Sept. 9, 1941. A. PETERSON 2,255,363

SWIFT

Filed March 24, 1941 2 Sheets-Sheet 1

Fig. 1.

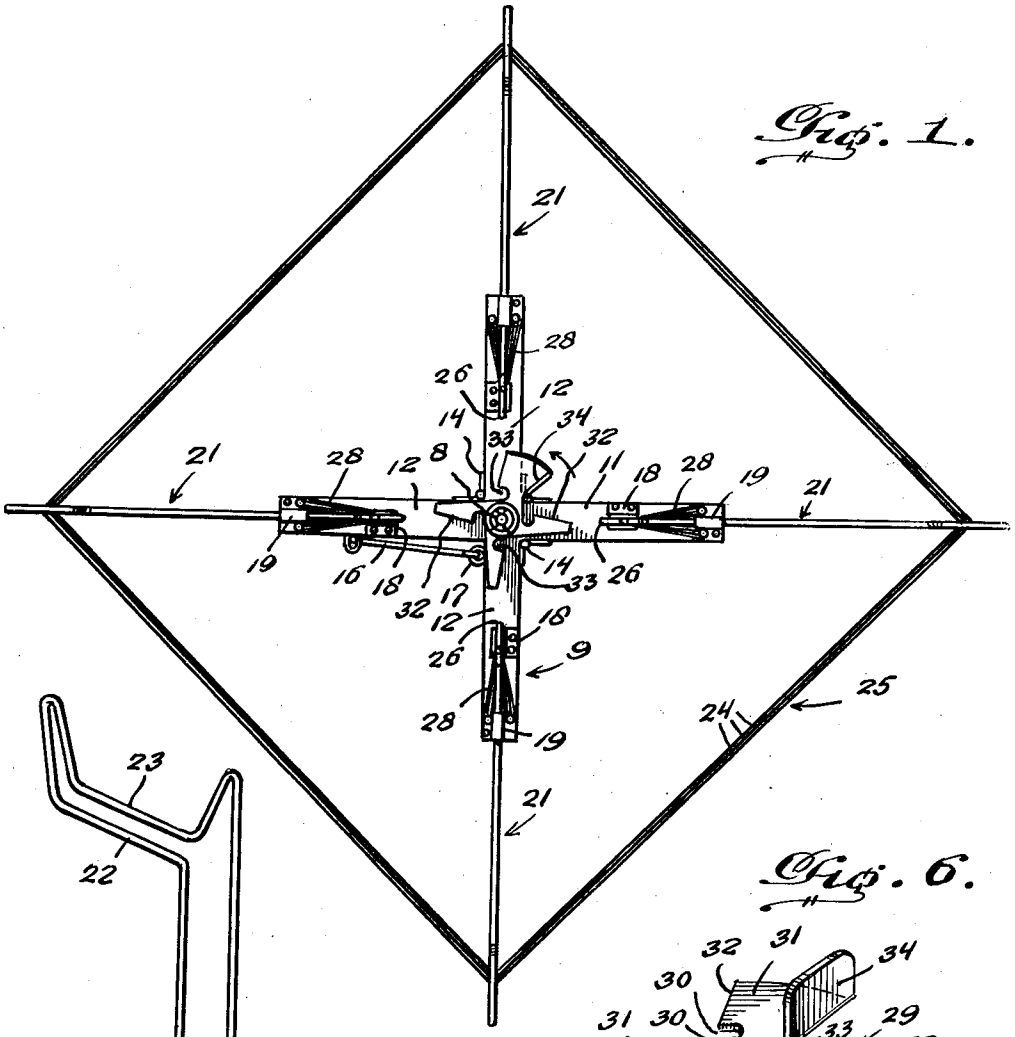
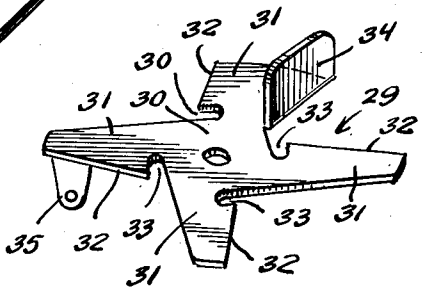


Fig. 5.

Fig. 6.



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Sept. 9, 1941. A. PETERSON 2,255,363

SWIFT

Filed March 24, 1941 2 Sheets-Sheet 2

Fig. 2.

