

(No Model.)

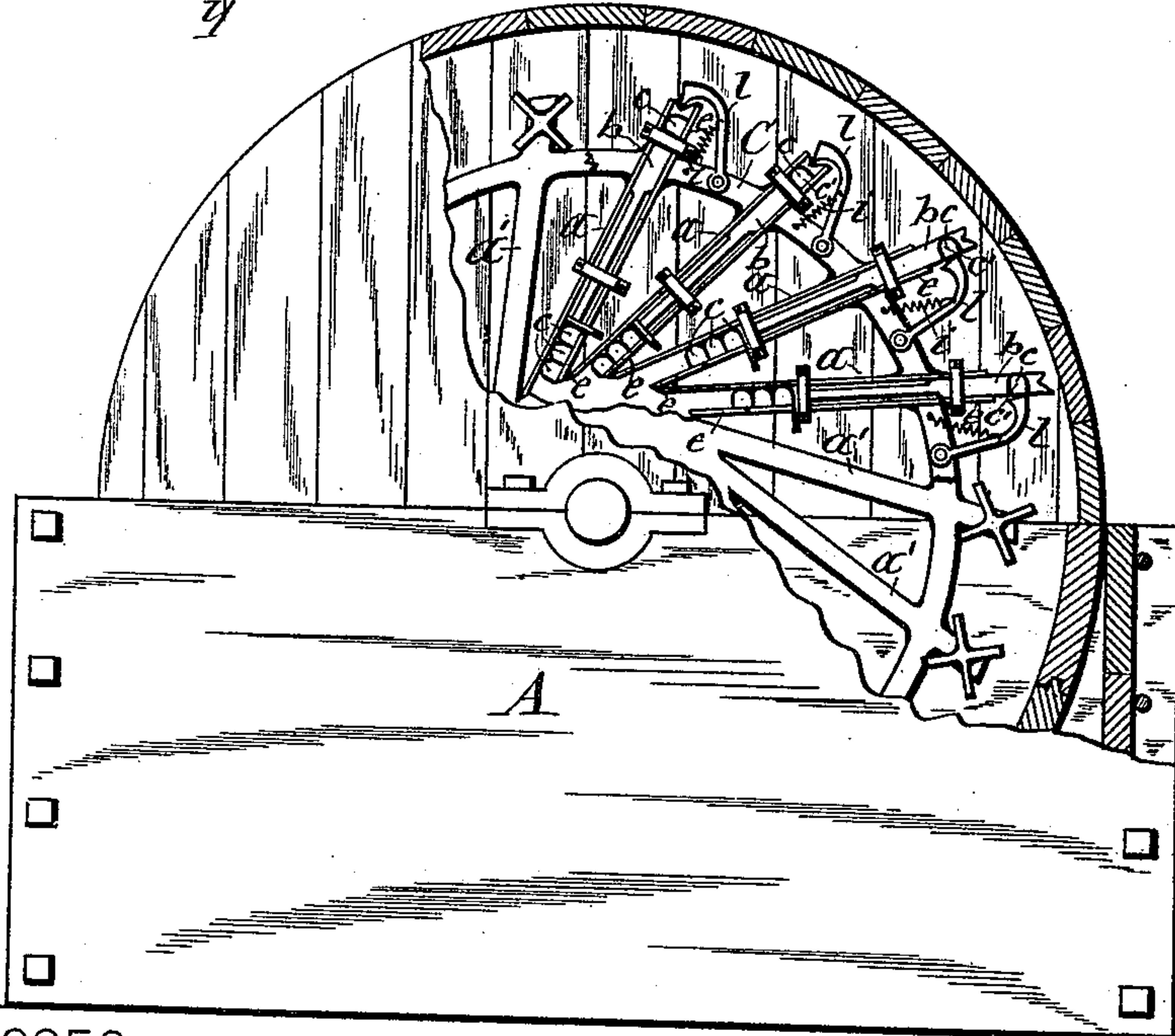
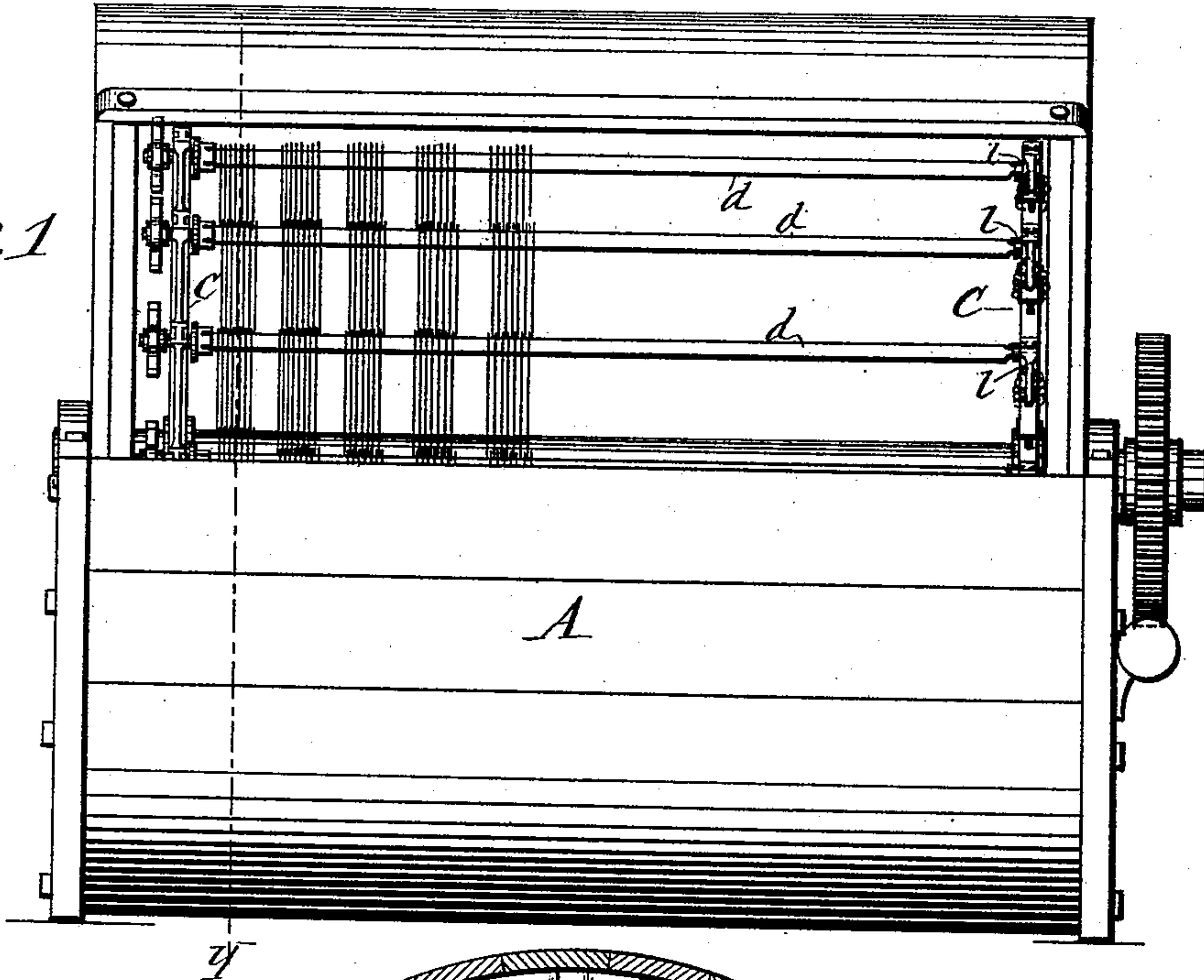
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L. WELDON.
YARN DYEING MACHINE.

