G. O. FLOGLAND.

SAFETY COUPLING.

APPLICATION FILED SEPT. 2, 1913.

1,167,285. Patented Jan. 4, 1916.

Fig. 1.

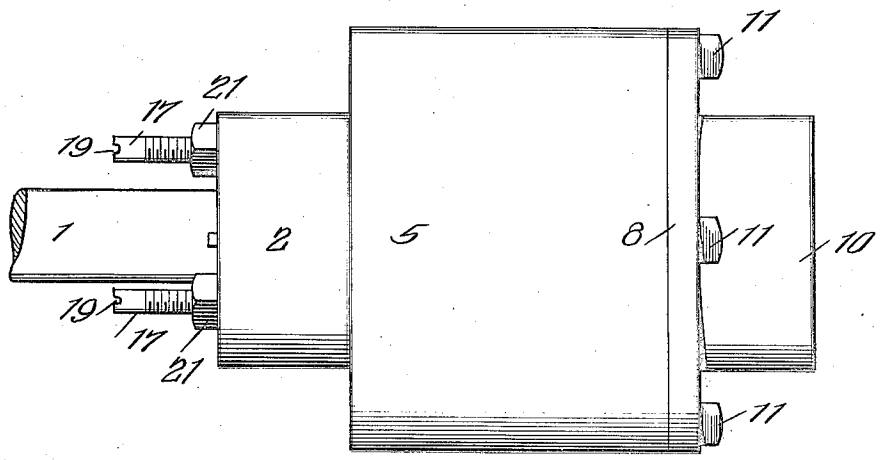


Fig. 2.

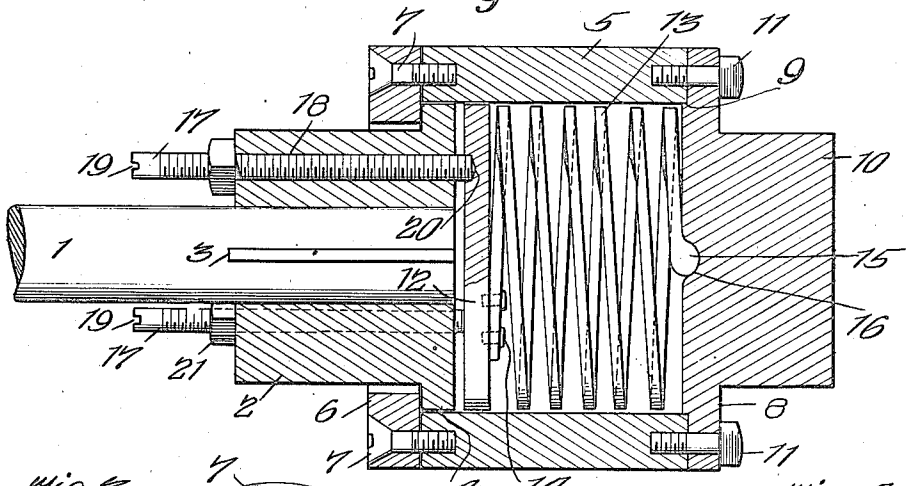


Fig. 3.

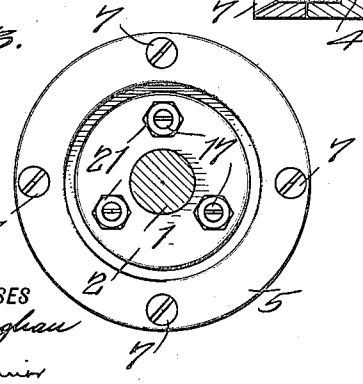
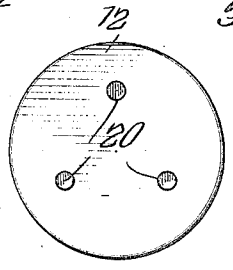


Fig. 4.



WITNESSES

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SAFETY-COUPLING.

1,167,285. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed September 2, 1913. Serial No. 787,647.

To all whom it may concern:

Be it known that I, GUS O. FLOGLAND, a citizen of the United States, and a resident of Minocqua, in the county of Oneida and State of Wisconsin, have invented a new and useful Improvement in Safety-Couplings, of which the following is a specification.

My invention is an improvement in safety couplings of the class adapted for connecting the propeller wheel to its shaft, wherein mechanism is provided for preventing injury to the propeller or the shaft when the propeller strikes an obstruction, the said mechanism being arranged to permit relative movement of the propeller and the shaft when the propeller strikes an obstruction, and wherein the parts will automatically return to their normal position as soon as the wheel is released.

In the drawings:—Figure 1 is a side view of the improved coupling, Fig. 2 is a longitudinal section, Fig. 3 is an end view, looking from the left of Fig. 1, and Fig. 4 is a front view of the disk.

