1,637,996

Aug. 2, 1927. H. W. GUTTRIDGE

POWER ROLLER

Filed Feb. 25, 1927

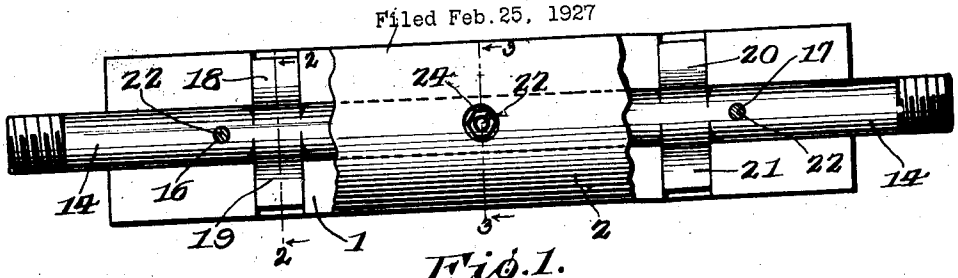


Fig. 1.

Fig. 2.

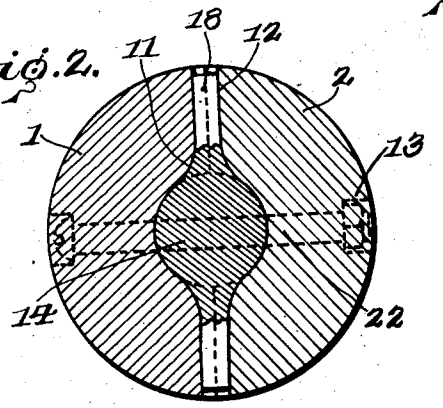


Fig. 3.

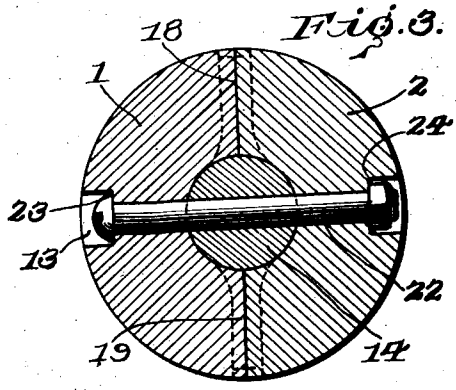


Fig. 6.

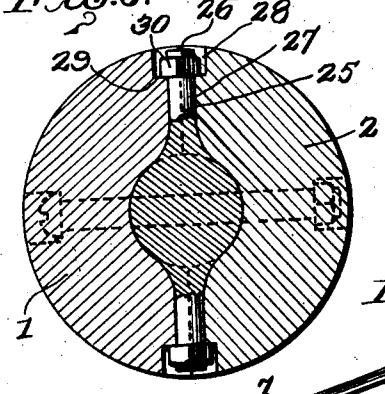


Fig. 7.

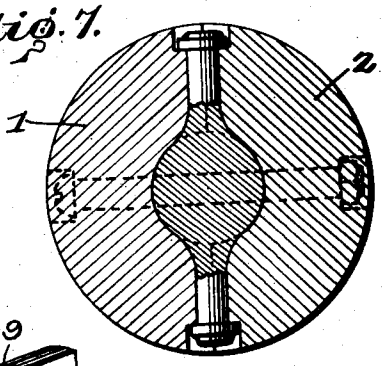


Fig. 4.

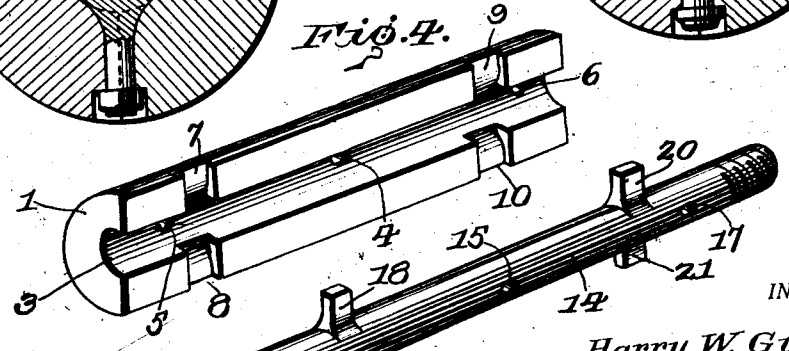
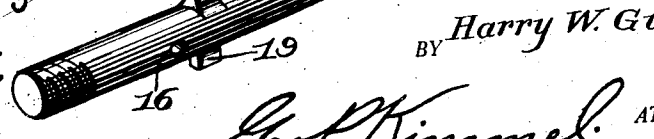


Fig. 5.



