July 17, 1962 P. W. SIMONDS 3,044,732

WRIST REEL

Filed Aug. 13, 1959

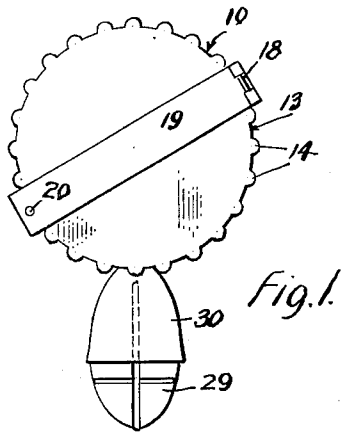


Fig. 1.

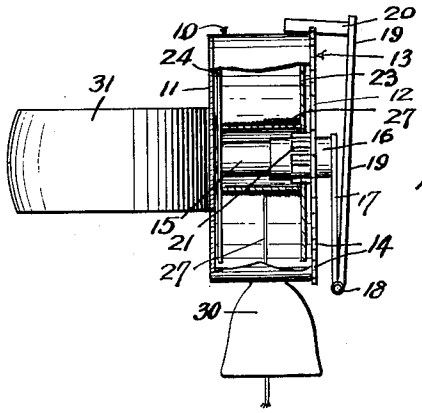


Fig. 2.

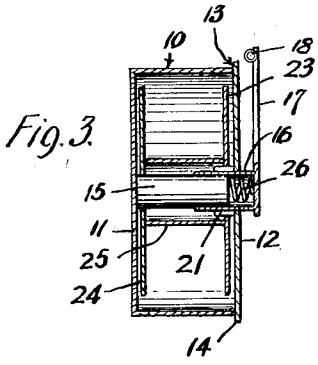


Fig. 3.

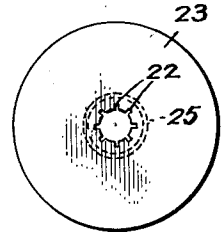


Fig. 4.

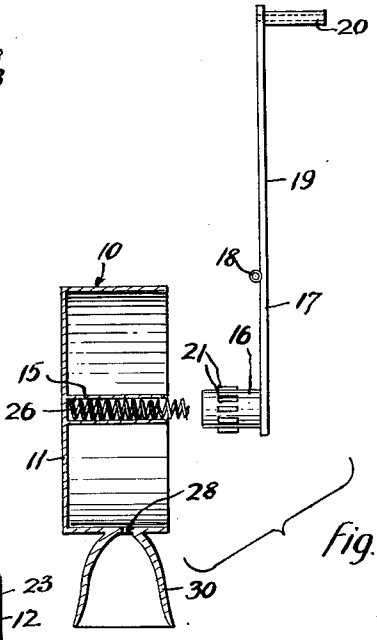


Fig. 5.

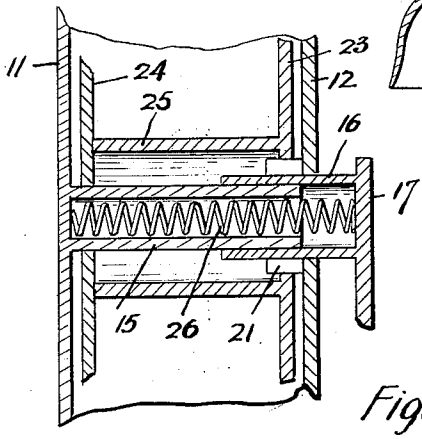


Fig. 6.

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WRIST REEL

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1 Claim. (Cl. 242—96)

This invention is a reel structure for application preferably to the wrist of a user and involves structure permitting of ready application of the reel to the wrist of a person, and which may with equal readiness be removed therefrom, and affords means whereby the other hand of the user may readily manipulate the reel for either winding or unwinding purposes.

The primary object of the invention is to provide a reel of simple and inexpensive construction which may be readily manufactured and marketed at a minimum of cost, which involves an assemblage of parts of simple construction capable of being readily assembled and which operates effectively in producing the reeling or unreeling operations.

A further object of the invention is to provide a reel structure wherein the movable parts thereof are normally positioned so as to positively lock the winding shaft with the reel, but may be quickly and easily operated to release the shaft from the winding mechanism to permit automatic unreeling.

A further object of the invention is to provide a reel of the character thus generally stated wherein means are provided for positively locking the reel against unwinding operations at a desired time, which means may be quickly actuated to release the winding handle from the drum to bring about either reeling or unreeling operations.

With the foregoing objects in view, together with others which will appear as the description proceeds, the invention resides in the novel construction, combination and arrangement of parts, all as will be described more fully hereinafter, illustrated in the drawings, and particularly pointed out in the claim.

In the drawings:

FIG. 1 is a side elevation of a reeling device constructed in accordance with the invention,

FIG. 2 is a view taken at right angles to the showing in FIG. 1 with the reel casing broken away to show the parts in the position they will assume when the reel has been operated to tension the string or cord and with the operating handle in locked position,

FIG. 3 is a view similar to FIG. 2 but with the winding sleeve shown in section to indicate how the teeth thereof interengage with the teeth of the reel or drum,

FIG. 4 is an end elevation of one side of the reel or drum,

FIG. 5 is a detail sectional view taken through the drum and illustrating the tubular shaft in which the expansion spring is seated, and

FIG. 6 is an enlarged fragmentary sectional view taken centrally through the casing, drum and winding sleeve.

