May 26, 1953 F. KOCH 2,639,871

STOCK REEL

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Fig. 2.

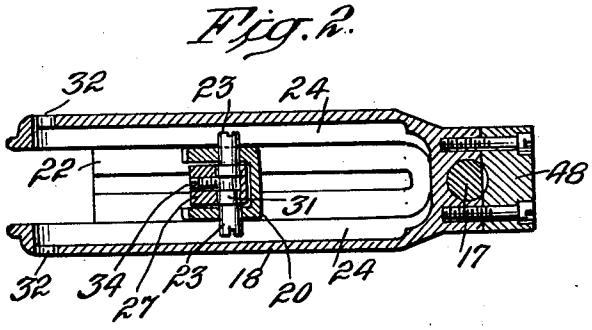


Fig. 1.

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Fig. 5.

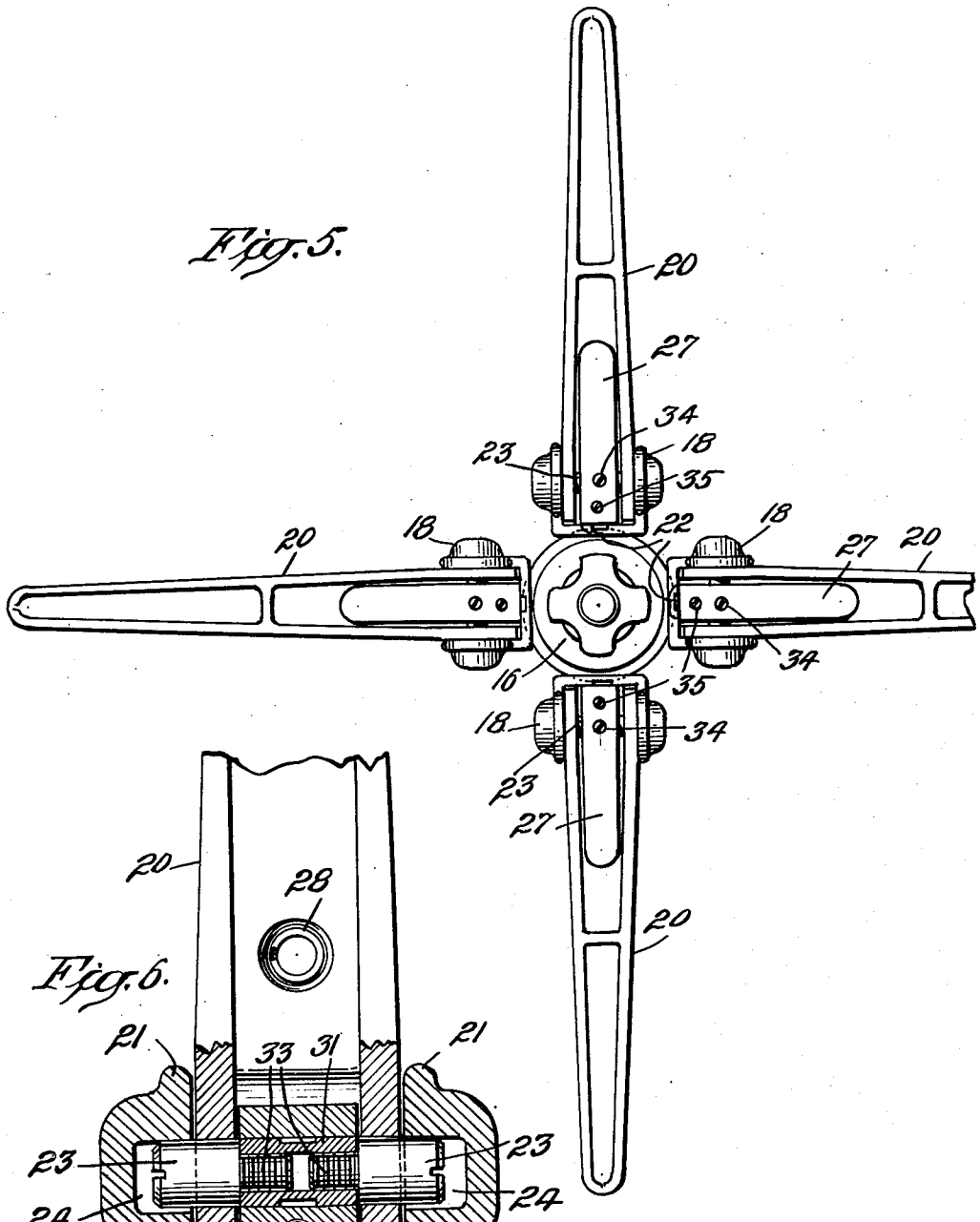


Fig. 6.

