S. J. Seely.

Iron-Roll.

No 73467 Patented Jan. 21, 1868

Fig. 1.

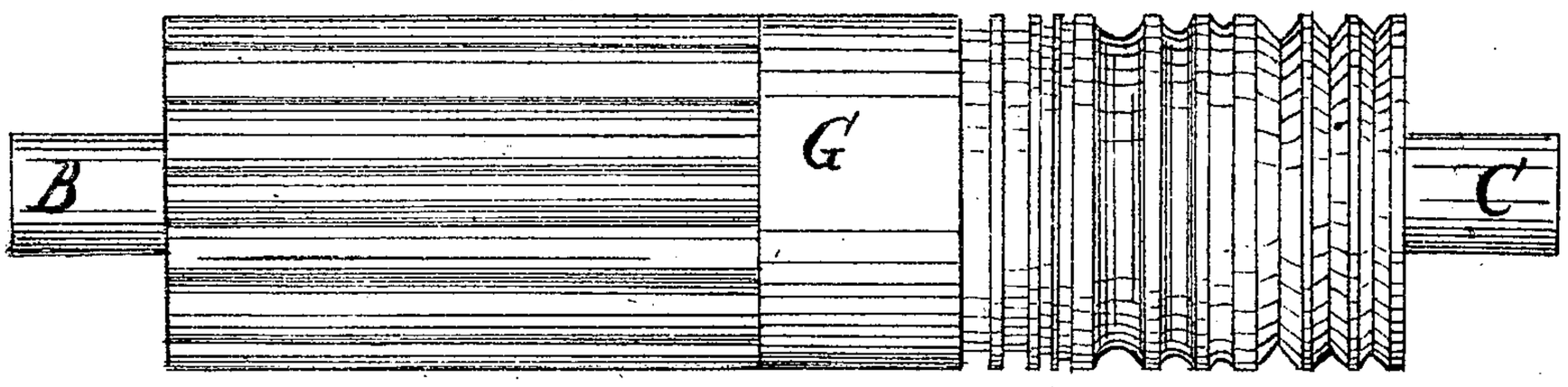


Fig. 2.

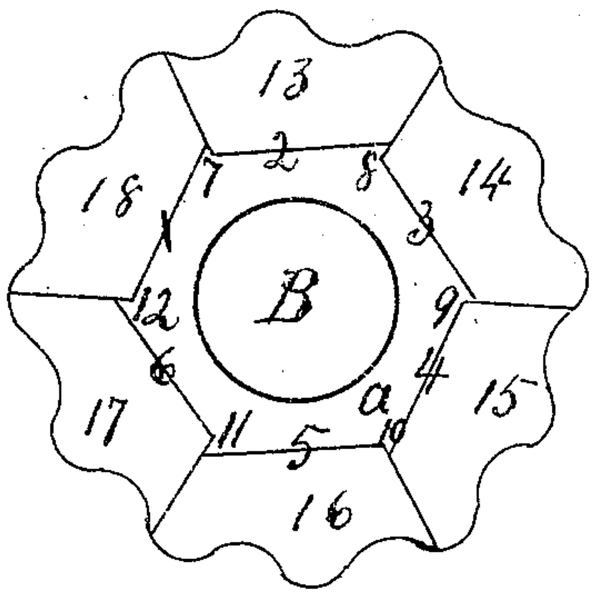


Fig. 3.

