

No. 686,096.

Patented Nov. 5, 1901.

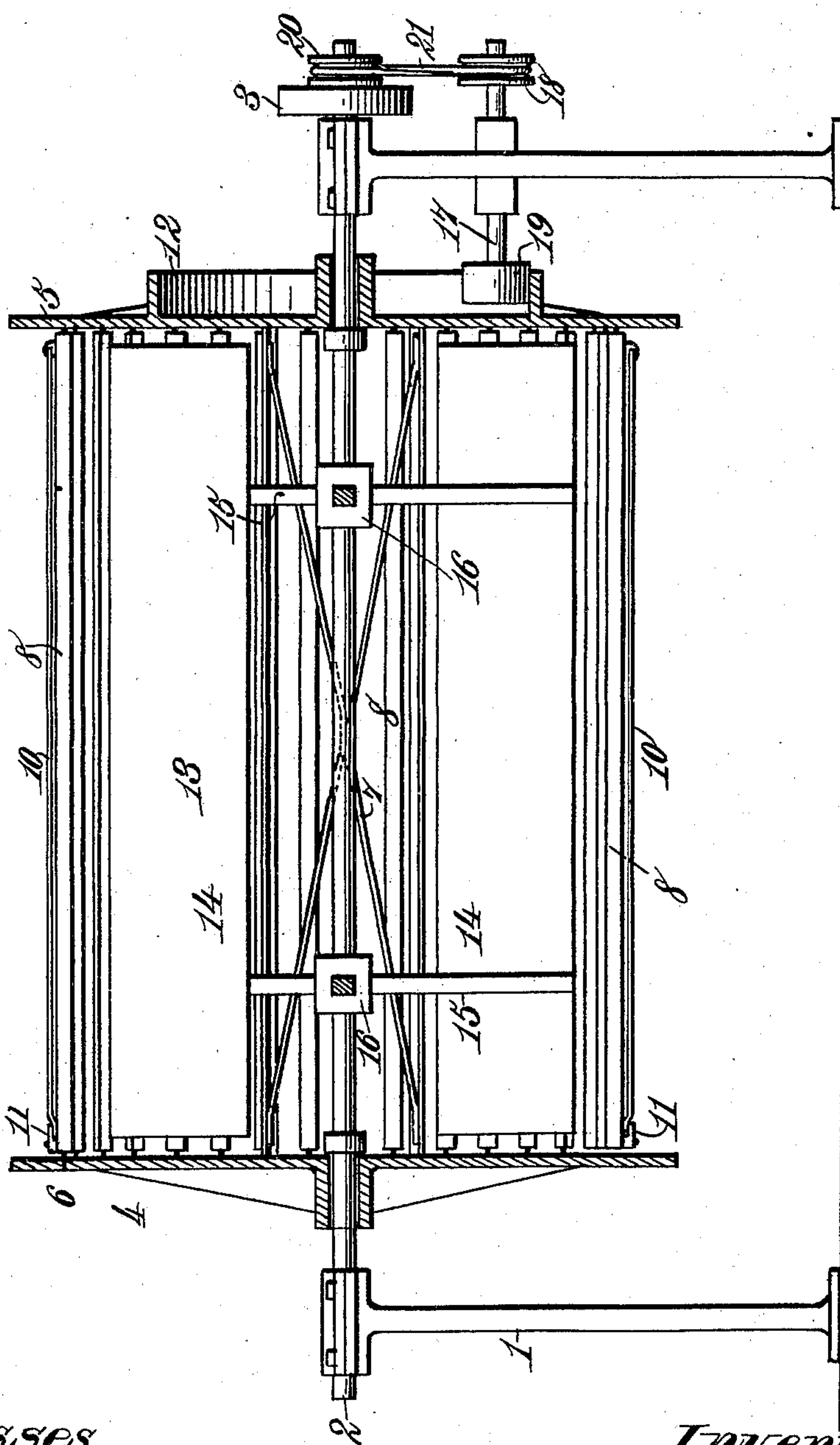
M. B. LITCH.
DRYING APPARATUS.

(Application filed Jan. 29, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses,
Robert Everett
J. B. Keefe

Inventor,
Milton B. Litch.
By James L. Norris.
Atty.

No. 686,096.

Patented Nov. 5, 1901.

M. B. LITCH.
DRYING APPARATUS.

(Application filed Jan. 29, 1901.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.

