R. KNEBEL.

DRESSING MACHINE REEL.

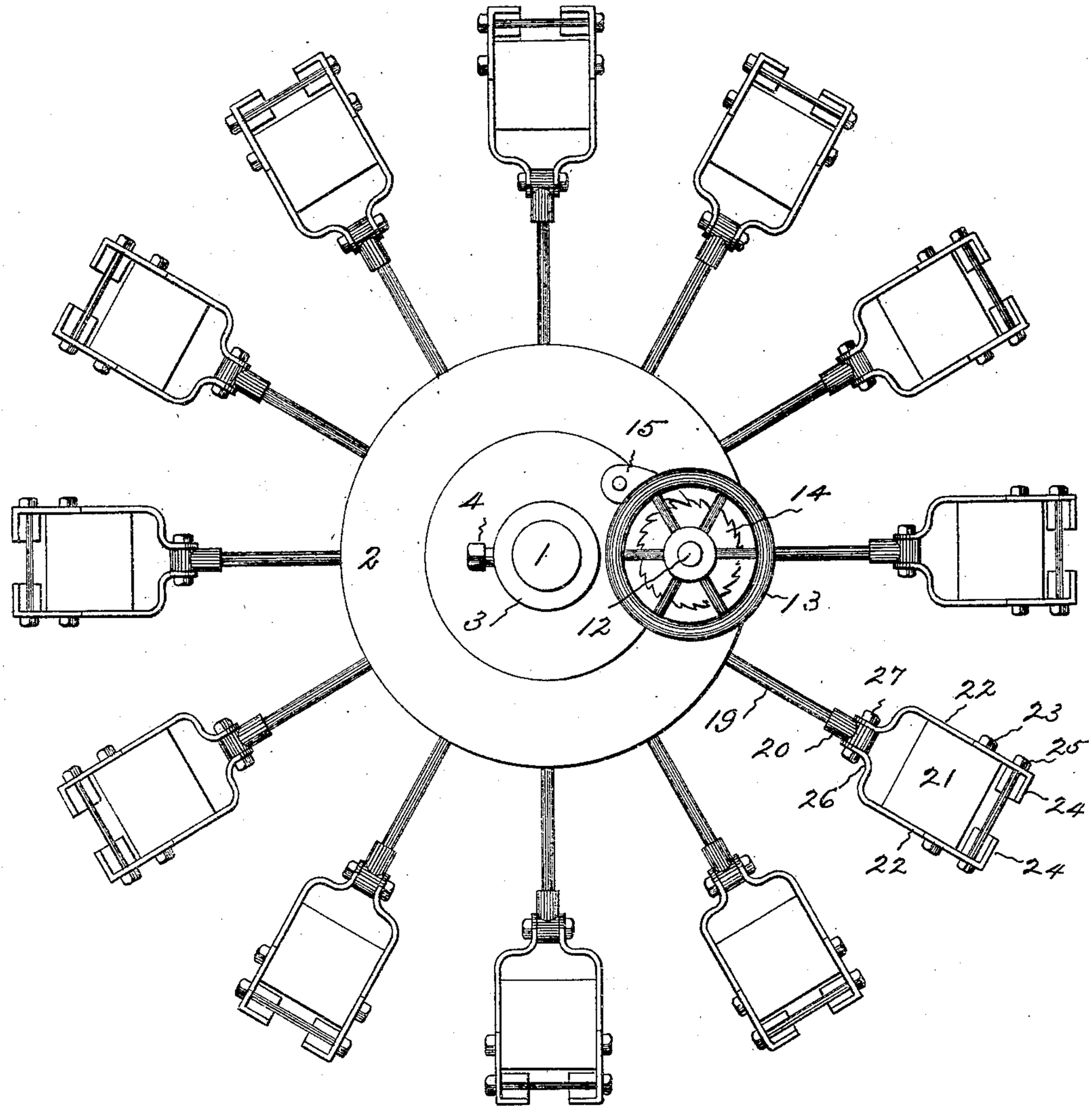
APPLICATION FILED MAR. 30, 1909.