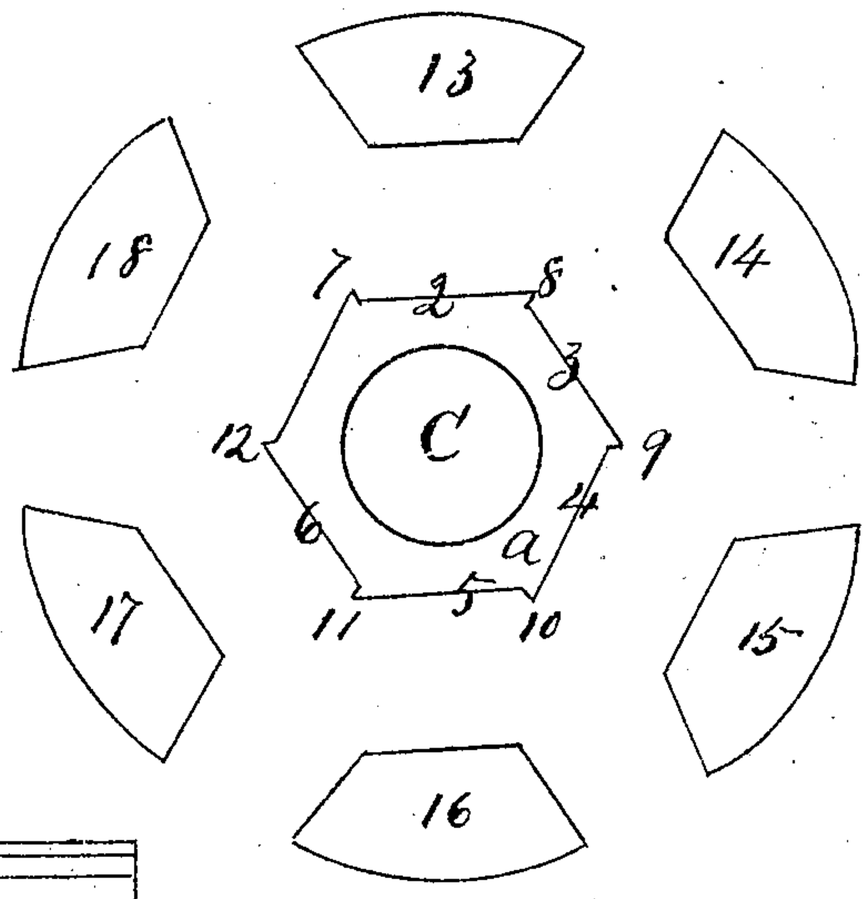


Fig. 4.

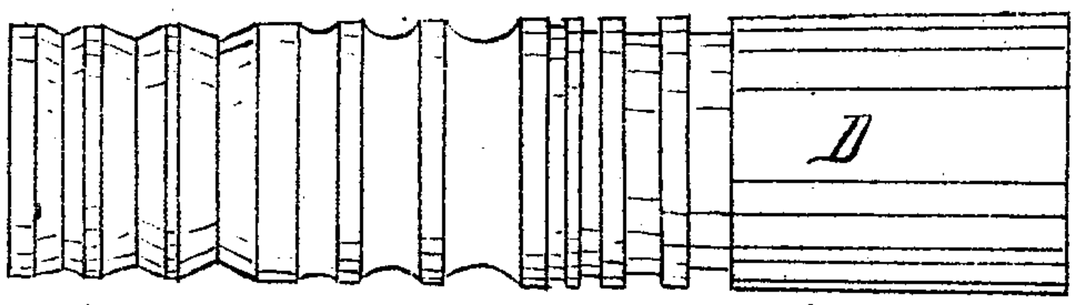


Fig. 5.

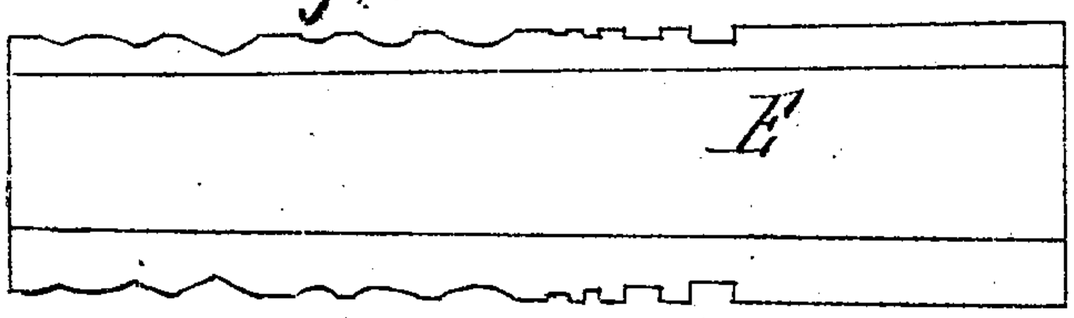
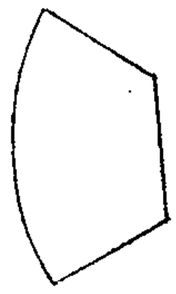


Fig. 6



Witnesses.
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by his Attys
Baldwin & Son

United States Patent Office.

SAMUEL J. SEELY, OF NEW YORK, ASSIGNOR TO J. M. BROWN, OF BROOKLYN, NEW YORK.

Letters Patent No. 73,467, *dated January* 21, 1868; *antedated January* 2, 1868.

