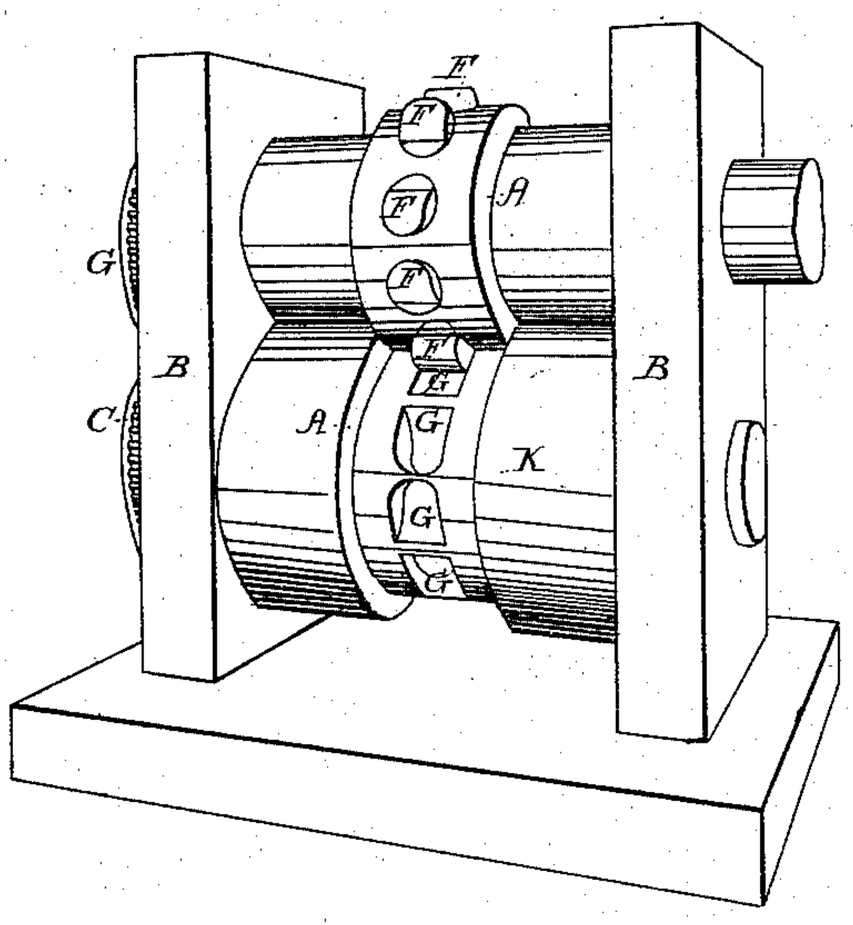
No. 10,751. PATENTED APR. 4, 1854.

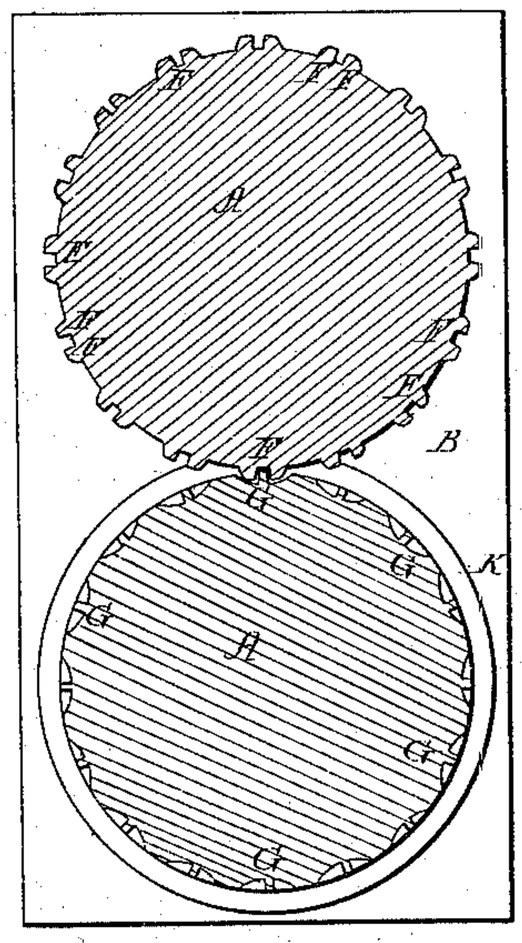
J. C. OGDEN.

