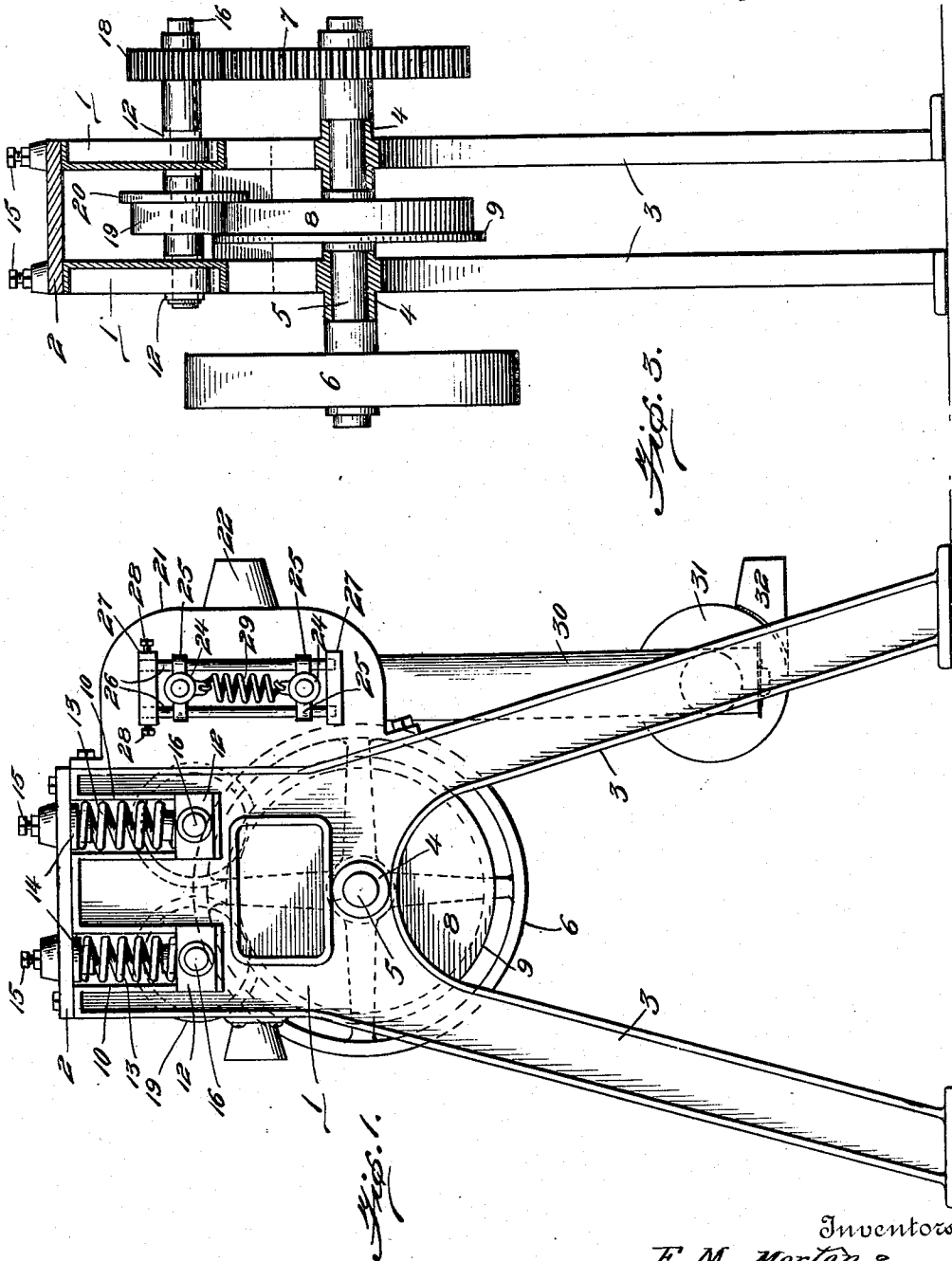


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COTTON BALE TIE STRAIGHTENING AND CLEANING MACHINE.
APPLICATION FILED FEB. 4, 1909.

939,532.

Patented Nov. 9, 1909.