No. 464,337.

Patented Dec. 1, 1891.

Fig. 1



WITNESSES:

C. L. Bendixon
H. M. Seamans

Fig. 2

INVENTOR:

Leonard Weldon
By Hull, Laessle & Hull
his ATTORNEYS.

(No Model.)

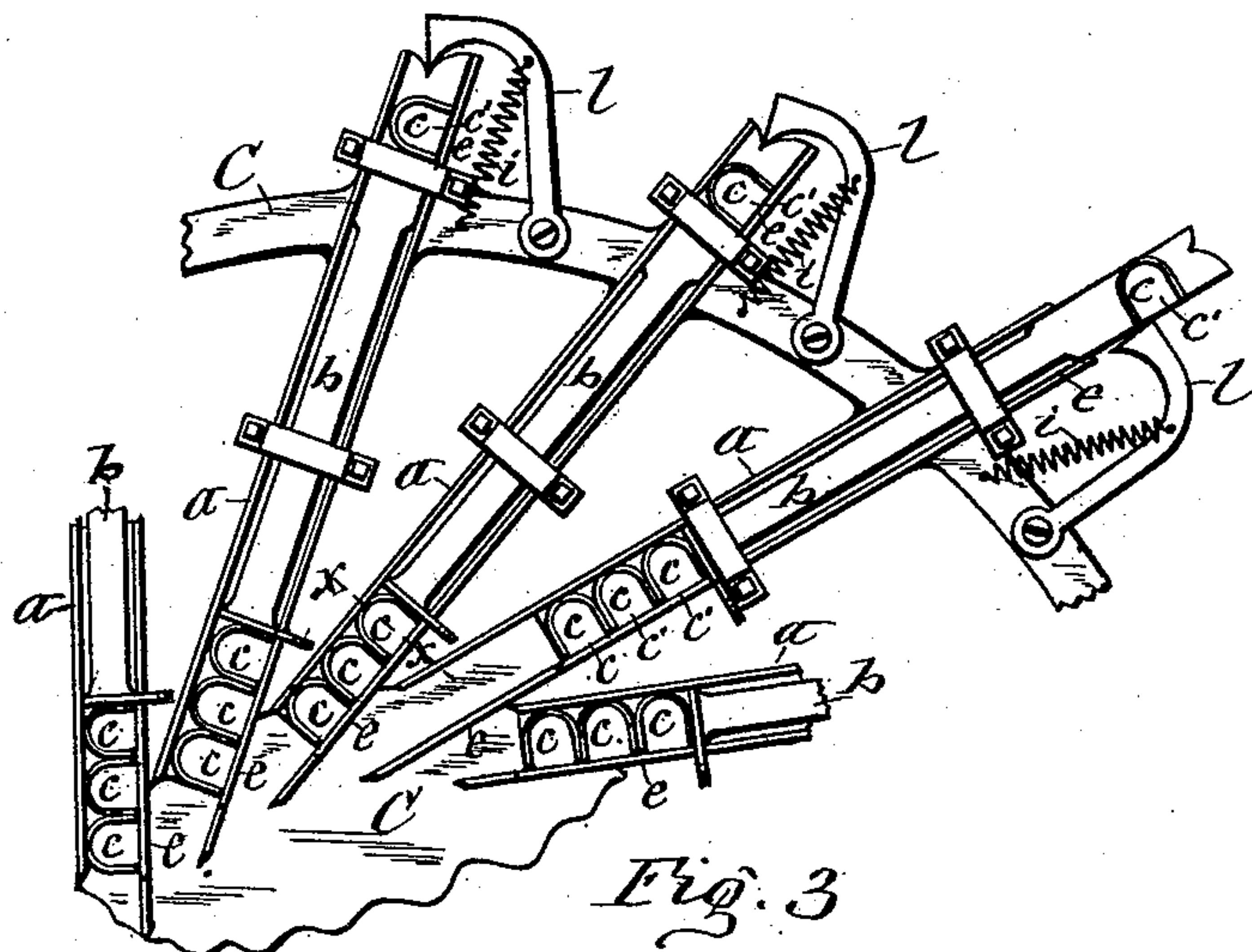
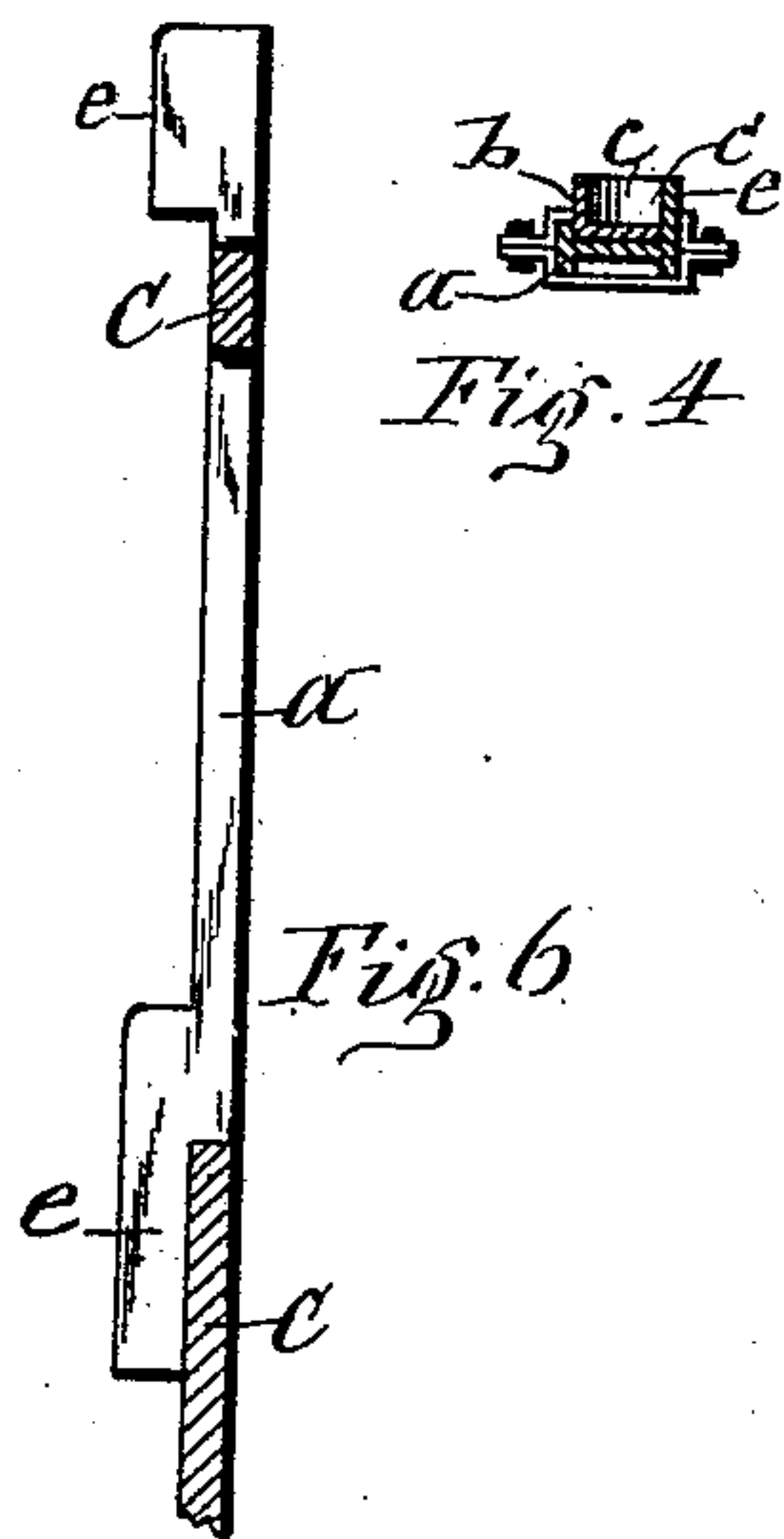
