

(Model.)

2. Sheets—Sheet 1.

J. W. McDONALD.
Hide Fleshing Machine.

No. 239,522.

Patented March 29, 1881.

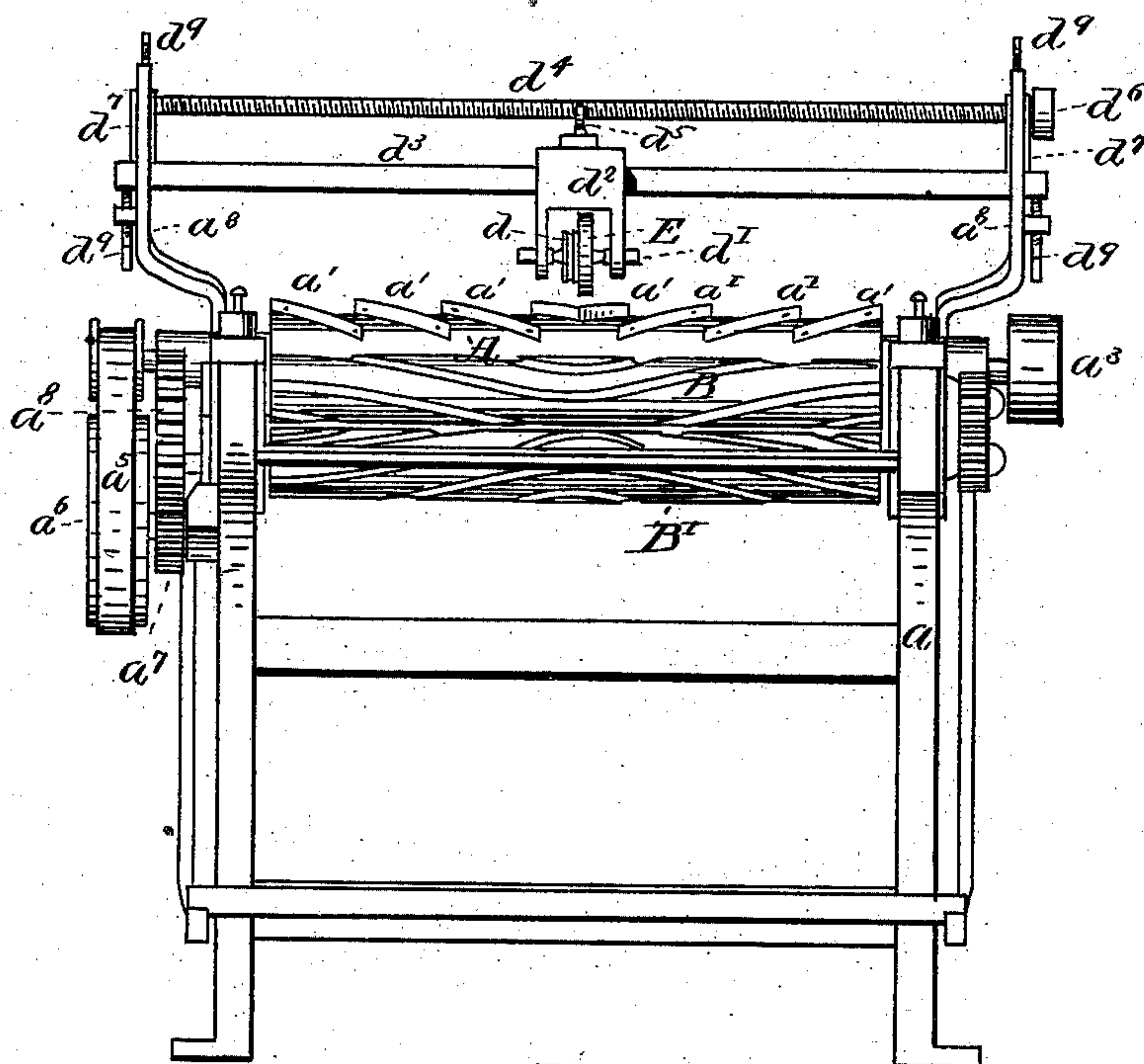


Fig. 1.

