

O. L. HUFFMAN.
POWER TRANSMITTING DEVICE.
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1,362,700.

Patented Dec. 21, 1920.

Fig. 1

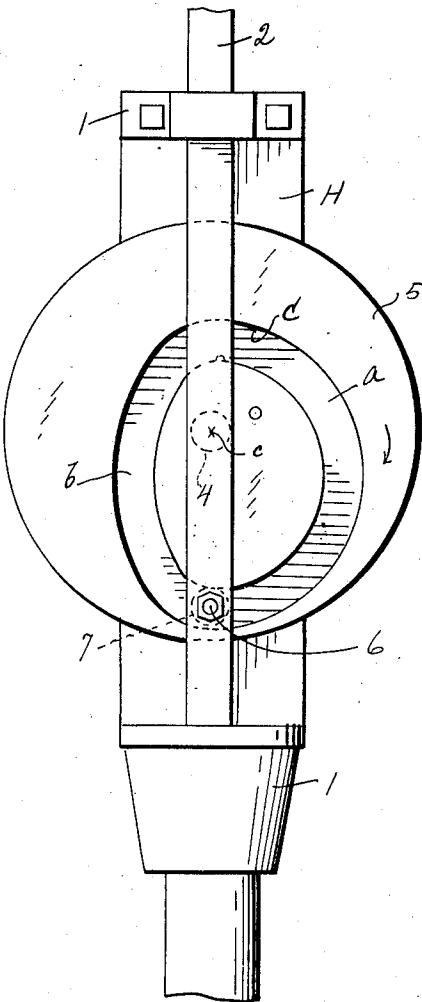
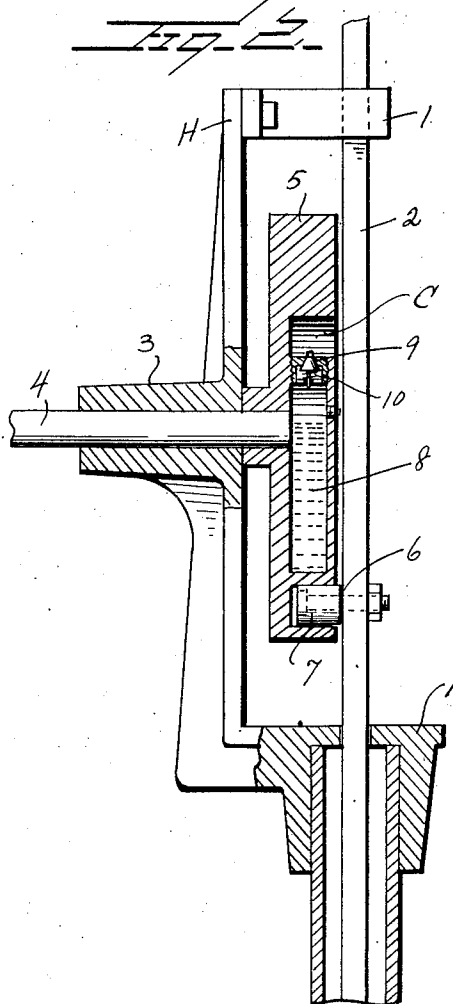


Fig. 2



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POWER-TRANSMITTING DEVICE.

1,362,700.

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To all whom it may concern:

Be it known that I, ORLA L. HUFFMAN, a citizen of the United States, residing at Weatherford, in the county of Potter and State of Texas, have invented certain new and useful Improvements in Power-Transmitting Devices, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to certain improvements in power transmitting means, and it is an object of the invention to provide a novel and improved device of this general character which serves to convert rotary movement into reciprocatory movement.

15 Another object of the invention is to provide a novel and improved device of this general character wherein the rotary element co-acts with the reciprocating element in such a manner whereby the speed of movement of the reciprocating member in one direction is greater than in the opposite direction.

20 An additional object of the invention is to provide a novel and improved device of this general character wherein the reciprocating member is mounted for movement in a vertical path and wherein the rotary member coacts with the reciprocating member in such manner to impose increased pull upon the reciprocating member.

