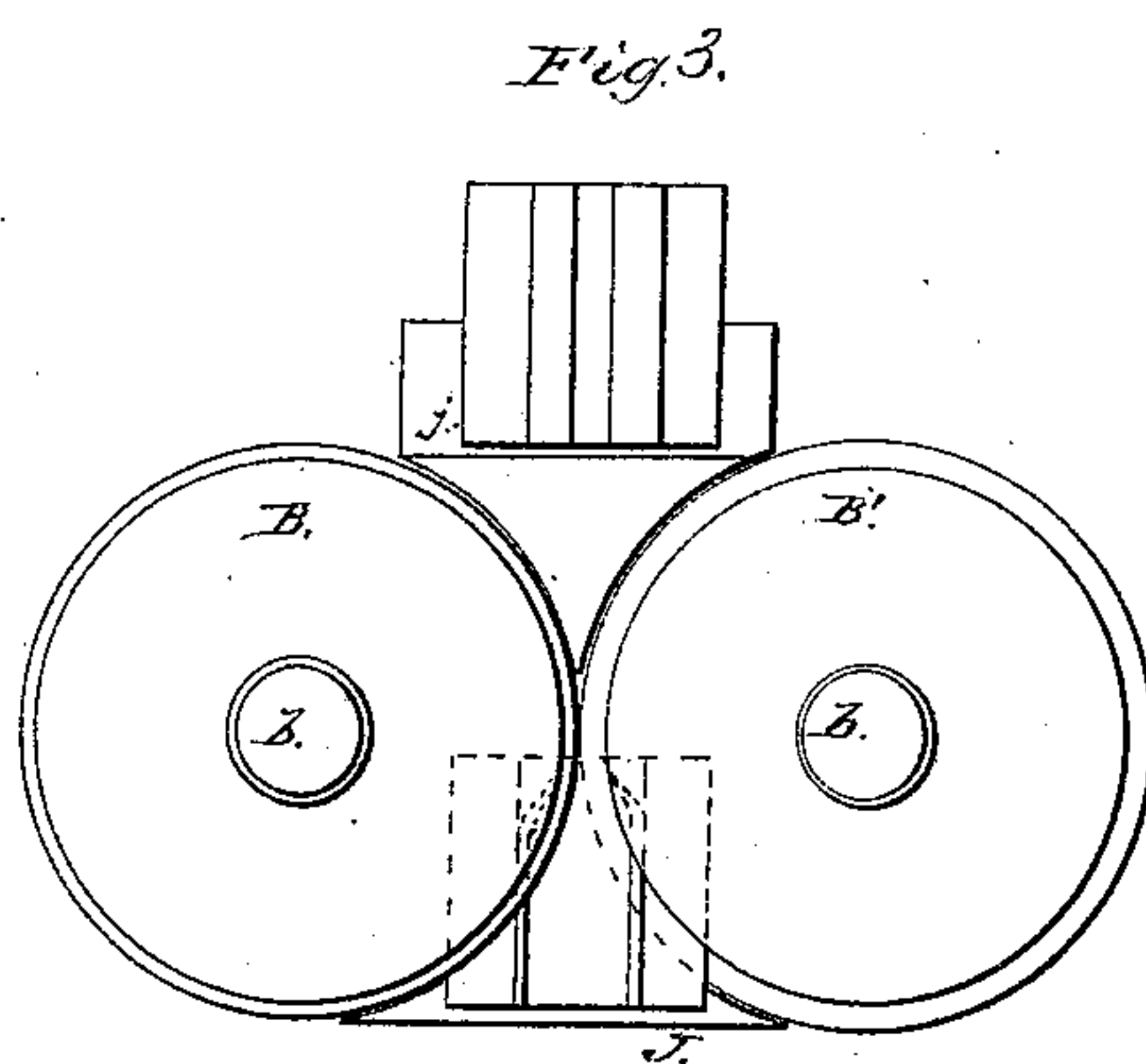