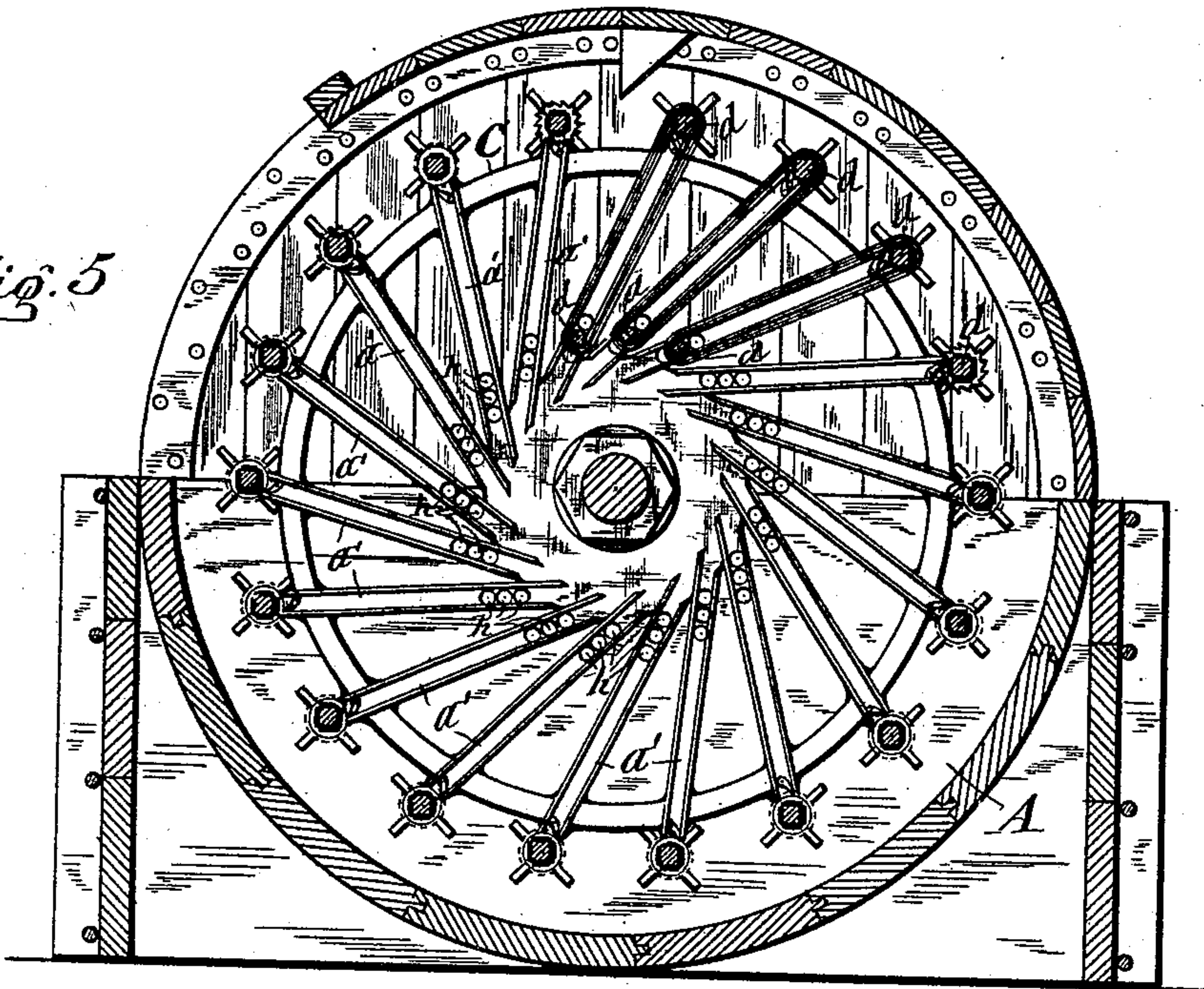
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Fig. 5