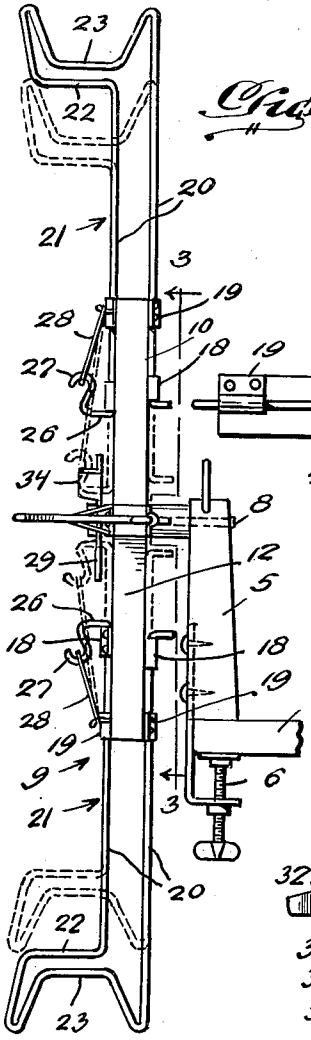


Fig. 3.

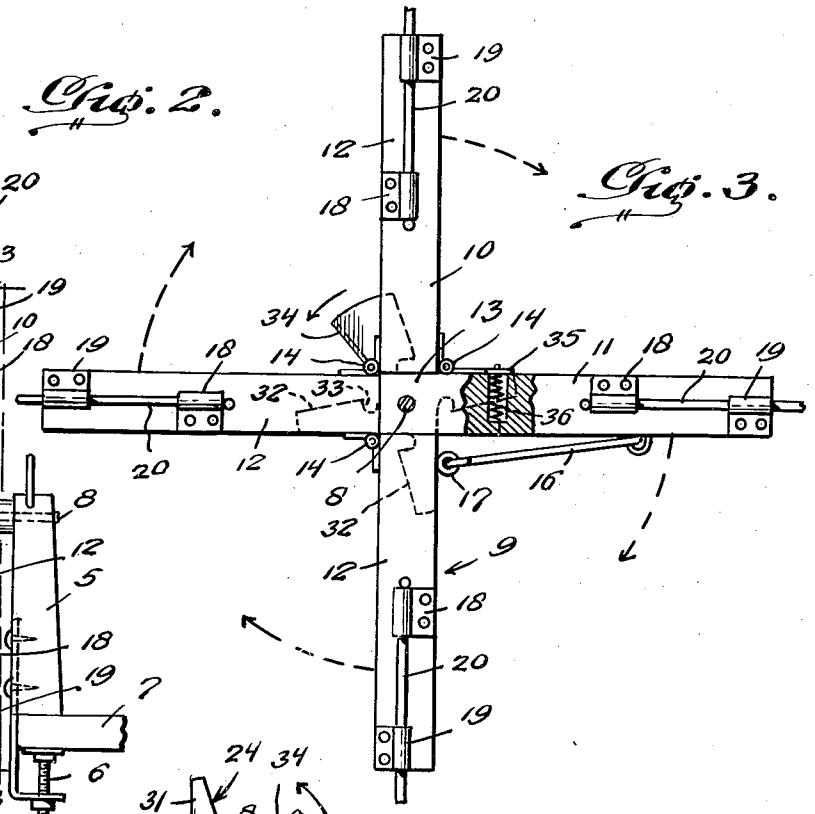


Fig. 4.

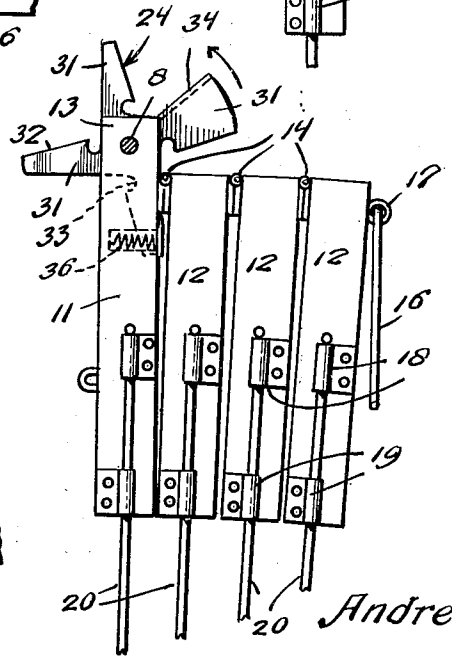
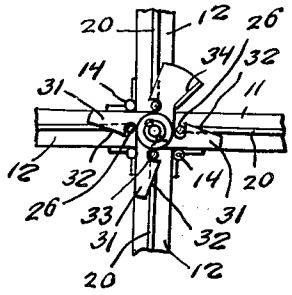


Fig. 7.



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UNITED STATES PATENT OFFICE

2,255,363

SWIFT

Andrew Peterson, Detroit, Mich.

