

Apr. 24, 1923.

1,452,968

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PUMP OPERATING MECHANISM

Filed Aug. 18, 1922

2 Sheets-Sheet 1.

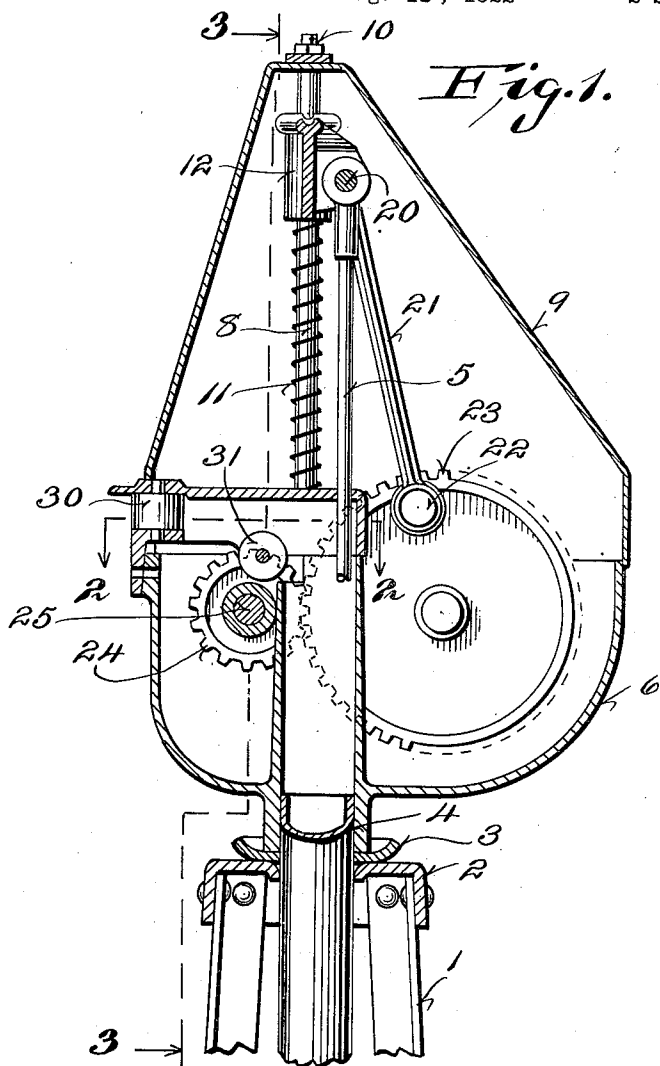


Fig. 1.

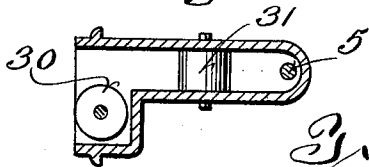


Fig. 2.

