(No Model.) 2 Sheets—Sheet 1.

F. OLEJNIK.

MACHINE FOR AND PROCESS OF MANUFACTURING KETTLES.

No. 496,439. Patented May 2, 1893.

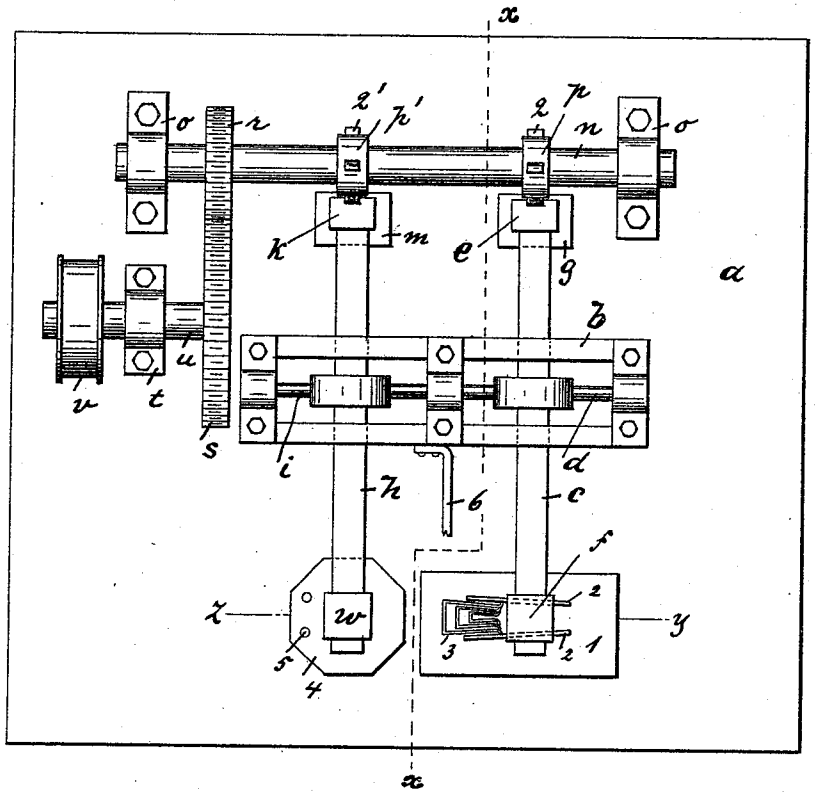

Fig. 1.

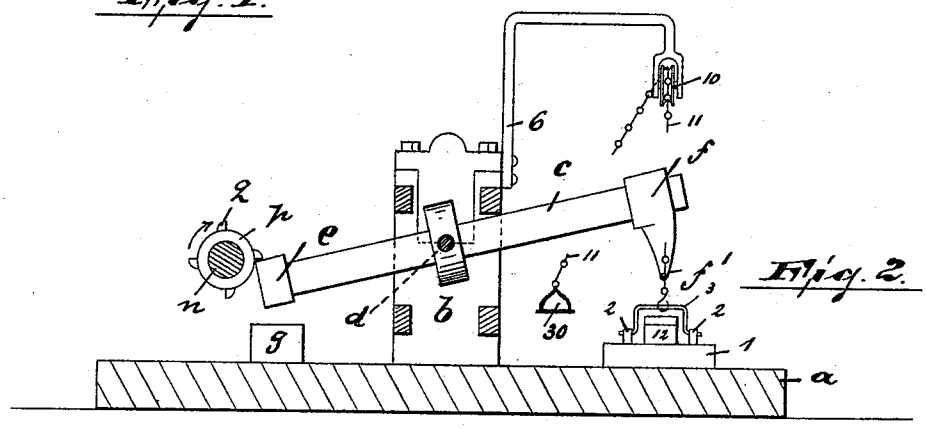

Fig. 2.

WITNESSES:

A. M. Robertson.

Wm. Dell.

INVENTOR:

Frans Olejnik

BY Gartner & Co

ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

F. OLEJNIK.

MACHINE FOR AND PROCESS OF MANUFACTURING KETTLES.

No. 496,439. Patented May 2, 1893.

