(No Model.)

2 Sheets—Sheet 1.

C. J. STURGEON.

CIRCULAR SAWING MACHINE.

No. 358,173. Patented Feb. 22, 1887.

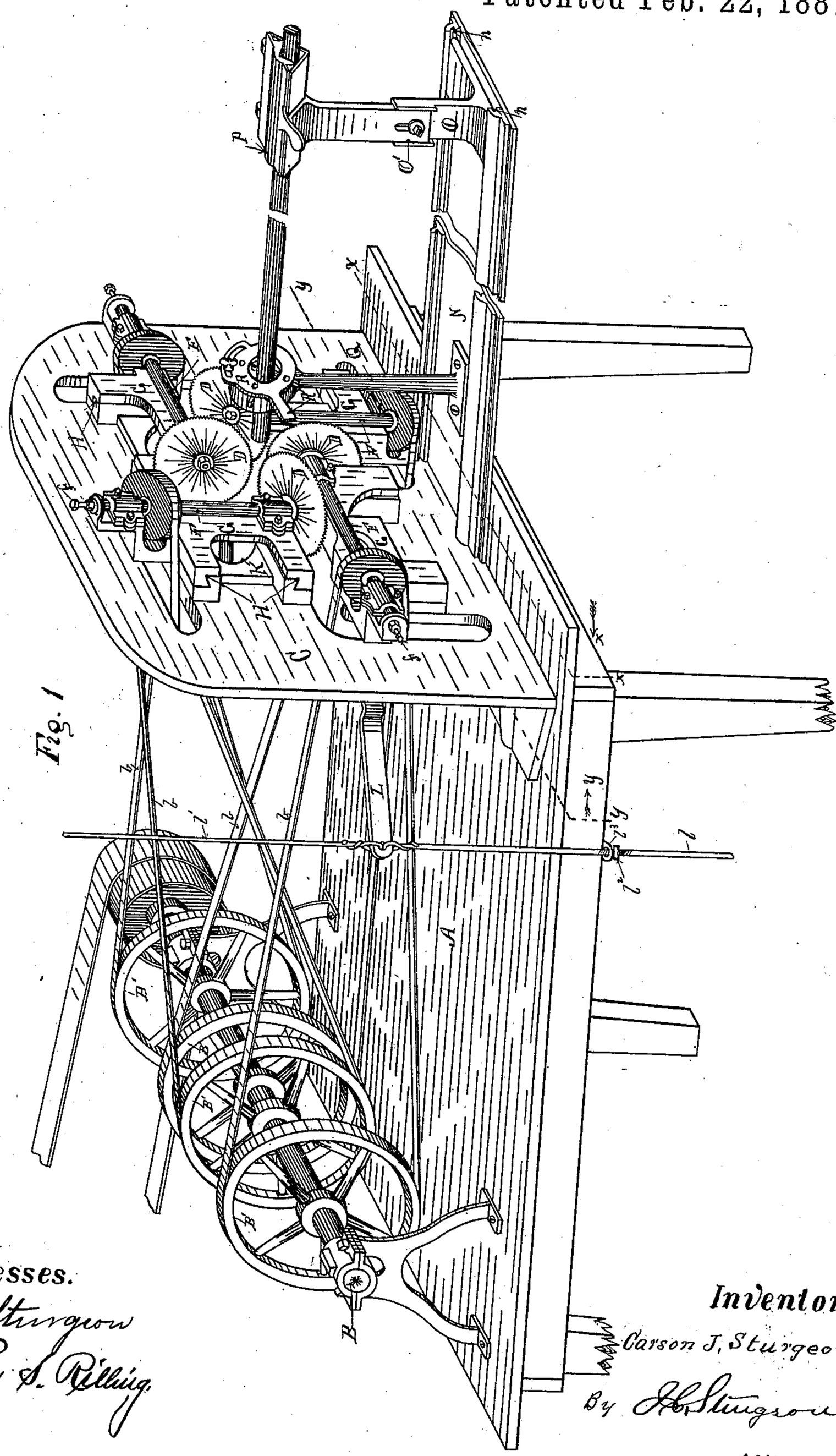

Fig. 1

Witnesses.
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(No Model.)

