

No. 882,336.

PATENTED MAR. 17, 1908.

R. A. McLAURIN.

TREATMENT OF GUM PAPER AND THE LIKE.

APPLICATION FILED AUG. 31, 1907.

2 SHEETS—SHEET 1.

Fig. 2.

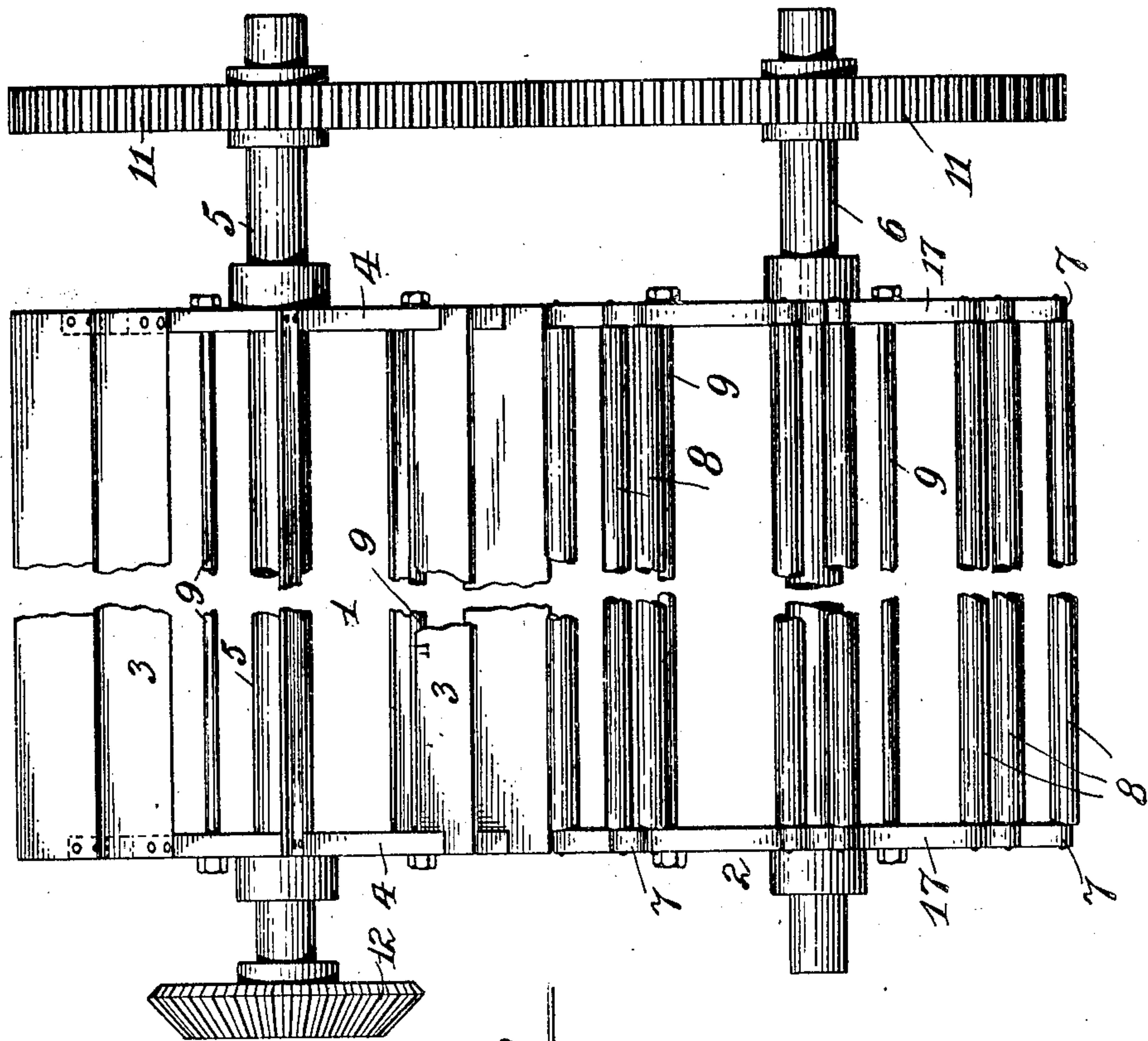
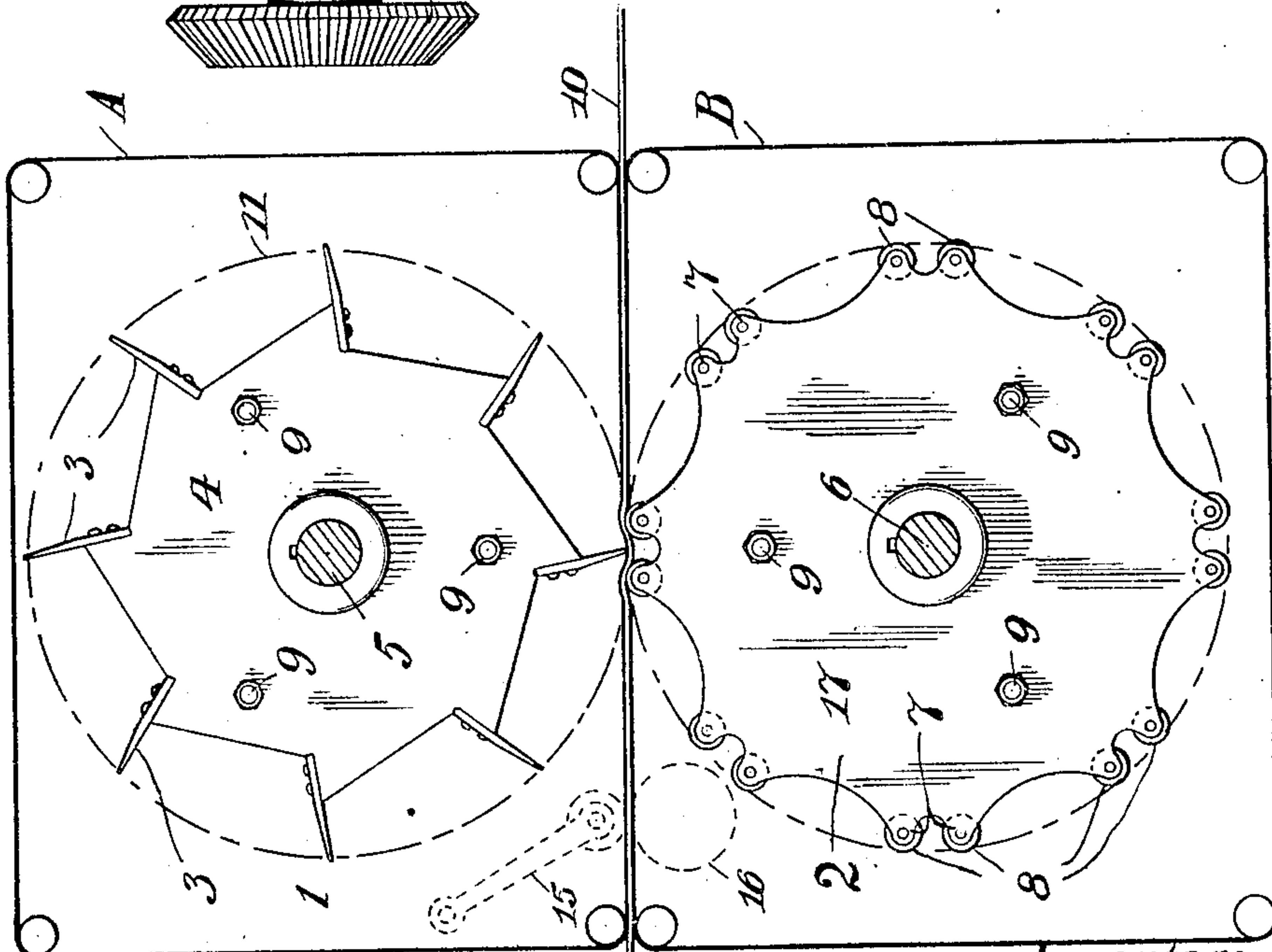


