Oct. 2, 1934. W. J. HELLENBROICH 1,975,422

METHOD AND APPARATUS FOR THE MANUFACTURE OF DISK RIBBED PIPES

Filed Dec. 5, 1932

Fig. 1.

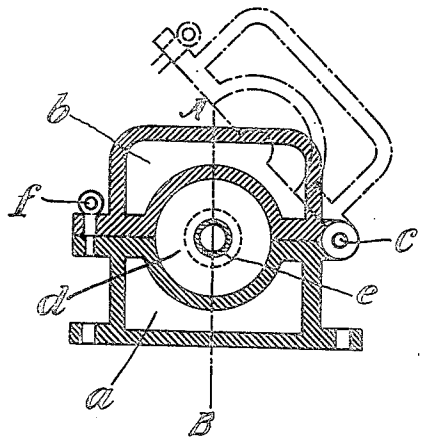



Fig. 2.

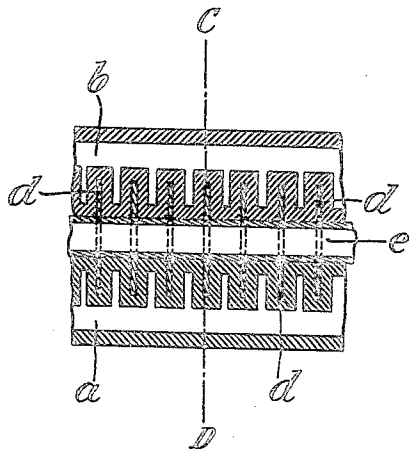



Fig. 3.

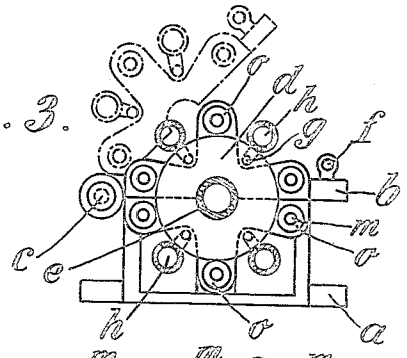
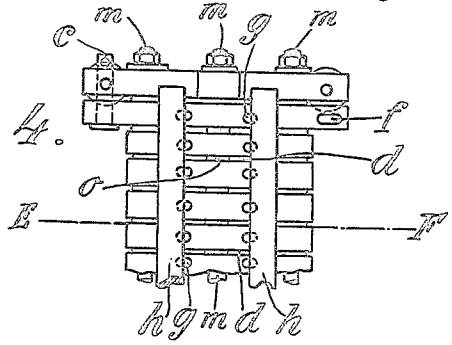



Fig. 4.




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## METHOD AND APPARATUS FOR THE MANUFACTURE OF DISK RIBBED PIPES

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In Switzerland December 7, 1931

5 Claims. (Cl. 29—84)

The present invention relates to a method and an apparatus for the manufacture of wrought-iron disk ribbed pipes.

On the accompanying drawing two examples of the apparatus forming part of the present invention are shown.

Fig. 1 shows a cross-section of the first example along the line C—D of Fig. 2,

Fig. 2 a longitudinal section on the line A—B of Fig. 1.

Fig. 3 shows a cross-section on the line E—F of Fig. 4 and

Fig. 4 is a plan view of the second apparatus.

According to Figs. 1 and 2 the upper part *b* of a two-parted casing is pivoted on the lower part *a* thereof by means of a bolt *c* so that the upper part *b* can be brought to the position shown in Fig. 1 by dash-dotted lines. *f* is an eye for receiving a wire-rope (not shown) with counter-weight for balancing the upper part *b*. The casing parts *a* and *b* are adapted to be heated by electricity, gas, high-pressure steam or high tension heating water.

After the upper part *b* of the double casing has been brought to the position shown by dash-dotted lines, the disk rings *d* are brought into the recesses provided therefor in the lower part *a* of the casing. Afterwards the upper part *b* which is provided with corresponding recesses is returned to its original position so that the inserted disk-rings *d* are fully embedded. Now the heating is inserted. As soon as the required temperature of the disk-rings *d* is reached, the cold pipe body *e* is pushed into the holding-body whereby all the disk-rings *d* come to rest thereon. Afterwards the upper part *b* is again brought to its position shown by dash-dotted lines, the finished disk-ribbed pipe is taken out and laid aside for cooling whereat the disk-rings *d* firmly set on the pipe-body *e*.

According to Figs. 3 and 4 *a* is the lower part and *b* the upper part of a frame formed of individual segments held together by screw bolts *m*, the distance-rings *o* forming the intermediate space for the reception of the disk-rings *d*. The upper part *b* is pivoted to the lower part *a* by the bolt *c* so that it can be brought to the position shown by dash-dotted lines in Fig. 3. *f* is an eye for fastening a wire-rope (not shown) with counter-weight for balancing the upper part. *h* are gas-pipes provided with nozzles *g* discharging directly on the disk-rings *d*.

After the upper part *b* has been brought to the position shown by dash-dotted lines, the disk-rings *d* are laid into the lower part *a* and thereupon the upper part *b* is again put to its original position. Thereby, in consequence of the edges of the distance-rings *o* touching the edges of the disk-rings *d* an exact centric bearing of the disk-rings *d* is ensured. Now the gas nozzles *g* are set on fire and the disk-rings *d* brought to the required temperature. Afterwards the pipe-body *e* is pushed into the disc-rings *d* and the gas-nozzles *g* extinguished or diminished so that in cooling the disk-rings *d* firmly set on the pipe-body *e*.

What I claim is:

1. An apparatus for the manufacture of wrought-iron ribbed pipes or the like, comprising a holding-body, spaces in this holding body adapted to receive apertured metal plates in a position one relatively to the other which corresponds with the position of the apertured metal plates on the finished article, heating means provided in such manner as to effect heating of said apertured metal plates, said holding body being of such shape that the pipe to be provided with the apertured metal plates can be pushed in its longitudinal direction through the apertured metal plates located in the holding body.

2. An apparatus for the manufacture of wrought-iron ribbed pipes or the like, comprising a holding body adapted to be heated and consisting of a lower part and an upper part pivoted one to another, recesses formed partly in the lower and partly in the upper part of said holding body in equal distances one from another on the same axis, a bore along this axis formed partly in the lower and partly in the upper part of said holding body.

3. An apparatus for the manufacture of ribbed pipes or the like, comprising a frame consisting of a lower part and an upper part pivoted one to another and each composed of segments distanced one from another to form spaces between them for receiving apertured metal plates to be set on a pipe, distance-rings provided on each of said parts of the frame in such a position in said spaces as to hold said metal plates in exact centric position relatively to the axis of said frame.

4. An apparatus for the manufacture of wrought-iron disk ribbed pipes and the like, comprising a holding body composed of plates having recesses or openings and positioned one alongside another so that said recesses or openings lie all on a common axis, distance-pieces located between said plates in such a manner as to provide intermediate spaces for the reception of sheets or the like in correct position relatively to the common axis of the recesses in said plates, adjustable

heating means adapted to directly heat sheets or the like positioned in said intermediate spaces.

5. An apparatus for the manufacture of wrought-iron disk ribbed pipes and the like, comprising a holding body composed of plates having recesses or openings and positioned one aside another, distance-pieces located between said plates in such a manner as to provide intermediate spaces for the reception of sheets or the like in correct position relatively to the axis of the recesses in said plates, adjustable heating means adapted to directly heat sheets or the like positioned in said intermediate spaces.

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