

APPLICATION FILED MAY 23, 1908.

Patented June 15, 1909.

2 SHEETS—SHEET 1.



G. S. Andrews Jr
Gus A. Flinn

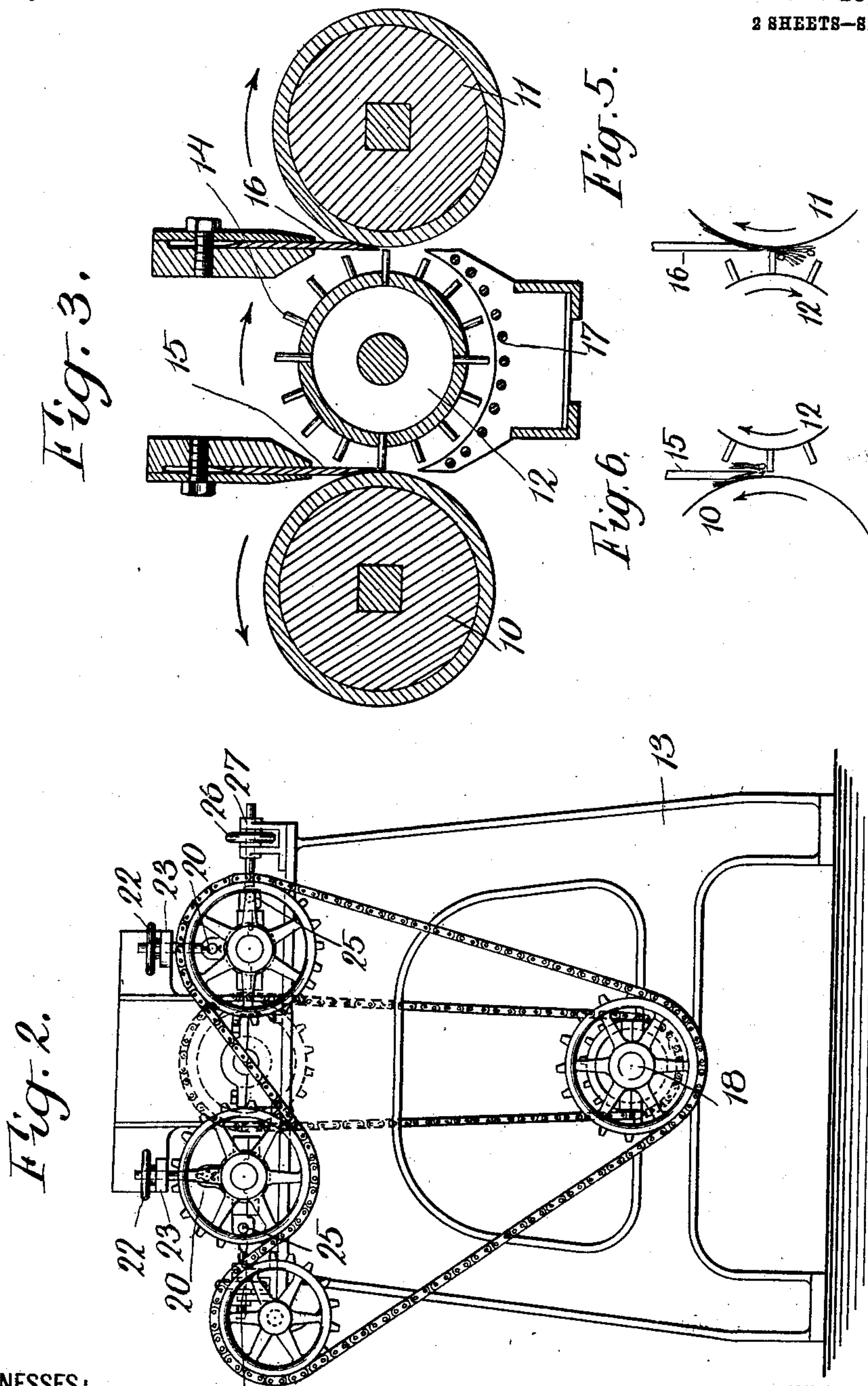
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WITNESSES:
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UNITED STATES PATENT OFFICE.

FREDERICK T. KENT, OF BROOKLYN, NEW YORK, ASSIGNOR TO EMPIRE DUPLEX GIN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF ARIZONA TERRITORY.

COTTON-GIN.

No. 924,793.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed May 23, 1908. Serial No. 434,464.