Fig. 1.



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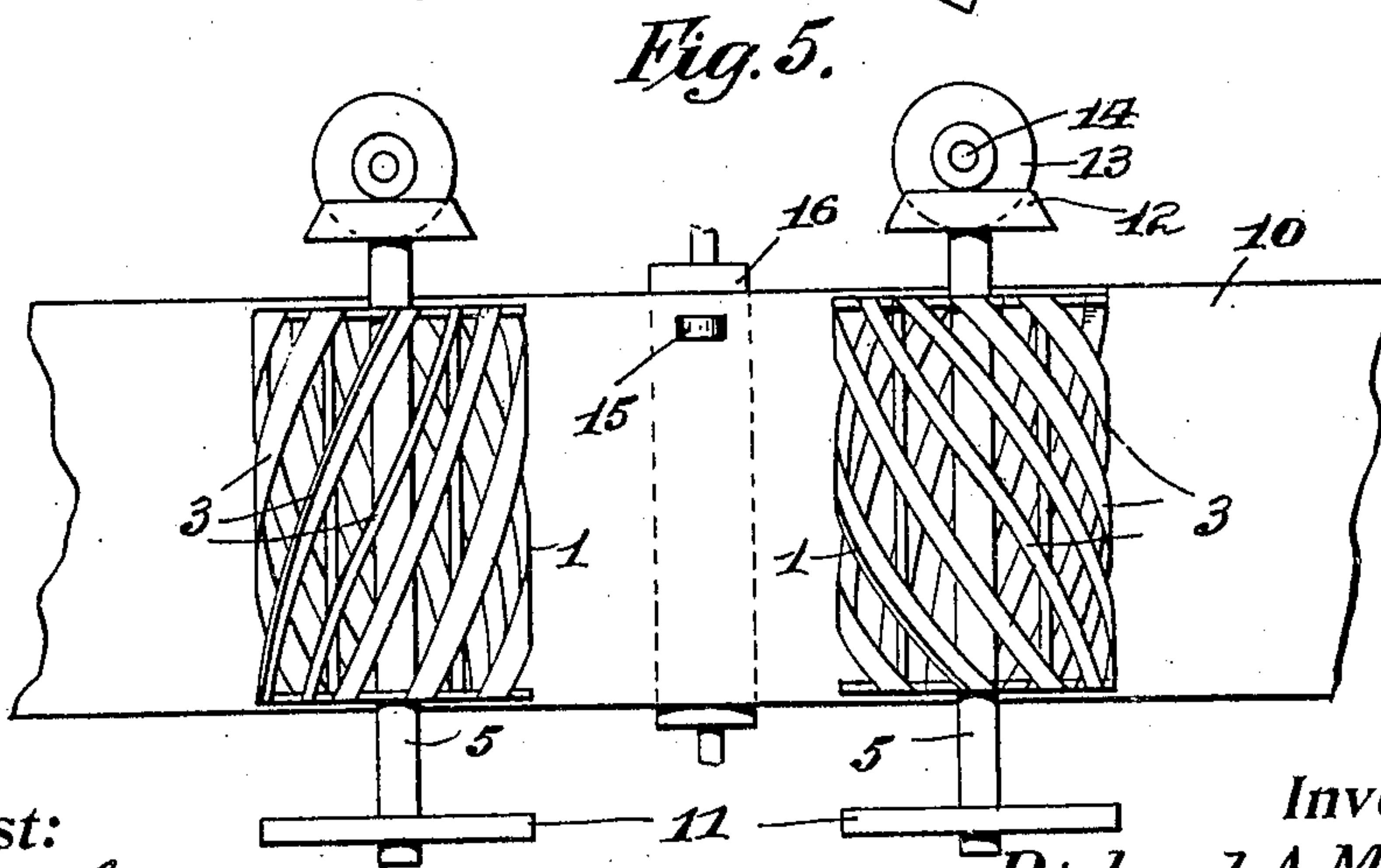