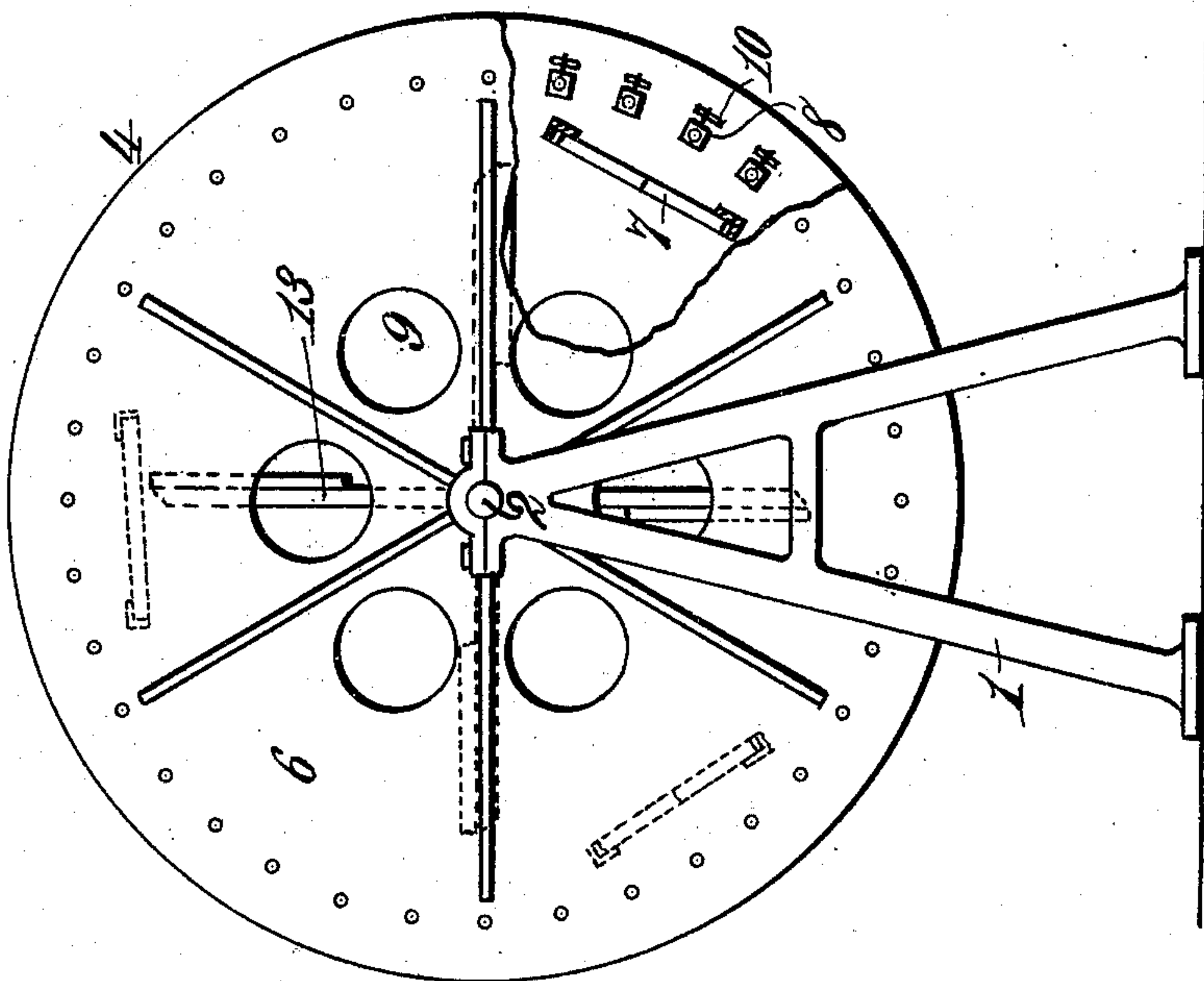