WITNESSES:

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(No Model.)

3 Sheets—Sheet 3.

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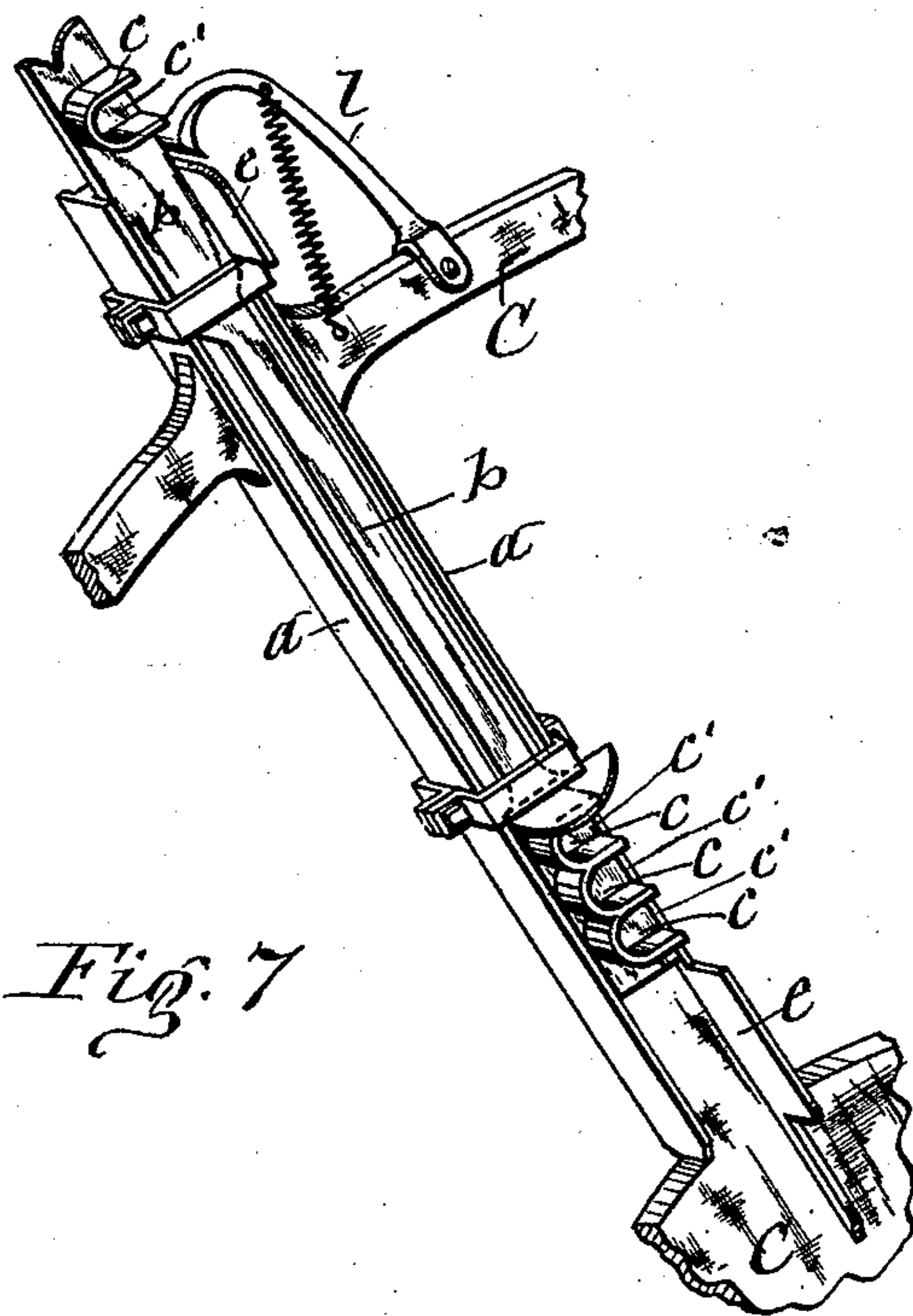


Fig. 7

Witnesses

C. L. Bendixon

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Inventor:

Inventor:
Leonard Weldon

By his Attorneys

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UNITED STATES PATENT OFFICE.

LEONARD WELDON, OF AMSTERDAM, NEW YORK.

YARN-DYEING MACHINE.

SPECIFICATION forming part of Letters Patent No. 464,337, dated December 1, 1891.

Application filed January 23, 1891. Serial No. 378,768. (No model.)

To all whom it may concern:

Be it known that I, LEONARD WELDON, of Amsterdam, in the county of Montgomery, in the State of New York, have invented new and useful Improvements in Yarn-Dyeing Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the frames or wheels employed in dyeing-machines for dipping the yarn in skeins into the vat containing the dye-liquor.