As has been heretofore stated, the reel of my invention is adapted particularly for application to the wrist of a user, leaving one hand free to operate the reel. A reel of this general construction, with a cord attached to the drum, may be equipped with means whereby objects floating, dropped or otherwise out of reach, may be conveniently and easly retrieved, where for instance, a grapple or other article engaging device may be attached to the free end of the cord. Its use could also be readily extended to the reeling or unreeling operations of measuring bands or tapes as will be readily understood.

Involved in the construction of my improved reel is a casing or housing indicated generally at **10** which is of relatively flat cylindrical form having bottom and cover plates **11** and **12** respectively for its ends corresponding

with the shape of the housing or casing. The cover plate **12** is of slightly greater diameter than the housing to provide a flange **13** provided with spaced teeth **14**.

Arranged axially within the housing **10** and secured rigidly at one end to the bottom plate **11** is a hollow shaft **15**, the outer end of which terminates adjacent to the cover plate **12**. The outer end of this shaft is enclosed by a slidable sleeve **16**, the inner end of which extends within the casing **10** while the outer end projects beyond the plate **12** and has rigidly attached thereto one end of an operating lever **17** which has hinged thereto as at **18** a sectional handle **19** equipped at its free end with a hand grip **20** to permit ready rotation of the handle. The hinge **18** is so located that when the handle portion **19** is swung inwardly upon lever portion **17**, the hand grip **20** will engage between the teeth **14** of the cover plate **12** and thus lock the handle against rotative movement.

The sleeve **16** is provided upon its exterior surface and inwardly of its ends with teeth **21** to engage with similar teeth **22** in one plate **23** of a reel or drum, the opposite plate of which is represented at **24**. The plates **23—24** are connected by an axial band **25** constituting the drum upon which the cord or string is to be wound, the plates **23—24** being axially bored to bear respectively upon the exterior of sleeve **16** and the hollow post **15**.

Mounted within the hollow post **15** is an expansion coil spring **26**, one end of which bears against the bottom plate **11** while the opposite end bears against the lever **17** which is rigid with the sleeve **16**. This spring tends normally to force the sleeve in a direction outwardly of the casing or housing **10**, the limit of movement of the sleeve **16** being limited by engagement of the teeth **21** with the inner surface of the cover plate **12** of the casing. However, the teeth **21**, as previously stated, are positioned upon the sleeve inwardly from the ends of the latter so that upon depression of the lever **17** and movement of the sleeve **16** inwardly upon its supporting shaft **15**, the teeth **21** will disengage themselves from the teeth **22** of the reel, thus releasing the latter to free unwinding movement.

In operation, a cord **27** is attached at one end to the drum **25** and passes through a suitable opening **28** in the periphery of the casing **10** so that its free end may be secured to a weight, grapple or other device **29** which may be seated within the socket member **30** rigidly secured to the periphery of the housing **10**. Secured in any desired manner to the exterior surface of the base plate **11** of the housing is a wrist band of conventional form indicated at **31** to be engaged around the wrist of a wearer.

With the parts in the position illustrated in FIGS. 1 and 2 of the drawings, the cord **27** has been wound upon the drum or reel **25** so as to hold the weight **29** securely in position within its retaining socket **30**. When it is desired to release this weight, grapple or whatever it may be, the handle mechanism **17—19** is pressed inwardly against tension of spring **26**, moving the teeth **21** of the sleeve from engagement with the corresponding teeth **22** of the plate **23**. The reel thus released permits the weight to drop from its position within the socket as the cord unwinds. When it is desired to wind the cord upon the reel, presure upon the sleeve **16** is released, whereupon the spring **26** operates to force the sleeve outwardly of the casing, bringing the teeth **21** into interlocking engagement with the teeth **22** of the plate **23** of the reel, whereupon the handle may be bent to extended position upon its hinge **18** and rotative movement applied thereto will bring about a winding action of the drum. When this action is completed, the handle is then bent upon its hinge **18** until the hand grip **20** engages between the teeth **14** of the cover plate, thus locking the reel against rotative movement in either direction.

It is obvious from the foregoing, that I have provided a reel structure of exceedingly simple construction, which is composed of but few simple and inexpensive parts which may be readily assembled and which will be positive and efficient in all its operations. By attaching the wrist band 31 to the casing the reel may be conveniently carried about and will be available for instant operation when required.

I claim:

In a winding reel, a cylindrical casing, parallel bottom and cover plates secured to the ends of said casing and concentric therewith, said cover plate being of greater diameter than said casing and having teeth in its periphery, a hollow shaft of uniform diameter throughout its length affixed at one end centrally of said bottom plate and extending axially thereof toward said cover plate, a reel in said casing comprising a hub portion and spaced apart circular plates one of which has bearing upon said shaft, a sleeve extending slidably through said cover plate and slidably enclosing said shaft, said other reel plate having an opening therein having bearing upon said sleeve, teeth in said bearing opening, an expansion spring in said hollow shaft engaged at one end with said bottom plate and at its opposite end with the interior of said sleeve, teeth on the exterior of said sleeve between the ends thereof normally engaging the teeth of said reel plate and

engaging at one end with said cover plate to limit the outward movement of said sleeve, said sleeve teeth when moved inwardly against tension of said spring being disengaged from the teeth of said reel plate to free the reel for rotation, a lever connected at one end to the outer end of said sleeve with its opposite end disposed slightly beyond the periphery of said cover plate, a handle portion of greater length than the diameter of said cover plate hinged at one end to the said opposite end of said lever, and a hand grip at the other end of said handle portion disposed at right angles thereto to slidably engage with the peripheral teeth of said cover plate when folded upon said lever and to lock said handle and lever against rotation.

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