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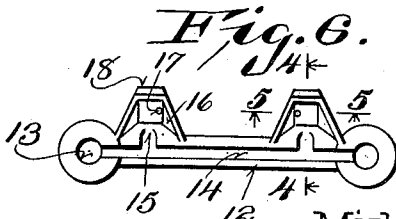
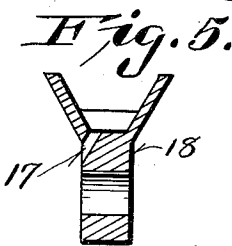
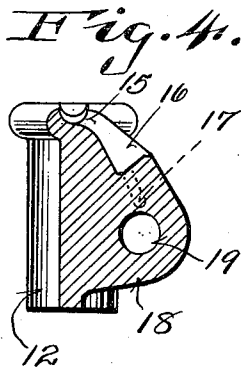
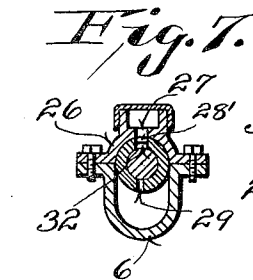
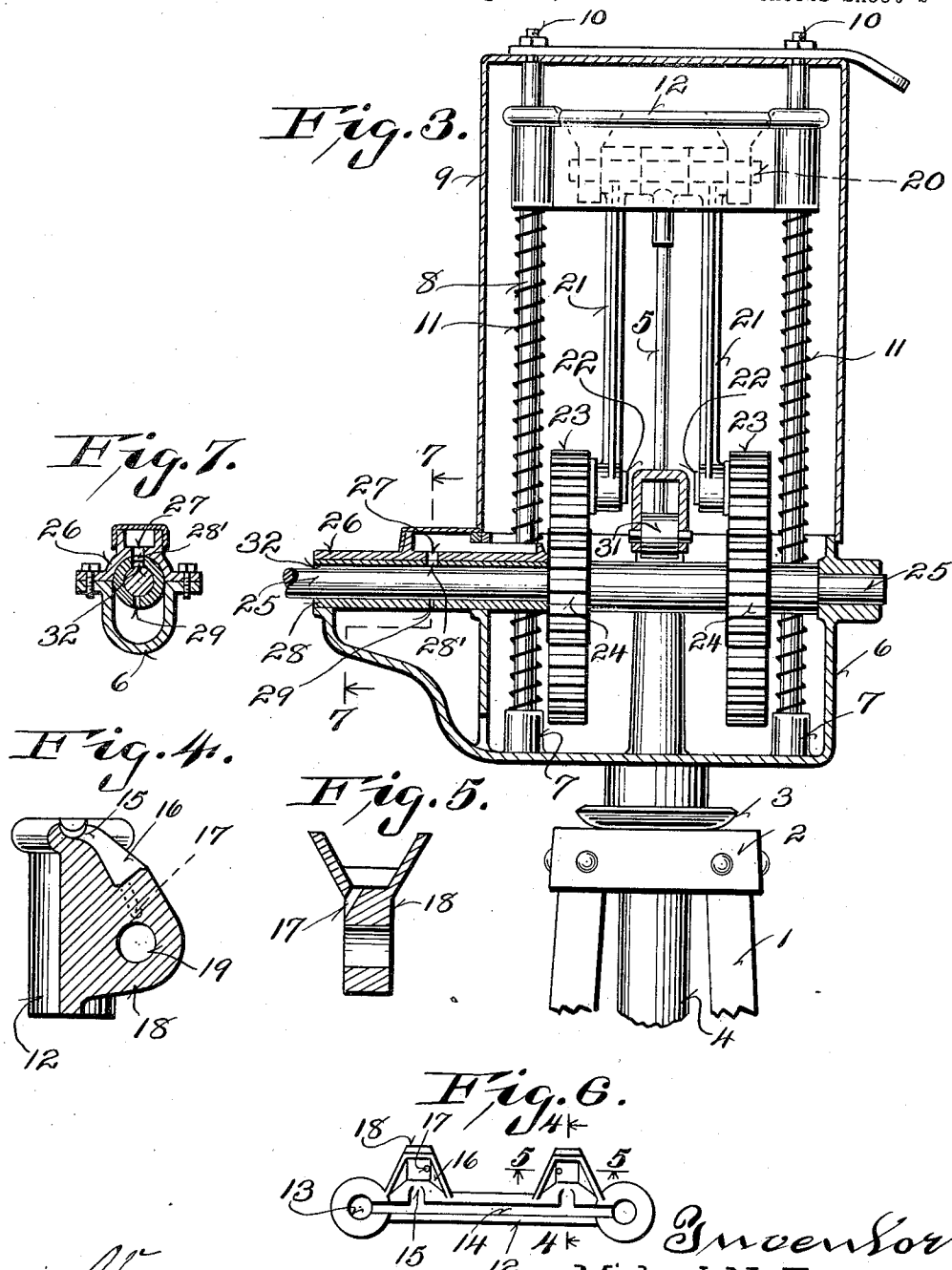
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

MICHAEL N. FREEMAN, OF RACINE, WISCONSIN, ASSIGNOR TO FREEMAN MANUFACTURING CO., OF RACINE, WISCONSIN, A CORPORATION OF WISCONSIN.

PUMP-OPERATING MECHANISM.

Application filed August 18, 1922. Serial No. 582,632.

