G. R. EVERSON.

Machine for Bending Sheets of Metal.

No. 220,224. Patented Oct. 7, 1879.

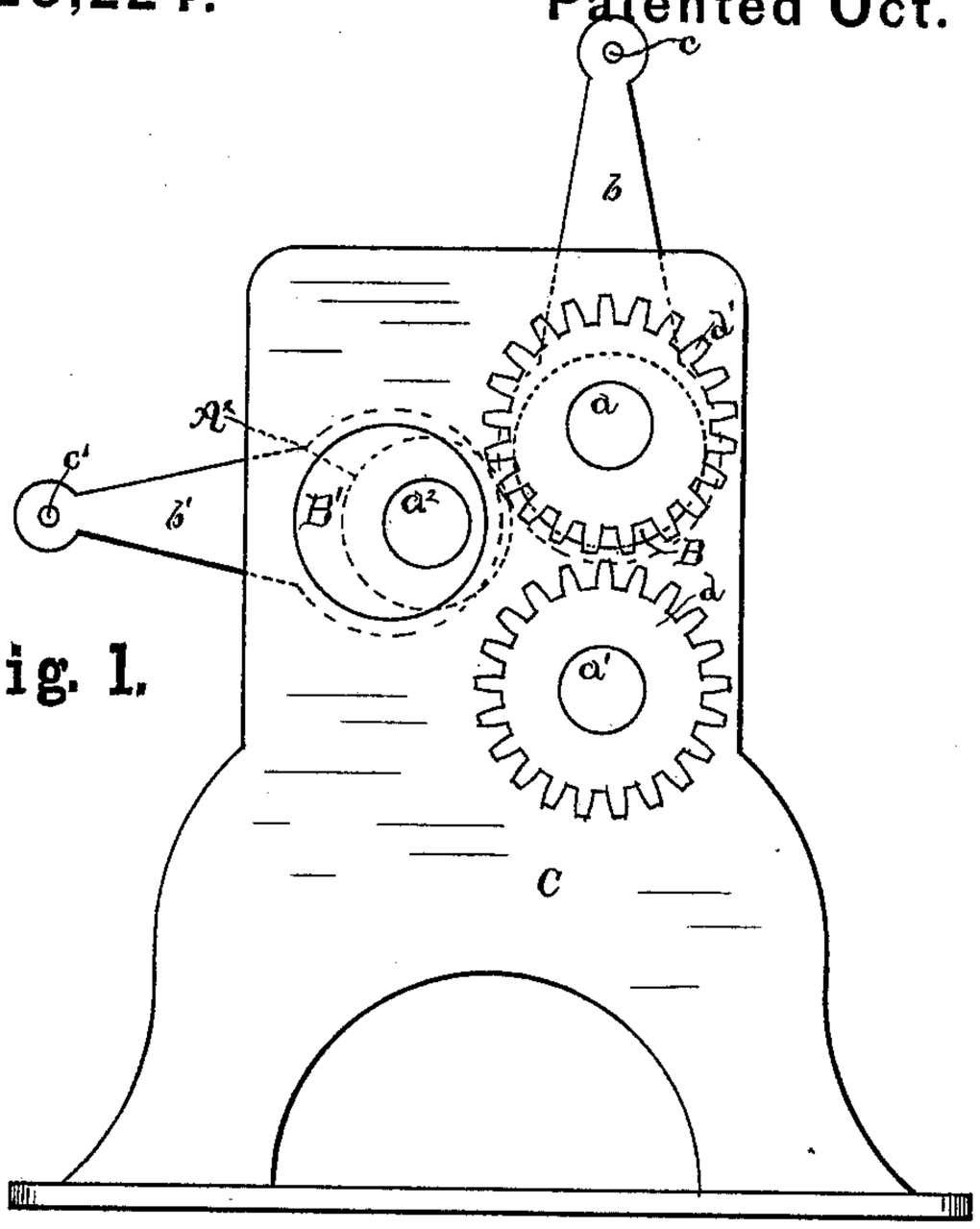

Fig. 1.