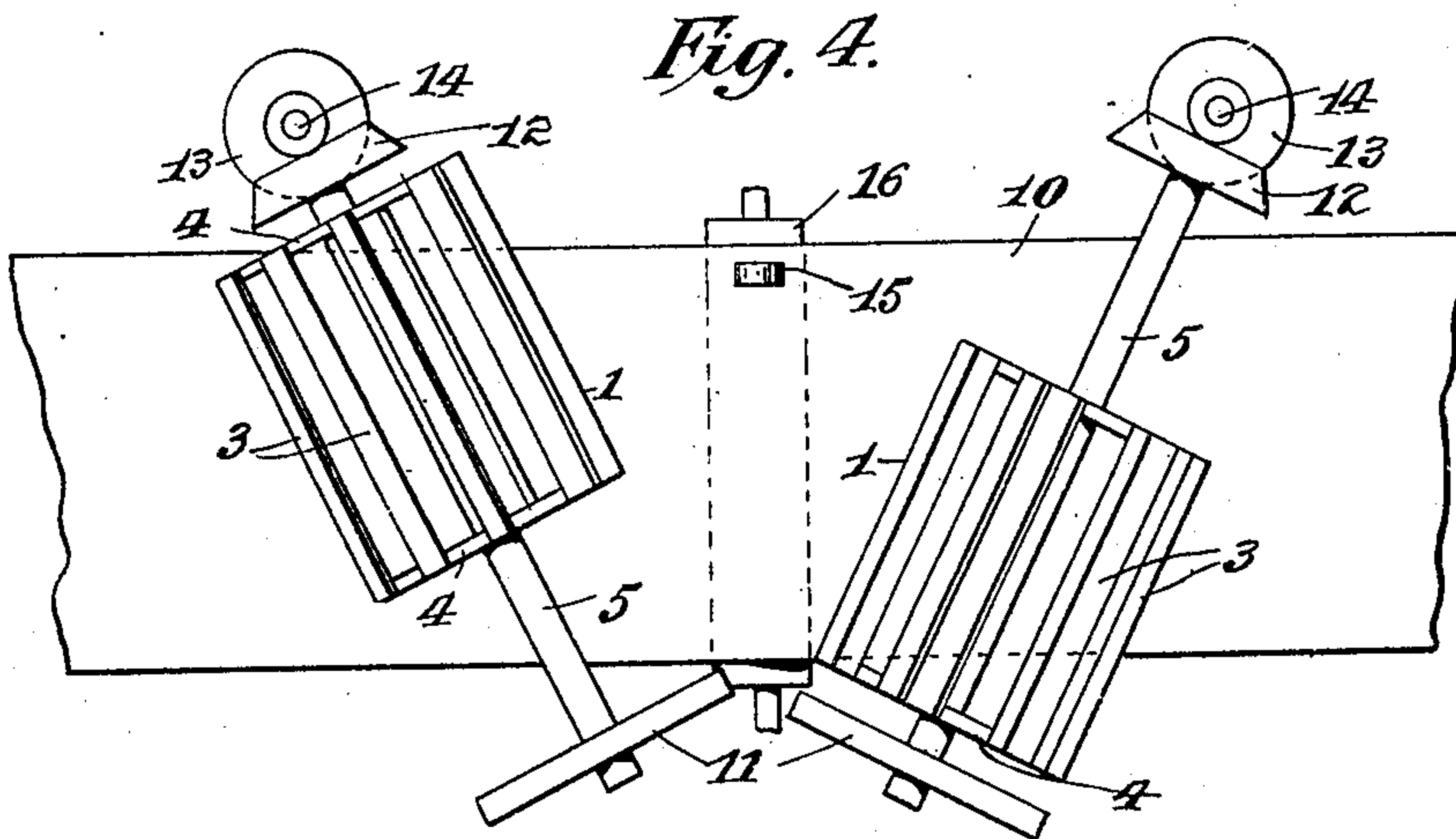
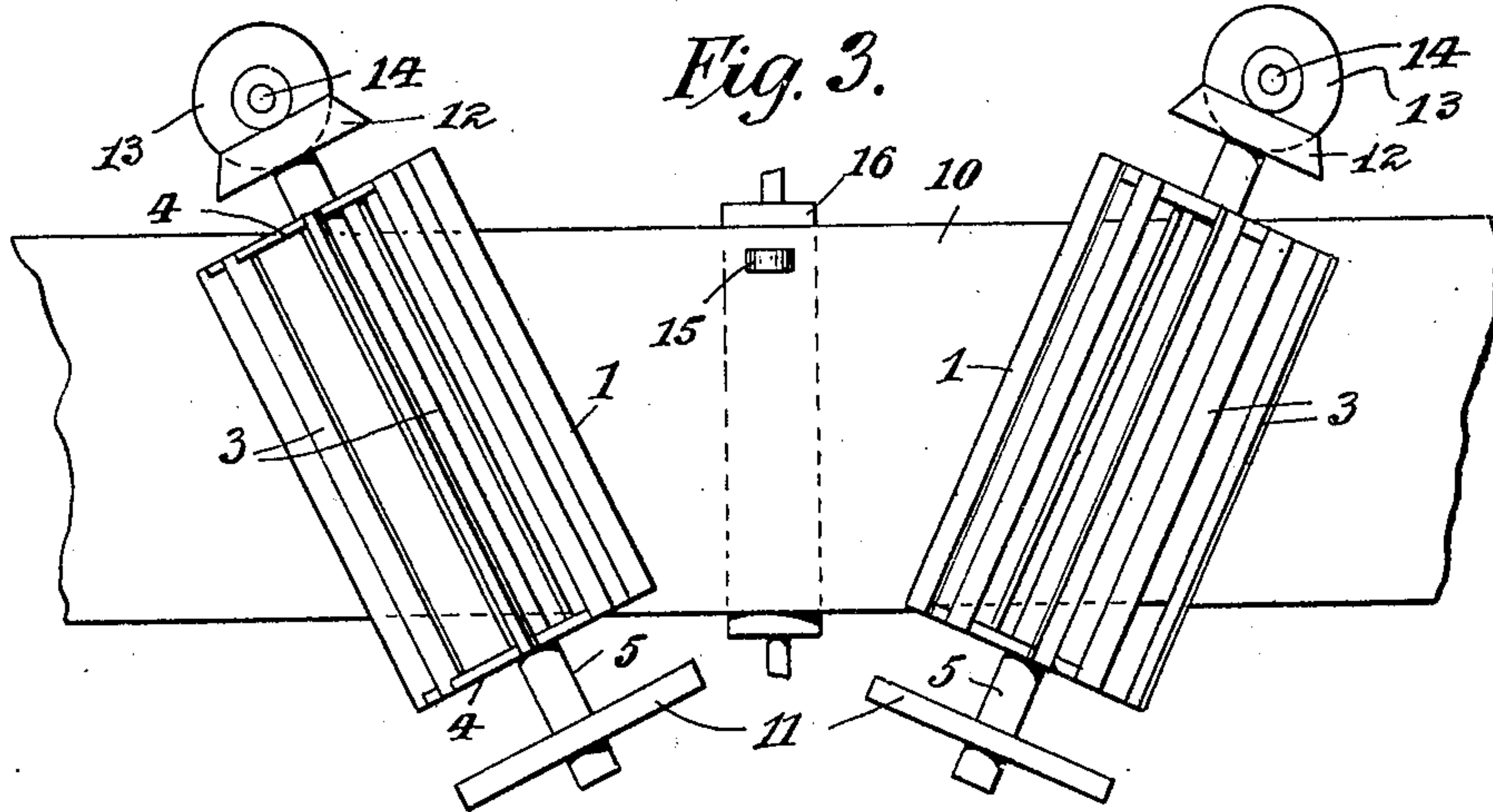
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