In the present embodiment of the invention, the propeller shaft 1 fits within a collar or sleeve 2, and the said shaft is keyed or feathered to the sleeve or collar by means of keys or feathers 3. At its inner end the sleeve or collar 2 is provided with an annular marginal rib 4, and the said rib is received within a cylinder or drum 5.

A ring 6 is connected with the end of the drum adjacent to the collar 2, by means of screws 7, the said screws passing through openings in the collar and engaging threaded openings in the drum. The heads of the screws are counter-sunk so that the faces thereof are flush with the outer face of the ring. The width of the ring is slightly greater than the thickness of the wall of the drum and the external diameter of the ring is the same as the diameter of the drum. Thus a portion of the ring extends inwardly beyond the inner surface of the drum and engages outside of the rib 4 to limit the outward movement of the collar away from the drum.

A head 8 is connected with the opposite end of the drum, the said head being rabbeted on its inner face to provide an annular rib or shoulder 9, fitting the inner surface of the drum, and the edge of the head is flush with the periphery of the drum. The head is provided with an axial extension 10, and the said extension is adapted for connection with the crank shaft of the engine to rotate the propeller shaft in a manner to be presently described. The head is connected to the drum by means of screw bolts 11, the said bolts passing through openings in the head at the rabbeted portion and engaging threaded openings in the adjacent end of the drum.

A disk 12 is arranged within the drum at the end adjacent to the collar 2, and a coil spring 13 is arranged between the disk and the head 8. One end of the spring is secured to the adjacent face of the disk by means of screws 14 or the like, and the other end of the spring is provided with an enlargement 15, which is received within a recess or depression 16 at the center of the inner face of the head 8.

Threaded rods 17 are passed through openings 18 extending longitudinally of the collar 2, and each of the said rods is of the same diameter throughout its length. Each rod is provided with a transverse kerf 19 at its outer end, and the inner end of each of the said rods engages a recess or depression 20 in the adjacent face of the disk, and a lock nut 21 is threaded on to each of the said rods for engaging the outer end of the collar 2, to lock the rods in place. By means of the threaded rods 17, the tension of the spring 13 may be varied, and the rods also connect the said disk to the collar and indirectly connect the disk to the propeller shaft.

Under ordinary conditions, the engagement of the enlargement 15 of the spring with the recess 16 of the head 8 will constrain the collar 2 and the propeller shaft 1 to rotate with the head 8 and with the extension 10. Should however, the propeller meet with an obstruction, the enlargement 15 will be thrown out of the depression or recess 16 and will release the propeller shaft from the engine. As soon as the propeller is released from the obstruction, the enlargement 15 will engage with the recess and the parts will again rotate together.

I claim:—

1. In a device of the character specified, the combination with the driving shaft and the driven shaft, of a collar keyed to the inner end of the driven shaft and having an annular marginal rib at the end adjacent to the driving shaft, a drum rigidly connected with the inner end of the driving shaft,

the rib of the collar being received within the drum, a retaining ring secured to the end of the drum adjacent to the driven shaft and engaging the rib to prevent displacement thereof from the drum, a coil spring within the drum, a disk adjacent to the collar and to which one end of the spring is secured, rods threaded through the collar longitudinally of the shaft, the disk having depressions for engagement by the rods, and lock nuts on the rods, the end of the spring remote from the disk having an enlargement or head, and the end of the driving shaft having a recess or depression for engagement by the head.

2. A device of the character specified, comprising in combination with the driving shaft and the driven shaft, a collar keyed to the inner end of the driven shaft, a drum secured to the inner end of the driving shaft, a disk within the drum and adjacent to the collar, a coil spring within the drum having one end connected to the disk, a detachable connection between the drum and the other end of the spring, means in connection with the collar for engaging the disk to vary the tension of the spring, said means connecting the disk to the collar, and means for preventing disengagement of the collar from the drum, said means comprising an annular marginal rib at the inner end of the collar, and a retaining ring secured to the end of the drum adjacent to the collar and engaging the outside of the rib.

3. A device of the character specified, comprising in combination with the driving shaft and the driven shaft, a collar keyed to the inner end of the driven shaft, a drum secured to the inner end of the driving shaft, a disk within the drum and adjacent to the collar, a coil spring within the drum having one end connected to the disk, a detachable connection between the drum and the other end of the spring, means in connection with the collar for engaging the disk to vary the tension of the spring, said means connecting the disk to the collar, and means for preventing disengagement of the collar from the drum.

4. A device of the character specified, comprising in combination with the driving shaft and the driven shaft, a drum connected to the inner end of the driving shaft and coaxial therewith, a coil spring within the drum having one end frictionally connected with the drum, a disk rigidly connected with the other end of the spring, means for connecting the disk to the driven shaft, and means for varying the tension of the spring.

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