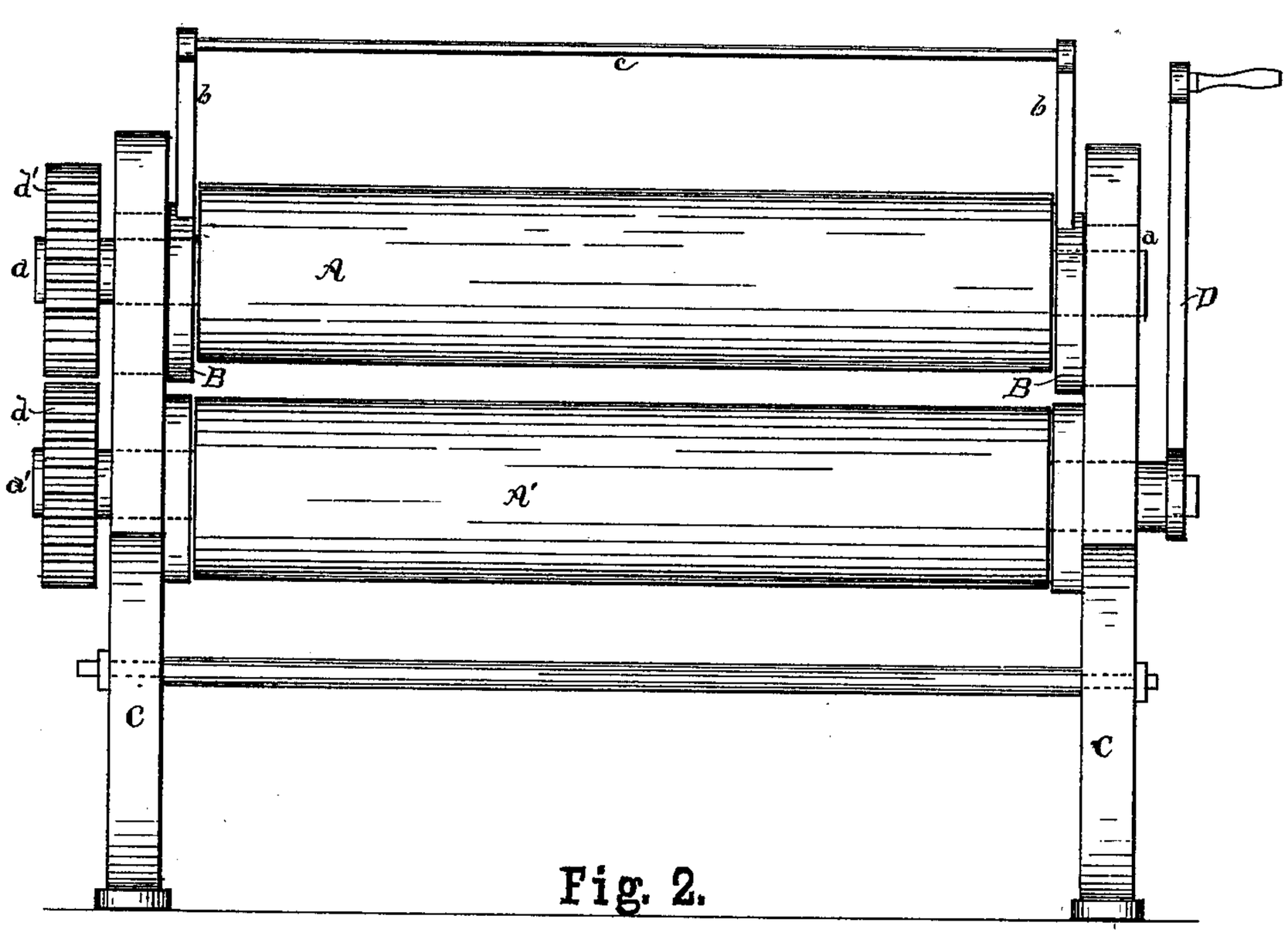

Fig. 2.

Attest.

E. R. Hill.
C. A. Bosworth.

Inventor.

George R. Everson
per Wm. Hobbell Fisher,
Atty.

UNITED STATES PATENT OFFICE.

GEORGE R. EVERSON, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO CHRISTOPHER B. ROTHWEILER, OF NEWPORT, KENTUCKY.

IMPROVEMENT IN MACHINES FOR BENDING SHEETS OF METAL.

