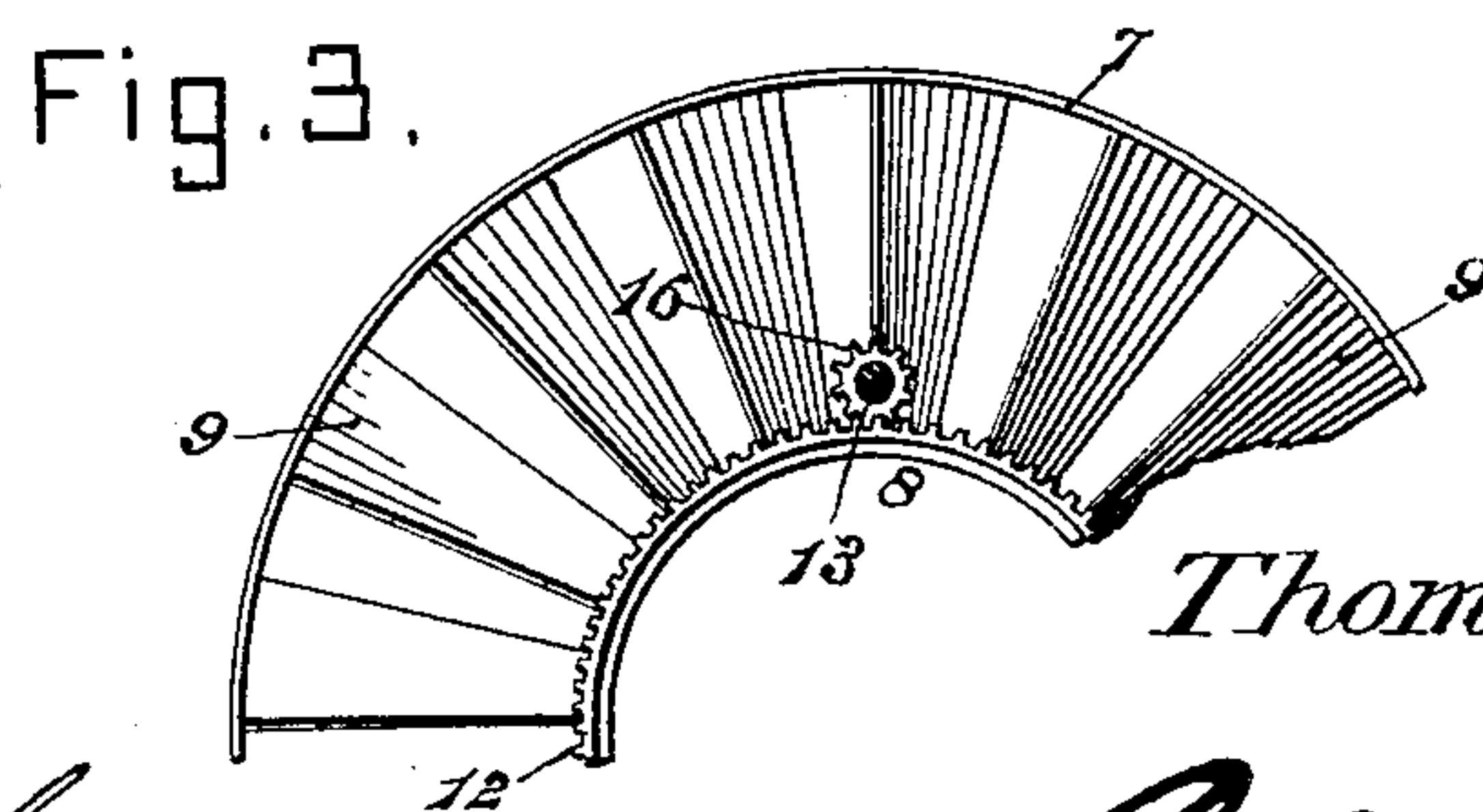