To all whom it may concern:

Be it known that I, FREDERICK T. KENT, a citizen of the United States of America, and a resident of the borough of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Cotton-Gins, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in cotton gins and particularly to a duplex roller cotton gin of the general type illustrated in U. S. Patent No. 828,668 of August 14, 1906, issued upon application of W. H. Kent. In the said Kent patent two ginning rollers are arranged in one gin with their axes parallel to each other, and a single rotary stripping member is arranged between the two said rollers for coaction with each of them. A stationary bed knife is disposed substantially tangent with each ginning roller and that side of the rotatable stripping member which is contiguous to such ginning roller. In this form of gin the two ginning rollers are arranged to rotate in the same direction, whereby the adjacent surfaces of each ginning roller and the stripping member will rotate in the same direction and in a direction opposite to the edge of the bed knife arranged for coaction therewith.

In my present invention I employ the same type of gin, that is to say, I employ two ginning rollers with a rotatable stripping member between them and two bed knives for coaction with the two said rollers and the opposite sides of said stripping member respectively, but I rotate the two ginning rollers in the opposite directions, whereby one of the said ginning rollers is arranged to rotate in the same direction as the stripping member and the other ginning roller in the opposite direction thereto.

Upon that side of the gin in which the roller rotates in the same direction as the stripping member I arrange that the said roller shall rotate in a direction toward the edge of the bed knife, but that the stripping member shall rotate in a direction away from the edge of the said bed knife, while in the opposite side of the gin I arrange that the roller at that side and the contiguous surface of the rotatable stripper shall both rotate in a di-

rection toward the edge of the bed knife. The result of this is that in operation the cotton to be ginned will be first carried over to be operated upon at that side of the gin at which the coacting surfaces of the roller and stripper move in opposite directions. At this point of operation the fibers will be carried longitudinally beneath the edge of the stripping knife without any tendency to bend the said fibers across the edge of the stripping knife. The seeds will be stripped therefrom by blows administered by the stripping member in a direction opposite to the direction of travel of the fibers, but in the same general longitudinal lines. The result of this, is the ginning of cotton with less liability of the rupture of the fibers. All of the cotton fed into the machine is submitted to this side of the gin first to be ginned in this fashion, and I find in practice that a large portion of the material is thus ginned at this side of the machine, but I find that in certain portions of the material the seeds adhere to the fibers with such tenacity that it requires more vigorous treatment to dislodge the seeds than can be given to them in this manner. In other words, the stripping member in continuously imparting blows to the seeds, such as adhere so tenaciously, will overcome the tendency of the roller to carry the fibers forward, and such unginned cotton will then be carried around with the stripper to the opposite side of the machine. At the other side of the machine wherein the roller and stripper both move in a direction toward the edge of the bed knife, the fibers will be laid across the bed knife and will be held firmly by the rollers and the bed knife while the stripper operates thereon to positively dislodge the seeds. By this means, in a single gin, I operate in one part of the machine to dislodge such seeds as may be readily dislodged without any possible damage to the fibers, while in another part of the machine I take care of all of the remainder of the material, though in finally doing so certain of the fibers may be more or less injured. It may be here noted that I make no claim herein to the specific form of stripping member employed, the same being disclosed and claimed in a copending application Serial No. 434,465, filed upon even date herewith.

In order that my invention may be fully

understood, I will now proceed to describe a cotton gin showing an embodiment thereof, having reference to the accompanying drawings illustrating the same, and will then point out the novel features in claims.

In the drawings: Figure 1 is a view in front elevation of a gin embodying my invention with certain parts broken away. Fig. 2 is an end view of the same. Fig. 3 is a view in central vertical transverse section through the operating portions of the gin. Fig. 4 is a detail view showing the constructional arrangement of certain adjustable suspension bearings which I employ for the ginning rollers. Figs. 5 and 6 are diagrammatic views to illustrate the action of the ginning members upon the fibers at the opposite sides of the machine.

The gin illustrated comprises two rotatable ginning rollers 10 and 11 and a rotatable stripping member 12 between them. The axes of the rollers 10 and 11 and that of the stripping member 12 are arranged parallel with each other and in the same plane. The journals therefor are supported in suitable bearings in the main frame 13 of the machine. The rollers 10 and 11 may be of any suitable character such as is usually employed in gins of this description. The surfaces thereof may conveniently be of raw hide, such material having been found to provide a suitable friction surface for engaging and carrying along the cotton fibers. The stripping member 12 may also be of any suitable form, being here shown as provided with a plurality of radially disposed pegs or pins 14, the outer edges of which are arranged to travel in close proximity to, but out of actual contact with, the surface of the rollers 10 and 11 respectively. The specific form of stripping roller herein shown is more particularly described in a co-pending application filed upon even date herewith, the said stripping member forming the invention in said application and being claimed therein.