IMPROVEMENT IN IRON-ROLLS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL J. SEELY, of the city, county, and State of New York, have invented a new and useful Improvement in Rolls for Rolling Iron, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 is a view in elevation of one of my improved rollers.

Figure 2 is an end view of the roller.

Figure 3 is an end view of the arbor and sections or dies, separated; and

Figures 4, 5, and 6 are an outside, an inside, and an end view of a single section or die of the roller.

Solid rollers for rolling iron are expensive, and difficult to cast sound, and when injured in part are only valuable as old iron, or to be reduced in diameter and used as smaller rollers; and to produce the various forms in which iron is used, they are required in great numbers, involving capital that is much of the time idle.

Now, it is the object of my invention to obviate these objections to solid rollers for rolling iron by forming a roller of sections or dies of cast iron upon a wrought-iron arbor; and to this end my invention consists in forming the arbor or journals for rollers for rolling iron of wrought iron of a polygonal shape, the sides of which are all depressed on one edge and raised on the other, so that each angle shall be raised to a shoulder on a line radiating from the axis to the perimeter of the roller, while the sides and angles of the arbor are parallel to its axis, and covering the arbor with removable dies or sections of wrought iron matched to and firmly secured upon the sides of the arbor, and reduced to the form desired for rolling iron of any design or pattern.

In the example employed in this specification to illustrate my invention, I form a hexagonal arbor, A, of wrought iron, soundly forged, with the journals B and C truly turned upon accurate centres. From these centres a circle is described upon the end of the arbor A, which is divided into six equal parts by lines radiating from the axis of the arbor. Between these radiating lines, and in the largest circle of which the arbor will admit, I project planes or sides 1, 2, 3, 4, 5, and 6, depressing one edge of each plane, so that the opposite edge shall form at the angles shoulders 7, 8, 9, 10, 11, and 12. I now reduce these sides and angles longitudinally across the arbor, in lines truly parallel with its axis, finishing the surface, if necessary, with the plane accurately applied.

I have described the shoulders of the sides of this hexagonal figure as formed on lines radiating from the centre of the arbor, and so formed they will be found efficient to sustain the pressure of the blocks or dies when secured in position. But it may be found expedient to change the face of these shoulders, so as to form a dove-tailed shape, and let the dies be formed with a corresponding projection, so that when secured upon the arbor the dies or sections shall be locked thereto by a dove-tailed connection which will render them even more secure than when fastened as first described. When the arbor is finished, I build the roller up of dies 13, 14, 15, 16, 17, and 18, all formed on their inner sides to match the sides 1, 2, 3, 4, 5, and 6 of the arbor, each die having one edge resting behind one of the shoulders 7, 8, 9, 10, 11, and 12, while the angular sides or edges *e* and *f* (fig. 6) of the dies or sections are reduced truly in lines to form an accurate circle upon the arbor. These dies are made of cast iron, and planed to a perfect fit on their inner sides and edges, and may be of the whole length of the roller, or divided into short pieces. But in whatever lengths they are made, they must, it is manifest, be firmly fastened to the arbor; and the fastening may be effected by screws through the dies, or otherwise; and where the dies are as long as the arbor, the ends may be turned down and banded, and this fastening, with the dove-tailed connection before described, will be found all-sufficient in all short rollers.

In fig. 4, one of the sections is shown with its outer surface at D, and its inner surface at E, fig. 5, with an end view at F, fig. 6. After the dies or sections 13, 14, 15, 16, 17, and 18 are thus fitted and securely fastened to the arbor, the surface of the roller G may be reduced in any of the most approved methods, and finished to such form as may be desired for any description of rolled iron.

Thus formed, the arbor of my roll will be liable to little wear, save on the journals, where all rolls must wear much alike under like conditions. The sections can be changed with little delay, and a broken or worn one replaced without materially injuring the roll. The sections are cheaply made, and few arbors and housings will be required in the conduct of a large business, for the design of the sections only will require any change

to produce a variety of forms in the iron to be rolled, while there can be no loss in liability to break from defective casting, as in the large heavy rolls of cast iron.

I have only described a hexagonal roller, but of course it is well understood that my arbor may be made with more or fewer sides and projections without departing from the spirit of my invention.

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

A roll for rolling iron, having a solid wrought-iron arbor and a sectional cast-iron surface, when constructed substantially in the manner described, for the purpose set forth.

In testimony whereof, I have hereunto subscribed my name.

SAMUEL J. SEELY.

Witnesses:

LYDIA A. SEELY,

CH. E. BROWN.