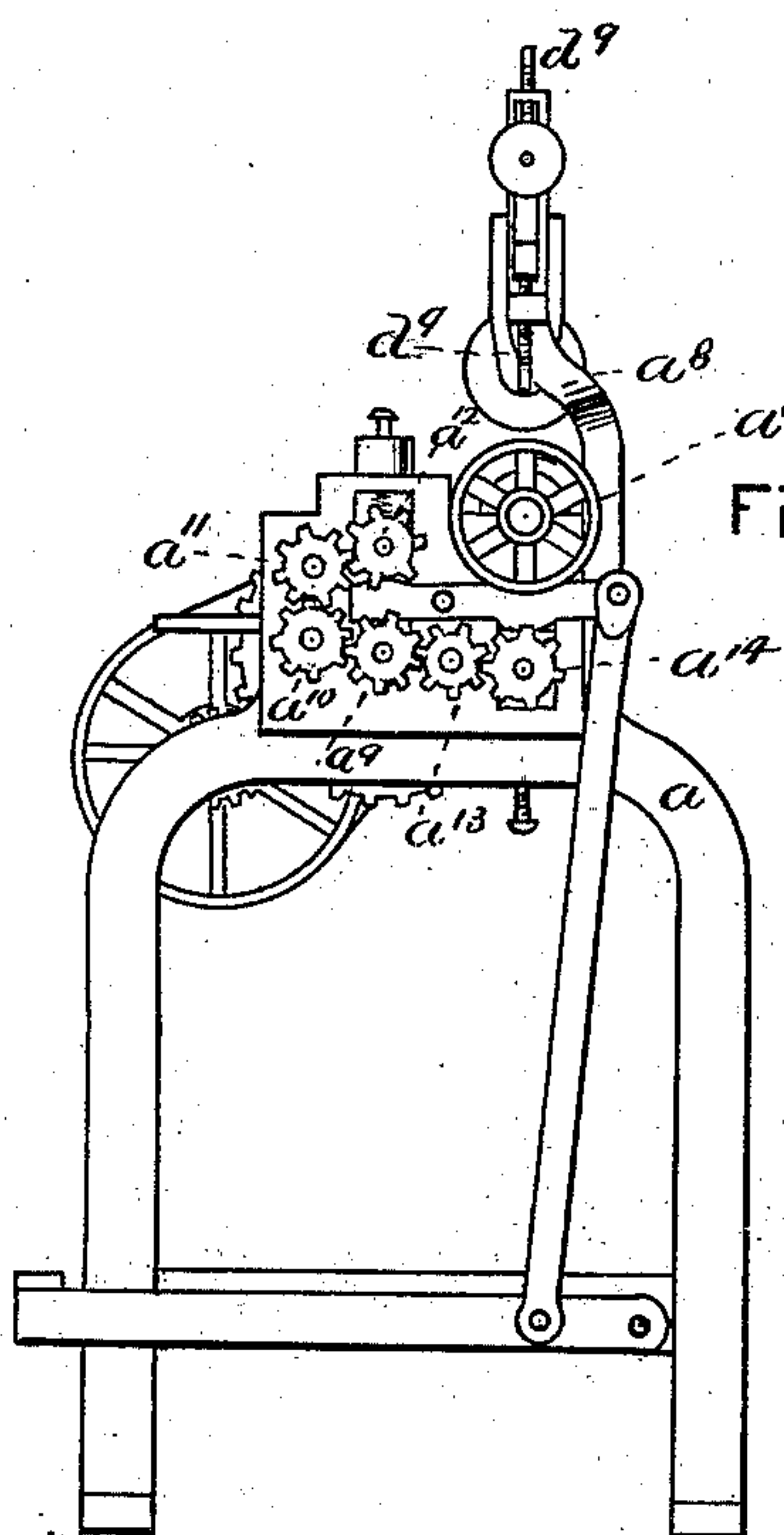


Fig-2.