Mounted substantially tangential with respect to each of the said rollers are stationary bed knives 15 and 16, the said bed knife 15 being arranged for coengagement with the roller 10 and that side of the stripping member 12 which coengages therewith, while the bed knife 16 is arranged for coengagement with the roller 11 and that side of the stripping member which operates in conjunction with the said roller 11. A seed grid 17 is arranged beneath the said stripping member 12. The shafts of the said rollers 10, 11 and the stripping member 12 are all driven from the same power shaft 18 which is mounted in suitable journals in the lower portion of the frame 13. Suitable belt or sprocket chain connections are provided between the various shafts to drive them in the proper directions.

The bearings for the rollers 10 and 11 are preferably of the suspended type, being adjustable both vertically and horizontally. One of such bearings and the adjustment therefor is illustrated in Fig. 5. The suspension means comprises a screw-threaded rod 19 which is pivotally connected at 20 to the bearing 21, the said rod being provided with a nut 22 thereon which is supported by a portion 23 of the frame 13. A similar rod 24 is also pivoted thereto at 25 and is provided with an adjusting nut 26 thereon which is disposed between abutments 27—28 also carried by the frame of the machine. By manipulation of the two nuts 22—26 a substantially universal adjustment may be given to the bearing 21, whereby, a similar adjusting means being provided for the bearings at both ends of both of the said rollers 10 and 11, such rollers may be accurately adjusted with respect to the central stripping member.

It will, of course, be understood that by leaving off the roller 10 and the stationary bed knife 15, the gin including the roller 11, rotatable stripping member 12, and stationary bed knife 17, may be employed as a single gin. In operation, cotton to be ginned will be fed into the machine over the edge of the rotary stripper 12 and between the bed knives 15 and 16. This material will be carried by the rotary stripper first to the ginning roller 11 and a portion of the cotton will be ginned thereat in accordance with the manner above described and as illustrated in Fig. 6 of the drawings. Such cotton as is not successfully ginned at this point will be carried by the rotatable stripper around to the other side of the gin and will then be ginned at the point of coaction between the stripping member, the roller 10, and the stationary bed knife 15. By this it will be seen that this portion of the cotton capable of being ginned between the roller 11 and stripping member 12 will be ginned upon that side of the machine, the product therefrom being of a high grade quality with fibers unruptured and straight; and that such portion of the cotton as is not capable of being ginned at this point will be carried around and ginned between the roller 10 and the stripper 12. The product of this side of the machine will be at least as good as the product in any ordinary form of gin, but will not be as high grade a product as is produced at the side of the gin first mentioned.

In the use of the expressions "toward the edge of the bed knife" and "away from the edge of the bed knife" to describe the direction of rotation of the ginning rolls with respect to the bed knives, it will be understood that the former expression is intended to describe the direction of the rotation of the rollers 10 and 11 with respect to their bed

knives 15 and 16 as indicated by the arrows in proximity to the said rollers 10 and 11 in Fig. 3, while the latter expression is intended to describe the opposite direction of rotation.

What I claim is:

1. A cotton gin comprising two ginning rollers arranged to rotate in opposite directions, tangential bed knives, and a rotatable stripper disposed between the two said rollers arranged for co-action with both of them.

2. A roller cotton gin comprising two rollers and a rotatable stripping member mounted between them for engagement with both of them, the said rollers arranged to rotate in opposite directions, whereby the adjacent surfaces of one of the said rollers and the stripping member will rotate in the same direction, and the adjacent surfaces of the other said roller and the said stripping member will rotate in opposite directions; and tangential bed knives for co-action with the said stripping member and the two said rollers respectively, the direction of movement of the rollers being in each case toward the edge of the said bed knife.

3. In a roller cotton gin the combination with a ginning roller, a rotatable stripping

member having a plurality of radially disposed projecting portions, the outer edges of which are arranged to travel in close proximity to the surface of the said ginning roller, and a stationary bed knife arranged substantially tangent with respect to both the said roller and the said stripping member, of bearing means for the said ginning roller, and means for imparting movements of adjustment to the said bearings in a direction toward and away from the axis of rotation of the rotatable stripping member, and means for also imparting movements of adjustment to the said bearings in a direction transverse with respect to the last said adjustment.

4. In a roller cotton gin the combination with a stripping member and a ginning roller for coöperation therewith, of a bearing for the roller, an adjustable suspension rod pivoted to said bearing and supporting the same, a second adjustable rod also pivoted to the said bearing and extending at right angles to the first said rod, and rocking supports for the said suspension rods.

FREDERICK T. KENT.

Witnesses:

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LYMAN S. ANDREWS, Jr.