MACHINE FOR MAKING RAILROAD CHAIRS.

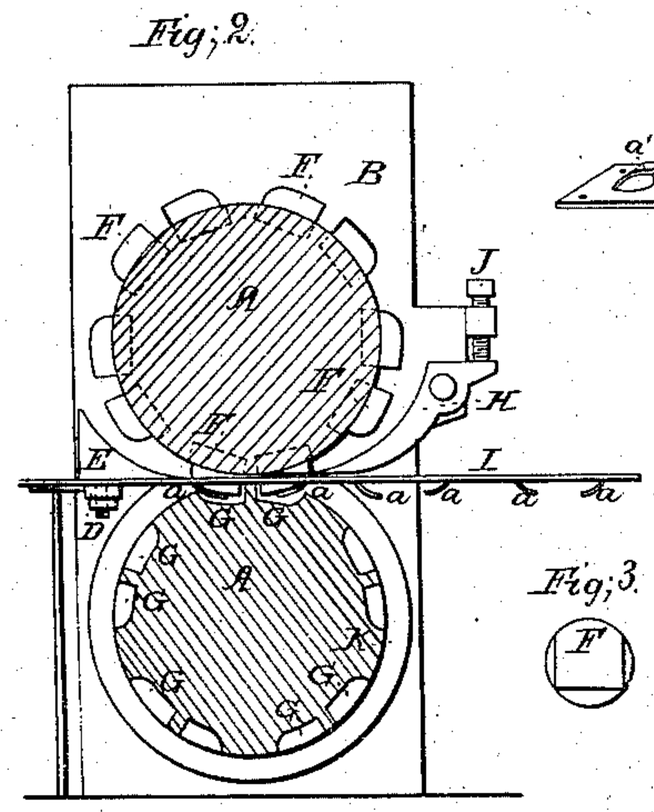
Fig; 1.



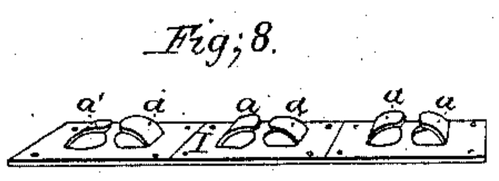
Fig; 6.



Fig; 2.