RICHARD A. McLAURIN, OF KELVINSIDE, SCOTLAND.

## TREATMENT OF GUM-PAPER AND THE LIKE.

No. 882,336.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed August 31, 1907. Serial No. 390,946.

*To all whom it may concern:*

Be it known that I, RICHARD A. McLAURIN, a subject of the King of England, and residing at Kelvinside, in the county of the city of Glasgow, Scotland, have invented certain new and useful Improvements in and Relating to the Treatment of Gum-Paper and the Like, of which the following is a specification.

This invention has reference to and comprises improvements in and relating to the treatment of gum paper and the like, and has for its object to obviate the tendency of paper coated with gum, mucilage or the like, to curl up when dry.

In carrying into effect or practice the improvements of this invention the gum paper, to be treated in a dry state, is subjected on its uncoated surface to a beating, scraping or rubbing action in a machine constructed or arranged as will be described.

The dry gummed paper to be treated in long lengths is passed between treating rolls or roller like frames by means of rollers driven at any desired speed.

In order that my invention and the manner of carrying same into effect or practice may be properly understood, I have hereunto appended explanatory drawings in which

Figure 1 is an end view and Fig. 2 a side view of the treating rolls; Figs. 3 and 4 are diagrammatic views showing two different arrangements of the treating rolls, no machine framing being shown in any of these views, as such forms no part of the invention, and any suitable framing may be employed; Fig. 5 is a plan view showing a treating roll of modified construction.