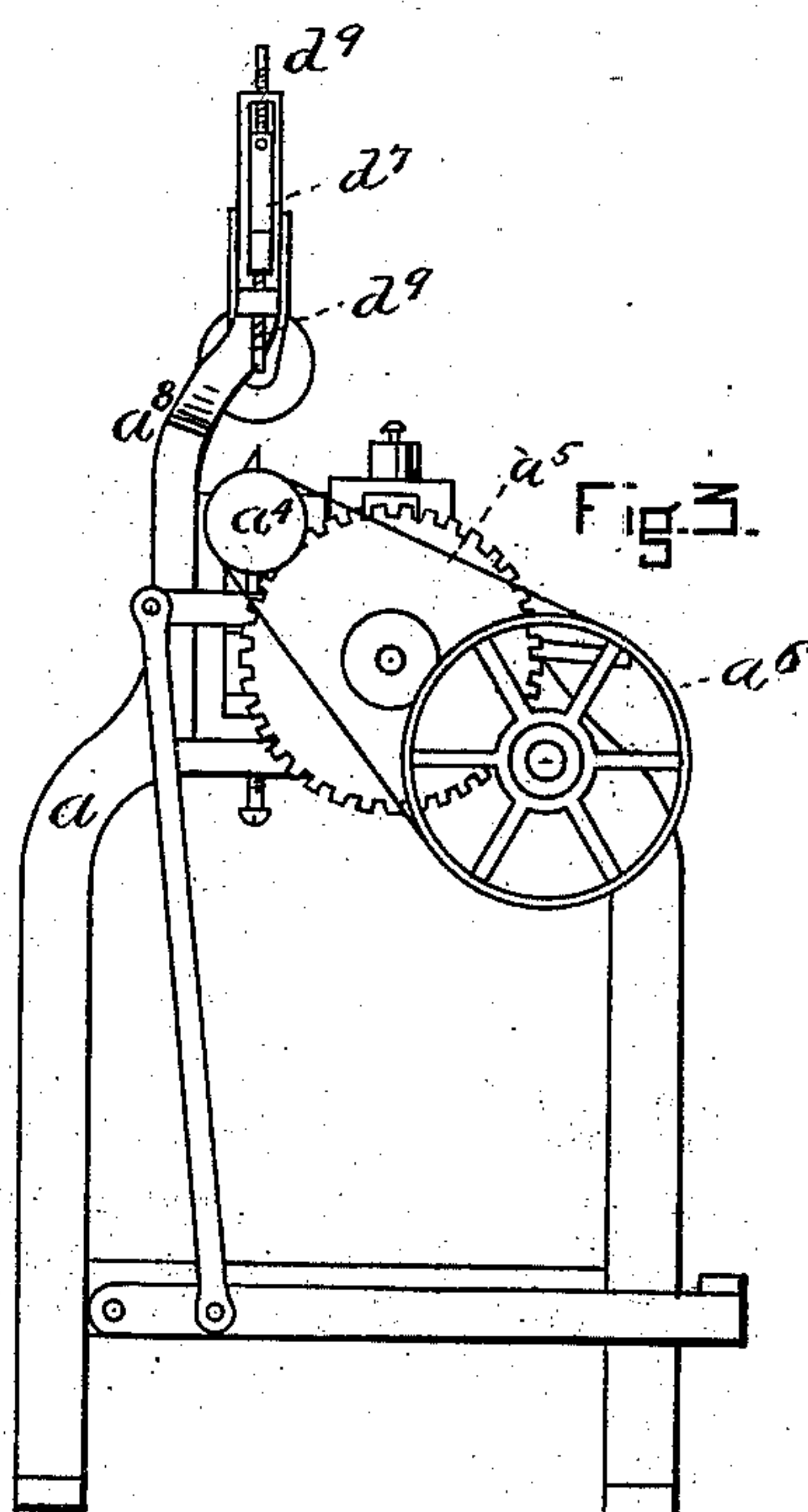


Fig. 3.

