Grove & Hedrick,

Corrugating Sheet Metal,

No. 80,348 Patented July 28, 1868.

Fig. 3.

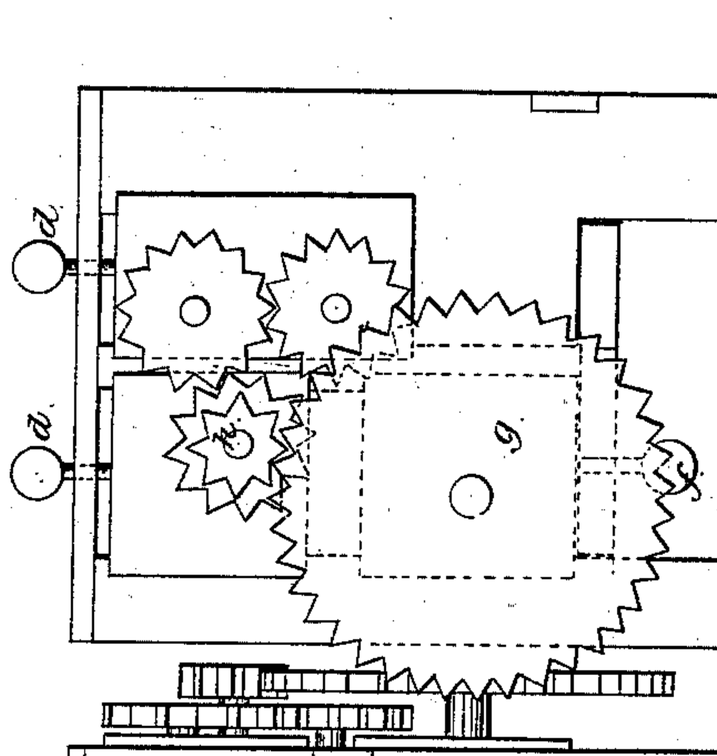


Fig. 2.

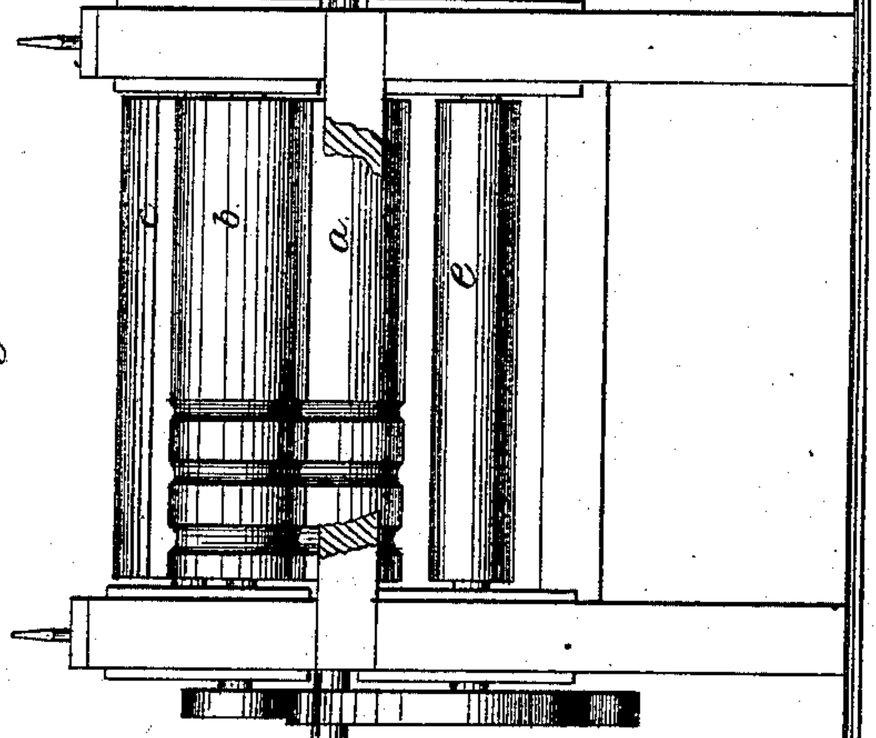
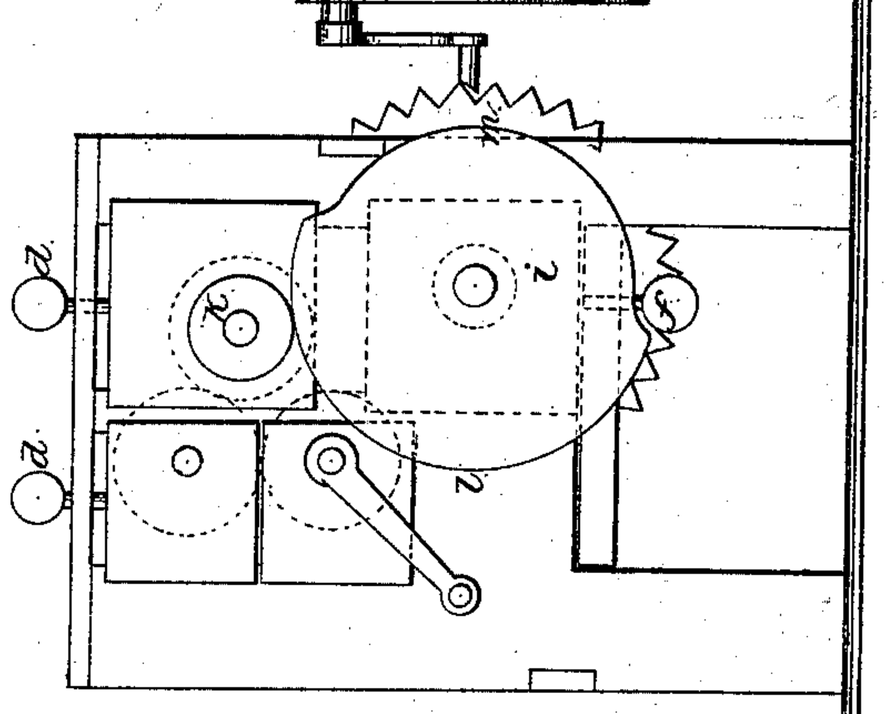