Referring to these drawings:—The treating or beating rolls 1, 2, which may be of a frame like construction are fitted in pairs, or it may be a series of pairs, one roll vertically above the other, and each pair is fitted to lie at any suitable angle to the other and to the path of the paper, as shown in Figs. 3 and 4, and so that the paper is acted upon, preferably, in the direction of its travel, but it may be in the opposite direction, and from the center outwards as shown in Fig. 4. The two upper beating rolls 1 are formed with a series of blades 3 of metal or other suitable rigid material set longitudinally, and which may be secured between end disks 4 secured on a shaft 5, or otherwise, having the outer edges of the blades 3 free to act on the paper.

The lower rolls 2 are also formed with end

disks 17 secured on the shaft 6 having a number of radial arms, or equivalent projecting parts 7, fitted with small rollers 8, preferably in pairs, between them free to rotate in bearings in the outer ends of the projecting parts 7.

The end disks of both rolls may be secured together by the stay rods 9.

The upper and lower beating rolls 1 and 2 are rotated at a circumferential speed greater than that at which the paper 10 travels and are so set in relation to each other that when one of the rollers 8 of the lower roll 2 comes into contact with the under surface of the paper 10 it slightly raises it a little in advance of one of the blades 3 of the upper roll which then acts upon its upper surface with a beating or rubbing action between the pair of rollers 8 and produces the desired effect.

The two pairs of rolls may be so arranged in relation to each other that the whole surface of the paper passing through may be acted on without leaving the center untouched, as shown in Fig. 4 or the whole surface of the paper may be acted on by both pairs of rolls as shown in Fig. 3.

In order to obviate any tendency of the paper to creep to one side under the action of the angled rolls a small india rubber roller 15, indicated in Fig. 1 in dotted lines, pressed down by a weight or spring and carried on an arm jointed in any suitable manner to the machine frame may be fitted to press on the paper as it passes over a roller 16 to prevent it moving laterally. The rubber roller may however be carried by a spindle or shaft instead of an arm.

When the paper is to be treated in sheets, instead of long lengths, endless traveling blankets A and B of any suitable flexible material are made to travel around the upper and lower rolls in any suitable known manner, and the sheets of paper are fed to the machine so as to pass through between the blankets while being acted on in the manner desired.

When coated papers, gummed on the back are being treated the coated surface may be protected by an endless blanket A or by a covering of any thin fabric or paper to prevent the coated surface from being damaged.

Each pair of treating rolls is geared together by the wheels 11 so as to travel at the same speed and may be driven by means of the bevel wheels 12 and a bevel wheel 13 on a vertical shaft 14 receiving motion in any suitable manner, but any system of driving



may be adopted which will drive the rolls at a speed suitable to that of the paper which is traveled between them by driven rollers.

I claim as my invention:

- 5 1. In a machine of the character described, a pair of treating rolls one of which is provided with blades and the other with pairs of supports for the paper with which said knives mesh, substantially as described.
- 10 2. In a machine of the character described, a pair of treating rolls one of which is provided with blades and the other with pairs of supporting rollers for the paper with which said knives mesh, substantially as described.
- 15 3. In a machine of the character described, a pair of treating rolls one of which is provided with blades and the other with pairs of supports for the paper with which said knives mesh, substantially as described, said  
20 knives meeting the paper at an angle to its feed.
4. In a machine of the character described, a pair of treating rolls one of which is provided with blades and the other with pairs of  
25 supports for the paper with which said knives mesh, substantially as described, in combination with means for feeding the paper to said rolls at a speed varying from the peripheral speed of the rolls.

5. In a machine of the character described, 30 a pair of treating rolls one of which is provided with blades and the other with pairs of supports for the paper with which said knives mesh, substantially as described, and means for protecting the ungummed side of 35 the paper from the action of said knives.

6. In a machine of the character described, a pair of treating rolls one of which is provided with blades and the other with pairs of supporting rollers for the paper with which 40 said knives mesh, substantially as described, and means to prevent the lateral creep of the paper under the influence of the action of the knives.

7. In a machine of the character described, 45 a pair of treating rolls one of which is provided with blades and the other with pairs of supports for the paper with which said knives mesh, substantially as described, and means to carry sheets of paper past the rolls. 50

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

RICHARD A. McLAURIN.

Witnesses:

WILLIAM ABBE,  
L. H. GROTE.