WITNESSES

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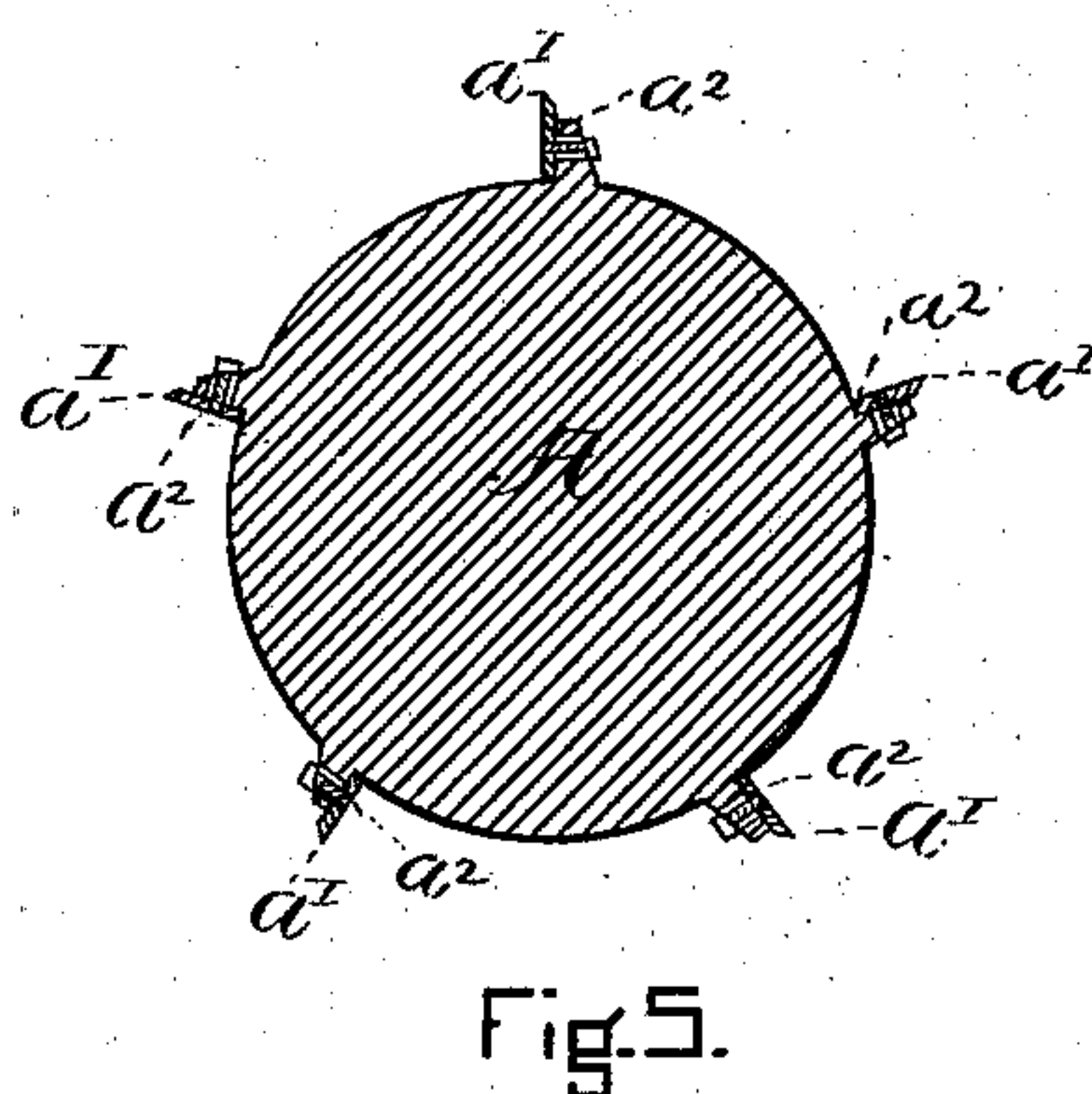