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UNITED STATES PATENT OFFICE

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STOCK REEL

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8 Claims. (Cl. 242—114)

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The invention disclosed in this patent relates to stock reels of the type disclosed in Borton patents 2,097,142 of October 26, 1937, and 2,326,092 of August 3, 1943, in which an open center coil of stock is supported on radially adjustable arms and confined thereon by axially adjustable fingers.

In the handling of heavy coils of stock, difficulty may be experienced in placing the coil in supported relation on the carrying arms and in fitting the coil snugly into fully seated position on the arms.

Objects of the present invention are to facilitate the locating and setting of the coils in proper position on these reels.

Further special objects of the invention are to provide such mechanism in a simple, practical form which will not add materially to the cost of the reel.

Particular objects of the invention also are to provide coil guiding, supporting and confining mechanism which will be quickly and easily adjustable to the various widths and sizes of coil stock intended to be handled.

Other desirable objects attained by the invention are set forth or will appear in the course of the following specification, in which the various features of the invention are described and claimed.

The drawings accompanying and forming part of the specification illustrate certain present preferred embodiments of the invention. Structure, however, may be further modified and changed, all within the true intent and broad scope of the invention as hereinafter defined and claimed.

Fig. 1 in the drawings is a broken part sectional side view of the reel, showing in broken lines how the coil confining fingers may be slid outward and folded inward to pass the coil onto the bearers or supporting arms;

Fig. 2 is a horizontal sectional view as on substantially the plane of line 2—2 of Fig. 1, showing the pivotal and sliding mounting of the coil confining fingers in the coil supporting arms;

Fig. 3 is a broken sectional detail showing a coil confining finger slid outward to the end of its travel and being pivoted downwardly to line it up with the coil supporting arm;

Fig. 4 is a similar view showing the finger folded all the way downward and then slid inward to the inner limit of travel in the coil supporting arm;

Fig. 5 is a broken front elevation of the reel

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with the coil confining fingers in the normal upstanding relation;

Fig. 6 is an enlarged broken sectional detail as on substantially the plane of line 6—6 of Fig. 2, showing the eccentrically adjustable mounting for the latch lever of one of the coil confining fingers.

The reel illustrated comprises in the main a spindle 15 on which is rotatably mounted a hub 16 carrying radial spokes 17 on which the laterally extending coil supporting arms 18 are radially adjustable.

Coils placed on these supports are positioned at the back by the sleeves 19 engaged over the spokes and forming part of the supporting arms, and at the front by radially extending fingers 20 carried by and laterally adjustable on the supporting arms.

A special feature of the present invention is that these coil confining fingers are mounted so that they may be turned down or folded inwardly as shown in broken lines in Figs. 1 and 7, to form an extended core over which a coil of stock may be guided, supported and slipped into position over the carrier or supporting arms 18.

This is accomplished by making the coil supporting arms of channel cross section, arranged with the channels opening radially outwardly and providing opposite parallel spaced side walls 21, Fig. 6, connected by bottom or inner walls 22 forming guideways and holding means for the coil confining fingers 20.

In the first illustrated form of the invention shown in Figs. 1 to 6, the fingers 20 are slidingly and pivotally held in the guideways by having pivot studs 23 projecting from opposite sides, at inner ends of the same, into grooves or slots 24 provided in the adjoining side walls 21 of the coil supporting bearers 18.

These grooves 24 in the side walls of the supporting arms are shown as extended laterally beyond the ends of the bottom walls 22 connecting said side walls to permit the fingers, when pulled outwardly to the full extent indicated in Fig. 3, to be rocked downwardly or inwardly to line up with the channels and to be then slipped inwardly into the channels as shown in Fig. 4, where they will then be held in alignment with and projecting beyond the ends of the arms.

In this folded down condition the fingers 20 thus supported in the arms, will form rigid extensions for guiding the coil over and into supported relation on the arms.