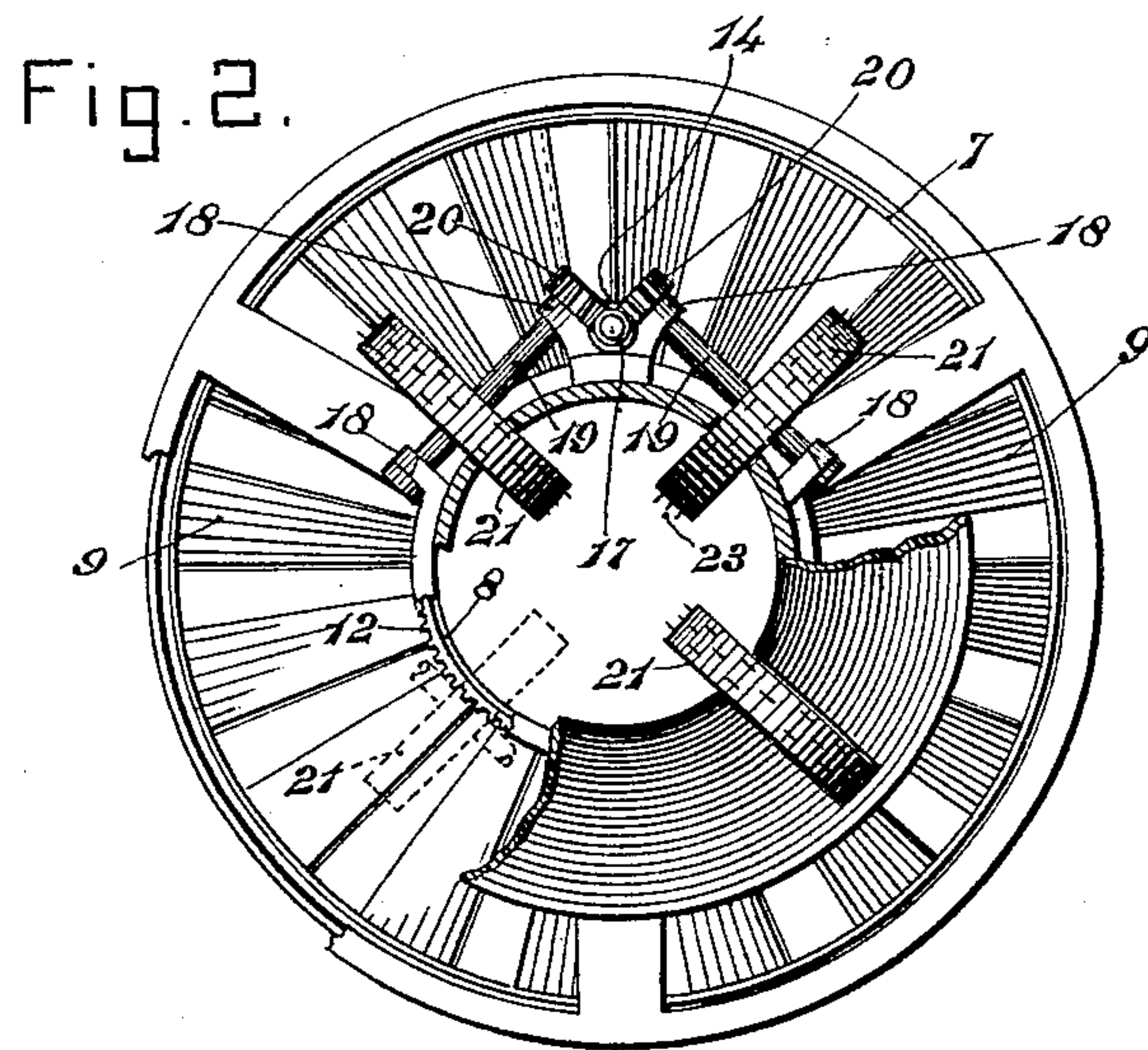
