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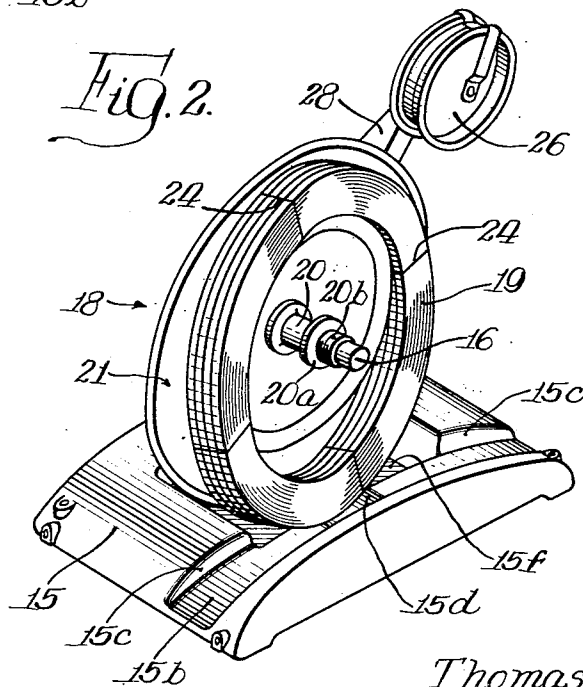
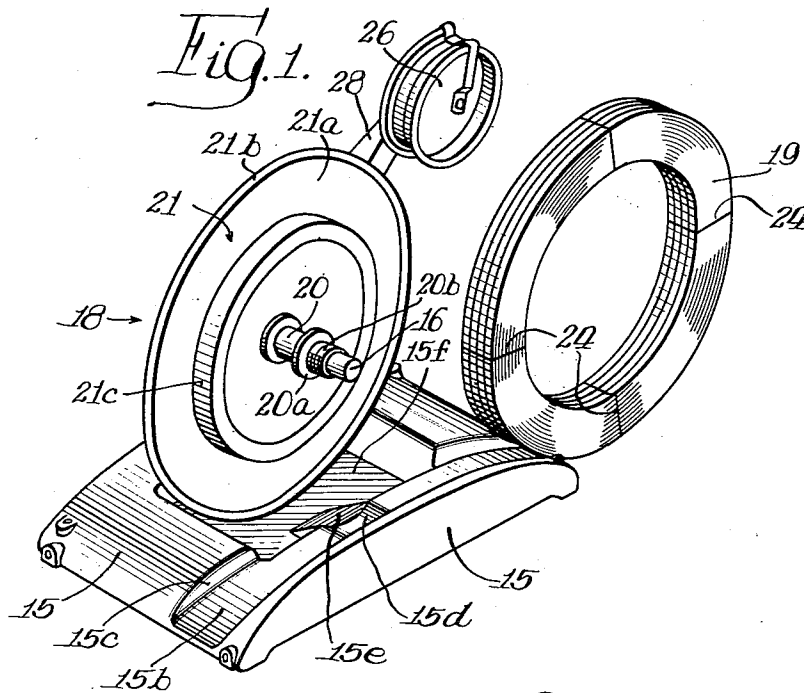
T. J. FULLERTON ET AL