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UNITED STATES PATENT OFFICE.

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POWER ROLLER.

Application filed February 25, 1927. Serial No. 170,917.

This invention relates to a power roller for use in connection with headers, combines and other harvesting machinery devices wherein elevator canvas is operated.

Power rollers for the purpose aforesaid are of the composite type, metal and wood, to properly elevate and rotate the canvas, which carries the cut and headed grain. The ordinary power roller for the purpose aforesaid and now in general use comprises a wooden body portion, a metallic shaft and lateral cross bars or rivets engaging the shaft, and with one or both opposite ends of the cross bars riveted through the wood body and the latter is constructed of two sections. This form of power roller is open to a serious objection, in that, experience shows that the constant pressure and vibration shears or breaks off the rivets, releasing the coupling connection between the shaft and wooden body portion and causes more or less constant trouble, and to overcome this troublesome feature, is the primary object of the invention, and therefore the invention has for its object, to provide in a manner as hereinafter set forth, a power roller which will be rigid, will not be affected by vibration, will stand the strain and stress, will materially facilitate the distribution of service when rotating and elevating the canvas by reason of the power thrust upon the roller, and further to avoid the usual breaking and shearing of the rivets or pins now commonly used.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a power roller for the purpose referred to, which is simple in its construction and arrangement, strong, durable, rigid, compact, thoroughly efficient in its use, readily assembled and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to, which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is a fragmentary view, in elevation, of a power roller in accordance with this invention.

Figure 2 is a cross sectional view of a power roller in accordance with this invention and on line 2—2 Figure 1.

Figure 3 is a cross sectional view of a power roller in accordance with this invention and on line 3—3 Figure 1.

Figure 4 is a perspective view of one of the sections of the body portion.

Figure 5 is a perspective view of the metallic shaft.

Figure 6 is a cross sectional view of a power roller in accordance with this invention of a modified form and with the section taken between the transverse median and one end of the roller.

Figure 7 is a cross sectional view, of the form of power roller shown in Figure 6 and taken at the transverse median of the roller.

A power roller, in accordance with this invention, comprises a body portion formed of two like sections 1, 2 of semi-cylindrical cross section and constructed of material other than metal, preferably wood. The inner face of each section of the body portion of the roller is formed with a semi-circular groove 3 at the longitudinal median thereof and extending from one end to the other end of the section. The section at its transverse median is formed with an opening 4 extending from the outer face of the section and communicating with the groove 3. The section is furthermore provided in proximity to each end thereof with a transverse opening extending from the outer face of the section to the groove 3 and the said openings are indicated at 5, 6. Between the openings 4 and 5 and in proximity to the opening 5, the inner face of the section is formed with a pair of transversely extending, opposed spaced grooves 7, 8 and the section between the openings 4 and 6 and in proximity to the opening 6 is formed with a pair of transversely extending, opposed spaced grooves 9, 10. The grooves 7 to 10, inclusive are formed on the inner face of the section and extend from the outer face thereof to the groove 3. The base of each of the grooves 7 to 10 inclusive, diverge in a direction towards the groove 3 and merge into the wall of the latter. The diverging part of the base of each of the grooves 7 to 10 is indicated at 11 and shown in Figure 2. The portion of each of the grooves 7 to 10 other than the diverging part of the

base thereof extends in the same plane throughout as indicated at 12. The grooves 7 to 10 of one section oppose the grooves 7 to 10 of the other section, when the sections are secured together in abutting relation, and each pair of opposed grooves provides what may be termed a socket to receive a coupling member, carried on a shaft of the roller and which will be presently referred to. Each socket in cross section, is of rectangular contour with respect to the form shown in Figures 1 to 5. The outer end of each of the openings 4, 5 and 6 is enlarged, as indicated at 13 Figures 2 and 3.

