

No. 677,791

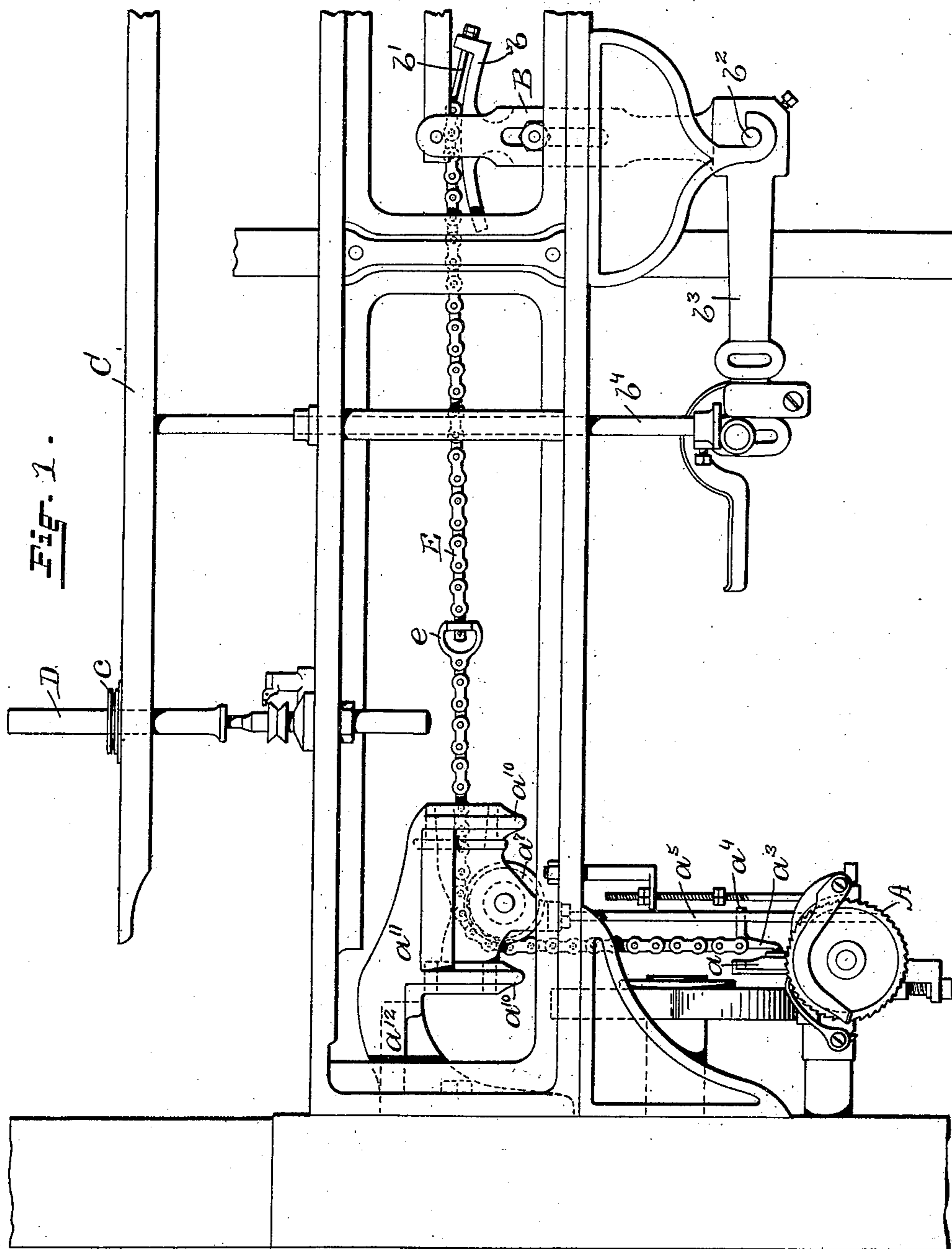
Patented July 2, 1901.