2,777,647

COIL UNREELER

Filed April 28, 1953

3 Sheets-Sheet 1



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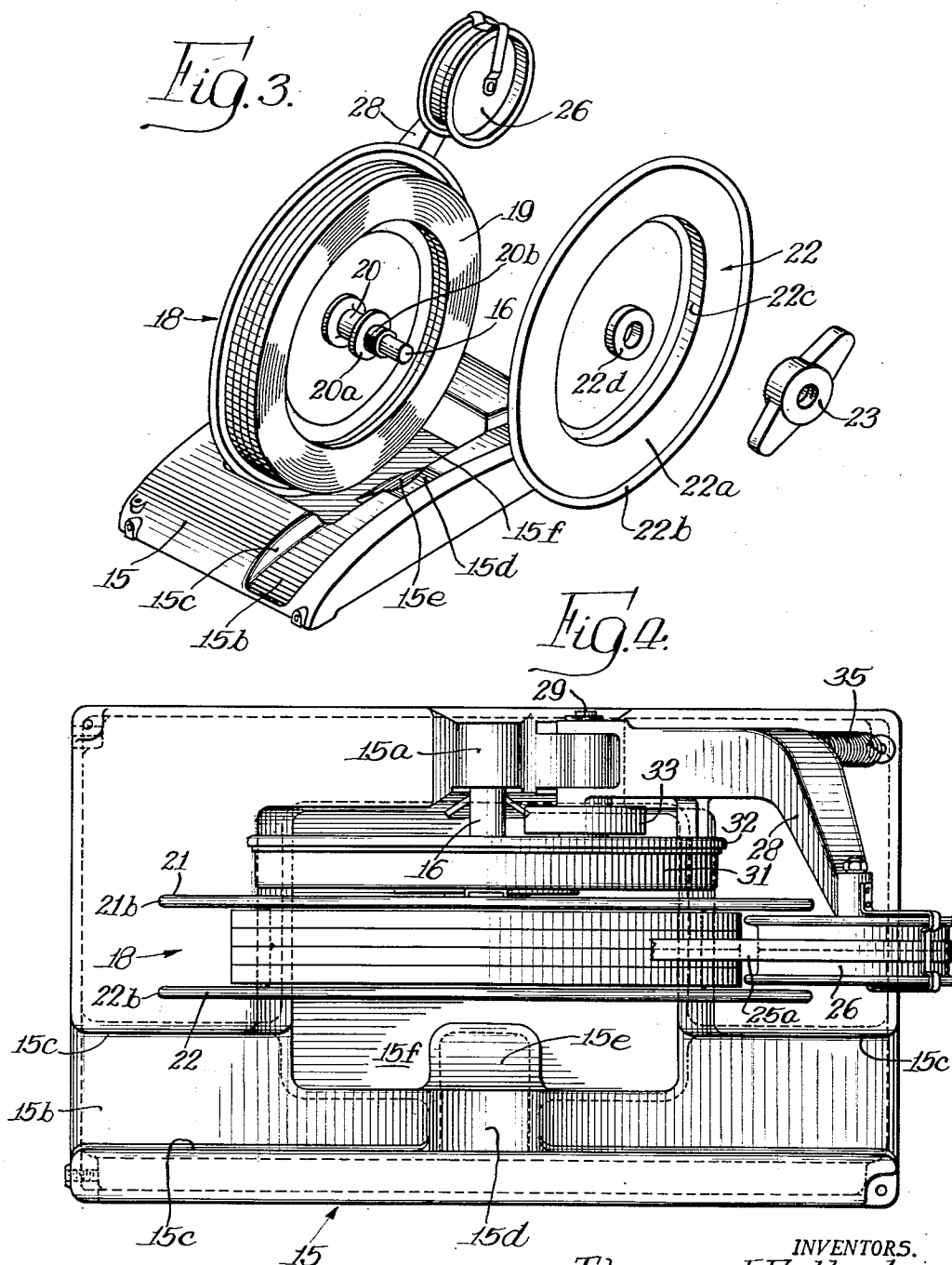
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JOIL UNREELER