To facilitate this guiding action the fingers

are shown as having beveled or tapered end portions 25 which will act in the capacity of wedges for assisting the locating of the coil over the same.

After a coil of stock has been slipped over the folded fingers into position on the arms, these fingers, lying free in the guiding channels and therefore clear of the coil supported on the arms, may be pulled outwardly to the extent shown in Fig. 3 and then be rocked radially into the coil confining position shown in Fig. 1, and slid inwardly in the guide channels as far as required to hold the coil properly backed up against the bearer sleeves 19.

In this coil confining relation the fingers 20 cannot be folded down because the inner end portions 26 of the same will directly overlie the bottom walls 22, as shown in Fig. 1.

To prevent any loosening or side slip of the coil on the reel, means are provided for locking the fingers in the coil holding positions.

In the first embodiment illustrated, such means are shown in the form of thumb levers or triggers 27 pivotally supported by studs 23 and tensioned by springs 28 to have their inner ends at 29 make binding engagement with the bottom walls 22 of the guide channels.

These spring pressed levers are shown as beveled at 30 from the pivotal points outwardly to the holding ends 29 so that they will operate as spring pressed pawls when the fingers are slid inwardly in the guide channels as in Fig. 1, but bind and oppose any outward shifting movement.

The ends of these spring pressed levers or pawls are shown in Figs. 1, 3, 4 and 5 as exposed at the outer sides of the holding fingers 20, so that they may be released by hand pressure at any time to permit outward and collapsing movement of the coil confining fingers.

To enable proper setting of the trigger levers and provide take-up for wear and the like, said levers are shown as pivotally engaged on eccentric bushings 31 arranged to be rotatably adjusted by the screw studs 23 which can be reached through openings 32, Fig. 2, in the outer end portions of the supporting arms.

Fig. 6 shows the inner ends of pivot studs 23 screw threaded at 33 into opposite ends of the eccentric bushing 31, enabling this bushing to be rotatably adjusted by the turning of the screw studs 23 through the holes 32 in the ends of the arms for effecting adjustment of holding levers 27 to properly engage the arms.

When such adjustments are effected the eccentric bearings 31 may be locked in place by set screws 34.

Fig. 1 shows one of the trigger levers 27 tensioned in holding engagement with the coil supporting arm 18, at 29.

Fig. 3 shows the trigger pressed inward as in releasing the finger 20, and Fig. 4 shows how when the finger is lowered and slid longitudinally into the channel of the coil supporting arm, it will serve as a drag or brake against the bottom of the channel to frictionally retain it in any position to which it is shifted therein.

Stop screws 35 are shown at the inner ends of the holding levers engageable with the backs of the fingers 20 to limit the outward swinging movement of the levers under pressure of the springs 28.

In all forms of the invention disclosed the coil confining fingers or forks 20 are laterally adjustable for different widths of stock to be handled by the reel and are folded inward to lie below the surface of the supporting arms and to constitute extensions of the reel center for supporting and guiding open stock coils into supported position upon the arms.

These adjustments are possible in all radially adjusted positions of the supporting arms. The latter may be all simultaneously or individually adjusted, according as to whether the reel is of the automatic centralizing type or of the plain type in which each supporting arm is manually adjusted and secured as by means of the clamp blocks shown at 48.

What is claimed is:

1. A stock reel of the character disclosed comprising a hub, spokes carried by said hub, coil supporting arms radially adjustable on said spokes and coil confining fingers laterally adjustable on said arms for different widths of coil stock and pivotally supported to swing inwardly into aligned relation with said supporting arms, thumb levers carried by said fingers in position to make binding engagement with said supporting arms and eccentric mountings for said thumb levers for adjusting the binding engagement of the same with the arms and including eccentric bearings for said levers, means on the levers for securing said bearings in adjusted relation and means at the ends of said bearings accessible for effecting rotary adjustment of the same.