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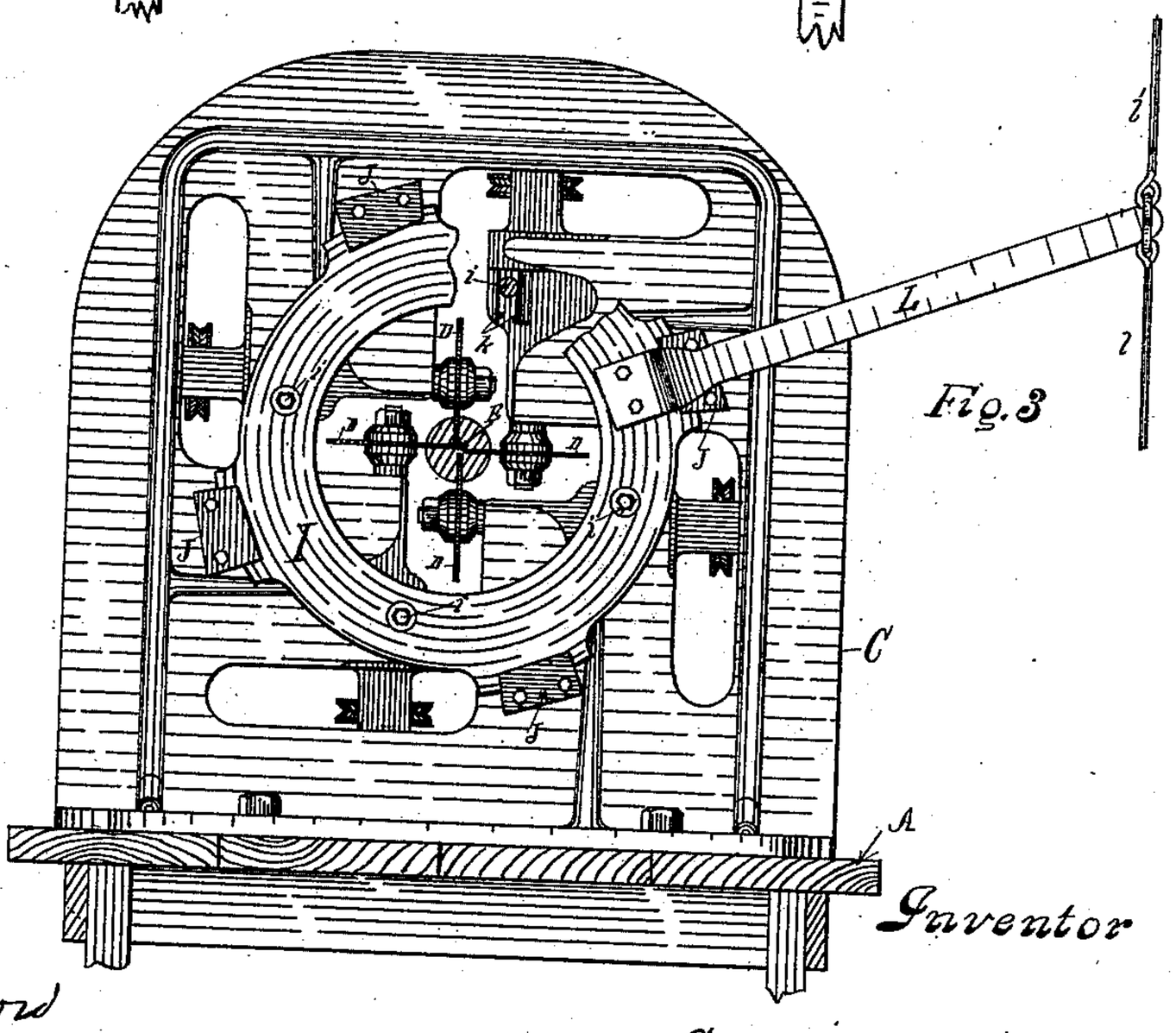

Witnesses

H. M. Sturgeon

Jos. S. Billing.

Inventor

Carson J. Sturgeon

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Att'y.

UNITED STATES PATENT OFFICE.

CARSON J. STURGEON, OF MILES GROVE, PENNSYLVANIA, ASSIGNOR TO THE KEYSTONE MANUFACTURING COMPANY, OF SAME PLACE.

CIRCULAR SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 358,173, dated February 22, 1887.

Application filed April 24, 1886. Serial No. 200,078. (No model.)

To all whom it may concern:

Be it known that I, CARSON J. STURGEON, a citizen of the United States, residing at Miles Grove, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Sawing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to sawing-machines; and it consists in the improvements hereinafter set forth and explained.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved sawing-machine with the legs of the machine broken away, (and the treadle for moving the saws apart not shown.) Fig. 2 is a vertical cross-section of same on the line *x x* in Fig. 1, looking in the direction of the arrow *x*. Fig. 3 is a vertical cross-section of same on line *y y* in Fig. 1, looking in the direction of the arrow *y*.

Like letters refer to like parts in all the figures.

In the construction of my improved sawing-machine, A is the table or frame upon which the mechanism of the machine is supported, and B the counter-shaft of the machine, preferably secured upon one end of the table A.

Upon one end of the table A, opposite the counter-shaft B, is secured a vertical frame, C, and upon this frame C are mounted four circular saws, D D D D, which are arranged to cut toward a common center, as shown in Fig. 3, and driven by belts *b b b b* from pulleys B′ on the counter-shaft B.

