C. Hewett,

Corrugating Metal,

No. 54,154. Patented Apr. 24, 1866

Fig. 1.

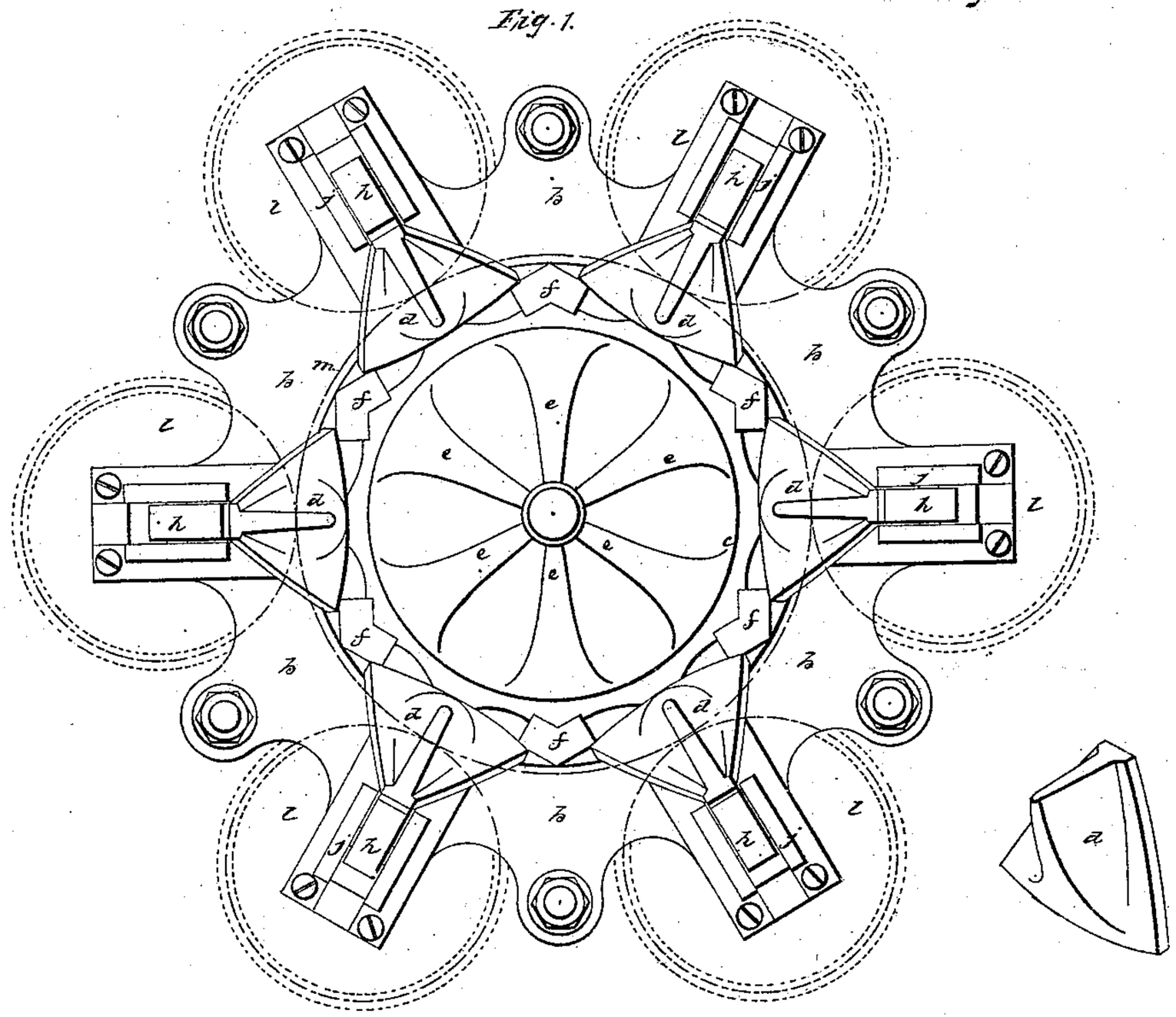