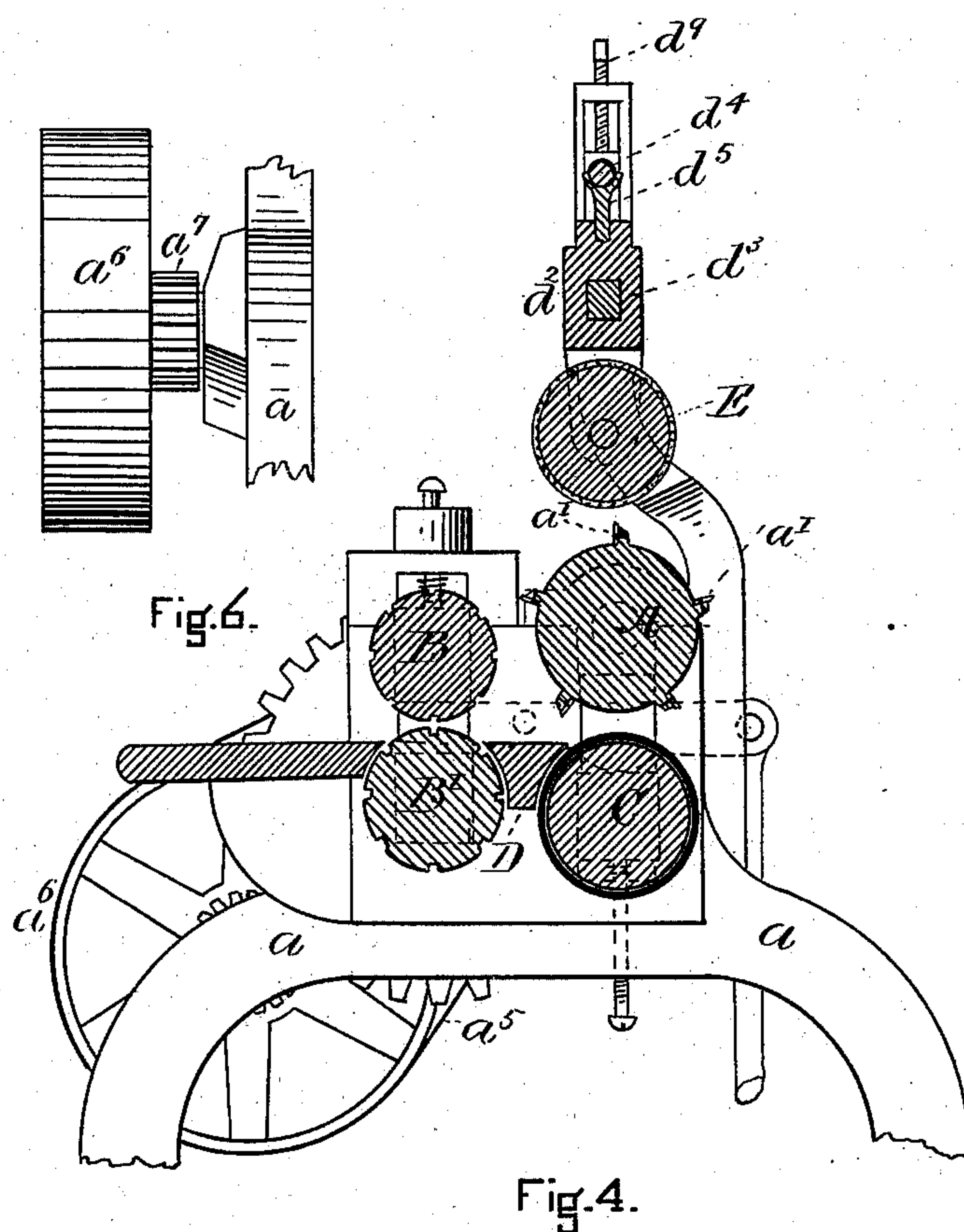
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UNITED STATES PATENT OFFICE.

