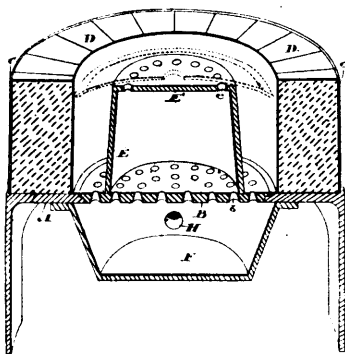


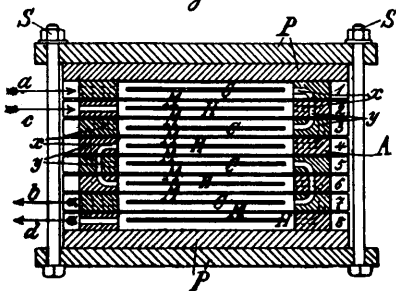
fire brick outer portion, circular grate and a central portion, whereby the central portion of the disc placed thereon may be kept



cool, while the peripheral edge is being heated, as and for the purpose specified. 3rd. The combination, with the outer fire brick portion D, and grate B, provided with air holes *b*, of the hollow cone frustum shaped portion E, provided with a circle of air holes *c*, arranged as and for the purpose specified. 4th. The combination with the outer fire brick portion D, and grate B, provided with air holes *b*, of the hollow cone frustum shaped portion E, provided with a circle of air holes *c*, as specified, and the air chamber F, provided with a blast pipe H, as and for the purpose specified. 5th. As a new article of manufacture, a concave convex disc having a soft central portion and a hardened or tempered peripheral edge, the soft central portion being preserved in its original state by being kept cool during the period that the peripheral edge is being heated, as and for the purpose specified.

**No. 42,815. Electrolytic Treatment of Cupreous Liquors, Ores, &c. (Traitement électrolytique des liquides, minerais, etc., cuivreux.)**

Fig. 3.



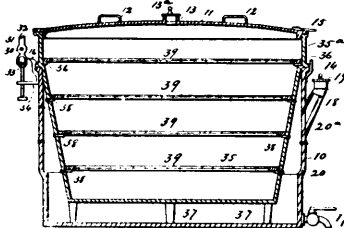
Carl Hoepfner, Giessen, Germany, 4th May, 1893; 6 years.

*Claim.*—1st. A process for the electrolytic extraction of copper or silver from ores and metallurgical products or solutions, characterized by the fact that simultaneously two separate currents of cuprous chloride dissolved in halogen salt lyes (such as common salt) are conveyed past the cathodes and past the anodes, so that copper or silver is precipitated at the cathodes, whilst at the anodes a solution of cupric chloride and sometimes ferric chloride, which is adapted for the lixiviation of ores and metallurgical products, is obtained, which solution, after the transformation of cupric chloride into cupreous chloride, can be used again for the electrolysis, and eventually for the subsequently lixiviation. 2nd. In the process, the keeping away or the entire or partial removal of dissolved iron, (a) by cupric oxide, copper carbonate, cuprous oxide, copper oxychloride or roasted copper ores, or else by alkalis, alkaline earths or carbonates of the same; (b) by oxygen or air, preferably in a neutral solution; (c) by alkalis, alkaline earths or their carbonates with subsequent addition of liquid or gaseous acids and transformation of the corresponding quantity of cuprous chloride into cupric chloride by air. 3rd. In a process characterized in the first and second claims, the reduction of cupric chloride in excess to cuprous chloride by ferrous oxide or ferrous carbonate. 4th. For the extraction of copper or silver from ores and metallurgical products, the preparation of roasted copper ores or silver ores, more especially of burnt pyrites, by finely grinding them and at the same time repeatedly separating them by magnetic means, whereupon a separate lixiviation of the non-magnetic portion and of the magnetic portion takes place. 5th. In an apparatus for carrying out electrolytic operations, the process described, comprising a number of frames which are separated by mechanically or chemically resistant membranes and held together by screws or clamps or their substitute, a circulation of the liquid taking place through channels, are arranged either inside or outside the parts of the apparatus or frames, substantially as described. 6th. In the apparatus characterized, the

employment of membranes of a double layer of strong fabric or a double layer of other material, such as leather or felt, with intermediate parchment paper or nitro-parchment paper. 7th. In such an apparatus as described, the arrangement of a double membrane or of auxiliary frames or intermediate cells between the anode and cathode for the purpose of rendering diffusion difficult. 8th. In apparatus for the electrolysis of halogen salt solutions, the nitration of such parts of the apparatus or such membranes as come in contact with free halogens or halogen acids. 9th. In electrolytic operations, in the extraction of metals, the employment of anodes, the effective surfaces of which consist of ferrosilicon, silicon, boron, tungsten chromium or their iron alloys or any desired mixture of the said substances with or without admixture of carbon or other ingredients or of poly-sulphides of iron.

**No. 42,816. Combined Steam Cooker, Dish Washer and Clothes Press. (Machine à cuire à la vapeur, à laver la vaisselle, et presser le linge.)**

Fig. 2.



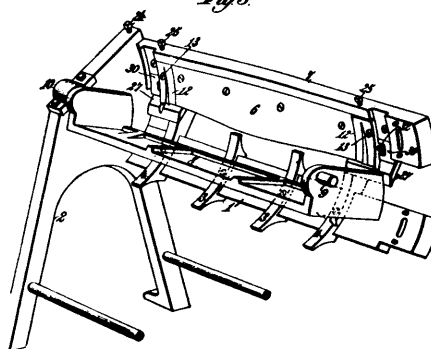
Huldah A. Shepard, Nelsonville, Ohio, U.S.A., 4th May, 1893; 6 years.

*Claim.*—1st. A combined steam cooker and dish washer, comprising a body having a suitable cover, a series of perforated shelves mounted in the body, and a vertically movable dasher mounted beneath the shelves, substantially as described. 2nd. An apparatus of the character described, comprising a body having a removable cover, a series of perforated shelves mounted in the body, vertically movable dasher mounted beneath the shelves, and a lever mechanism for operating the dasher, substantially as described. 3rd. An apparatus of the character described, comprising a body having a removable perforated cover, a series of perforated shelves mounted in the body, a dasher rod secured to the dasher and extending upward through the shelves and cover, and a lever for operating the dasher rod, substantially as described. 4th. The combination, with the body and the dasher and the dasher rod therein, of the lever having means for attachment to the dasher rod, and a spring pressed rod mounted on one end of the body and connected by a swivel with the lever, substantially as described. 5th. The combination, with the main vessel, the movable dasher mounted therein, and the rod connected with the dasher, of a lever detachably secured to the vessel, one end of the lever being pivoted in a keeper which carries a stop to limit the movement of the lever, substantially as described.

**No. 42,817. Stave Cutting Machine.**

(Machine à découper les douelles.)

Fig. 8.



Luther L. Frierson, Mount Pleasant, assignee of Charles Willis Rich, Summertown, both of Tennessee, U.S.A., 4th May, 1893; 6 years.

*Claim.*—1st. The combination with a knife bar, a cutting knife for severing a stave from a stave bolt, and crozing knives for crozing the staves, of residual rib removing knives or planes connected with and supported by the knife bar which carries the stave cutting and crozing knives, and arranged in proximity to the latter to provide a space between the stave cutting knife and the rib removing knives or planes for the passage of the stave being severed, substan-