Application March 24, 1941, Serial No. 385,023

5 Claims. (Cl. 242—110)

My invention relates to improvements in yarn reels or swifts and has as one of the principal objects thereof the provision of a swift so constructed and arranged whereby tension may be applied to the skein of yarn contained on the reel in order to maintain the skein in a taut condition during its removal and thus preclude tangling of the runs during unwinding.

Another object of my invention is to provide a device of the character described so constructed and arranged whereby the same may be easily folded when not in use to form a compact assembly thereby enabling the device to be stored or transported in a relatively small space.

An important object of my invention is to provide a device of the character described which is simple in construction, durable in use, efficient in operation and economical in manufacture.

With the above and other objects in view, as will hereinafter appear, the invention consists in the combination, and arrangement of parts hereinafter set forth and illustrated in the accompanying drawings, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

Referring to the drawings wherein like reference characters designate like parts throughout the several views:

Figure 1 is a front elevation of my invention.

Figure 2 is a side elevation thereof.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a view similar to Figure 3 but illustrating the device in folded condition to form a compact assembly.

Figure 5 is a perspective view of one of the fingers.

Figure 6 is a perspective view of the finger latching member.

Figure 7 is a detail front elevation illustrating the fingers in latched and retracted positions.

As illustrated in the drawings, I employ an elongated substantially vertically disposed standard 5 having its lower end provided with a clamp 6 for securing said standard to a support 7, for instance, a table top or the like. The upper end of the standard 5 has attached thereto one end of a substantially horizontally extending shaft 8 on which is mounted a reel or swift 9. The swift comprises a plurality of radially extending spaced arms 10 including a main arm 11 and a ternary of axuiliary arms 12. The main arm 11 is of a greater length than the auxiliary arms to provide at one end a hub section 13 rotatably journaled on the shaft 8. The inner ends of the auxiliary arms abut the sides and end of the hub section 13 and thus dispose one pair of the auxiliary arms at right angles to the main arm and the other or interjacent auxiliary arm in lengthwise aligned relation with said main arm.

The inner ends of the foregoing described pair of the auxiliary arms are connected to the interjacent auxiliary arm, and one of the inner ends of said pair of auxiliary arms is connected to one side of said main arm, adjacent its hub section, by means of hinges 14, while the other of said pair of auxiliary arms is connected to the opposite side of main arm by means of a hook and eye 16 and 17 respectively as clearly illustrated in Figures 1 and 3 of the drawings. Obviously, by disengaging the hook from the eye, the auxiliary arms may be folded together, one adjacent the other, and disposed on one side of the main arm to form a compact assembly capable of being transported and stored within a relatively small space.

Each arm 10 is provided on its front and rear faces with pairs of inner and outer guides 18 and 19 respectively in which are slidably mounted the spaced pair of inner end sections 20 of a wire finger 21, the outer end section 22 of said finger being of a substantially U-shaped configuration as at 23 and which coacts with the end sections 20 of the other fingers to receive therein the runs 24 of a skein of yarn 25.

An inner end section of each finger, overlying the front face of the respective arm and inwardly of its inner guide 18, is formed with an angularly disposed portion 26 terminating in a hook 27 to which is secured the inner end of a resilient member 28, the outer end of said member 28 being secured to the arm adjacent its outer end and serving to urge the finger outwardly with respect to the hub section.

Rotatably mounted on the shaft, adjacent the front face of the hub section, is a finger latching member or star-wheel 29 having a hub portion 30 provided with a quarternary of radially extending substantially cruciform arms or blades 31 normally disposed over the front faces of the arms 10 respectively and having their sides converging towards their outer ends. One side of each blade 31 constitutes a cam face 32 formed, adjacent the hub portion 30, with a notch 33 for receiving and maintaining therein the portion 26 of the respective finger against the urgency of its resilient member 28.

The opposite side of one of the blades 31

is provided with a laterally disposed finger-piece **34** for effecting sufficient rotation of the star-wheel in a direction to release the portion **26** from within the notches **33**. The opposite side of another of said blades **31** is provided with an angularly extending section **35** disposed adjacent a side face of the adjacent arm and is connected thereto by means of a spring **36**, the latter serving to urge rotation of the star-wheel in an opposite direction to maintain the portions **26** seated within the notches **33**.

In use, the parts being in the positions illustrated in full lines in Figures 1, 2, and 3 of the drawings, the fingers are actuated inwardly whereupon the portions **26** engage the cam faces **32** of the blades and rotate the star-wheel a sufficient distance to effect seating of the portions **26** within the notches **33**. When the fingers are thus maintained in retracted positions by the star-wheel as illustrated in Figure 7, yarn is wound through the U-shaped outer ends of the fingers by rotating the reel about the shaft. When it is desired to remove the yarn from the reel and to preclude tangling of the same during the removing or unreeling operation, the star-wheel is rotated to effect release of the fingers whereby they are urged into projected positions by the resilient members **28** thereby maintaining the skein in a taut condition while the skein is being removed from the reel during rotation of the latter.