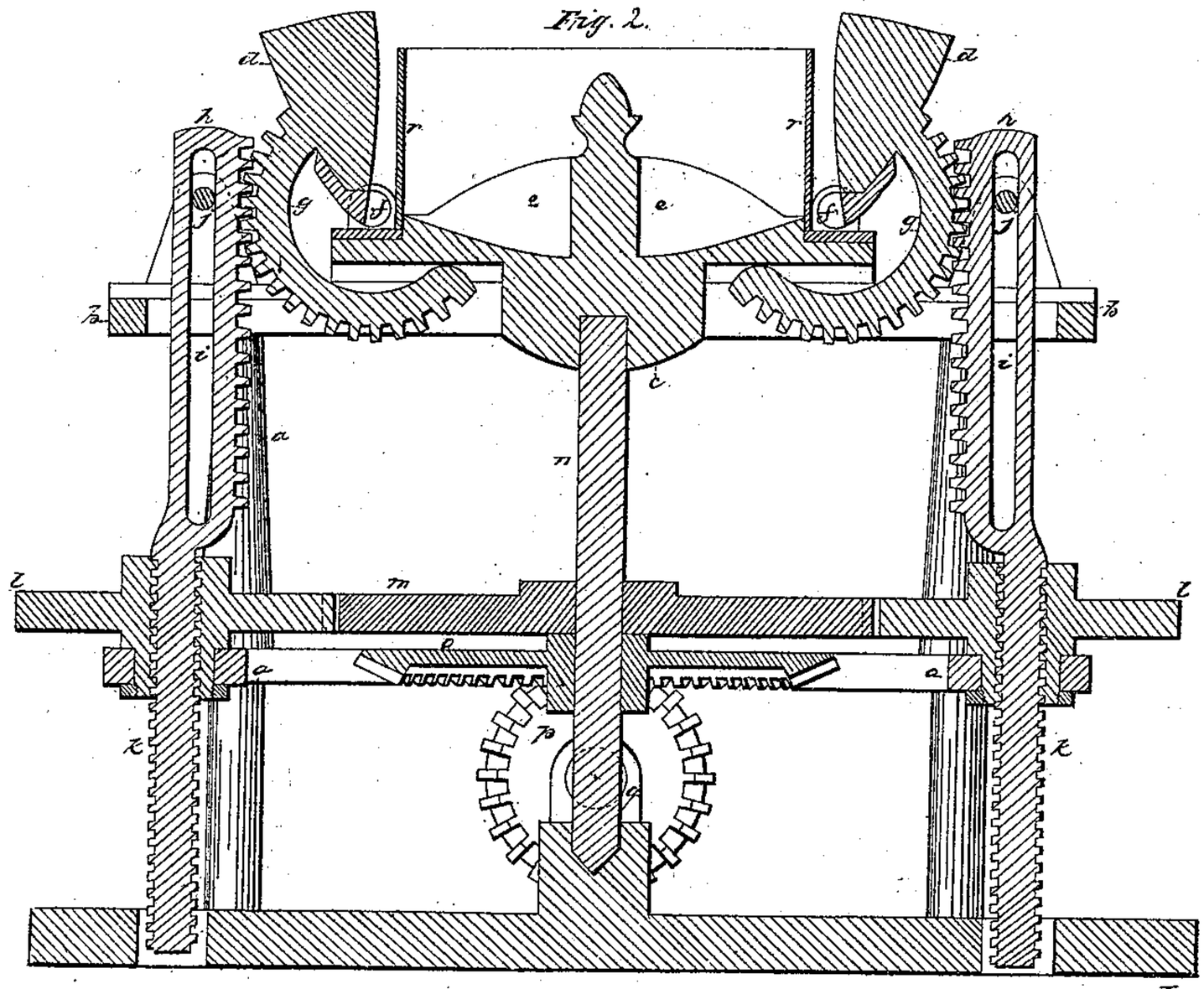


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES HEWITT, OF TRENTON, NEW JERSEY.