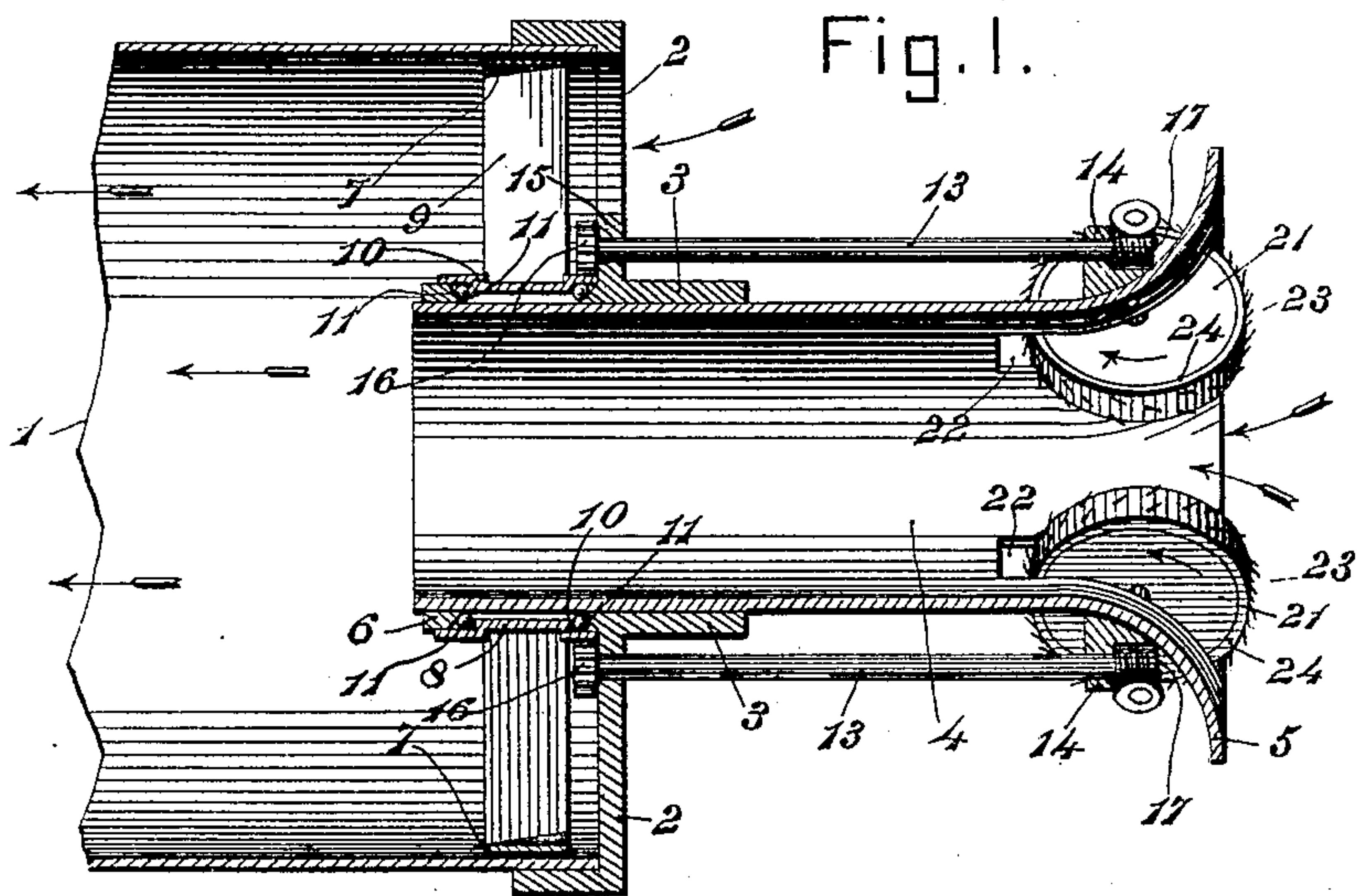