940,603.

Patented Nov. 16, 1909.

3 SHEETS—SHEET 1.

FIG. 1



WITNESSES:

Howard L. Holcomb

Josephine H. Strempfer.

INVENTOR:

Richard Knebel by

Harry P. Williams

Atty.

ANDREW. B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

R. KNEBEL.

DRESSING MACHINE REEL.

APPLICATION FILED MAR. 30, 1909.

940,603.

Patented Nov. 16, 1909.

3 SHEETS—SHEET 2.

FIG. 2

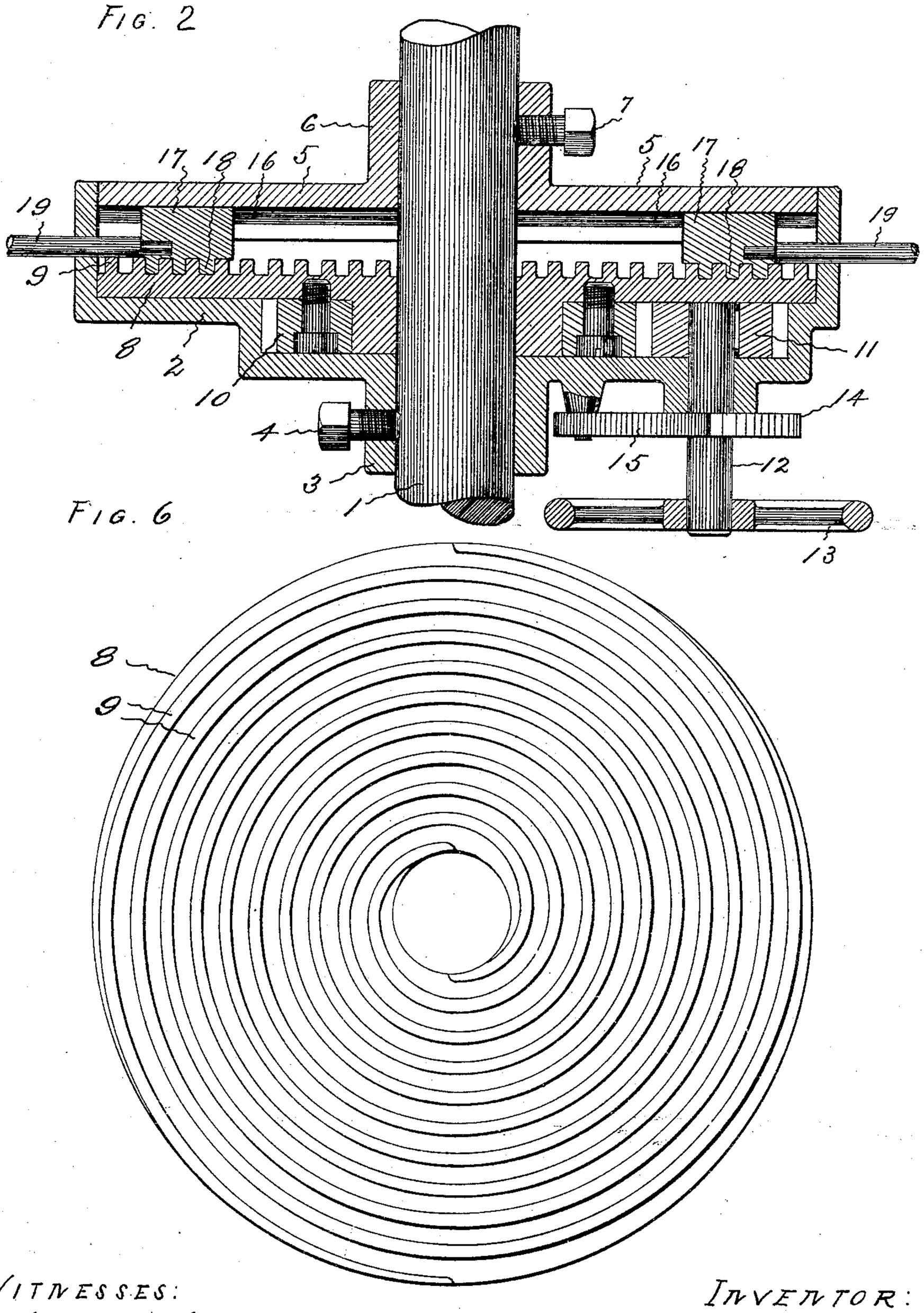


FIG. 6

WITNESSES:

Howard L. Holcomb

Josephine M. Strempfer.

INVENTOR:

Richard Knebel by

Harry P. Williams

atty.

ANDREW. B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

R. KNEBEL.

DRESSING MACHINE REEL.

APPLICATION FILED MAR. 30, 1909.

940,603.

Patented Nov. 16, 1909.

3 SHEETS—SHEET 3.

FIG. 7

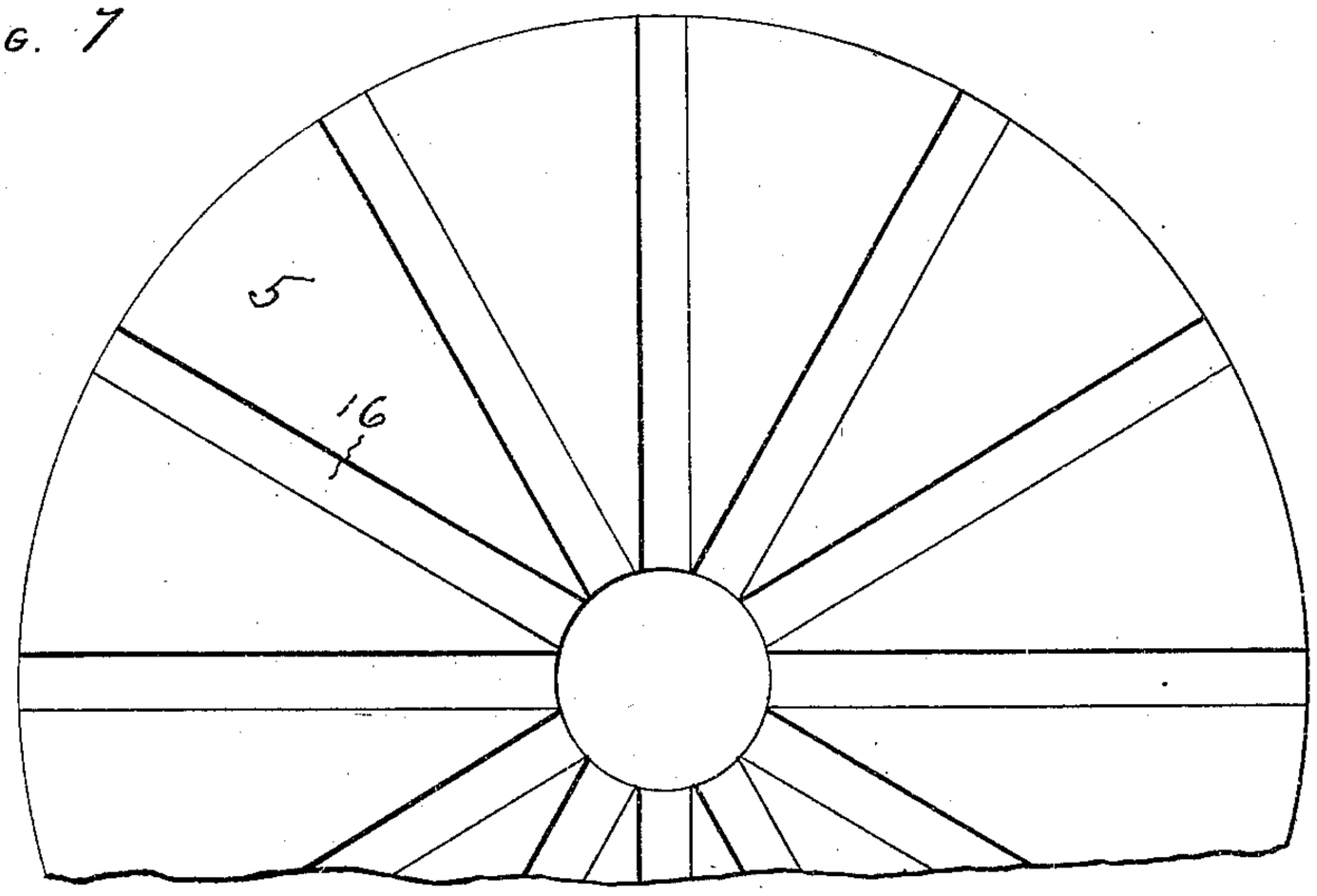


FIG. 3

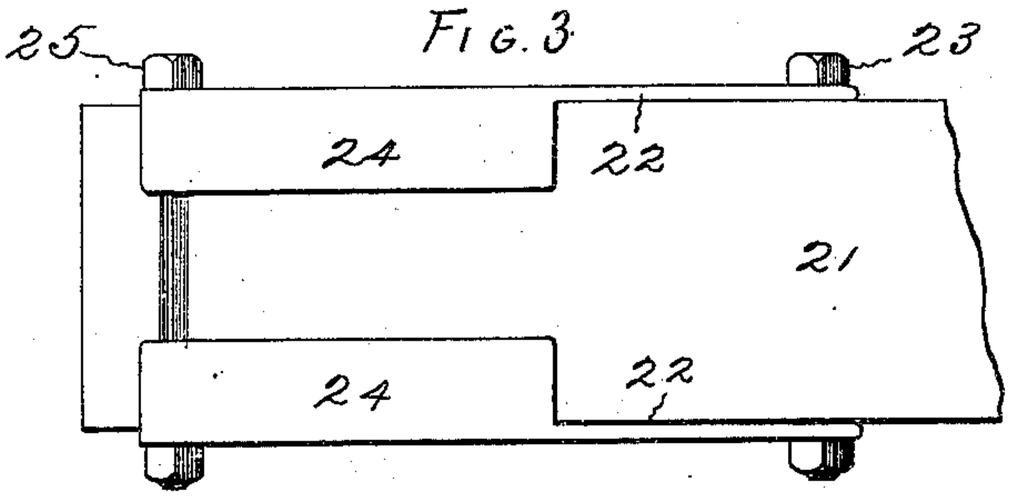


FIG. 8