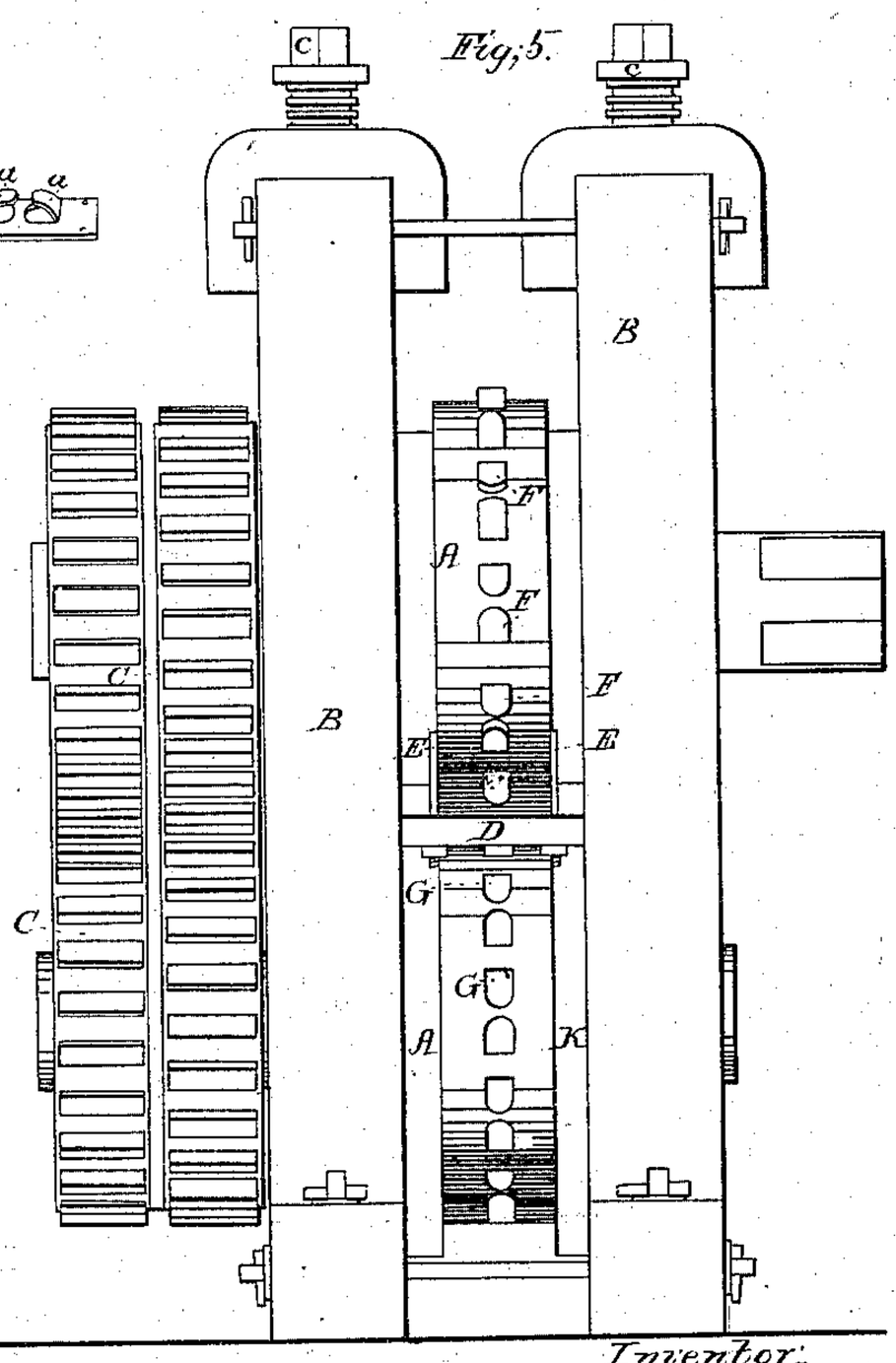
Fig; 8.



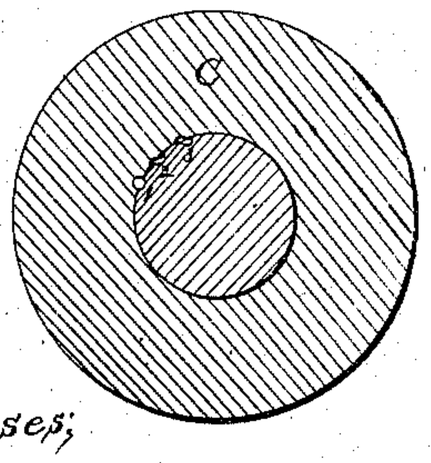
Fig; 3.

Fig; 4.

Fig; 5.



Fig; 7.



Witnesses;

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UNITED STATES PATENT OFFICE.

JOHN C. OGDEN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO CHARLES S. OGDEN.

MAKING RAILROAD-CHAIRS.

Specification of Letters Patent No. 10,751, dated April 4, 1854.

To all whom it may concern:

Be it known that I, JOHN C. OGDEN, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Machine for Making Wrought-Iron Chairs for Railroad-Rails; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a perspective view of a pair of rolls with punching cutters and dies adapted to each other; Fig. 2, a cross section of the same, with a bar of iron as being formed thereby into chairs; Fig. 3, a plan view of one of the punching cutters; Fig. 4, an elevation of the same; Fig. 5, a front elevation of a pair of rolls with connecting pinions, and housings; Fig. 6, a cross section of the same kind of rolls of larger diameters and an increased number of punches and dies, and Fig. 7, a cross section of a pinion and its shaft, showing the manner of keying them together, so that the pinion may be adjusted, as its teeth wear.