Specification forming part of Letters Patent No. **220,224**, dated October 7, 1879; application filed June 6, 1879.

To all whom it may concern:

Be it known that I, GEORGE R. EVERSON, of Cincinnati, Hamilton county, Ohio, have invented certain new and useful Improvements in Machines for Bending Sheets of Metal, of which the following is a specification.

My invention relates more particularly to that class of machines in which rollers are used, between which sheets of metal are passed to cause said sheets to assume a curved form, but is capable of general application—as, for example, to rolls for rolling out metal, heated glass, &c.

My invention provides certain means for approximating and separating the rollers for enabling said rollers to be fixed at a desired distance apart and the material to be rolled to be made of any desired thickness, or, where the bending of the metal is an object to be attained, to bend the metal in a curve of any desired radius. Where the material is not to be rolled, but simply bent or formed, then my device allows the rollers to accommodate metal of different thicknesses.

My invention accomplishes these ends without the use of screws, which are used in the ordinary forming-machines.

The objection urged to the use of screws for this purpose is that the pressure coming as it does upon the threads of the screw, the screw soon wears out, and the machine is useless.

My invention accomplishes the desired end by means of eccentrics, in which the ends of the rollers are journaled.

In the drawings, forming part of this specification, Figure 1 is an end elevation of a machine employed to bend tin and sheet metal embodying my invention, and showing the arrangement of the eccentrics and the ends of the rollers with relation to each other. Fig. 2 is a side elevation, showing two of the rollers and means for turning them, and also the arrangement for approximating and separating said rollers.

A, A^1, and A^2 are rollers, and $a\ a^1\ a^2$ are the ends of the rollers, two of which, a and a^2, are journaled in the eccentrics B B^1, the axes of the rollers being at some distance from the axes of the eccentrics, and a^1 is journaled in an immovable box in the standard C. These eccentrics duplicates of which appear at the other ends of the rollers, and are fitted in a standard similar to standard C, are permitted to turn in the standards, and are provided with arms or levers $b\ b'$ for the purpose of turning them. These outer ends of the arms b are connected by a rod, c, and the outer ends of arms b' are connected by a rod, c'.

The roller A^1 is journaled at either end in a stationary journal-bearing, and is provided at one end with the crank D, or other means for turning the roller. At the opposite end from the crank the roller is provided with a gear-wheel, d, with which the gear-wheel d' on the end of the roller A is made to engage as the roller A is lowered toward roller A^1.

The operation of my invention is as follows: Starting with the rollers A A^1, separated as shown in Fig. 2, the end of the sheet of metal to be formed is placed between these rollers, and the eccentric B and its duplicate at the opposite end of the roller are caused to turn in the standards, and the roller A is made to approximate the stationary roller A^1 by lowering the rod c and with it arm b, and the sheet of metal is thus caught between the rollers. As the roller A is made to approximate the roller A^1, the gear-wheel d' is made to engage with the gear-wheel d, and thus the roller A^1 is made to turn the roller A. As the sheet of metal is drawn through the rollers it comes in contact with the roller A^2, which is journaled in the eccentric B' and its duplicate at the opposite end of the roller. These eccentrics can be turned in the standards by means of the rod c', which connects the arms of the two eccentrics, and as said eccentrics are turned the roller A^2 is raised or lowered to make a shorter or longer curve in the metal sheet.

It will be seen from the foregoing description, that the means employed to accomplish the desired end—viz., approximating and separating the rollers—are very simple, and at the same time efficient, and that the eccentrics afford an even and firm bearing for the rollers, and a bearing that will not easily wear out or

get out of repair. For certain of the purposes heretofore mentioned the roll A^2 and its accompanying devices will be omitted.

What I claim as new, and of my invention, is—

The combination of the rolls A and A^2, provided at each end with concentric journals, respectively journaled eccentrically in the journals B B and B′ B′, arms *b*, rod *c*, arms *b*′, rod *c*′, and the roll A^1, provided with concentric journals B B B′ B′, the latter and the eccentric-journals B B B′ B′, being journaled in a suitable standard, substantially as and for the purposes specified.

GEORGE R. EVERSON.

Attest:

CHRIST. B. ROTHWEILER,

ED. GUNKEL.