, or ſet on a tripod on the open fire, or built up in the general fire place. The ſteam-pipe BC riſes from the cover of this boiler, and then is led away with a gentle aſcent in any convenient direction. C repreſents the ſection of this conducting ſteam pipe. Branch­es are taken off from the side at proper diſtances. One of theſe is repreſented at CDE, furniſhed with a cock D, and having a taper nozzle E, fitted by grinding in­to a conical piece F, which communicates with an up­right pipe GH, which is ſoldered to the side of the ſtewing vessel PQRS, communicating with it by the ſhort pipe I. The vessel is fitted with a cover OT, having a ſtaple handle V. The piece of meat M is laid on a tin plate grate KL, pierced with holes like a cullen­der, and standing on three ſhort feet *nnn.*

The ſteam from the boiler comes in by the pipe I, and is condenſed by the meat and by the sides of the vessel, communicating to them all its heat. What is not ſo condenſed eſcapes between the vessel and its co­ver. The condenſed water lies on the bottom of the vessel, mixed with a very ſmall quantity of gravy and fatty matter from the victuals. Frequently, inſtead of a cover, another ſtew-vessel with a cullender bottom is ſet on this one, the bottom of the one fitting the mouth

@@@[mu] Plate CCCCLXXII. fig. 5.