O. L. OWEN.  
SPINNING MACHINE.

(Application filed Nov. 30, 1900.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

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*B. M. Simms.*

INVENTOR:

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*Joseph A. Miller & Co.*  
ATTORNEYS:

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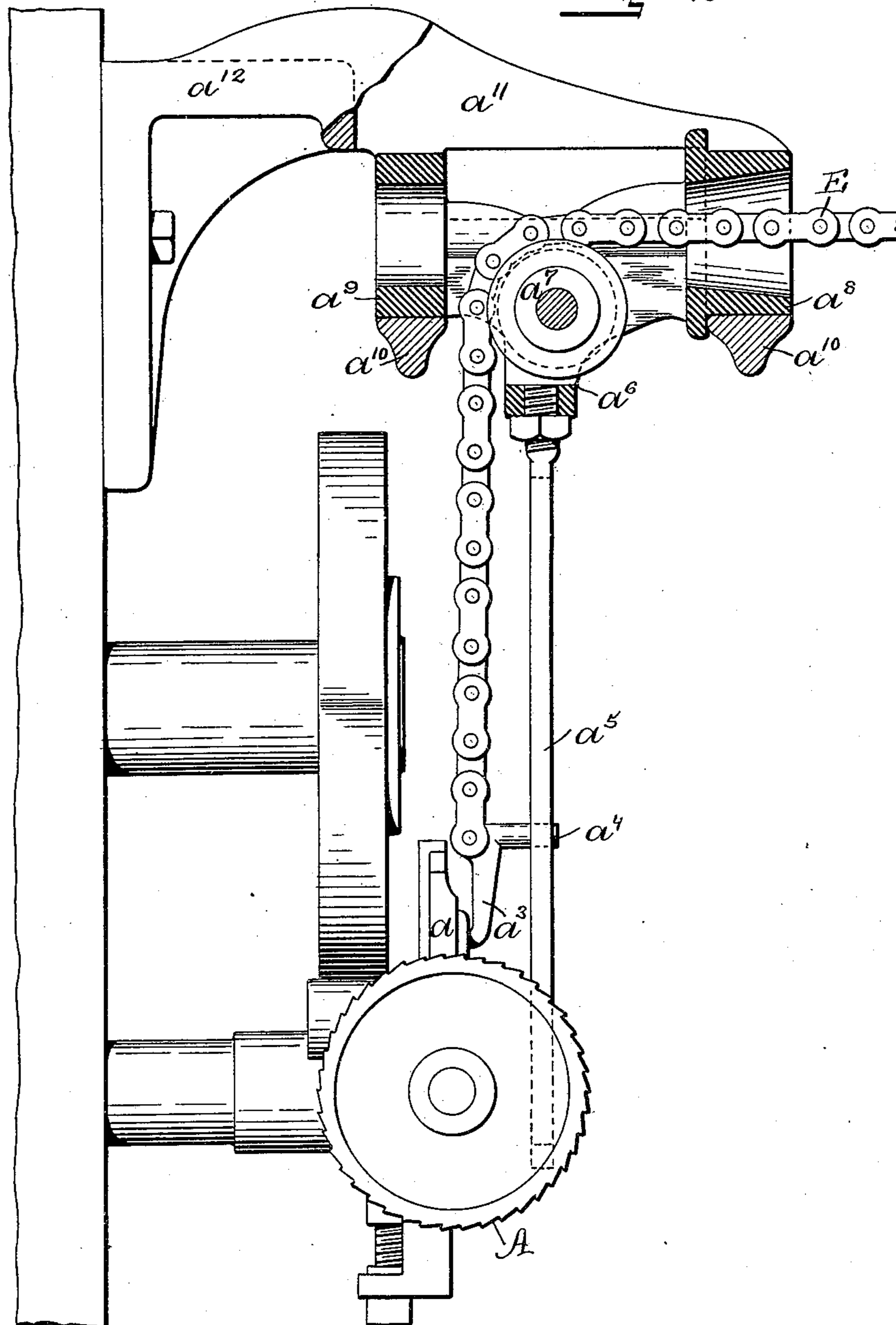
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Fig. 2.