2. A stock reel of the character disclosed comprising a hub, spokes carried by said hub, coil supporting arms radially adjustable on said spokes and coil confining fingers laterally adjustable on said arms for different widths of coil stock and pivotally supported to swing inwardly into aligned relation with said supporting arms, thumb levers carried by said fingers in position to make binding engagement with said supporting arms and eccentric mountings for said thumb levers for adjusting the binding engagement of the same with the arms and including eccentric bearings for said levers, means on the levers for securing said bearings in adjusted relation and means at the ends of said bearings accessible for effecting rotary adjustment of the same, said arms having parallel side walls provided with guide grooves and said means for effecting adjustment of the eccentric bearings including guide studs operable in said grooves and said grooves having open portions for exposing the ends of said studs.

3. A stock reel of the character disclosed comprising a hub, spokes carried by said hub, coil supporting arms radially adjustable on said spokes and coil confining fingers laterally adjustable on said arms for different widths of coil stock and pivotally supported to swing inwardly into aligned relation with said supporting arms, said supporting arms having opposed side walls with grooves therein and said fingers having projecting pins slidable and rotatable in said grooves.

4. A stock reel of the character disclosed comprising a hub, spokes carried by said hub, coil supporting arms radially adjustable on said spokes and coil confining fingers laterally adjustable on said arms for different widths of coil stock and pivotally supported to swing inwardly into aligned relation with said supporting arms, said arms being of channel formation with opposed side walls connected by a bottom wall, the latter being of less longitudinal extent than the side walls, said side walls having guide grooves extending beyond the end of said bottom wall and said fingers having projecting studs riding in said guide grooves, the inner ends of said fingers

slidable over said bottom wall to retain said fingers in upstanding relation until clear of the ends of said bottom wall and whereupon said fingers may be rotated in the extended portions of said grooves to lower the same into substantial alignment with the supporting arms.

5. A stock reel of the character disclosed comprising a hub, spokes carried by said hub, coil supporting arms radially adjustable on said spokes and coil confining fingers laterally adjustable on said arms for different widths of coil stock and pivotally supported to swing inwardly into aligned relation with said supporting arms, said arms being of channel formation with opposed side walls connected by a bottom wall, the latter being of less longitudinal extent than the side walls, said side walls having guide grooves extending beyond the end of said bottom wall and said fingers having projecting studs riding in said guide grooves, the inner ends of said fingers slidable over said bottom wall to retain said fingers in upstanding relation until clear of the ends of said bottom wall and whereupon said fingers may be rotated in the extended portions of said grooves to lower the same into substantial alignment with the supporting arms, and thumb levers pivoted on said fingers in position to make binding engagement with said bottom walls of the supporting arm channels.

6. A stock roll of the character disclosed comprising a central rotatably mounted supporting structure, coil supporting arms mounted on said supporting structure, and coil confining fingers laterally adjustable on said arms for different widths of coil stock and pivotally supported to swing inwardly into aligned relation with said supporting arms, said arms being of channel formation with opposed side walls connected by a bottom wall, the latter being of less longitudinal extent than the side walls, said side walls having guide grooves extending beyond the end of said bottom wall and said fingers having projecting studs riding in said guide grooves, the inner ends of said fingers slidable over said bottom wall to retain said fingers in upstanding relation until clear of the ends of said bottom wall and whereupon said fingers may be rotated in the extended portions of said grooves to lower the same into substantial alignment with the supporting arms, and thumb levers pivoted on said fingers in position to make binding engagement with said bottom walls of the supporting arm channels.

7. A stock reel of the character disclosed comprising a rotatably mounted central supporting structure, coil supporting arms carried by said central supporting structure and coil confining fingers laterally adjustable on said arms for different widths of coil stock and pivotally supported to swing inwardly into aligned relation with said supporting arms, said supporting arms having opposed side walls with grooves therein and said fingers having projecting pins on opposite sides near the inner ends of the fingers slidable and rotatable in said grooves and spring latches on said fingers yieldably engageable with said arms for releasably securing said fingers in laterally adjusted relation on the arms.

8. A stock reel of the character disclosed comprising a rotatably mounted central supporting structure, coil supporting arms carried by said central supporting structure and coil confining fingers laterally adjustable on said arms for different widths of coil stock and pivotally supported to swing inwardly into aligned relation with said supporting arms, said supporting arms being of channel form and arranged with the channels faced radially outward of the reel and said fingers in the folded-down position being disposable in said channels, said channel form supporting arms having guide grooves in the opposite sides of the same and the fingers having oppositely projecting studs at the inner ends of the same slidingly and rotatably engaged in said grooves.

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