Without further elaboration the foregoing will so fully explain the invention that others may, by applying current knowledge, readily adapt the same for use under various conditions of service. Moreover, it is not indispensable that all the features of the invention be used conjointly since they may be employed advantageously in various combinations and sub-combinations.

It is obvious that the invention is not confined to the herein described use therefor as it may be utilized for any purpose to which it is adaptable. It is therefore to be understood that the invention is not limited to the specific construction as illustrated and described as the same is only illustrative of the principles of operation, which are capable of extended application in various forms, and that the invention comprehends all construction within the scope of the claims.

What I claim is:

1. In a swift construction, a plurality of connected substantially radially extending arms each provided with a slidably mounted yarn receiving finger operable to projected and retracted positions with respect to said arm, resilient means connected between the arms and fingers for urging the latter to said projected positions, latch means carried by said swift and detachably connected to the fingers for maintaining the latter in said retracted positions against the urgency of said first mentioned means to enable a skein to be wound on said fingers in a relatively slack condition, said latch means operable for releasing said fingers towards said projected positions to maintain the skein in a taut condition during its removal from the fingers.

2. In a swift construction, a plurality of connected substantially radially extending arms each provided with guide means, fingers slidably mounted in said means and operable to projected and retracted positions with respect to said arms, said fingers each formed with inner and outer end sections and with the latter adapted to receive the runs of a skein of yarn, said inner end sections each fashioned with an angularly extending portion disposed between the inner end and guide means of the respective arm, resilient means connected between the arms and portions for urging the fingers to said projected positions, a latch member carried by said swift and rotatable with respect to said fingers, said member formed with notches detachably receiving said portions for maintaining the fingers in retracted positions against the urgency of said resilient means to enable a skein to be wound about said outer end sections in a relative slack condition, said latch means rotatable with respect to said fingers for releasing said portions and thus effecting movement of said fingers towards said projected positions to maintain the skein in a taut condition during removal of the skein from the fingers.

3. In a swift construction, a plurality of substantially radially extending arms each provided with a slidably mounted yarn receiving finger operable to projected and retracted positions with respect to said arm, resilient means connected between the arms and fingers for urging the latter to said projected positions, latch means carried by said swift and detachably connected to the fingers for maintaining the latter in said retracted positions against the urgency of said first mentioned means to enable a skein to be wound on said fingers in a relatively slack condition, said latch means operable for releasing said fingers towards said projected positions to maintain the skein in a taut condition during its removal from the fingers, hinges connecting said arms together, and means connected between a pair of said arms for maintaining said arms in angular spatiality and operable for permitting hinging of said arms one about the other to form a compact assembly.

4. In a swift construction, a plurality of substantially radially extending arms each provided with guide means, fingers slidably mounted in said means and operable to projected and retracted positions with respect to said arms, said fingers each formed with inner and outer end sections and with the latter adapted to receive the runs of a skein of yarn, said inner end sections each fashioned with an angularly extending portion disposed between the inner end and guide means of the respective arm, resilient means connected between the arms and portions for urging the fingers to said projected positions, a spring tensioned latch member carried by said swift and rotatable with respect to said fingers, said member formed with notches detachably receiving said portions for maintaining the fingers in retracted positions against the urgency of said resilient means to enable a skein to be wound about said outer end sections in a relative slack condition, said latch means rotatable with respect to said fingers for releasing said portions and thus effecting movement of said fingers towards said projected positions to maintain the skein in a taut condition during removal of the skein from the fingers, hinges connecting said arms together, and means connected between a pair of said arms for maintaining said arms in radial spatiality and operable for permitting hinging of said arms one about the other to form a compact assembly.

5. In a swift construction, a plurality of connected substantially radially extending arms each having a slidably mounted yarn receiving finger operable to projected and retracted positions with respect to said arm and provided with

means constituting a latch bolt, resilient means connected between the arms and fingers for urging the latter to said projected positions, a spring tensioned latch member rotatably carried by said swift and formed with radially extending blades disposed in confronting relation with said arms respectively, one side of each blade, adjacent its inner end, formed with a notch for receiving the latch bolt of the respective finger for maintaining the latter in retracted position, said sides of said blades constituting cam faces engageable by said bolts when said fingers are operated to retracted position to effect rotation of said latch member a sufficient distance to seat said bolts within said notches, said latch means rotatable in an opposite direction with respect to said fingers to effect release of said bolts from said notches and thus permit movement of said fingers towards said projected positions to maintain a skein, trained about said fingers, in a taut condition during removal of said skein from the fingers.

ANDREW PETERSON.