Aug. 2, 1949. G. J. SCOFIELD 2,478,059

INTERCHANGEABLE GEARING

Filed June 22, 1945

Fig. 3.

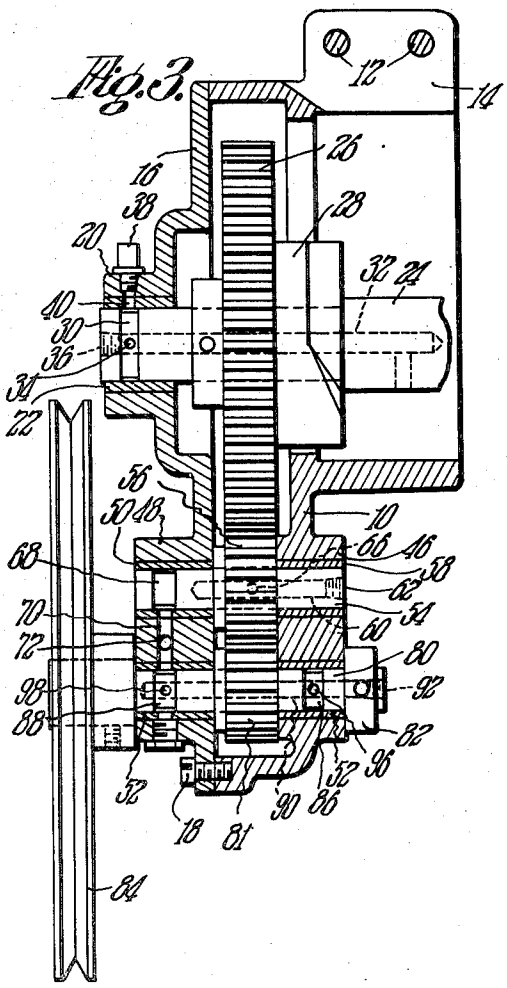
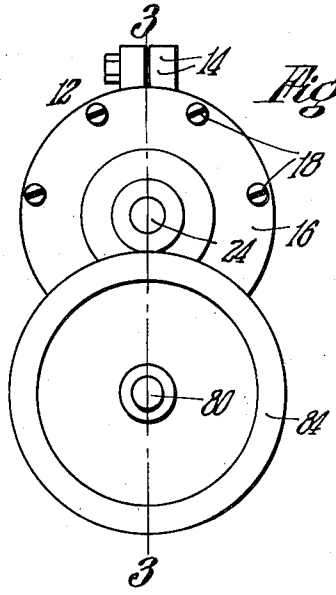


Fig. 1.



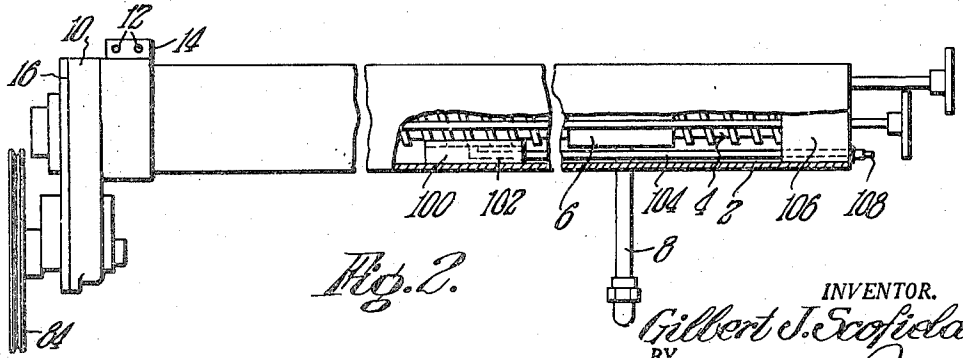


Fig. 2.

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Patented Aug. 2, 1949

2,478,059

UNITED STATES PATENT OFFICE

2,478,059

INTERCHANGEABLE GEARING

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Application June 22, 1945, Serial No. 600,930

1 Claim. (Cl. 74—325)

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This invention relates to improvements in cleaning apparatus and the principal objects of the invention are directed to the provision of novel driving and lubricating means for cleaning apparatus such as shown in U. S. Letters Patent No. 1,888,575, issued to me on November 22, 1932.

The cleaning apparatus of the patent referred to is particularly adapted for cleaning the wire or the felt of a paper-making machine and may be driven from some rotating part of said paper-making machine and said cleaning apparatus may be driven. To facilitate obtaining of the desired direction of rotation of the cleaning apparatus from the paper machine with which the cleaning apparatus is used and to efficiently lubricate the apparatus the novel features of this invention are directed.

With the foregoing and various other novel features and advantages and other objects of my invention as will become more apparent as the description proceeds, the invention consists in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more particularly pointed out in the claim hereunto annexed and more fully described and referred to in connection with the accompanying drawings wherein:

Fig. 1 is an end elevational view of driving mechanism for cleaning apparatus embodying the novel features of the invention;

Fig. 2 is a small scale elevational view of a cleaning apparatus embodying the novel features of the invention with parts in section for clearness; and

Fig. 3 is a sectional elevational view on the line 3—3 of Fig. 1.