2 SHEETS—SHEET 1.



Witnesses

B. M. Offutt
C. H. Griesbauer

Inventors

F. M. Morton, and
W. H. Dismuke

by

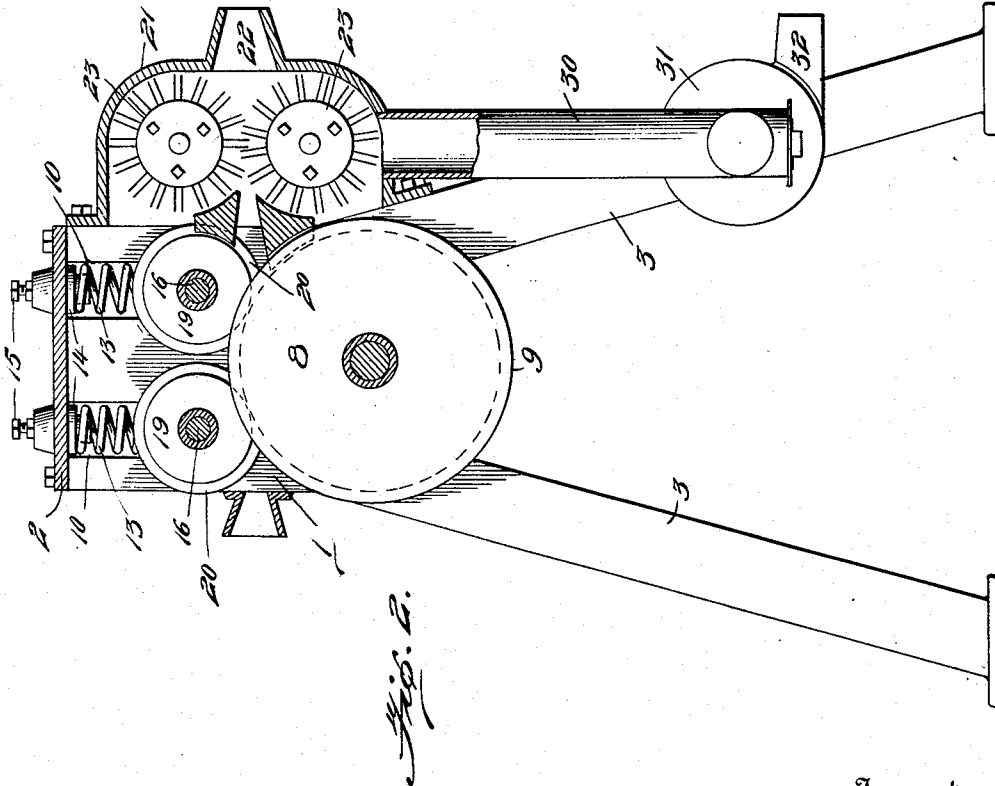
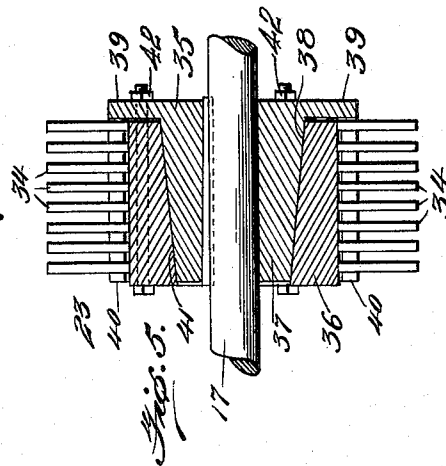
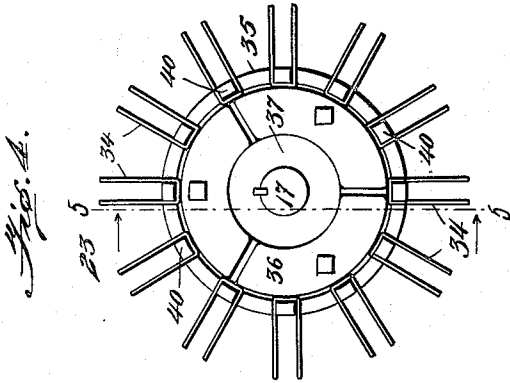
A. B. Wilson & Co
Attorneys

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W. H. Dismuke

By *A. B. Wilson*
Attorneys

UNITED STATES PATENT OFFICE.

FRANK M. MORTON AND WILLIAM H. DISMUKE, OF PHOENIX, ALABAMA.

COTTON-BALE-TIE STRAIGHTENING AND CLEANING MACHINE.

939,532.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed February 4, 1909. Serial No. 476,086.

To all whom it may concern:

Be it known that we, FRANK M. MORTON and WILLIAM H. DISMUKE, citizens of the United States, residing at Phoenix city, in the county of Lee and State of Alabama, have invented certain new and useful Improvements in Cotton-Bale-Tie Straightening and Cleaning Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in straightening and cleaning machines for cotton bale ties.

The object of the invention is to provide a machine of this character in which the tie from the cotton bale may be straightened and cleaned, thus providing for the repeated use of the same tie.

A further object is to provide a tie cleaning and straightening machine of this character, which will be simple, strong and durable in construction, efficient and reliable in operation, and well adapted to the purpose for which it is designed.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawing, Figure 1 is a side view of a bale tie straightening and cleaning machine constructed in accordance with the invention; Fig. 2 is a vertical longitudinal sectional view; Fig. 3 is a transverse vertical sectional view; Fig. 4 is an enlarged detail sectional view of one of the cleaning brushes showing the construction of the same; and Fig. 5 is a similar view taken at right angles to and on the line 5—5 of Fig. 4.

In the embodiment of the invention we provide a supporting frame consisting of side pieces 1, which are connected together at their upper ends by a cross plate 2 and are provided with supporting legs 3. In the side plates 1 are formed bearings 4 in which is revolubly mounted a drive shaft 5 on one end of which is fixedly mounted a drive pulley 6, while on its opposite end is mounted a drive gear 7. On the shaft 5 between the side plates 1 is fixedly mounted a lower tie straightening roller 8, said roller having on one side a radially projecting flange 9.