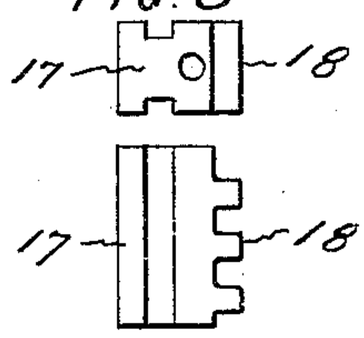


FIG. 4

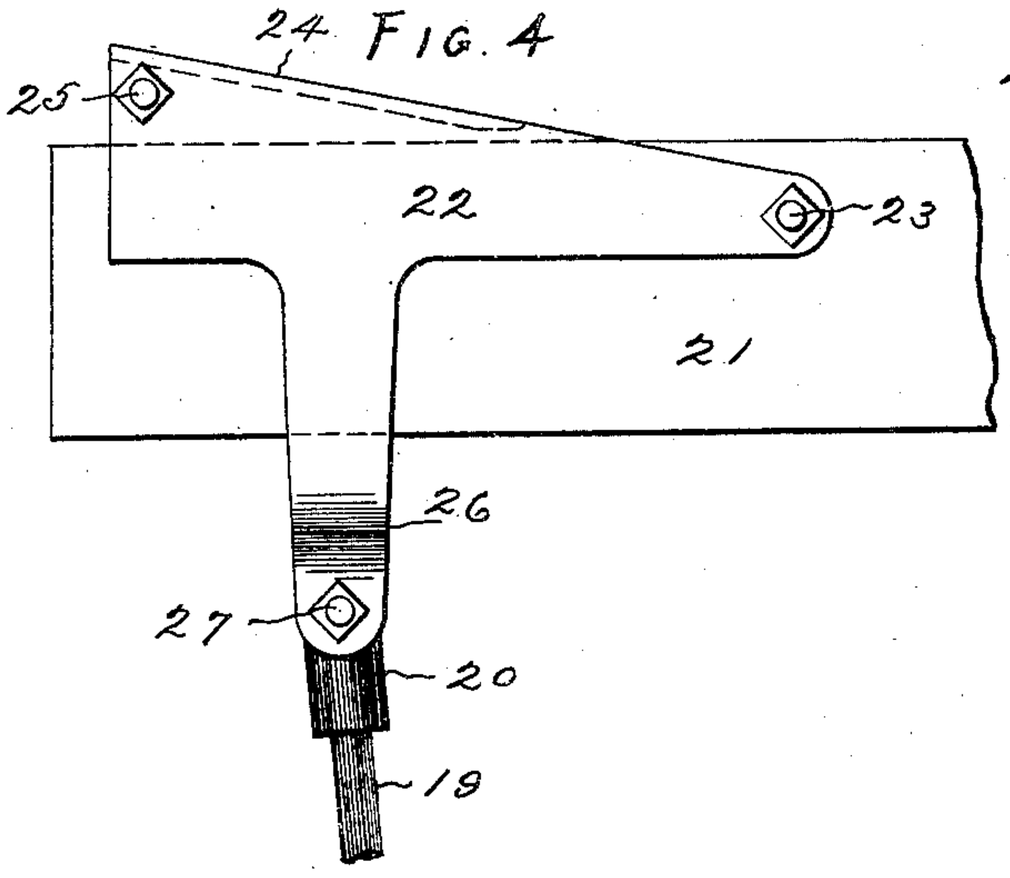
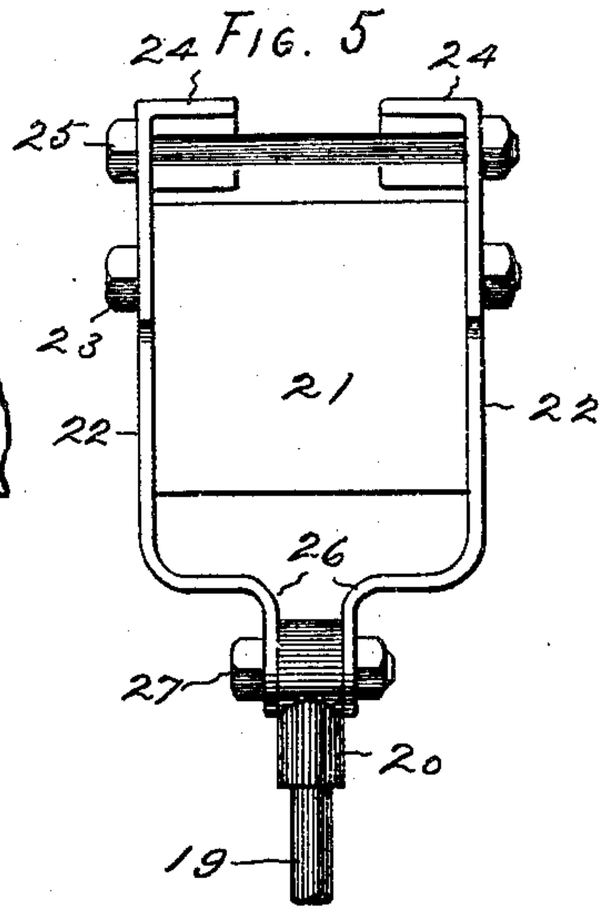


FIG. 5



WITNESSES:

Howard L. Holcomb

Josephine K. Strempfer.