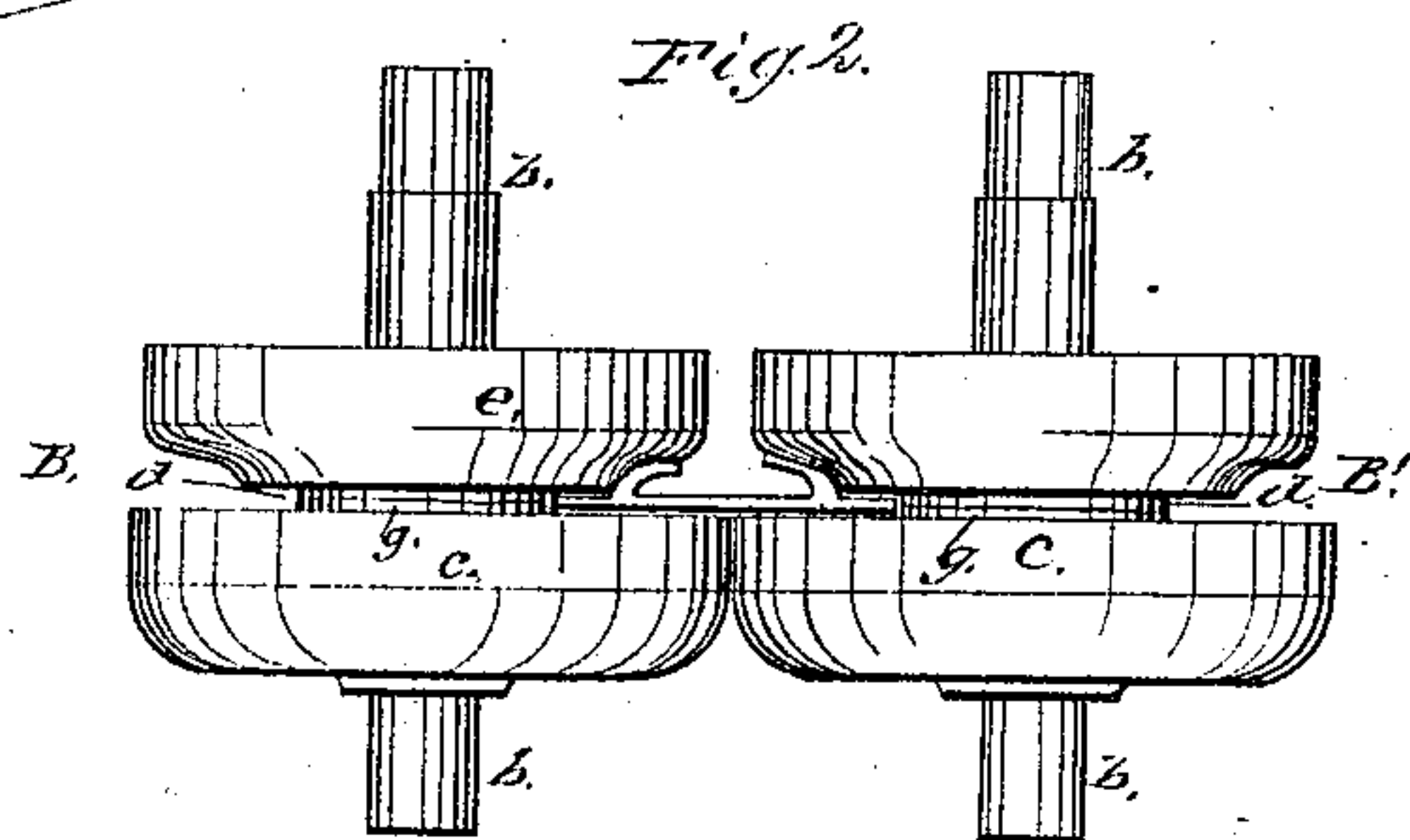
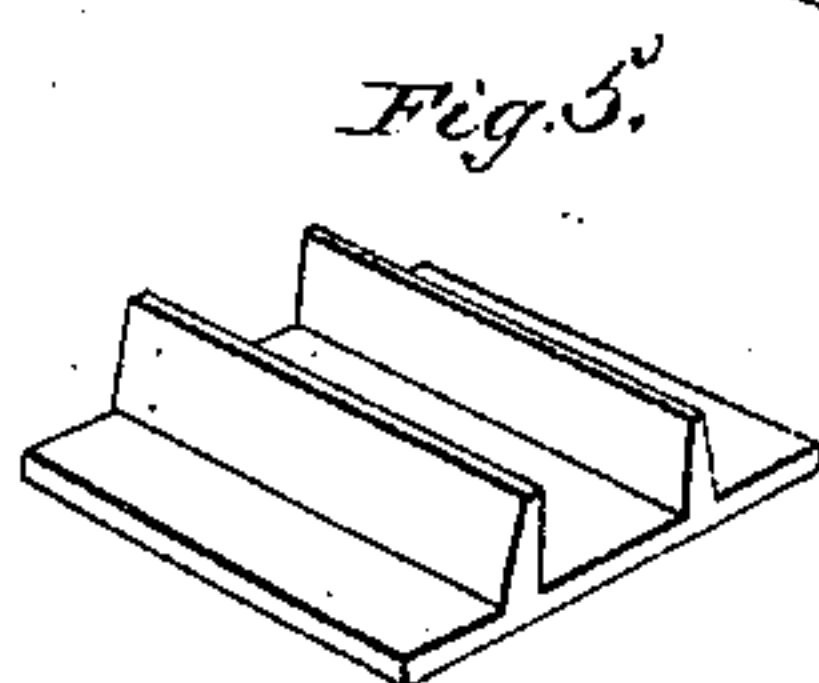