IMPROVED MACHINE FOR FORMING CORRUGATED WROUGHT-IRON PLATES FOR RAILROAD-WHEELS.

Specification forming part of Letters Patent No. **54,154,** dated April 24, 1866.

To all whom it may concern:

Be it known that I, CHARLES HEWITT, of Trenton, in the State of New Jersey, have invented certain new and useful Machinery for Forming Corrugated Wrought-Iron Plates for Railroad-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan view of the machine, and Fig. 2 a vertical section.

The same letters indicate like parts in both figures.

The object of my invention is to form plates for railroad-wheels with radial corrugations from plates of wrought-iron.

Preparatory to subjecting the wrought-iron plates to the action of the machinery which I have invented for the purpose, they must be bent in the form of a hollow cylinder or frustum of a cone. I take a plate or sheet of wrought-iron a little longer than the outer circumference of the intended corrugated plate, and as wide as the distance between the inner and the outer circumference of the intended corrugated plate. The plate or sheet of such dimensions is bent to the form of a hollow cylinder, and in that form is to be subjected to the operation of the machine to be corrugated.

In the accompanying drawings, *a* represents a suitable frame, on the upper part of which is secured a plate, *b*, the central portion of which is a mold or die, *c*, with the upper surface of the form of the intended corrugated plate. Around the mold *c*, and at equal distances apart, are mounted a series of swages or benders, *d*, equal in number to the number of corrugations to be formed in the plate. Six are represented in the drawings. Each one is of a form on its face to fit into one of the cavities *e* of the mold or die *c* less the thickness of the intended corrugated plate. The outer or lower edge of these swages or benders are formed with journals fitted to turn in boxes *f f* secured to the rim surrounding the mold *c*, and the back or outer face of each one is formed with a strong cogged sector, *g*, concentric with the journals.

The cogs of the sectors *g* are engaged by the cogs of a series of vertical racks, *h*, by which the benders are operated. These bars play in mortises in the plate *b*, and are formed with longitudinal slots *i*, that slide on pins *j* that act as guides, the said pins being attached to a series of brackets on the plate *b*.

The stems of the vertical racks are threaded, as at *k*, and are fitted to corresponding threads in the hubs of a series of pinions, *l*, arranged around and meshing into a master-wheel, *m*, on the central shaft, *n*, which receives motion by bevel-wheels *o p* from the horizontal driving-shaft *q*.

The followers or benders *d* are elevated to the position represented in the drawings, and the sheet of metal previously bent to the form of a hollow cylinder is placed, as represented at *r*, in a vertical position on the rim surrounding the mold or die *c*, and within the series of benders. The driving-shaft is then set in motion, and by reason of the connections described all the followers or benders are pressed against the outer periphery of the bent plate *r*, and as the motion of these benders continues to approach the surface of the mold or die *c* they bend the said plate into a series of corrugations, over the projections, and into the cavities of the said mold, and make it assume the exact form of the said mold or die, with a series of radial corrugations of considerable depth toward the center and of gradually less depth toward the circumference.

If it should be desired to make the corrugations of the plate of less proportional depth toward the center, instead of using a straight plate or sheet of metal and bending it in the form of a hollow cylinder, I take a plate cut in the form of the segment of a large circle and bend it in the form of a frustum of a cone, and when so prepared it can be formed into a corrugated plate, the mold or die and benders being made of suitable shape.

What I claim as my invention, and desire to secure by Letters Patent, for forming corrugated plates for railroad-car wheels and other purposes, is—

The combination of the series of benders with the mold or die, substantially as described.

CHAS. HEWITT.

Witnesses:

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RICHARD P. WILSON.