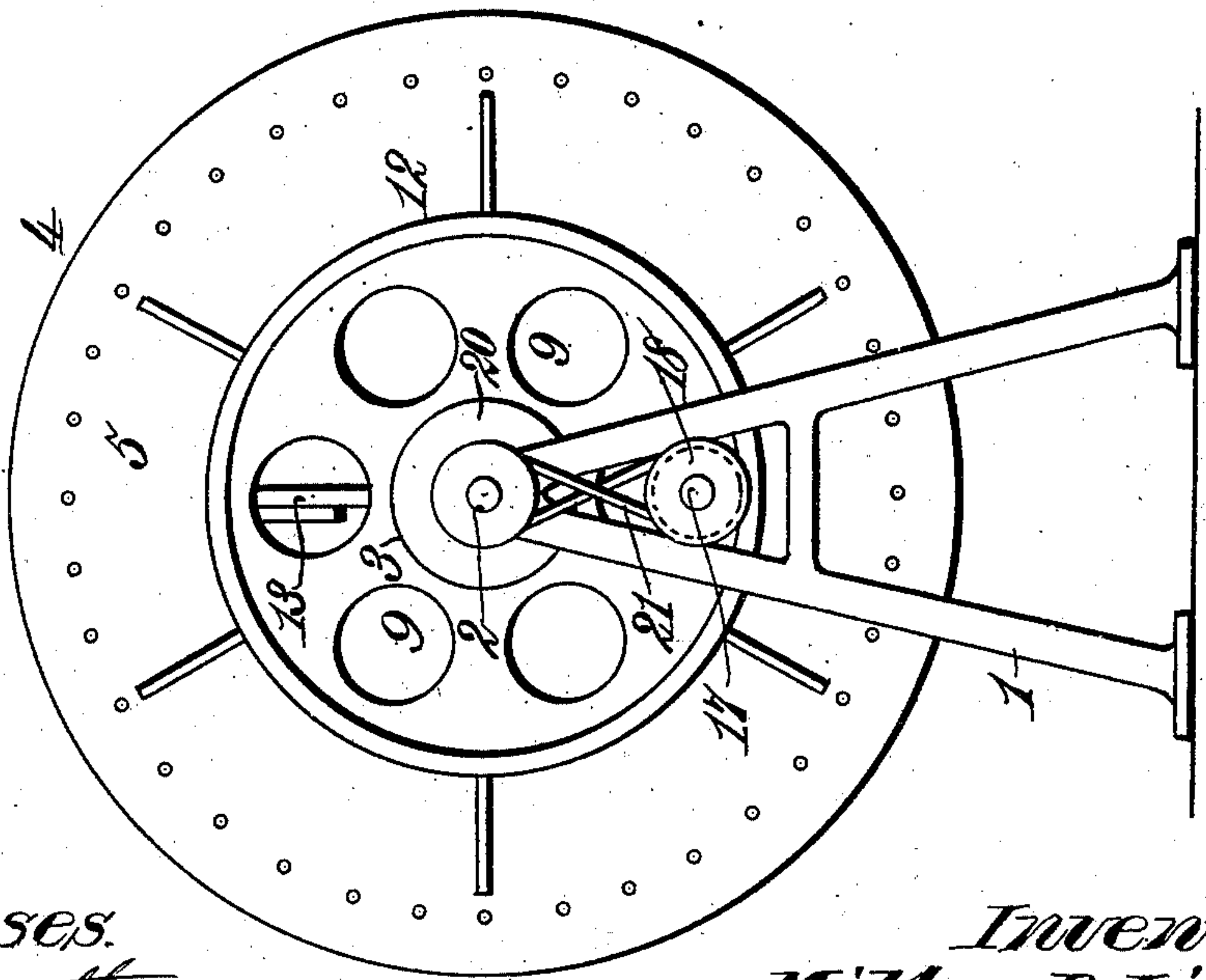