The object of the invention is to provide simple, convenient, effective, and durable means for detachably connecting the yarn-carrying sticks to the frame or wheel; and to that end the invention consists, essentially, of a yarn-carrying frame having bars provided with bearings for the ends of the yarn-sticks, and with openings in the sides of said bearings, and guards over said openings and removable therefrom, as hereinafter more fully described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a front elevation of a yarn-dyeing apparatus embodying my improvements. Fig. 2 is partly an end view and partly a vertical transverse section of the same without the yarn-sticks. Fig. 3 is an enlarged face view of my improved devices for adjustably securing the yarn-sticks to the dipping frame or wheel. Fig. 4 is a further enlarged transverse section on line *x x*, Fig. 3. Fig. 5 is a vertical transverse section on line *y y*, Fig. 1. Fig. 6 is an edge view of one of the dipping-wheel arms, and Fig. 7 is an enlarged detached perspective view of said arm and yarn-stick-supporting bar connected thereto and showing said bar in position for either receiving or removing the yarn-sticks.

Similar letters of reference indicate corresponding parts.

A denotes the vat containing the dye-liquor, and C the frame or wheel by means of which the yarn in skeins is dipped into the dye-liquor. Said dipping frame or wheel is provided with two or more sets of parallel arms *a* and *a'* for carrying between them the yarn-sticks, which have to be removable from the frame or wheel to allow the yarn in skeins to be applied to and removed from said sticks. For that purpose the arms *a' a'* may have the

bearings *h h* for the ends of the yarn-sticks of the form of stationary sockets formed directly on said arms, as shown in Fig. 5 of the drawings. The other set of arms *a a*, however, I form with longitudinal channels and insert in the channels thereof longitudinally-movable bars *b b*, which are provided at both ends with bearings *c c* for the reception of the ends of the yarn-sticks *d d*. These bearings I form with openings *c' c'* in their sides to allow the ends of the yarn-sticks to be slipped sidewise into the bearings, and in order to retain them in these bearings I provide guards *e e*, attached to the dipping-frame or its arms *a a* and in such positions and only of such lengths as to barely cover the side openings *c' c'* when the bar is in its requisite operative position on the frame or wheel.

To apply the yarn-sticks to the dipping frame or wheel, the bars *b b* are to be drawn longitudinally outward sufficiently to carry the bearings *c c* beyond the guards *e e* and thus uncover the openings of said bearings *c' c'*. Then the yarn-sticks are inserted with one end into the sockets *h h* of the arms *a' a'* and passed with their opposite ends laterally through openings *c'* and into the bearings *c c* of the bars *b b*, and then said bars are to be pushed inward to their requisite operative positions, and when this is effected the guards *e e* cover the openings *c' c'* and thus retain the yarn-sticks on the dipping frame or wheel. Inasmuch as the guards are very short, it requires only a slight longitudinal movement of the bar *b* to cover and uncover the openings *c' c'*.

Inasmuch as the skeins of yarn are of different lengths, I render the inner yarn-sticks adjustable in their distance from the outer yarn-sticks by providing the inner ends of the arms *a' a'* and bars *b b* with a plurality of bearings *h h* and *c c* at different points in the length thereof.

To lock the bars *b b* to the frame or wheel, so as to prevent their sliding lengthwise out of the channeled arms *a a* during the operation of the machine, I connect to said frame or wheel latches *l l*, which are adapted to bear on the outer ends of the bars *b b*, and are preferably held in engagement with the same by means of springs *i i*, forcing the latches toward the arms *a a*.

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

1. In a yarn-carrying frame, the combination of two parallel bars provided at one and the same end with one set of bearings for the ends of one of the yarn-sticks and at the opposite end with a plurality of bearings for the adjustable attachment of the ends of the companion yarn-stick, each of said bearings being provided with a side opening, and guards adapted to cover and uncover said openings, as set forth.

2. A yarn-carrying frame comprising longitudinally-channeled arms, bars sliding in said arms and provided with bearings for the ends

of the yarn-sticks and with openings in the sides of said bearings, guards on the aforesaid arms adapted to cover and uncover the side openings of the bearings by the longitudinal movement of the sliding bars, and a latch connected to the frame and engaging the aforesaid bars to retain them in the channeled arms, substantially as described and shown.

In testimony whereof I have hereunto signed my name this 16th day of December, 1890.

LEONARD WELDON. [L. S.]

Witnesses:

MARK W. DEWEY,
H. M. SEAMANS.