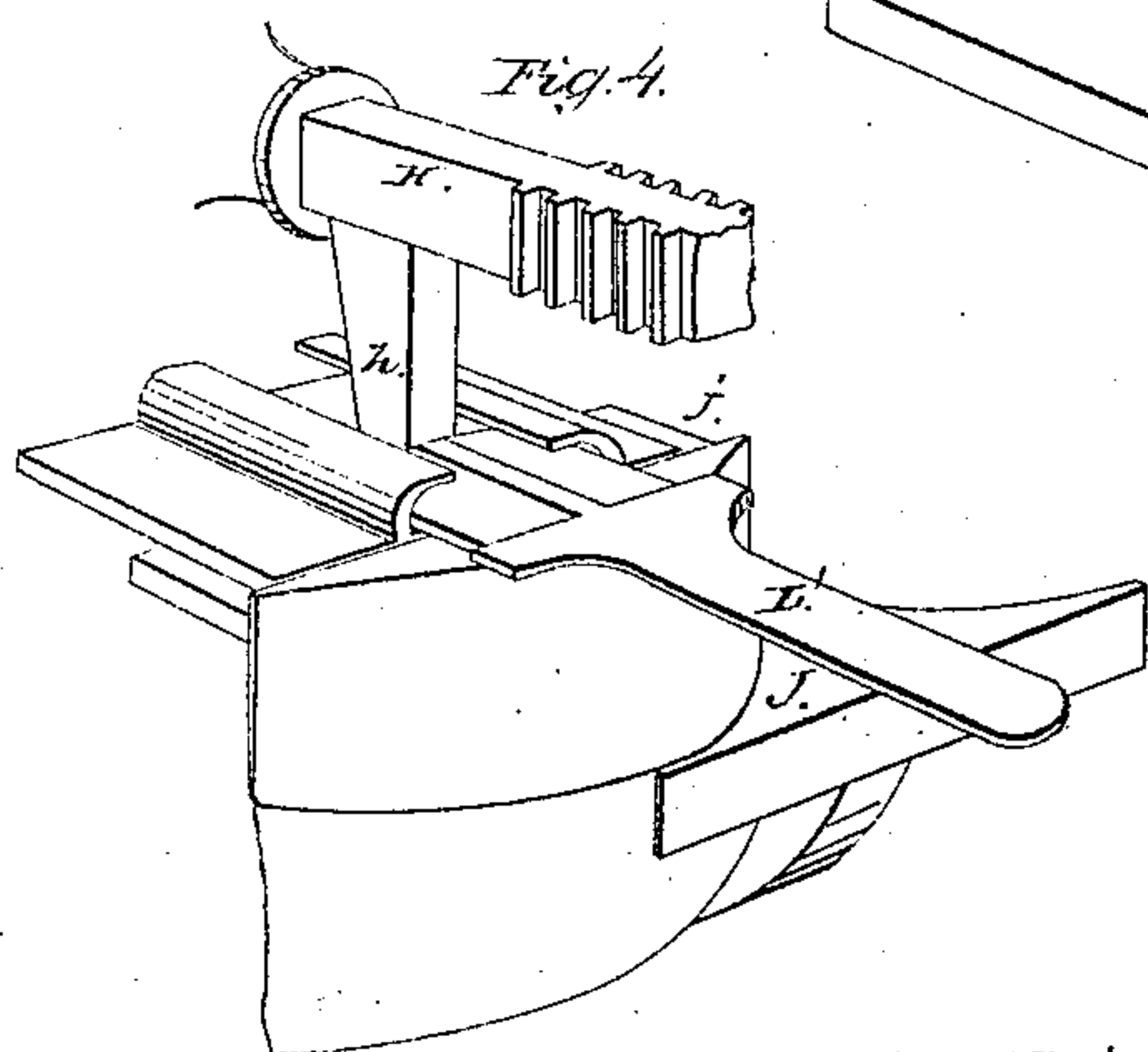