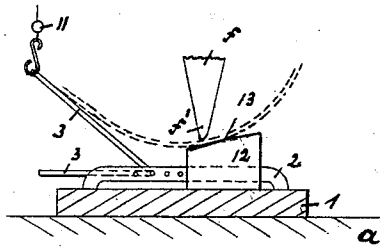

Fig. 3.

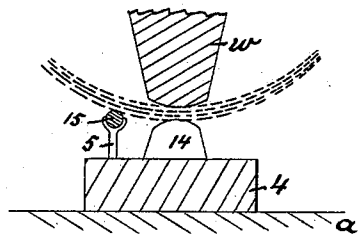

Fig. 4.

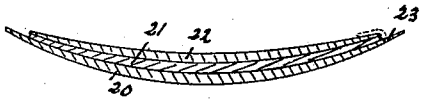

Fig. 5.

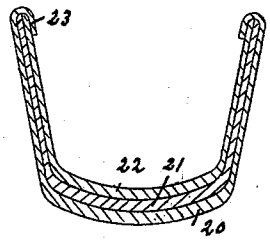

Fig. 6.

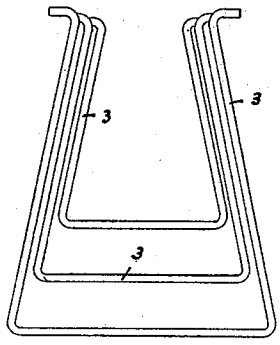

Fig. 7.

WITNESSES: INVENTOR:

D. M. Robertson.

Wm. D. Dell

Frank Olejnik

BY Gartner & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

FRANZ OLEJNIK, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF TO MELCHIOR WALTER, OF NEW YORK, N. Y.

MACHINE FOR AND PROCESS OF MANUFACTURING KETTLES.

SPECIFICATION forming part of Letters Patent No. 496,439, dated May 2, 1893.

Application filed February 18, 1893. Serial No. 462,833. (No model.)

To all whom it may concern:

Be it known that I, FRANZ OLEJNIK, a subject of the Emperor of Austria-Hungary, residing in Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Machines for and Processes of Manufacturing Kettles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to a new and useful method of and apparatus for the manufacture of copper kettles, and it consists in the method of forming from a blank or blanks one or more copper kettles, having the bottom thicker than the sides, and also in the improved hammers and anvils used in the formation of the kettles.

It further consists in the novel arrangement and combination of parts hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures: Figure 1. is a top plan view of my improved machine. Fig. 2. is a sectional view on the line x—x of Fig. 1. Figs. 3 and 4 are enlarged sectional views on the lines y and z of Fig. 1 respectively. Fig. 5. illustrates in section the plates from which the kettles are formed:—during the first step of the process. Fig. 6. is a sectional view, illustrating the plates hammered out into the shape of the kettle (third step of process), and Fig. 7 is an enlarged detail view of certain gages used in connection with the anvils of the machine.

In said drawings a represents the bed plate, to which is secured in any desired manner a frame work b, serving as bearings for the shafts i and d of the hammer supporting arms h and c respectively. On the rear end of hammer arm c is arranged an enlargement e adapted to strike on and rebound from the metal block g, secured firmly on or in the bed plate a. At right angles to the hammer arm c is arranged in bearings o a shaft n, to which is secured a gear wheel r meshing into gear wheel s on shaft u, which latter has its bearings in block t. Said shaft u may be provided with a driving pulley v or with any other well known transmitting devices. Parallel with arm c is arranged on shaft i, the hammer arm h, provided at its rear end with an enlargement k, adapted to strike against and rebound from metal block m. On the shaft n and in rear of the enlargements e and k are arranged collars p and p', provided with projecting lugs q and q', adapted to strike against the enlargements e and k, and thus operate the hammer arms c and h respectively.

To the forward end of hammer arm h is secured in any desired manner the hammer w, having its lower end convexly curved as shown in Fig. 4 of the drawings; said hammer is adapted to strike with its curved portion on and against the convexly curved face of anvil 14, which latter is permanently secured to metal plate 4 fastened to bed plate a. At the left side of the anvil are arranged upwardly extending pins 5, provided at their top with friction balls or rollers 15, for the purposes hereinafter specified.