Referring now to the drawings more in detail, the invention will be fully described.

The cleaning apparatus above referred to includes an elongated cylindrical casing 2. A screw is journalled for rotation in a member 106 and as it rotates it moves a sleeve 6 back and forth in opposite directions accordingly as the screw is rotated in opposite directions. A discharge tube 8 is carried by the sleeve 6 and said tube is supplied with cleaning fluid as set forth in the referred to patent.

The direction of rotation of the screw is changed by the operation of gear mechanism and clutch mechanism connects a driven shaft to the gear mechanism. This construction is not shown as it forms no part of the present invention but is referred to since the driving mechanism hereof is adapted to operate the said driven shaft.

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According to this invention, a housing 10 is provided which receives an end of the casing 2. Said housing is split at its upper side and bolts 12 extend through lugs 14 to clamp the housing to the casing.

A cover 16 is provided for the housing and may be secured thereto in any well known manner as by screws 18. The cover and housing provide a tight enclosure.

A hub 20 on the cover 16 has a bushing 22 therein and a driven shaft 24 is rotatable therein. A driven gear 26 and clutch member 28 are fixed to the shaft 24. The said shaft 24 and clutch member 28 are those previously referred to.

Said shaft 24 is provided with a circumferential oil groove 30 which is in communication with an axial channel 32 through one or more passageways 34. Said channel at the end of the shaft is closed by a screw plug 36. A fitting 38 is connected by a passageway 40 to the groove 36 so that lubricant may be forced under more or less pressure through said fitting and into the channel and groove.

Hubs 46 and 48 on the housing 10 and cover 16 have intermediate aligned bearings 50 and lower aligned bearings 52.

A shaft 54 is journalled in the bushings 50 and a gear 56 thereon is in mesh with the driven gear 26. Said shaft 54 is provided with an axial oil channel 60 with a plug 62 in the end thereof. A passageway 66 is in communication with the channel 60. Said shaft 54 is also provided with a circumferential groove 68 which is in register with a passageway 70 that is supplied with lubricant through a transverse passageway 72.

A drive shaft 80 is rotatable in bushings 52 which has a collar 82 and a wheel 84 fixed to opposite ends thereof. Circumferential grooves 86 and 88 are provided in the shaft 80 which is also provided with an axial channel 90 that has a plug 92 in the end thereof. Passageways 94 and 98 connect the channel 90 with the grooves 86 and 88. A pinion 81 is fixed to the shaft 80 which meshes with pinion 56 as the parts are shown in the drawing.

The shaft 80 may be driven by other means than the wheel 84 such as a chain and sprocket or whatever may be desired and in the ordinary case said shaft will be driven from some rotating element of the paper making machine with which the apparatus is used.

The shaft 24 of the apparatus must, however, be rotated in a certain direction but frequently the rotating element of the paper machine ro-

tates in the wrong direction for driving said shaft **24** in the certain direction.

The construction is such that the shaft **80** may be employed in the upper intermediate bearing construction so that its pinion meshes with the gear **26**. Or it may be used in the lower bearing construction wherein the gear **26** is driven through idler pinion **56**. The structure facilitates easy and ready assembling of the shaft **80** in those bearings which will provide the desired direction of rotation of the shaft **24** from the available driving element of the paper machine.

In any case, the shafts are adequately lubricated by the means shown and described so as to eliminate wear and overcome the difficulties usually brought about by lack of adequate lubrication.

A block **100** is provided in the casing **2** with an upper surface closely adjacent the screw **4**. Said block has a bore **102** and a pipe **104** extends therefrom through a block **106** in the end of the casing **2** and carries a fitting **108** through which lubricant may be forced which will be taken up by the screw for lubricating the coacting surfaces of the screw and sleeve **6**.

The invention may be embodied in other specific forms without departing from the essential characteristics thereof. Hence, the present embodiments are therefore to be considered in all respects merely as being illustrative and not as being restrictive, the scope of the invention being indicated by the appended claim rather than by the foregoing description, and all modifications and variations as fall within the meaning and

purview and range of equivalency of the appended claim are therefore intended to be embraced therein.

What it is desired to claim and secure by Letters Patent of the United States is:

Apparatus for cleaning the movable wire or felt of paper making apparatus comprising in combination, an elongated hollow cylindrical casing, a housing construction secured to one end of said casing, said housing having a driven shaft journalled therein, a gear of a certain diameter fixed to said driven shaft, aligned intermediate bearings in said housing, aligned lower bearings in said housing, an idler shaft having an idler gear fixed thereon, a driving shaft having a driving gear and a wheel fixed thereto, said aligned and lower bearings arranged to receive either said intermediate or driving shafts for rotation therein, said driving shaft, intermediate and lower bearings being relatively spaced and said driven gear, idler gear and driving gear being relatively proportioned whereby said driving shaft may rotate in said lower bearings to rotate the driven gear or rotate in the said intermediate bearings to engage and rotate said driven gear.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,354,300	Bock	July 25, 1944