No. 795,394.

PATENTED JULY 25, 1905.

T. B. HYDE.  
COTTON PICKER.

APPLICATION FILED MAY 26, 1905.



Witnesses

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# UNITED STATES PATENT OFFICE.

THOMAS B. HYDE, OF TAYLOR, TEXAS.

## COTTON-PICKER.

No. 795,394.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed May 26, 1905. Serial No. 262,469.

*To all whom it may concern:*

Be it known that I, THOMAS B. HYDE, a citizen of the United States, residing at Taylor, in the county of Williamson and State of Texas, have invented a new and useful Cotton-Picker, of which the following is a specification.

This invention relates to pneumatic cotton-pickers of that class in which a suction-box is provided with mechanically-operated means for detaching the bolls or locks of cotton from the pods, the cotton being conveyed through a suction-tube to a place of deposit and the operating means being actuated by the current of air entering and passing through the suction-tube.

The objects of the present invention are to simplify and improve the construction and operation of this class of devices; and with these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention.

In said drawings, Figure 1 is a longitudinal sectional view of a suction-box or mouth-box constructed in accordance with the principles of the invention. Fig. 2 is an end view of the same, parts having been broken away in order to expose the underlying construction. Fig. 3 is a detail view of a portion of the fan-wheel.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

In carrying this invention into practical operation a suction-tube 1 of relatively large diameter is employed, said suction-tube being made of flexible material and connected with means (not shown) whereby a current of air may be induced to flow through said tube in the direction of the arrows. Suitably connected with the free end of the tube 1 is a spider 2, the arms of which support an annular sleeve 3, in which is fitted the suction-box or mouthpiece 4, which consists of a tube of metal or other rigid material provided at its outer extremity with a flaring flange 5. The inner end of the mouthpiece 4 extends within the tube 1 and is provided with a ring or sleeve 6.

In the space between the extremity of the tube 1 and the inner end of the mouthpiece 4

is fitted a fan-wheel composed of concentric outer and inner rings 7 and 8, which are spaced apart and connected by inclined blades 9. The inner ring 8 is provided upon its inner surface and at the ends thereof with shoulders 10 10, cooperating with the sleeves 3 and 6 to form ball-races in which antifriction-balls 11 are placed to enable the fan-wheel to rotate freely upon the inner end of the mouthpiece, which constitutes a supporting means therefor. The inner ring of the fan-wheel is also provided at its forward end with teeth or spurs constituting a gear-wheel 12.

Upon opposite sides of the mouthpiece are disposed shafts 13, which are supported for rotation in boxes 14 upon the flaring flange 5 and in bearings 15, formed in the spider 2. The inner ends of said shafts have pinions 16, meshing with the gear-wheel 12, and the outer ends of said shafts carry worms 17.

The mouthpiece 4 is provided with auxiliary bearings 18 for pairs of shafts 19, provided at their adjacent ends with worm-gears 20, which are constantly in mesh with the worms 17, so as to be rotated thereby. The shafts 19, two pairs of which are used, are provided with disks 21, extending through slots 22 in the mouthpiece, said disks being armed with fine needle-pointed barbs 23, which may be attached either directly to said disks or to rims 24, of leather, rubber, or other suitable material fitted peripherally upon said disks. The disks are arranged to rotate in the direction of the arrows—that is, in the direction of the inner end of the mouthpiece—and the barbs upon the disks are preferably made to point in the opposite direction in order that the picked locks may be freely discharged.