JAMES W. McDONALD, OF WOBURN, MASSACHUSETTS.

HIDE-FLESHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 239,522, dated March 29, 1881.

Application filed December 17, 1880. (Model.)

To all whom it may concern:

Be it known that I, JAMES W. McDONALD, of Woburn, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Fleshing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification in explaining its nature, in which—

Figure 1 is a front elevation; Fig. 2, an elevation of the side to the right of the front; Fig. 3, an elevation of the side to the left of the front; Fig. 4, a vertical central section; Fig. 5, a section of the fleshing-roll enlarged; Fig. 6, a detail view.

This invention is an improvement in construction upon that described in Letters Patent granted me, No. 200,078, dated February 5, 1878, and Patent No. 210,797, granted Thos. Wm. Clarke, F. F. Raymond, 2d, and myself, dated December 10, 1878, and Patent No. 220,930, granted said Clarke, Raymond, and myself, dated October 28, 1879, all for improvement in unhairing and scouring machines; and it consists, first, in a fleshing-roll provided with detachable or removable blades; second, in a device attached to the machine for sharpening or grinding said blades without removing them from the roll or the roll from the machine, or without stopping the working of the machine; third, in a novel way of gearing the various rolls in order to simplify the construction and to improve it; fourth, in the employment of two grooved feed-rolls in lieu of one, as described in the last-named patent.

The fleshing-roll A is mounted in suitable bearings upon the frame *a* of the machine, and it has a series of spiral elevations, *a'*, arranged thereon in relation to each other, preferably as described in said Patent No. 210,797. These elevations furnish supports and braces for the removable or detachable blades *a''*, which preferably are made of steel, and are of the same length and shape as the elevations, but project outwardly from the roll somewhat beyond them. They are bolted or otherwise secured to the elevations or projections, preferably in a way to be easily removed.

The feed-rolls B B' are identical in construction and operation with the feed-rolls described

in said Letters Patent Nos. 210,797 and 220,930, with the exception that the upper feed-roll is provided with spiral spreading grooves like those described in the last-named Letters Patent, and for the same purpose.

Beneath the fleshing-roll is the pressure-roll C, which preferably has an elastic or yielding surface of rubber, and between the pressure-roll and the lower feed-roll there is arranged the bed D. These portions correspond to like parts in the first two Letters Patent named.

The feed and pressure rolls are run from the fleshing-roll, the said scouring-roll being provided at one end with the pulley *a³*, by which it is belted to a pulley on a counter-shaft, and upon the other end with the small pulley *a⁴*, which is belted by the belt *a⁵* with the large pulley *a⁶*. This pulley operates through the medium of the small gear-wheel *a⁷*, attached thereto, and the large gear-wheel *a⁸*, which is fastened on one end of the shaft of the lower feed-roll. The opposite end of the lower feed-roll shaft carries the small gear-wheel *a⁹*, which operates, through the intermediary gear-wheels *a¹⁰* *a¹¹*, the gear-wheel *a¹²* upon the end of the upper feed-roll shaft, and said feed-roll, and, through the intermediary gear-wheel *a¹³*, the gear-wheel *a¹⁴* upon the end of the pressure-roll shaft, and said pressure-roll.

The arrangement of mechanism by which the feed-rolls are separated, and the supporting or pressure roll is adjusted with reference to the fleshing-roll, is similar to that described in Letters Patent No. 210,797. It will be observed, however, that the manner of gearing the fleshing, feed, and pressure rolls is an improvement over that described in said Letters Patent, in that the feed-rolls may be separated and the pressure-roll moved vertically in relation to the fleshing-roll without any danger of the gear-wheels becoming disengaged on account of said movement, and this is due to the peculiar relation (represented in Fig. 2) which they bear to each other.

The blade grinding or sharpening device consists of an emery or other grinding wheel, E, mounted with a pulley, *d*, upon a short shaft, *d'*, having bearings in the traversing block *d''*.

This block has a bearing on, or is supported by, the transverse bar *d³*, and is moved thereon from one end of the fleshing-roll to the other

by means of the screw-threaded rod or worm d^4 and the yoke d^5 , which forms the connection between the block and the screw-rod, and which engages with the thread of the screw, as represented. The threaded rod is revolved by means of the pulley d^6 and a belt running to a pulley on a counter-shaft. The threaded rod has bearings on the projections or posts d^7 , extending upwardly from the transverse bar, and with the bar it is provided with vertical adjustment, in relation to the fleshing-roll, in the slotted uprights a^8 by means of the adjusting-screws d^9 . Upon the end of the traversing movement of the block upon the bar in one direction it is reversed by any suitable mechanism, either automatic or otherwise, and moved in the opposite direction.