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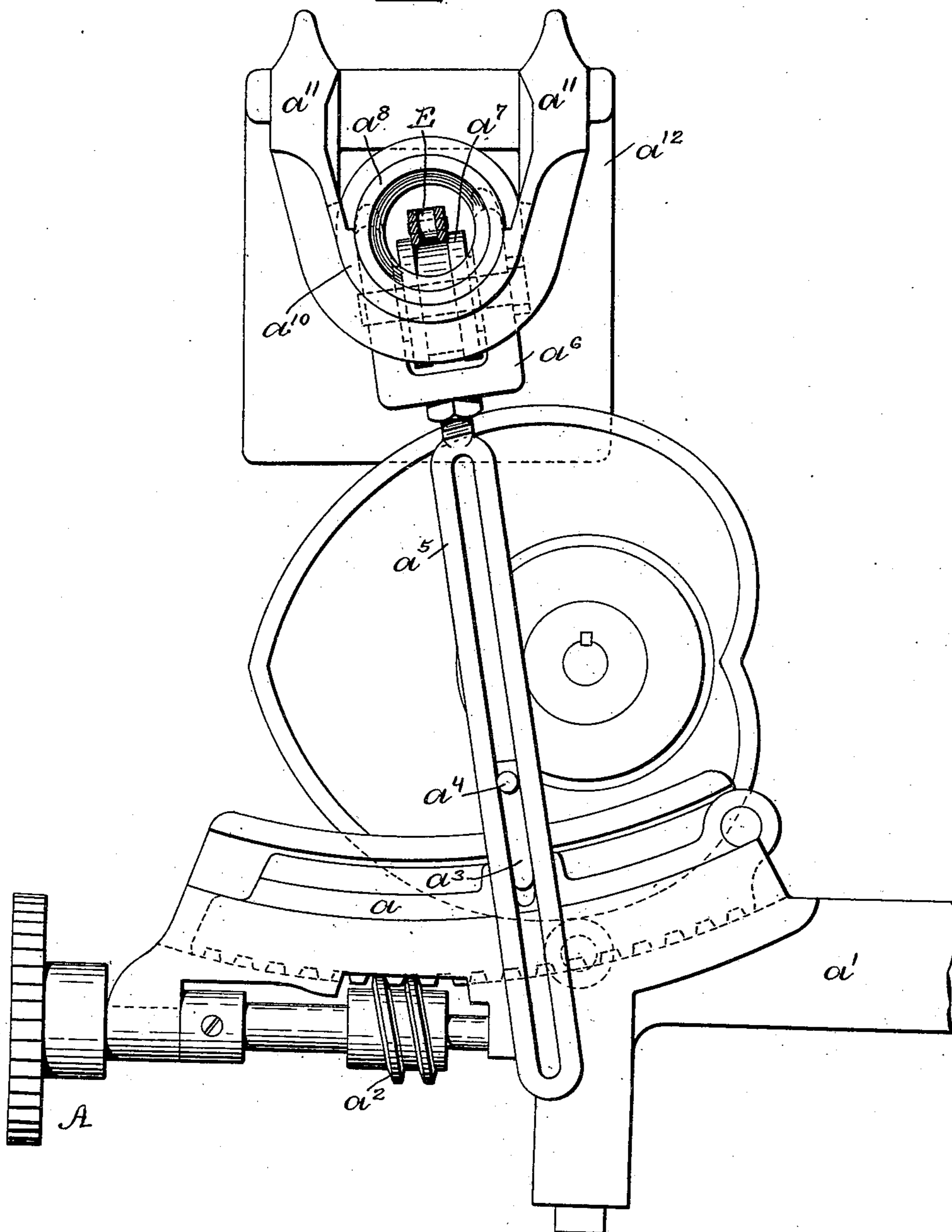
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3 Sheets—Sheet 3.

Fig. 3.



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# UNITED STATES PATENT OFFICE.

OSCAR L. OWEN, OF WHITINSVILLE, MASSACHUSETTS, ASSIGNOR TO THE  
WHITIN MACHINE WORKS, INCORPORATED, OF SAME PLACE.

## SPINNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 677,791, dated July 2, 1901.

Application filed November 30, 1900. Serial No. 38,111. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR L. OWEN, a citizen of the United States, residing at Whitinsville, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Spinning-Machines, of which the following is a specification.

This invention has reference to an improvement in the mechanism of a spinning-machine by which the winding of the yarn on the bobbin is controlled; and it consists in the peculiar and novel construction whereby the movements of the bobbin-building mechanism are more reliably transmitted to the yarn-guides, as will be more fully set forth hereinafter.

In spinning-machines the bobbin-building mechanism has heretofore been connected with the rocker-arm by which the ring-rails are reciprocated to guide the yarn onto the bobbin by curb-chains in which the adjacent links are placed at planes at right angles to each other. These chains are passed over a grooved sheave supported in fixed bearings. The successive links of such chains do not bear uniformly on the surface of the sheave, and as the end of the chain, which is connected with the bobbin-building mechanism, is moved out of the plane of the sheave the chain is liable to ride on the oblique sides of the groove in the sheave. The accurate and close laying of the yarn on the bobbins, required in all bobbins, and particularly in filling-bobbins, was injuriously affected by every change in the bearing of the links on the sheave.