To all whom it may concern:

Be it known that I, MICHAEL N. FREEMAN, a citizen of the United States, and resident of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Pump-Operating Mechanism; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention is an improvement in pump operating mechanism.

It relates more especially to the lubricating of pump operating mechanism in wind mill structure.

It has for its object the lubricating of the cross head and the shaft connected with the pump rod of the wind mill. It contemplates the continuous feeding of lubricant contained in a housing to a cross head and associated parts.

Another important object of my invention is a feeding of lubricant to the motor shaft. An additional object is the utilization of the splashing action of gear wheels to feed lubricant to the motor shaft.

Other objects will appear as the description proceeds. Reference is had to the accompanying drawings, in which:—

Figure 1 is a central vertical cross section thru the pump operating mechanism.

Figure 2 is a horizontal cross section on the line 2—2 of Figure 1.

Figure 3 is a cross section on the line 3—3 of Figure 1.

Figures 4, 5, and 6, are details of the cross head showing the lubricant feeding grooves and ducts.

Figure 7 is a cross section on the line 7—7 of Figure 3.

Supports 1 have riveted thereto a ferrule 2 upon which is positioned a lubricating wear plate 3 closely surrounding pump pipe 4 in which pump rod 5 is reciprocated. Contacting with the wear plate 3 is a housing 6 containing lubricant not shown. Integral with housing 6 are supports 7 for guide rods 8. A light metallic housing member 9 is fitted upon housing 6. Guide rods 8 are affixed thereto shown at 10. Encircling the guide rods 8 and closely fitting there against are spiral springs 11 exerting pressure upon a cross head 12 slidable on said guide rods. The upper surface of cross head

12 is shown in Figure 6. Connected with chambers 13 in the cross head is a groove 14 leading by channels 15 to cups 16. Ducts 17 lead from the bottom of the cups through lugs 18 integral with said cross heads. Aligned openings 19 are formed in the lugs to receive a shaft 20 to which the pump rod is connected. Pitmen 21 are also operatively mounted on the shaft and are connected to pins 22 on gear wheels 23. Gear wheels 24 mesh with these gears and are operated by shaft 25 receiving power from the motor. A plate 26 is located in the housing and has an aperture 27. Bushing 28 has an opening 28' to register with aperture 27 and an additional and smaller aperture 29. Opening 28' communicates with a longitudinal groove 32 adapted to receive oil through aperture 28' and spread it along shaft 25.

Rotation of shaft 25 operates the gear wheels and causes a splashing of the lubricant contained in the lower portion of the housing some of which is received upon plate 26 and drains through apertures 27 and 28' onto shaft 25 from which excess oil is permitted to drain through aperture 29.

The rotation of shaft 25 operating the gears causes reciprocation of pitmen 21 and cross head 12. This causes a compression of spiral springs 11. Alternate compressions and expansions of the springs operate to feed the lubricant in the bottom of the housing along guides 8 to the cross head from where it is fed through groove 14 and channels 15, thence through ducts 17 to points adjacent shaft 20. In this manner shaft 20 is lubricated. Wheels 30 and 31 relieve friction on a chain not shown which operates in a manner common in the art to throw the motor in and out of the wind.

In this manner the power shaft, the cross head, and shaft 20 are lubricated continuously and oil is communicated to all vital friction receiving portions of the device. Springs 11 tend to stabilize the device and give it a better balance as their force is useful in counteracting the weight of the cross head and associated parts on the upward movement of the cross head. This weight is relatively great.

I claim as my invention:—

1. In pump operating mechanism, parallel guide rods, a cross head slidable thereon,

and springs on said guide rods and engaging said cross head for feeding lubricant to said cross head.

2. In pump operating mechanism, parallel guide rods, a cross head slidable thereon, springs on said guide rods and engaging said cross head for feeding lubricant to said cross head, said cross head having a groove

on its upper surface, a lug on said cross head having a duct communicating with said groove, a shaft mounted in said lugs adjacent to said ducts. 10

In testimony that I claim the foregoing I have hereunto set my hand at Racine, in the county of Racine and State of Wisconsin. 15

MICHAEL N. FREEMAN.