The metallic shaft is indicated at 14 and in cross section, conforms in contour to the opening formed by the grooves 3 when the sections 1 and 2 are secured in abutting relation. As shown the shaft 14 is of cylindrical cross section and is provided centrally thereof with a diametrically extending opening 15 which registers with the openings 4 of the sections 1 and 2. The shaft 14 in proximity to each end is provided with an opening, and which openings are indicated at 16, 17 and align respectively with the openings 5 and 6 formed in the sections of the roll body. The shaft 14, between the openings 15 and 16 is provided with a pair of integral, laterally extending and oppositely disposed coupling members 18, 19, and the shaft 14 between the openings 15 and 17 is provided with a pair of integral, laterally extending oppositely disposed coupling members 20, 21. Each of said coupling members conforms in contour to the shape of a socket formed by the pair of opposed grooves 7 or 8, or 9 or 10. The coupling members have their outer ends positioned inwardly with respect to the periphery of the body of the roller or in other words the coupling members are of less length than the length of the sockets, but are of a size to snugly engage the walls thereof. As the sockets are of rectangular cross section, the coupling members are of like contour.

The sections 1 and 2 are secured together in abutting relation, and in enveloping position with respect to the shaft 14, by clamping members 22 and each of which consists of a headed bolt provided with a clamping nut. The bolts extend through the openings 4, 5 and 6 of the body section and through the openings 15, 16 and 17 of the shaft 14. The openings 5 of the body sections align and also align with the openings 16 of the shaft 14. The openings 4 of the body sections align and also align with the opening 15 in the shaft, and the openings 6 of the body sections also align and align with the opening 17. The enlarged portions at the outer ends of the opening provide shoulders 23 and 24 and abutting against the shoulders 23 are the heads of the bolts and abutting against the shoulders 24 are the clamping nuts. The bolts are of less length than the diameter of the body portion and when the sections of the latter are secured in abutting relation the heads of the bolts, as well as the clamping nuts, are arranged inwardly with respect to the outer periphery of the body portion.

The construction illustrated in Figures 6 and 7, is the same as that referred to in connection with Figures 1 to 5, with this exception that the coupling members 25 which are integral with the shaft, are of cylindrical cross section and the sockets in which the coupling members extend are of like contour The coupling members 25 at their outer ends are threaded, as indicated at 26. The sockets in which the coupling members are mounted, and which are indicated at 27 have the outer ends thereof enlarged as at 28 to provide shoulders 29 and against which abut clamping nuts 30 carried on the threaded outer end 26 of the coupling members 25. Otherwise than that as stated the construction shown in Figures 6 and 7, is the same as that shown in Figures 1 to 5 and corresponding parts are provided with like reference characters.

The construction of the power roller, in accordance with this invention, provides a rigid roller that will not be effected by vibration, will stand the strain and stress, will materially facilitate the distribution of service in rotating and elevating canvas by reason of the power thrust upon the roller and further will avoid the usual breaking and shearing of the rivets or pins now present in the ordinary type of power roller used, and therefore it is thought the many advantages of a power roller, in accordance with this invention, can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the invention as claimed.

What I claim is:

1. A power roller comprising a body portion provided with diametrically extending sockets and openings, the walls of said openings in proximity to their outer ends provided with shoulders, a shaft mounted in and extending from the body portion and formed with integral coupling members projecting into said sockets, holdfast devices extending through said shaft and into said openings and further abutting against the shoulders formed on the walls of the openings, said coupling members of a length to have their outer ends positioned inwardly of the outer ends of said sockets.

2. A power roller comprising a body portion formed of a pair of abutting sections each provided with a plurality of diametri-

cally disposed openings and further having its inner face formed with a pair of aligning spaced grooves, the grooves of one section registering with the other section to provide sockets, said sections of semi-circular contour, a shaft extending through said body portion when the sections thereof are in abutting relation, said shaft formed with integral coupling members extending into said sockets, the openings in one of said sections aligning with the openings of the other of said sections, said shaft provided with openings aligning with the openings in said sections, and holdfast devices extending through the aligning openings for coupling said sections in abutting relation and further for securing them to said shafts.

In testimony whereof, I affix my signature hereto.

HARRY W. GUTTRIDGE.