The object of this invention is to insure the accurate and true transmission of every movement of the bobbin-building mechanism to the yarn-guides, so as to insure the close spiral winding of each layer of the yarn on the bobbins.

Figure 1 is a partial side view of a ring-spinning machine, showing the bobbin-building mechanism connected with the rocker-arm by which the reciprocation of the ring-rail and the guiding of the yarn onto the bobbin are secured. Fig. 2 is an enlarged side view, partly in section, showing a flat chain supported on a sheave journaled in a rocking yoke. Fig. 3 is an end view of the

builder mechanism, showing the yoke of the chain-supporting sheave connected with the builder mechanism.

Similar marks of reference indicate corresponding parts in all the figures.

In the drawings, A indicates the bobbin-building mechanism; B, the rocker-arm; C, the ring-rail; D, the bobbin, and E the chain connecting the bobbin-building mechanism with the rocker-arm.

The bobbin-building mechanism is shown in Fig. 3 provided with the segmental slide  $a$ , supported on the builder-arm  $a'$ , and operated by the worm  $a^2$ , this being one form of bobbin-building mechanism to which I have applied my invention. I do not, however, wish to confine myself to this specific form of bobbin-building mechanism. In the preferred form I connect the chain E with the slide  $a$  by means of the connecting member  $a^3$ , having the stud  $a^4$ , extending into the slot of the arm  $a^5$ , connected with the yoke  $a^6$ , in which the sheave  $a^7$  is journaled. The yoke  $a^6$  has two trunnions  $a^8$  and  $a^9$ , supported in the saddle-bearings  $a^{10}$   $a^{10}$ , which extend from the arms  $a^{11}$   $a^{11}$  of the bracket  $a^{12}$ , secured to a fixed part of the machine, preferably the end frame, as is shown in Fig. 1. The trunnion  $a^8$  is tubular, the chain E passing through the same. The trunnion  $a^9$  is preferably tubular, but may be solid.

The chain E is what is known in the arts as a "flat" or a "sprocket" chain, such as is used on bicycles. They are formed, preferably, of links having an odd and an even number of flat blanks in the adjacent links pivotally secured together.

The sheave  $a^7$  has a peripheral flat bearing-surface for the chain in place of the usual V-shaped groove, and has practically rectangular raised rims on each side of the bearing-surface. The swivel  $e$  is interposed in a part of the chain intermediate the sheave  $a^7$  and the rocker-arm B.

The rocker-arm B is provided with the segment  $b$  to form a uniform support for the chain E, which is connected to a bracket on the end of the segment by the bolt  $b'$ . The rocker-arm B is secured to and transmits rocking motion to the shaft  $b^2$ , which usually extends transversely across the frame and

has secured to it on one or both sides the lifter-arm  $b^3$ , by which the lifter-rod  $b^4$  operates the ring-rail C. The usual travelers on the rings  $c$  guide the yarn on the bobbins D.

5 Practical use has demonstrated that in a ring-spinning frame provided with my improvement the finer qualities of yarn may be wound on bobbins in such close spirals that the adjacent layers at no place enter or interfere with each other. The bearing of the flat chain on the flat surface of the sheave and the capacity of the sheave to swing with the chain, as also the freedom of the part of the chain bearing on the sheave to turn, by the use of the swivel, independent of the part of the chain supported on the rocker-arm segment, all contribute to secure the improved result.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a spinning-machine, the combination with the bobbin-building mechanism and the rocker-arm, of a sheave, a swinging support for the sheave and a flat chain connecting the builder mechanism with the rocker-arm, as described.

2. In a bobbin-building mechanism for spinning-machines, a sheave journaled in a

yoke and a pivotal support for the yoke, in combination with a flat chain supported on the sheave and connecting the bobbin-building mechanism with the ring-rail-operating mechanism, and a swivel in the chain, as described.

3. In a bobbin-building mechanism, the combination with a flat chain, of a sheave journaled in a yoke, trunnions on the yoke, a passage for the chain through one of the trunnions, and bearings for the trunnions, as described.

4. In a spinning-machine, the combination with the bobbin-building mechanism and the segmental slide, of the member  $a^3$ , the stud  $a^4$  on the member, the flat chain E, the sheave  $a^7$ , the yoke  $a^6$ , the rocking support for the yoke and the slotted arm  $a^5$  secured to the yoke and engaging with the stud  $a^4$ , whereby the movement of the segmental slide is transmitted to the yoke, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OSCAR L. OWEN.

Witnesses:

B. M. SIMMS,

J. A. MILLER, Jr.