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3 Sheets-Sheet 2



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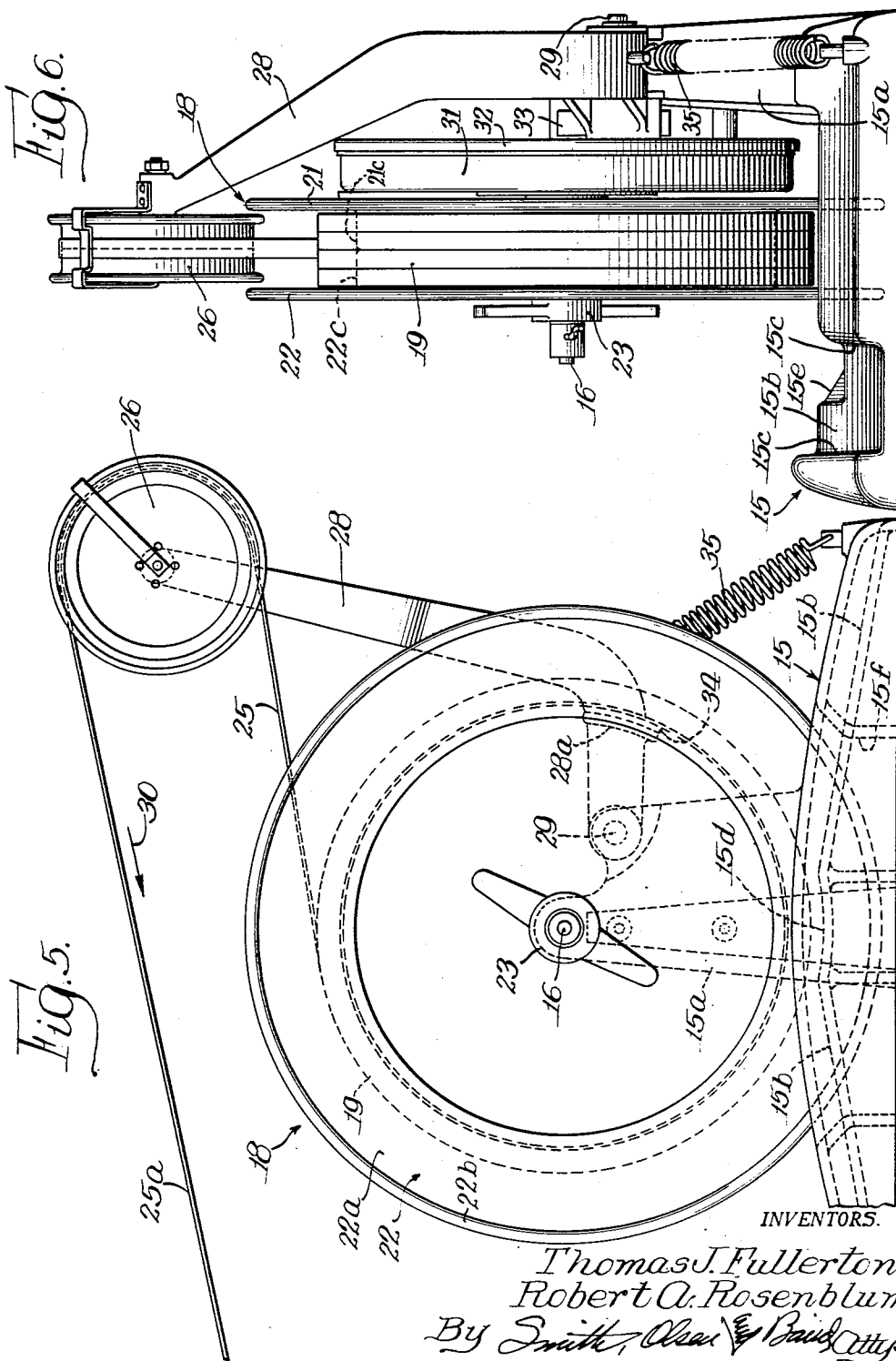
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COIL UNREELER

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2,777,647

COIL UNREELER

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Application April 28, 1953, Serial No. 351,679

4 Claims. (Cl. 242—105)

This invention relates to improvements in coil unreelers and its purpose is to provide improved means by which a coil of flexible strip material, such as steel strapping, may be placed in position on a reel to be unwound therefrom as the material is used in a strapping machine or the like.