INVENTOR:

Richard Knebel

by Harry P. Williams

atty.

UNITED STATES PATENT OFFICE.

RICHARD KNEBEL, OF ROCKVILLE, CONNECTICUT.

DRESSING-MACHINE REEL.

940,603. Specification of Letters Patent. **Patented Nov. 16, 1909.**

Application filed March 30, 1909. Serial No. 486,836.

To all whom it may concern:

Be it known that I, RICHARD KNEBEL, a citizen of the United States, residing at Rockville, in the county of Tolland and State of Connecticut, have invented a new and useful Improvement in Dressing-Machine Reels, of which the following is a specification.

This invention relates to those reels which are arranged in dressing machines that are used in woolen, cotton, linen and silk mills, and upon which, the warp yarn or thread, drawn from spools, is wound in sections, preparatory to being unwound therefrom and re-wound in proper layers upon a loom beam, that is, the beam which holds the warp and is taken from the dresser to the weaving loom with the warp threads in proper condition for being fed through the loom. With such reels, the required number of yards, for the length of cloth to be woven, of the desired number of strands for the weight of the cloth, are drawn from the spools containing the warp yarn or thread, and wound in the necessary number of layers upon one section of the reel bars. Then the same number of yards of the same strands are wound in an equal number of layers on the next section of the reel bars. This is repeated until all of the sections of the reel are covered, producing an even bolt of the same number of the same length of threads or strands, having the same number of coils from end to end of the reel, wound in such manner that they all have the same tension and can be unwound uniformly, and without danger of becoming tangled. For this purpose some types of reels have perforated bars into which pins are inserted the desired distance apart, for properly holding the yarn in each section. With such reels, after one section has been wound with warp threads, the pins are removed and inserted farther along the bars to form the next section. Other reels are provided with inclined blocks secured to the outer surfaces near the ends of the bars upon which the first section of yarn is wound, while the reel, by suitable mechanism, is given a traverse so that the first edge of the first section will be wound up on the inclined blocks and the other edge will, when the section is completely wound, have the same incline. The following sections of yarn are then so wound that they will overlie the inclined edges of the preceding sections and produce, when the reel is filled, an even bolt of yarn. For different weights of yarn the incline of these blocks must be varied in order to keep the proper tension on all of the strands, for instance, if the yarn is small, as when intended for light weight cloth, the incline of the blocks would not be as great as when the yarn is heavy, as used for heavy weight cloth.

The object of this invention is to provide a pinless reel with adjustable blocks for the first ends of the bars, and mechanism by which all of the blocks can be quickly, uniformly and accurately adjusted at any time and by any one, so that they will have the proper inclination, thereby saving time and increasing the efficiency of the machine, also dispensing with the use of pins, and the labor of changing them for each weight of warp to be wound, and effecting a saving in time necessarily expended in changing the blocks or providing them with means, whereby they will have the necessary inclination to properly wind the warp threads.

Figure 1 of the accompanying drawings shows a side elevation of an adjustable block mechanism for a reel of this nature. In this view the ends of the reel bars are shown, but the reel frame is omitted, as it forms no part of the present invention. Fig. 2 shows on larger scale a diametrical section of the adjusting mechanism. Fig. 3 shows a plan of the end of a reel bar provided with adjustable blocks, arranged according to this invention. Fig. 4 shows a side view of the same. Fig. 5 shows an end view of the same. Fig. 6 shows a face view of the helical gear that is arranged in the adjusting mechanism. Fig. 7 shows a face view of the dog guiding disk used in the adjusting mechanism. Fig. 8 shows a top and a side of one of the toothed dogs, to which the inner ends of the adjusting rods are fastened. These dogs are moved in the grooves of the guide plate by the helical gear for adjusting the inclination of the blocks with relation to the surfaces of the reel bars.

