June 6, 1944. H. H. A. HEUER 2,350,758

WINDING DEVICE FOR RETRACTABLE ROOFS

Filed June 12, 1942

Fig. 1.

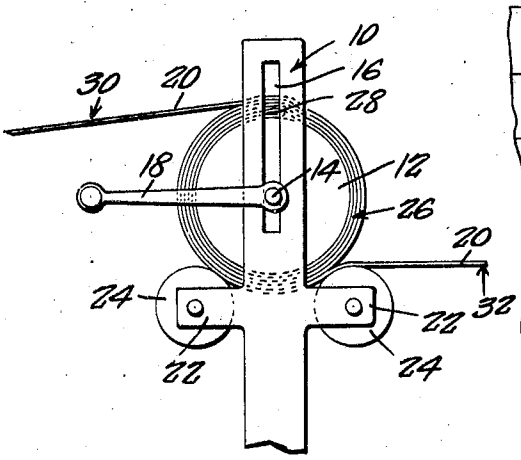



Fig. 2.

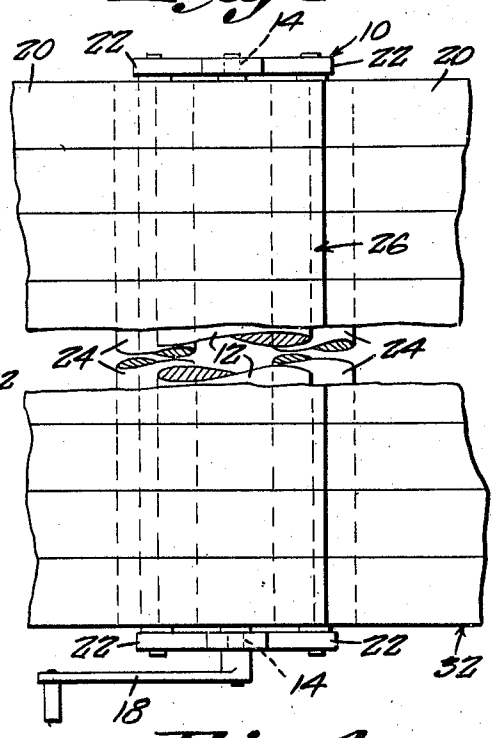



Fig. 3.

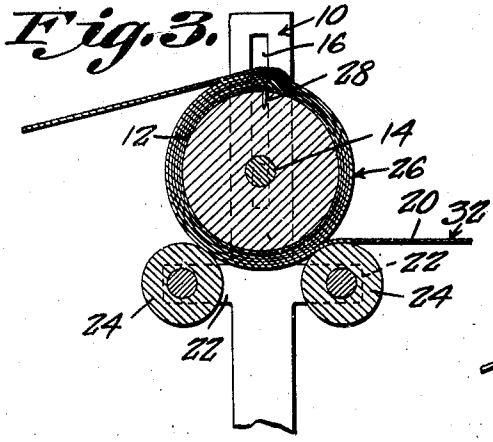
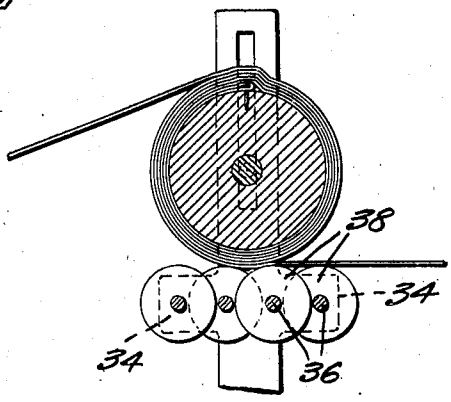



Fig. 4.




Hans H.A. Heuer, INVENTOR.

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ATTORNEYS

Patented June 6, 1944 2,350,758

# UNITED STATES PATENT OFFICE

2,350,758

## WINDING DEVICE FOR RETRACTABLE ROOFS

Hans H. A. Heuer, St. Petersburg, Fla.

Application June 12, 1942, Serial No. 446,783

1 Claim. (Cl. 242—55)

My invention relates to protective coverings for shading purposes, such as roof structures for shading growing crops, and has among its objects and advantages the provision of an improved winding device for retractable roofs.

In the accompanying drawing:

Figure 1 is an end view;

Figure 2 is a top view;

Figure 3 is a transverse sectional view; and

Figure 4 is a view similar to Figure 3 but illustrating a modified form of construction.

In the embodiment selected for illustration, I make use of two spaced, upright supports 10 between which a roll 12 is positioned. This roll is provided with a bearing shaft 14 extending loosely through a slot 16 in each of the supports 10. A crank 18 is attached to the shaft 14 to impart rotation to the roll 12, as when winding up the flexible roof 20.

Each support 10 is provided with two right angular arms 22 for rotatably supporting rolls 24 spaced in a horizontal plane and paralleling the roll 12. The two rolls 24 are rotatably mounted in the arms 22 and constitute rotary rests for the roll 12, as well as the convoluted roofing 26 on the roll 12.

The roofing 20 is doubled back upon itself and secured to the roll 12, as at 28. The bend in the roofing is located at the transverse center line of the roofing. The end portion 30 of the roofing is pulled from the roll 12 in one direction, while the other half portion 32 is pulled from the roll in the opposite direction. Both half portions are simultaneously wound upon the roll 12 through rotation of the roll.

In a construction such as that illustrated, the roll is located between two fields or at a central position in a large field. Suitable racks are, of course, provided for the roofing portions 30 and 32. Such racks are old and need not be described in detail.

The winding action of the roll 12 is a rapid one in that two roof portions are simultaneously wound on the roll. The roll 12 is effectively supported by reason of the two spaced rolls 24, which support extends through the entire length of the roll 12. Since the rolls 24 are spaced equal distances beneath and laterally of the axis of the roll 12, variable diameters incident to winding up and unwinding the roofing is compensated by reason of the sliding mounts for the shaft 14. This shaft slides freely vertically in the slots 16 but effectively restrains the roll from lateral displacement.

Figure 4 illustrates a modification in that the cross arms 34 corresponding to the cross arms 22 support a plurality of spaced bars 36 upon which disks or short rollers 38 are mounted. The elements 38 are arranged in end to end overlapping relationship.

Without further elaboration, the foregoing will so fully illustrate my invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

I claim:

In a device of the type described, the combination of a wind-up roll, roofing attached to the roll and adapted to be wound thereon, said roofing extending laterally from the roll in two directions and being simultaneously wound on the roll through rotation of the latter in one direction, a support for said roll, said support including roller elements engageable with the roll or with the roofing convoluted thereon, and means for guiding the roll toward and away from said roller elements to compensate for variable diameters incident to winding up and unwinding the roofing with respect to the roll, said roller elements comprising a plurality of circular members arranged in partial overlapping relationship end to end.

HANS H. A. HEUER.