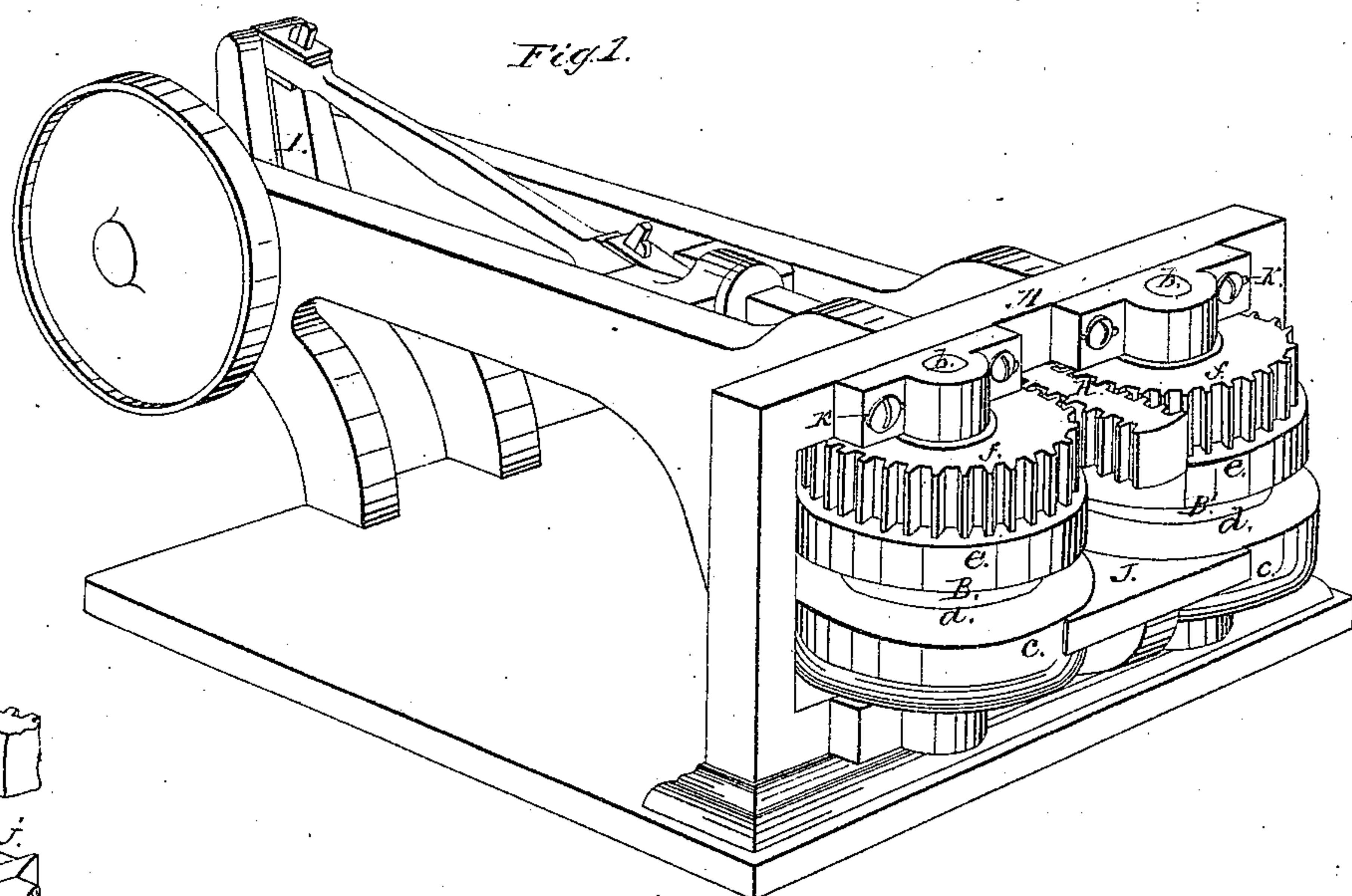