The same letters refer to like parts in the several figures.

A, A, are the rolls; B, the housings or frame; C, C, the gearing pinions; D, the guide bar; E, the guides for directing the "chair" bar to the rolls; F, the punching cutters; G, the dies; H, the adjustable lever for forcing the punched bar of iron (I) off of the punches as it passes from between the rolls (A, A) and J, the screw bolt for adjusting the lever (H).

a, *a*, *a*, are the lips, formed by the punches, on the bar of iron as it passes through the machine and 1, 2, 3 represent the key and extra holes or seats in the shafts and pinions for fixing, and also adjusting them to compensate for wear. The rolls are geared together by means of a pair of pinions with alternating teeth, and revolve in bearings secured within the housings and adjusted by screw bolts (*c*, *c*) in the usual manner.

The punching cutters and dies are arranged around the peripheries of the rolls, the punches being screwed firmly into the upper roll, and the corresponding dies or recesses made in the lower one. The lower roll is made with a groove to correspond with the intended width and thickness of the bar of iron to be punched or formed into chairs, (say about six and a half inches wide and half an inch in depth,) the upper roll having a projection around its periphery, accurately adapted to the groove in the lower roll. The punches are screwed into the upper roll in pairs, and shaped to suit any particular form of lip that may be desired on the chair to be made. The shape represented in the drawings is perhaps one of the best—yet any other form may be adopted and constructed on the same machine, by changing the punches and dies, or the rolls. The lever (H) is made in width to fit within the groove in the lower roll, and has a slot in its inner end, large enough to allow the punches to pass freely. The frame or housings, and the rolls and pinions, should be made of cast iron. The rolls may be from two to four feet in diameter, and should be turned "true," and accurately fitted together. The punches should be made of cast steel and properly hardened—and as the dies should also have their upper edges of cast steel, it is intended to have the collar or projecting part (K), on one end of the lower roll, adjustable on its shaft, so that a band of cast steel (about half an inch thick and of the same width as the groove in the roll) may be shrunk on and hardened upon the roll—the dies or recesses being first properly cut through the bar. This collar or projecting part (K) is then to be secured up against the edge of the band and keyed to the shaft. In this case, the cast roll must, of course, be turned down sufficiently to allow for the thickness of the band.

The two rolls are made, each of about the same diameter at the part where the punches or dies are placed, or where the "chair bar" passes between the rolls.

The machine is intended to be geared into connection with a steam or other engine, and driven in the usual manner, and at such a speed as may be found best adapted for the purpose.

I will now proceed to describe the mode of operation.

The rolls being adjusted apart to suit the thickness of the "chair bar," the iron out of which the chairs are to be made, is entered

between the revolving rolls while it is hot, and the dies and punches are kept cool by cold water running upon them. It is intended that the "chairs" shall be made from the "mill bars," direct from the "finishing rolls" without reheating. The bar is run through between the rolls, thus forming the lips (*a a a*) and is then taken to the "shears" and cut into separate "chairs." They are then punched at the corners for the spikes, and "dressed up" for use. The spike holes and lines of separation between the chairs are shown in perspective by Fig. 8. It will now appear obvious that "chairs" can be made by this rolling process, more rapidly and economically than by any other now known or used.

I do not claim the chairs herein described and illustrated nor any other particular form of chairs for railroad rails nor do I claim operating the punches and dies by means of cam rollers; but

What I do claim as my invention and desire to secure by Letters Patent is—

Making chairs for railroad rails by passing the hot mill bars direct from bar rolls out of which the chairs are to be made "without reheating" and by the same working hands usual at roll train, between a pair of rolls constructed and operating on the principle substantially as herein described and illustrated, the punches and dies for punching and forming the chairs being secured around the peripheries of said rolls substantially as described.

JOHN C. OGDEN.

Witnesses:
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