The mandrels F of these saws D are mounted upon sliding carriages G, which move in gibs H on the front of the frame C, as shown in Figs. 1 and 2. On the back of the frame C is mounted a circle, I, secured to the back of the frame by circular guides J, in which it turns. Secured to this circle I are stud-pins *i i i i*, which pass through openings K in the frame C into slots *k* (see Fig. 3) in the backs of the sliding saw-carriages G. On one side of the circle is secured a lever, L, from the outer end of which a connecting-rod, *l*, extends downward to a treadle, (not shown,) and another connecting-rod, *l′*, extends upward to a spring (not shown) attached to the ceiling of the room in which it is operated, so that when the foot of the operator is applied to the treadle the lever L is moved downward, turning the circle I. The stud-pins *i*, thereby acting upon the saw-carriages G, move them (together with the saws D mounted thereon) backward upon the gibs H, thereby throwing the saws D apart, as shown in Fig. 2. When, however, the foot of the operator is removed from the treadle, the spring attached to the rod *l′* above the lever L operates to automatically move the lever L and the saw-carriages G back to their normal positions, as shown in Fig. 3, so that the saws may be let into or moved out of a stick being sawed in the machine at any point desired without cutting the saw-kerfs out at the end of the stick. The movement of the circle I may be adjusted as desired, so that the saws D will cut any depth desired, by means of an adjustable stop, *l²*, on the rod *l*, where it passes through a guide, *i³*, on the side of the table A. (See Fig. 1.) In this manner the saws D will operate in and out of work, cutting to any depth at the will of the operator.

To the table, in front of the upright frame C, is secured a projecting frame, N, provided with ways *n n*, in which a sliding carriage, O, operates. Upon the top of this carriage is a hinged clamp, P, adapted to hold round or square sticks to be sawed. The height of the clamp P is made adjustable by means of a sliding joint, O′, in the standard of the clamp P. There is also secured to the frame N, as closely as possible to the saws D, (by means of a standard, Q,) a self-centering chuck or guide, R, which, operated by means of the ordinary eccentric mechanism used in chucks of this class, centers the rods to be sawed. This chuck or guide is operated by the lever R′, and is thereby opened or closed, so as to fit and center various-sized sticks, so that any sized stick can be at once centered by moving the lever R′, so that in operation, when the stick is clamped into P and pushed up to the chuck or guide R, the operator moves the lever R′, so as to open the chuck or guide R suf-

ficiently to receive the stick, which the operator pushes through it between the saws; and after the sawing is done the stick is withdrawn.

In Fig. 3 the saws are shown as quartering a round stick, the saws being set by means of adjusting-screws *f*, so that the saw-kerfs will all be within two opposite quarters, and the two remaining quarters will be full quarters, so that when the smaller quarters are removed the full quarters of the stick will, together with the like parts of another stick sawed in the same manner, make a joint the full size of the stick, so that two sticks sawed and joined in this manner will make a continuous stick of like size in every part.

For many purposes it may be desirable to only use two or three of the saws at one time. In this case one or more of the saws are removed and the remaining saws operated on the stick, as before.

I have thus shown and described convenient mechanism for utilizing my invention. However, many parts of my machine may be modified in construction and equally good results obtained. Therefore I do not desire to limit myself to the exact construction shown and described; but

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a sawing-machine, of four circular saws cutting toward a common center, mounted upon sliding saw-carriages adapted to move the saws toward and from a common center, and means for adjusting the saws and their mandrels endwise with a stationary guide, and a sliding carriage in front of the saws adapted to convey the work through the stationary guide to and from the saws, substantially as and for the purpose set forth.

2. The combination, in a sawing-machine, of four circular saws mounted in a frame so as to cut toward a common center, with an adjustable centering-guide in front of the saws, and a sliding carriage provided with clamping mechanism for holding and moving the work up to and between the saws, substantially as set forth.

3. The combination, in a sawing-machine, of four sliding saw-carriages mounted upon a frame and adapted to move circular saws mounted thereon toward and from a common center, with a ring on said frame provided with stud-pins engaging with said carriages, and a lever for operating said ring, whereby said carriages may be simultaneously moved toward or from a common center, substantially as and for the purpose set forth.

4. The combination, in a sawing-machine, of four sliding saw-carriages operating on gibs upon an upright frame carrying circular saws which cut toward a common center, with mechanism for simultaneously moving said carriages and the saws mounted thereon toward and from such common center, and an adjustable stop, l^2, on the rod *l*, for regulating the downward movement of the lever L, and thereby regulating the distance of the saws, substantially as and for the purpose set forth.

5. The combination, in a sawing-machine, of the saws D D D D with the centering-guide R and the sliding carriage O, provided with the clamp P, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CARSON J. STURGEON.

Witnesses:
W. D. JANES,
E. S. PECK.