The adjusting mechanism is designed to be mounted upon the shaft 1, of any common form of dresser reel. This mechanism is inclosed within a casing 2, which has a hub 3, with a set screw 4, for fastening the casing to the shaft. In the open end of the casing is fitted a disk 5, which has a hub 6, that may be provided with a set screw 7 for securing it to the shaft. In the casing is a

disk 8 with helically arranged teeth 9. Fastened to the back face of the helical gear is a spur gear 10, meshing with which is a spur pinion 11, which is fastened to a spindle 12, that is provided with a hand wheel 13. By turning this hand wheel, through the pinion and gear, the helical gear may be rotated in either direction. It is desirable to place a ratchet wheel 14 on the spindle and arrange a pawl 15 to engage with the teeth of this ratchet wheel for the purpose of holding the spindle, and consequently the helical gear in the position to which it is turned. The disk 5, on its inner face, has a number of radial dove-tail or undercut grooves 16, and movable in these grooves are dogs 17. On the faces of these dogs are teeth 18, which engage with the teeth of the helical gear.

Fastened in openings in the dogs are the inner ends of rods 19. The outer ends of these rods are provided with heads 20, which are connected by bolts or other means, with the blocks which are to be adjusted at different inclinations with respect to the outer surfaces of the bars 21 of the reel. These blocks may be formed of cast metal, but they are preferably formed of bent sheet metal with sides 22 that are pivoted by bolts 23 to the sides of the reel bars, and with tops 24, which project over the outer surfaces of the bars. It is desirable to secure the blocks together at their outer ends by rods or bolts 25 so that they will be held to the sides of the bars and will move together. With blocks of this form, the lower ends, 26, of the sides may be fastened together by bolts 27, upon which the heads 20 of the rods 19 may be pivoted.

By turning the handle and rotating the helical gear in the necessary direction, the dogs may be moved in and out radially along the grooves of the guide disk, the necessary distance in the required direction to swing the blocks on their pivots, and cause the upper surfaces of the blocks to assume the desired angle with relation to the outer surfaces of the reel bars. This mechanism adjusts the parts simultaneously and uniformly so that the desired inclination of the blocks may be quickly and accurately given at any time. By this means the necessary inclination may be given to the upper surfaces of the blocks pivoted to the bars, without loss of time, and without the exercise of any skill, in order that the warp yarn or threads of the first section may be desirably wound upon the reel bars, and the resulting bolt of yarn, when the reel is full, be even and of uniform tension, and can be rewound on the loom beam without danger of the strands becoming tangled or misplaced so as to cause annoyance and loss.

The invention claimed is:

1. An adjustable block mechanism for dresser reels, having blocks adapted to be pivoted to the reel bars, rods connected with the blocks, toothed dogs fastened to the rods, a helical gear meshing with the teeth of the dogs, and gears for rotating the helical gear.

2. An adjustable block mechanism for dresser reels, having blocks adapted to be pivoted to the reel bars, rods connected with the blocks, toothed dogs fastened to the rods, a helical gear with its teeth engaging the teeth of the dogs, a spur gear connected with the helical gear, a spur pinion meshing with the spur gear, and a spindle for rotating the spur pinion.

3. An adjustable block mechanism for dresser reels, having blocks adapted to be pivoted to the reel bars, rods connected with the blocks, toothed dogs fastened to the rods, a helical gear having teeth meshing with the teeth of the dogs, a spur gear fastened to the helical gear, a spur pinion meshing with the spur gear, a spindle for rotating the spur gear, a handle for turning the spindle, and a ratchet and pawl for holding the spindle from turning.

4. An adjustable block mechanism for dresser reels, having blocks adapted to be pivoted to the reel bars, rods connected with the blocks, toothed dogs fastened to the rods, a radially grooved disk for holding and guiding the dogs, a helical gear with teeth engaging the teeth of the dogs, a spur gear fastened to the helical gear, a spur pinion meshing with the spur gear, and means for rotating the pinion.

RICHARD KNEBEL.

Witnesses:
JOSEPHINE M. STREMPFER,
HARRY R. WILLIAMS.