Fig. 2.



Witnesses:
Robert G. Smith,
J. B. Keyser

Inventor:
Milton B. Litch,
By James L. Norris,
Att'y.

UNITED STATES PATENT OFFICE.

MILTON B. LITCH, OF STEELTON, PENNSYLVANIA.

DRYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 686,096, dated November 5, 1901.

Application filed January 29, 1901. Serial No. 45,229. (No model.)

To all whom it may concern:

Be it known that I, MILTON B. LITCH, a citizen of the United States, residing at Steelton, in the county of Dauphin and State of Pennsylvania, have invented new and useful Improvements in Drying Apparatus, of which the following is a specification.

My invention relates to drying apparatus, the same being particularly designed for use in drying leaf-tobacco, yarn, fabrics, and the like.

The object of the invention is to provide novel means whereby the articles or material being dried may be moved, and thereby brought in contact with and subjected to the action of the air, and means whereby a current or blast of air may be simultaneously forced in contact therewith.

Other objects of the invention will hereinafter appear.

The invention consists in certain features and details of construction and combinations of parts, which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 is a sectional elevation of my improved apparatus. Fig. 2 is an end view of the same; and Fig. 3 is a similar view of the opposite end, partly in section.

Like reference-numerals indicate like parts in the different views.

Mounted in bearings in the uprights or standards 1 is a rotary shaft 2, having a pulley 3 thereon, by means of which said shaft may be connected up with a suitable source of power for rotating the same. Loosely mounted on the shaft 2 is an open cylindrical drying-frame 4, the same being made up of two circular disk-shaped heads 5 6, rigidly connected together by the diagonally-arranged bracing-rods 7 and having secured to them at regular intervals apart the longitudinally-extending slats 8. The said slats 8 are secured to the heads 5 and 6 adjacent to the edges of said heads, are parallel to each other, and are arranged in circular form. The heads 5 and 6 are further provided with openings 9 for the admission of air to the interior of the cylindrical frame. It will thus be seen that the drying-frame 4 is cylindrical in form, but is open for the admission and discharge of air on all sides. Upon each of the slats or

ribs 8 of the drying-frame 4 is a clamping-strip 10, the same being pivotally connected to the slat 8 at one end and adapted to be secured thereto at its opposite end by means of a button 11 or other analogous fastening device. Upon the outer surface of the head 5 of the drying-frame is secured or cast integral therewith an annular rib or flange 12, the same being concentric with said head and parallel to the edges thereof.

Within the drying-frame 4 is a rotary fan 13, the same being made up of the blades 14, the spokes 15, and the hubs 16, the latter being keyed or otherwise secured to the rotary shaft 2, so that when said shaft 2 is turned it will rotate the fan 13 with it.

Mounted in one of the uprights or standards 1 is a counter-shaft 17, having a drum or pulley 18 on one end thereof and a friction-disk 19 on the opposite end. Around the pulley 18 and a corresponding pulley 20 on the shaft 2 passes a belt 21, the same being preferably crossed for a purpose which will presently appear. The disk 19 on the shaft 17 lies within the annular flange or rib 12 on the head 5 of the drying-frame and is in frictional contact with said rib. By this means when the shaft 2 is rotated a corresponding movement in the opposite direction will be imparted to the drying-frame 4. As the connection between the shaft 2 and the drying-frame 4, however, is by way of the friction-disk 19 and the annular rib or flange 12, the speed of rotation of the drying-frame 4 will be much slower than that of the shaft 2.

In using my improved apparatus the tobacco-leaves or other articles to be dried are secured in place upon the slats 8 of the drying-frame by means of the clamping-strips 10. Power is then applied to the shaft 2 through the medium of the pulley 3 thereon, and the fan 13, which is secured to said shaft, is rotated in one direction, whereas the drying-frame 4 is rotated in the opposite direction at a slower speed. The rotation of the frame 4 serves to bring the tobacco-leaves or other articles secured to the slats 8 into contact with the air, whereas the fan 13 simultaneously forces out a current of air through the spaces between the slats 8 into contact with the surface of the tobacco-leaves or other articles secured thereto. In this way a thor-

ough and effective drying of the leaves or other material is brought about in a short space of time without danger of breaking, cracking, or otherwise mutilating or destroying said leaves or other articles. While the belt 21, which connects the pulleys 20 and 18, has been described as being crossed for the purpose of rotating the frame 4 in a direction opposite that of the fan 13, it is obvious that said belt may be connected directly with said pulleys 20 and 18 without crossing without departing from my invention. When so connected, the drying-frame 4 and the fan 13 would still be rotated at different rates of speed, although moved in the same direction. Furthermore, other clamping means for securing the articles to be dried upon the slats 8 may be substituted for the strips 10, above described. It may be found that other changes in the details of construction of my apparatus may be made in addition to those above referred to, and I therefore do not limit myself to the specific construction of any of the parts except as defined by the appended claims.

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

1. In a drying apparatus, the combination with a rotary shaft, of an open drying-frame loosely mounted thereon, one of the heads of said drying-frame having an annular rib or flange thereon, a fan secured to said shaft and located within said frame, a counter-shaft having an operative connection with said rib or flange for rotating said frame, and connections between said counter-shaft and said rotary shaft.

2. In a drying apparatus, the combination with a rotary shaft, of an open drying-frame loosely mounted thereon, one of the heads of said drying-frame having an annular rib or flange thereon, a fan secured to said shaft and located within said frame, a counter-shaft having a friction-disk thereon bearing against said rib or flange, and connections between said counter-shaft and said rotary shaft.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MILTON B. LITCH.

Witnesses:

WM. M. STOCKBRIDGE,
F. B. KEEFER.