In the upper portion of the side plates 1

are formed vertically disposed parallel notches or slots 10, in which are slidably mounted bearing brackets 12. Arranged in the slots 10 are coil springs 13 one end of which engages the bearing blocks 12, while the upper end of said springs engage adjusting blocks 14 which are arranged in the top cross plate 2 and which are adjusted by means of set screws 15, whereby the tension of the springs 13 may be regulated.

Revolubly mounted in the bearing blocks 12 are shafts 16 on the outer ends of which are fixedly mounted spur gear pinions 18 which are in operative engagement with the main drive gear 7 on the shaft 5. On the shafts 16 between the side plates 1 are fixedly mounted a pair of upper tie straightening rollers 19, said rollers being in frictional engagement with the main straightening roller 8. The rollers 19 are provided on one side with radially projecting flanges 20 which project into engagement with the side of the straightening roller 8 and with the flange 9 on said roller form guides in which the tie to be straightened is inserted when run between the rollers. The rollers 19 are held in tight frictional engagement with the main straightening roller 8 by means of the springs 13, the tension of which is regulated by the adjusting blocks 14 and the set screw 15 as hereinbefore described.

To the rear edge of the machine is secured a casing 21 in the outer side of which is formed a discharge spout 22. Revolubly mounted in suitable bearings in the casing 21 are upper and lower cleaning brushes 23. The bearings 24 in which the shafts of the brushes are mounted are arranged on the outer side of the casing 21 and are provided with oppositely projecting apertured ears 25 which are closely engaged with supporting rods 26 secured in laterally projecting brackets 27 on the outer side of the casing. The rods 26 are secured in the upper bracket 27 by means of set screws 28. The bearing brackets 24 are connected together between the posts or bars 26 by means of a coil spring 29 whereby the brushes are held in close engagement with the tie which passes through the brushes after being straightened by the straightening rollers hereinbefore described. As the straightened tie passes between the brushes 23 the lint and cotton as well as any other foreign matter is cleaned from said tie after which they pass out of the discharge spout 22.

Between the side plates of the machine and in the casing 21 adjacent to the brushes 23 are arranged guide blocks which direct the ends of the ties after being straightened 5 between the brushes for cleaning.

In the lower portion of the casing 21 is arranged a discharge opening with which is connected a discharge tube 30 the lower end of which is connected with a suction fan 31 10 having a discharge spout 32 whereby the lint and dirt removed from the tie is drawn or sucked from the brushes through the discharge tube and forced out through the spout 32.

The machine is preferably provided on its front edge with a mouth piece adapted to receive the end of the tie when inserted in the machine and to guide the same between the straightening rollers.

The brushes 23 consist of flat wire bristles 34 arranged in annular parallel rows. Each of the bristles consists of a flat strip of metal bent or folded upon itself in substantially U-form. The bristles 34 are secured to a hub 25 or body portion comprising two interlocking sections 35 and 36. The sections 35 comprise a central hub portion 37 keyed upon the shaft 17 and having its outer surface inclined or tapered, as shown at 38. On the 30 larger end of the hub portion 37 is formed an annular radially projecting flange 39 on the outer edge of which is formed a series of laterally projecting arms or bars 40. The arms 40 are spaced from and project over 35 the inclined surface of the hub portion 37, and with said arms or bars are engaged the U-shaped bristles 34 of the brush. The member 36 of the body portion of the wheel consists of an annular flange having a tapered or inclined bore 41. The member or 40 section 36 is adapted to be engaged with the tapered hub portion 37 between the outer inclined surface of the same, and the laterally projecting arms or bars 40. The outer wall of the section 36 engages the U-shaped portions of the bristles and binds the latter in 45 position. The member 36 may if desired be formed of a series of segmental sections, as shown or may be formed of one continuous 50 annular section. Each of the sections of the

member 36 is provided with a transversely disposed bolt hole which is adapted to aline with a similar hole in the flange 39 of the section 35 and through said bolt holes is inserted a series of clamping bolts 42 which 55 when clamping nuts are applied thereto will draw the section 36 tightly between the hub portion 37 and the arms 40, whereby owing to the inclined surfaces of the sections 36 and the hub portions 37 said sections 36 will be 60 tightly clamped against the U-shaped portion of the bristles thereby firmly clamping the same in position.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may 70 be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claim.

Having thus described and ascertained the 75 nature of our invention, what we claim as new and desire to secure by Letters-Patent, is:—

In a machine of the character described, a supporting frame, a series of straightening 80 rolls, revolvably mounted in said frame, means to operate said rolls, a brush casing, rigid brackets thereon, parallel guide rods removably mounted in said brackets, bearings freely slidably mounted on said rods, 85 brush shafts journaled in said bearings, cleaning brushes mounted on said shafts within said casing, and a spiral spring connecting said bearings so as to normally hold the brushes in engagement together with a 90 suction tube connected to the casing.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

FRANK M. MORTON.
WILLIAM H. DISMUKE.

Witnesses:
EARL MORGAN,
J. L. FLOYD.