25 The novel features of my invention will hereinafter be definitely claimed.

30 In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawing, wherein

35 Figure 1 is a fragmentary view in elevation illustrating a power transmitting means constructed in accordance with an embodiment of my invention, and

40 Fig. 2 is a view partly in side elevation and partly in section of the structure as illustrated in Fig. 1.

45 As disclosed in the accompanying drawing, H denotes a head of a type generally employed in connection with windmills, and is provided with the vertically spaced bearing 1 for the reciprocating member or pump rod 2. The head H at a point substantially midway of the bearing 1 is provided with a journal or bearing 3 for a shaft 4, and which shaft is adapted to be rotated in a conventional manner under the influence of a wind vane or wheel.

50 The shaft 4 extends inwardly of the head

H and said end portion is engaged with the axial center of a vertically disposed disk or wheel 5.

60 Produced in the outer face of the wheel or disk 5 is a cam groove C. A portion *a* of the groove C at one side of the axial center of the disk or wheel 5 is semicircular in form and on a predetermined radius, and said portion *a* is in continuity with a portion *b* of said cam groove and of a radius equal to twice the radius of the portion *a*.

65 The rod 2 is provided with an inwardly directed stub shaft 6 or the like upon which is loosely mounted a roller bearing 7 or the like, and which bearing rides within the cam groove C.

70 As the disk or wheel 5 rotates in one direction the portion *a* of said groove causes the rod 2 to move upwardly with a maximum of pull. When the roller 7 enters within the portion *b* of the groove, the rod 2 travels downwardly and at a materially increased speed whereby the functioning of the rod 2 is materially facilitated.

75 As is illustrated in Fig. 1 of the accompanying drawing, it is to be noted that the axial center *c* of the wheel or disk 5 is in relatively close proximity to an extremity of the portion *a* of the groove C. By this means increased leverage is provided which materially facilitates the disk or wheel 5 to impart the desired upward movement to the rod 2.

80 As is illustrated in Fig. 2 of the accompanying drawing, the portion of the disk or wheel 5 defined by or surrounded by the cam groove C is hollow to afford an oil chamber 8. A peripheral wall of the chamber 8 and at a point substantially at a junction of the portions *a* and *b* of the groove, is provided with a discharge opening 9 normally closed by a spring-pressed valve 10. The valve 10 when in closed position extends slightly beyond the periphery of said chamber 8 so that as the roller 7 passes thereover, the valve 10 will be moved inwardly into an open position so that the oil within the chamber 8 will be intermittently discharged and whereby said groove C is maintained lubricated to such an extent as to materially facilitate the operation of my improved device.

85 It is preferred that the opening 9 be located at the junction between the portions *a* and *b* of the groove C in close proximity to the axial center *c* so that when the device

is inoperative, said opening 9 will be upwardly disposed so that wastage of the oil within the chamber 8 is eliminated. This position of the opening 9 is accomplished automatically as the weight of the rod 2 and the parts concomitant therewith causes the bearing 7 to assume its lowermost position when the device becomes inoperative.

From the foregoing description, it is thought to be obvious that a power transmitting device constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof, and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

1. A device of the character described, comprising a member supported for reciprocatory movement, a rotary member, said rotary member being provided with a cam groove, a part carried by the reciprocating member and traveling within the cam groove, a portion of the rotary member surrounded by the cam groove being hollow to afford a chamber adapted to contain lubricant, a wall of said chamber being provided

with a port discharging within the groove, a valve normally closing the port and having a portion extending within the groove when in closed position, the part carried by the reciprocating member and traveling within the groove forcing said valve inwardly to an open position when said part passes over the extended portion of the valve.

2. A power transmission device of the character described comprising a member supported for reciprocatory movement, a disk supported for rotary movement, a face of said disk being provided with a cam groove, opposed portions of the groove being on different radii with a junction of said portions in close proximity to the axial center of the disk, and a part carried by the reciprocating member and extending within the groove, a wall of said chamber being provided with a port discharging within the groove at the junction of the portions of the groove in close proximity to the axial center of the disk, a valve normally closing the port and having a portion extending within the groove when the valve is in closed position, the parts carried by the reciprocating member and traveling within the groove forcing said valve inwardly to open position when said part passes over the extended portion of the valve.

In testimony whereof I hereunto affix my signature.

ORLA L. HUFFMAN.