B. F. Gossin,

Making Railroad Chairs,

N^o 40,748.

Patented Dec. 1, 1863.



Witnesses:
Charles C. Fisher
J. Gibson

Inventor:
B. F. Gossin
per J. H. Bros
attys

UNITED STATES PATENT OFFICE.

BENJAMIN F. GOSSIN, OF CINCINNATI, OHIO.

IMPROVEMENT IN MACHINES FOR MAKING RAILROAD-CHAIRS.

Specification forming part of Letters Patent No. 40,748, dated December 1, 1863.

To all whom it may concern:

Be it known that I, BENJAMIN F. GOSSIN, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Machine for Bending the Lips of Wrought-Iron Railroad-Chairs; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification.

My improvement relates to the class of machines adapted to bend and form the lips of wrought-iron railroad-chairs from a vertical position; and it consists in a provision for a more easy and accurate performance of the work than has been practicable by devices heretofore employed.

Figure 1 is a perspective view of a machine embodying my invention. Fig. 2 is a side elevation of the rolls. Fig. 3 is a plan of the same. Fig. 4 is a detached representation of the disengaging mechanism. Fig. 5 represents a "blank."

A is a cast-iron frame. B B' are two similar rolls whose journals *b* occupy vertical bearings in the frame. Each roll is so formed as to present a projecting collar, C, which is level on its upper surface, in order to support the sole or under surface of the chair in passing through. Attached to the same shaft as the collar C, and the full thickness of a chair-plate above it, is a collar, *e*, whose vertical contour corresponds in reverse to that desired for the outside of a chair-lip. The interval between the collar *c* and the collar *e* forms a neck, *d*, which neck-permits the passage of the chair-base. Each roll has a cog-wheel, *f*, meshing in a double rack, H, which is reciprocated by a crank, I.

g is one of a series of washers by which the distance apart of the collars *c* and *e* is made to accord with the thickness of the chair-plate. This adjustment having been effected, the upper collar, *e*, is secured as immovably to its shaft as the lower collar, *c*. Slots K in the frame enable the rolls to be adjusted in distance to agree with the width of the chair.

J is a rest or table whose top is for the most part flush with the floor or ledge formed by

the upper surface of the collar *c*, but at its rear end is rabbeted, so as to form a shoulder, *j*, equal in height to the thickness of the chair-base.

From the rack H there depends a finger, *h*, which on the return movement of the rack acts to release the mandrel.

Operation: The machine being set in motion, the reciprocal action of the rack H imparts the desired vibratory motion to the rolls B B'. A chair-blank, Fig. 5, which has been formed in bar by the common rolling mill and cut into suitable lengths, is placed upon the rest J, and the mandrel L, whose form corresponds to that desired for the interior of the chair, is placed upon it, between the two flanges thereof. The blank and mandrel being then pushed back until the former impinges with the rolls B B', the latter acts to draw and bend in the lips of the blank and to press and form them upon the mandrel. On reaching the rear side of the rolls the now-formed chair drops down behind the shoulder *j*. The return-stroke of the rack brings the finger *h* against the head of the mandrel and forces it out of the chair. The former, being thus liberated, may be withdrawn by the attendant, and the chair, being now released, either falls of its own weight or is pushed off by its successor. The proportions of the parts should be such as to impart no squeezing pressure to either the edge or the upper face of the chair-base. The distance between the upper and lower collars, *c* and *e*, being invariable after they are keyed to their places exactly, the desired "set" is imparted to the chair lips. Nor are they materially effected by any springing apart of the rolls the one from the other; whereas in rolls which rotate at right angles to the plate such separation of the rolls materially affects the shape and fitting qualities of the chair. Moreover, the action produced by my machine upon the lips being more of a rolling and less of a rubbing one, there is less liability to stave or strain the material, and the operation consumes less power. There is also with my machine no tendency to displacement and distortion of the chair-lips by pressing endwise, as

occurs with the other mode of rolling. Each respective lip, together with the adjacent part of the base-plate, being acted on by parts of the same roll, the shape and set is made positive and definite.

My arrangement of rolls rotating in the plane of the chair-plate admits of ready adaptation to different widths by simply adjusting the bearings of the rolls.

Various modifications of my arrangement may be made while retaining the essential characteristics thereof. For example, the cog-wheels may be replaced by arms connected to the crank L by a pitman; or the rolls may have a continuous rotation, the mandrel being fixed.

I claim herein as new and of my invention—

1. Bending the lips of wrought-iron railroad-chairs by means of a pair of rolls rotating on axes perpendicular to the base-plate of the chair, and acting simultaneously on the outside of the two lips, in combination with a suitable mandrel for forming the interior of

the chair, all substantially as hereinbefore described.

2. The combination of the washers *g* and slots K, arranged and employed as described, for the purpose of adjusting the machine to different widths and thicknesses of chairs.

3. The arrangement of a pair of rolls, B B', rotating horizontally and in the plane of the chair-plate, in combination with the rabbeted table J and mandrel L, all constructed and operating substantially as set forth.

4. The combination of the rabbeted table J, for retaining the finished chair while the mandrel is being expelled, with the finger *h* depending from the rack H, for expelling the mandrel by the return motion of the said rack, as explained.

In testimony of which invention I hereunto set my hand.

BENJ. F. GOSSIN.

Witnesses:

GEO. H. KNIGHT,
J. B. GREEN.