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3,088,692

REEL

Filed Jan. 12, 1961

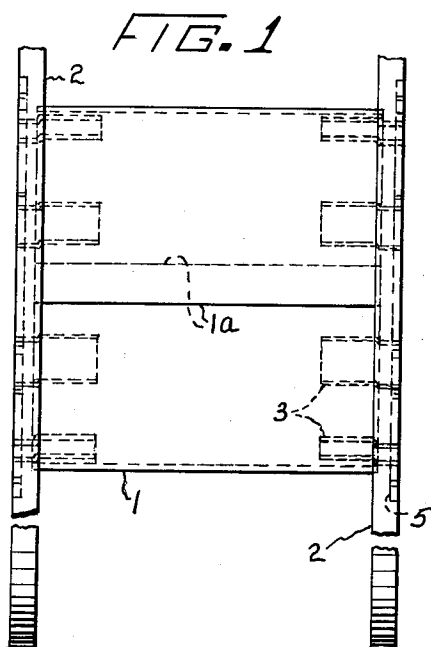
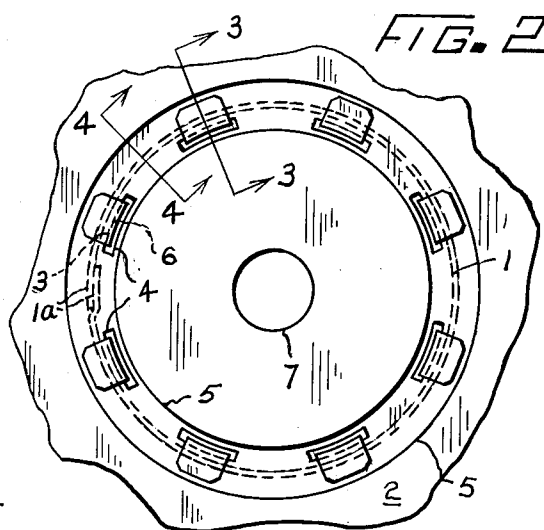


FIG. 3

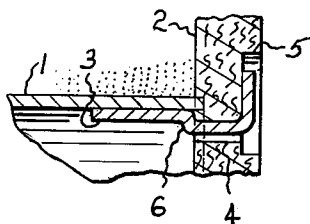
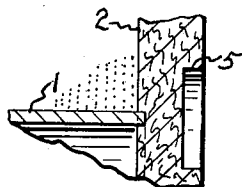


FIG. 4



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3,088,692
REEL

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1 Claim. (Cl. 242-118.6)

This invention relates to reels and particularly heavy duty reels suited to storing and shipping wire in considerable lengths.

An advantageous type of wire-receiving reel has been formed by clamping a sheet metal drum between a pair of end plates considerably thicker than the drum-forming sheet, each having a circular series of slots to receive tongues projecting endwise from the drum, such tongues being bent against the exterior faces of the plates to maintain the assembly. In such a reel, the slots must have a radial dimension at least slightly exceeding the thickness of the tongues, so that the tongues may be concurrently inserted in the slots without undue difficulty. Consequently the tongues have been afforded a slight radial play in the slots, with a resultant slight localized clearance sometimes occurring between the drum and outer margin of one or more of the slots. In winding quite fine wire on the described reel, a short length of such wire may be forced into any such clearance and may thus set up undue resistance when being eventually unwound.

An object of the invention is to eliminate any such localized clearance between the drum and end plates of a reel as may entrap a portion of fine wire and so resist unwinding of the wire.

Another object is to rigidly secure the aforementioned tongues to the interior face of the drum, and to form the tongues transversely thereof with offsets firmly engageable by the end plates to eliminate any fissure or crevice, into which a portion of wire fed to the reel may be so drawn as to eventually interfere with free unwinding of the wire.

These and various other objects are attained by the construction hereinafter described and illustrated in the accompanying drawing, wherein:

FIG. 1 is a side view of a reel having my improved features.

FIG. 2 is a fragmentary end view of the center portion of the reel.

FIG. 3 is an enlarged fragmentary view showing one of the tongues interconnecting the drum with an end plate, the section being taken on the line 3-3 of FIG. 2.

FIG. 4 is a view sectionally showing a portion of the reel between the tongues, as indicated by line 4-4 of FIG. 2.

In these views, the reference character 1 designates a sheet-metal drum, preferably steel, formed by rolling a flat blank (not shown) to cylindrical form, the ends of the blank being lapped as indicated at 1a and securely joined, as by welding. The drum is coaxial with and clamped between a pair of circular end plates 2 of a diameter largely exceeding that of the drum. Said plates are of sheet material much thicker than the drum-forming metal but considerably less dense, and are consequently much stiffer than the drum. A preferred material for the plates is pressed board. To each end of the drum, interiorly thereof, a plurality of equally spaced tongues 3 are rigidly secured, preferably by welding, and similarly project beyond the drum ends. The plates 2 are each formed with a circular series of slots 4, disposed in a pattern conforming to that established by the tongues, so that the latter may project through and beyond the slots as the plates are abutted against the drum

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ends. The dimensions of the slots materially exceed those of the tongues, thus facilitating registration of the tongues with and their concurrent insertion in the slots, as the reel is assembled. In effecting assembly, the end plates are forced against the drum ends under considerable pressure, so as to slightly embed the circular edges of the drum in the inner faces of the plates. In completing assembly, the end portions of the tongues projecting beyond the outer faces of the plates are bent outwardly from the reel axis and against the outer faces of the plates to strongly maintain the assembly. It is preferred to form the outer faces of the plates with circular grooves 5 coaxial with the plates and located to fully receive the bent ends of the tongues. This permits a quantity of the reels to be stacked one on another, using the full seating areas afforded by the plates.

A primary use of the described reel is for winding quite fine wire, and it is vital to avoid any such crevice between the drum and plates as may receive and grip any portion of the wire, since this would set up material resistance to unwinding, and would be likely to cause breakage of a fine wire. Rough usage or heavy stresses may tend to induce a slight displacement of one or more of the tongues in the slots 4 receiving same, with consequent formation of a small crevice or crevices at the juncture of the outer face of the drum with one or both of the plates. It has been found that this may be avoided by forming each tongue with a slight offset 6 located slightly inward from the corresponding end of the drum. These offsets form abutments for the inner faces of the plates, such abutments being firmly engaged by the plates under the heavy inward pressure applied during assembly, so that formation of any crevice is avoided. As before stated, the formation of any crevice at the drum edges between the tongues is avoided by slightly embedding the such edges in the plates.

Preferably, the plates are centrally formed with similar apertures 7 to accommodate a mandrel (not shown) for imparting a rotational drive to the reel.

For a desired capacity of wire, the described reel has ample strength and a minimum of weight.

What I claim is:

A reel comprising a cylindrical drum having substantially circular ends, a plurality of flexible tongues fixed upon and against the interior face of the drum at each of said ends and projecting beyond said ends in the direction of the drum axis and spaced apart circumferentially of the reel, and a pair of plates substantially coaxial with the drum and abutting and penetrated by the drum ends, substantially throughout the circular extent of said ends, each plate being formed with a plurality of circumferentially spaced slots respectively receiving the respective tongues on the adjoined end of the drum, said tongues having outer portions flexed to seat against the outer faces of the plates and being offset toward said axis in an inwardly spaced relation to the drum ends, such offsets forming abutments engaged by the inner faces of the plates, whereby the drum ends penetrate the plates in an outwardly spaced relation to the offsets and the drum is reinforced by the tongues against radial flexure.

References Cited in the file of this patent

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