Under this invention it will be seen that the cross-sectional area of the suction-tube is much larger than that of the suction-box or mouthpiece. This is considered of great importance, not only in order to admit a sufficient volume of air to enable the cotton which is detached by the device to be successfully carried through the tube and to the place of deposit, but also in order to afford room for a motor of sufficient dimensions to furnish the power needed for operating the mechanical pickers, which in the present case consist of the wheels 21. The latter serve to detach the bolls or locks of cotton from the pods, the cotton being carried by the rushing air through the mouthpiece, on emerging from which the air-current enter-



ing through the spider and actuating the fan-wheel or motor will increase the velocity of the cotton passing through the suction-tube to the place of deposit. The air-current entering between the arms and the spider serves to operate the fan-wheel at a considerable velocity, the relative speed of the picker-wheels being reduced by the reduction-gearing herein described. The speed may of course be regulated by modifying the proportions of the worms and worm-gears as well as by modifying the external pressure upon the fan-wheel caused by the exhaustion of air from the suction-tube.

The operation of this invention consists in simply placing the flaring end of the mouthpiece in contact with a cotton-boll, when the latter will instantly become detached and caused by the inrushing air to pass into and through the suction-tube. It is preferred that four picker-wheels be employed, as herein described, for the reason that a very large percentage of cotton-bolls contain four locks, all of which will thus become readily detached upon the first application of the device. No limitation is made, however, as to the number of mechanical picker elements employed, it being also understood that reciprocatory or other mechanical picker elements may be substituted, when desired, for the picker-wheels herein described.

Having thus described the invention, what is claimed is—

1. In a cotton-picker, a suction-tube having a mouthpiece, and an annular air-inlet surrounding said mouthpiece.

2. In a cotton-picker, a suction-tube having a mouthpiece and an annular inlet surrounding said mouthpiece; and an annular fan-wheel supported for rotation in said annular inlet.

3. In a cotton-picker, a suction-tube having a mouthpiece and an annular inlet surrounding said mouthpiece, and a pneumatic motor disposed in said inlet in the path of inrushing air.

4. In a cotton-picker, a suction-tube, a mouthpiece supported in the inlet of and spaced from the walls of said suction-tube, mechanically-operated pickers supported by said mouthpiece, a pneumatic motor supported in the space between the mouthpiece and the suction-tube in the path of inrushing air, and means for transmitting motion from said motor to the pickers.

5. A suction-tube, a spider connected with

the inlet of said tube, a sleeve supported by the arms of the spider, a mouthpiece fitted in said sleeve, an annular pneumatic motor supported for rotation upon the mouthpiece, mechanically-operated pickers supported by the latter, and means for transmitting motion to said pickers from the pneumatic motor.

6. In a cotton-picker, a mouthpiece, shafts supported for rotation upon and adjacent to said mouthpiece, worms upon said shafts, counter-shafts supported upon the mouthpiece, worm-gears upon said counter-shafts meshing with the worms, and picker-wheels upon said counter-shafts extending through slots in the mouthpiece.

7. A flaring mouthpiece having slots, barbed picker-wheels supported for rotation adjacent to and extending through said slots, and operating means.

8. A suction-tube, a flaring mouthpiece of relatively small cross-sectional area supported in the inlet of said tube and spaced from the walls of the latter, picker-wheels supported for rotation upon the mouthpiece, worm-gears upon the shafts of said picker-wheels, worm-carrying shafts supported for rotation upon and adjacent to the mouthpiece, pinions upon said shafts, and a pneumatic motor supported for rotation upon the mouthpiece in the space between said mouthpiece and the walls of the suction-tube and in the path of inrushing air; said motor having a gear-wheel meshing with the pinions upon the worm-carrying shafts.

9. A suction-tube, a spider connected with the inlet of said tube, a sleeve supported by the arms of said spider concentric with said suction-tube, a mouthpiece supported in said sleeve, a ring upon said mouthpiece, an annular pneumatic motor disposed in the space between the mouthpiece and the walls of the suction-tube in the path of inrushing air and including an inner ring having shoulders cooperating with the sleeve and the ring upon the mouthpiece to form ball-races, friction-balls in said races, mechanically-operated pickers supported by the mouthpiece, and means for transmitting motion to said pickers from the pneumatic motor.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS B. HYDE.

Witnesses:

C. C. CROW,

T. J. ARBUCKLE.