Fig. 1.



Witnesses:

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JOSEPH M. GROVE AND HENRY HEDRICK, OF ANDERSON, INDIANA.

Letters Patent No. 80,348, *dated July* 28, 1868.

IMPROVEMENT IN MACHINE FOR BENDING SHEET METAL.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, JOSEPH M. GROVE and HENRY HEDRICK, of Anderson, in the county of Madison, and State of Indiana, have invented a new and useful Improvement in Bending-Machines for Sheet Metal; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a front elevation of our improved machine.

Figures 2 and 3 are end elevations of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide a simple machine for bending sheets into oval form for making wash-boilers, and other similar articles, which can be readily adjusted to the various sizes required.

It consists in the combination, with the movable roller of an ordinary bending-machine, of a forming-cam suitably constructed for accomplishing the desired purpose, as will be more fully described on reference to the accompanying drawings, wherein—

a, *b*, and *c* represent the rollers of an ordinary bending-machine, *b* and *c* being arranged in adjustable bearings suspended from the upper cross-beam of the housings, except one end of the roll *b*, as will be presently described, by screws *d*.

e represents a shaft also fixed in adjustable bearings, which are actuated by the screws *f* in the bottom cross-beam of the housings, and is provided on one end with the gear-wheel *g*, through which it is actuated from the pinion *h* on the axle of the roller *b*.

The opposite end of the shaft *e* is provided with a forming-cam, *i*, which supports on its periphery the roller *k* on the other end of the roller *b*, and which determines the position of the roller *b* relatively to the other forming-rollers *a c*, and thereby governs the form of the sheet which is bent by the said rolls.

If the sheet is desired to be oval in form, the form of the periphery of the wheel *i* will be that shown in the drawings, and the high side, *l*, will maintain the roller *b* in the proper position to give to the sheet the short curve for the end of the boiler, while the low side, *m*, will produce the long curve for the side of the boiler, two revolutions of the wheel *i* being necessary to bend the sheet into the complete form.

If it be desired to bend sheets of different lengths for boilers of different sizes, the same may be accomplished by providing corresponding change-wheels to be used in place of the pinion *h* and wheel *g*, whereby two revolutions of the wheel *i* may be accomplished while the sheet is passing through the rolls.

As one end only of the roller *b* is actuated as described, the exact curvature desired for the boiler will be imparted only to one edge of the sheet, that which is designed for the top, while the other edge will only approximate the said form in a degree equal to the difference in width of the sheet and the length of the rolls which we find to be sufficient for all practical purposes, as, when the bottom edge of the boiler-sheet is sprung into the required form, and united to the bottom, no difficulty arises therefrom; hence we are enabled to use a more simple and cheap forming-machine than if the same motions were given to both ends of the roller *b*.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent—

The combination, with the rollers of a bending-machine, of the cam *i*, substantially as and for the purpose described.

JOSEPH M. GROVE,
HENRY HEDRICK.

Witnesses:

THOMAS B. FORTNER,
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