To the forward end of the hammer arm c is secured the hammer f, provided with a pointed, slightly curved portion f', adapted to strike against a portion of the surface of the anvil 12. Said anvil 12 is provided with an incline 13, which by preference is slightly curved, as shown in Fig. 3. At each side of the anvil 12 and secured on its supporting block 1 are arranged converging frame plates 2 provided with a series of holes, serving as bearings for the gages 3.

In Fig. 7 of the drawings I have illustrated a series of gages, which by preference are trapezoidal shaped and are fulcrumed in the same axial line.

To the frame b is also secured in any desired manner a projecting arm or crane 6, provided at its free end with a pulley 10 over which the chain 11 passes. One end of said chain is provided with a hook, adapted to engage one of the gages—while its other end is provided with a handle or stirrup 30, as clearly shown in Fig. 2 of the drawings.

In operation a series of circular copper

plates 20, 21, 22, &c., are first coated with a thin paste of wood-ashes and water, then laid together and put under the hammer *w*, as indicated by dotted lines in Fig. 4, (only one disk is shown in said Fig. 4.) Said hammer is then started and the disks hammered out, so that their greatest thickness is in the center and are gradually tapered toward their edges. During this process the friction rollers 15 serve as rests or bearings for said disks. The edge of the lower disk, which is of comparatively larger diameter than the other, is then bent upward, as shown in dotted lines in Figs. 5. The "compound disk" is then moved over on the anvil 12, and rests during its being hammered into shape on said anvil and also on one of the gages 3, which latter can be adjusted by means of the chain 11 to any required position. As soon as the disks are hammered into the required shape (the bottom is left comparatively thicker than the sides or walls), the outer edge 23 is cut or trimmed off, and the various finished kettles can be easily taken apart, as the coating with the wood ashes paste prevents its sticking together.

It may be remarked, that during the whole process, the disks are frequently heated, so that the operation of hammering out can be performed more easily and quicker.

From the foregoing description it can be seen, that a series of copper kettles is manufactured at one time, and that each kettle has its bottom thicker than its sides.

I do not intend to limit myself to the construction of the machine as shown and described, neither do I want to limit myself to any particular shaped vessel or kettles, as many alterations in the machine, and many shapes of vessels can be made, without departing from the spirit of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The herein described method of manufacturing a series of copper kettles from sheets, which consists in superimposing said sheets upon each other with a layer or paste of wood-ash between said sheets, second in hammering said superimposed sheets upon an anvil of substantially convex surface with a hammer having a blunt convex surface, third in hammering said sheets afterward upon an anvil having an inclined convex surface with a hammer having a pointed convex surface, substantially as described.

2. The herein described method of manufacturing a series of copper kettles from sheets, which consists in superimposing said sheets upon each other and interposing layers of wood ash between the sheets, second in hammering said superimposed sheets so that said sheets are thicker in the center and taper to the sides, third in overlapping the sides of the outermost sheet, and then in hammering the superimposed sheets into the form desired, and finally in hammering the edges of the outer kettle and removing the interior kettles, substantially as described.

3. In a machine for manufacturing copper kettles in series, the combination of two intermittent hammers, one of which has a blunt convex end and the other a pointed convex end, with two anvils resting respectively under said hammers, that one which rests under the blunt hammer having a convex surface, while the other has an inclined convex surface, substantially as described.

4. In a machine for manufacturing copper kettles in series, the combination of two intermittent hammers having respectively a blunt convex end and a pointed convex end, anvils arranged beneath the ends of the hammers and having respectively a blunt convex face and an inclined convex face, with a series of gages placed along side the inclined convex faced anvil and designed to support the metal to be hammered, substantially as described.

5. In a machine for manufacturing copper kettles in series, the combination of two intermittent hammers having respectively a blunt convex end and a pointed convex end, with anvils arranged beneath the ends of the hammers and having respectively a blunt convex face and an inclined convex face, and with one or more friction rolls arranged alongside of said anvil which has a blunt convex face and adapted to support the metal to be hammered, substantially as described.

6. The combination of a shaft carrying a cam or step collar, with a hammer arm pivoted at or about its center, the end of said hammer arm extending beneath the steps of said collar and adapted to be depressed thereby, and with a bouncing block of metal placed directly under the end of said hammer arm, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of February, 1893.

FRANZ OLEJNIK.

Witnesses:
ALFRED GARTNER,
MELCHIOR WALTER.