In grinding or sharpening the blades the cross or transverse bar is lowered until the grinding-wheel comes in contact with them, and it is then moved slowly from one end of the roll to the other as many times as may be necessary. In lieu of elevating it from the roll when not in use it may be moved horizontally therefrom either from one of its ends or from its working-surface outwardly. This grinding device can be used, of course, with a fleshing-roll in which the working blades or projections are cast on the roll, as described in Patent No. 210,797, as well as with removable blades.

I do not intend to confine myself to the specific construction of parts described for moving the grinding-wheel to and along the working-roll, but may use any suitable mechanism for this purpose; neither do I confine myself to the method described of attaching the independent blades to the roll or to the form shown, but may secure them thereto in any other desirable way, and may make them of any other suitable shape.

By making the working-blades separate from the roll the working-surface may be easily and cheaply renewed without renewing the roll.

In the operation of fleshing skins or hides the machine is operated in the same way as that described in Patent No. 210,797, and the blades may be ground while the machine is in operation, if desired.

The system of gearing and the feeding-roll may also be used in unhairing and scouring machines.

The spiral working-blades are conversely arranged upon the longitudinal center of its circumference, and may be continuous or may be isolated, as represented, and they vary from the spiral elevation described in my said Letters Patent in that they are made detachable from the rolls and in that they are sharpened.

It will be observed that the blades are provided with a sharpened edge upon the front upper corner, and that the remainder of the upper portion of the blade is inclined backwardly from this edge; and it will also be ob-

served that the spaces between the blades are so wide and the grinding-wheel is so arranged that in resharpening the blades the grinding-wheel can be brought to bear upon the upper inclined surfaces of the blades.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a machine for fleshing hides or skins, the working-roll having the series of short sharpened spiral blades conversely arranged thereon, and bearing the relation to each other as and for the purposes described.

2. In a machine for fleshing skins or hides, the combination of two feed-rolls, B B', each of which is provided with right and left spiral grooves conversely arranged upon its surface, the bed D, the pressure-roll C, and the working-roll A, all substantially as and for the purpose set forth.

3. In a machine for fleshing skins and hides, the combination of the working-roll A, the pressure-roll C, the feed-rolls B B', and the connecting devices, consisting of the pulleys a^4 a^6 , the belt a^5 , the small gear-wheel a^7 , the large gear-wheel a^8 , and the gear-wheels a^9 a^{10} a^{11} a^{12} a^{13} a^{14} , all arranged in relation to each other to operate the pressure-roll and feed-rolls from the working-roll, substantially as described.

4. The combination of the roll A, provided with the blades or projections a' , with the revolving grinding-wheel E, the block d^2 , the standards a^8 , the guiding-bar d^3 , and the set-screws d^9 , and means for reciprocating said block upon the guiding-bar, all substantially as and for the purposes described.

5. The combination, in a machine for fleshing skins and hides, of a working-roll, provided with sharpened spiral elevations or blades, with the feed-rolls B B', the bed D, and the pressure-roll C, all substantially as and for the purposes described.

6. The combination, in a machine for fleshing skins and hides, of a working-roll, provided with sharpened spiral elevations or blades, with the feed-rolls B B' and the pressure-roll C, all substantially as and for the purposes described.

7. The combination, in a machine for fleshing skins and hides, of a working-roll, provided with spiral elevations or blades, with the bed D and the pressure-roll C, all substantially as and for the purposes described.

8. The combination, in a working-roll for hide-fleshing machines, of the short spiral projections conversely arranged on the said roll, as described, with the short sharpened steel blades a' , of a corresponding shape to the projections, and bolted thereto, all substantially as and for the purposes described.

JAMES W. McDONALD.

Witnesses:

F. F. RAYMOND, 2d,
A. J. OETTINGER.