A coil of steel strapping or the like is very heavy and the task of placing such a coil on the reel of unreeler apparatus has heretofore presented a substantial problem. The principal object of the present invention is to overcome this difficulty by providing a novel coil unreeler comprising means whereby the coil of material may be elevated to a reel engaging position with little effort on the part of the operator. A further object of the invention is to provide a coil unreeler comprising an inclined surface or ramp over which the coil may be rolled to an upper position from which it may be conveniently moved into engagement with a supporting portion of the reel. Other objects relate to various features of construction and arrangement which will appear more fully hereinafter.

The nature of the invention will be understood from the following specification taken with the accompanying drawings in which one embodiment is illustrated. In the drawings,

Figure 1 is a perspective view of a portion of the improved coil unreeler of the present invention, with parts thereof removed, illustrating a coil of strip material in readiness to be passed upwardly over an inclined surface of the base toward the reel;

Fig. 2 is a perspective view similar to that of Fig. 1 showing the parts illustrated in Fig. 1 after the coil of material has been moved upwardly to the top of the base and tilted into engagement with a part of the reel;

Fig. 3 is a perspective view similar to those of Figs. 1 and 2 illustrating the coil after it has been moved into full engagement with a part of the reel and illustrating the remaining portion of the reel which is then to be applied and the nut by which the parts of the reel are secured together;

Fig. 4 shows a top plan view of the complete coil unreeler illustrated in Figs. 1, 2 and 3;

Fig. 5 shows a side elevation of the coil unreeler illustrated in Fig. 4; and

Fig. 6 shows an end elevation of the improved coil unreeler looking toward the left as viewed in Fig. 5.

As illustrated in the drawings, the invention comprises a base 15 having an upstanding pedestal or standard 15a in which there is mounted a horizontal shaft 16 adapted to support the rotatable reel 18 upon which the coil 19 of steel strapping or other flexible strip material is adapted to be supported while it is being unwound. The reel 18 comprises a hub 20 rotatably mounted thereon and this reel has fixed thereto one side plate 21 of the reel which comprises a radially extending flange 21a terminating in a bead 21b and an annular cylindrical flange 21c upon which the coil 19 is adapted to be supported. When the coil 19 has been placed on the portion 21c of the

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plate 21, a removable side plate 22 of the reel is adapted to be passed over the end of the shaft 16 into engagement with the portion 20a of the hub and this plate 22 is then secured in position on the hub by a nut 23 which has a threaded engagement with the threaded extremity 20b of the hub. The plate 22 has a radial flange or disk 22a which is similar to the flange 21a of the other plate and it has a bead 22b around its outer margin. It also has an annular part 22c which fits within the coil 19 and at the center of the plate there is a hub portion 22d which fits against the part 20a of the hub 20.

The convolutions of the coil 19 are secured together by binders 24 which extend in radial planes around the coil, as shown in Figs. 1 and 2, but when the coil has been placed on the reel and the parts are in readiness for the use of the flexible strip material which is in the coil, the binders 24 are removed, as shown in Fig. 3, and the steel strapping 25 or other flexible strip material may then be unwound from the coil. This is done by extending it around a pulley 26 which is rotatably mounted at the upper end of an arm 28 which is pivoted at 29 on the pedestal 15a. The strapping 25 is extended around the pulley 26 and is then reversely bent as shown at 25a so that when a pull is exerted upon the strip material in the direction of the arrow 30, the arm 28 will swing about its pivot and thus permit the slack in the strip material around the pulley 26 to be withdrawn as the pulley and the arm move toward the left as viewed in Fig. 5. A brake drum 31 is mounted to rotate on the shaft 16 and it is adapted to have a driving connection with the side plate 21 of the reel 18 so that when the drum is rotated the reel will be rotated about the shaft. The brake drum is closed by an end plate 32, thus forming a housing in which is mounted driving mechanism by which the drum may be rotated from a coil spring 33 mounted adjacent the shaft 16 and this rotation under the influence of the spring is normally prevented by the engagement with the inner surface of the brake drum 31 of a brake shoe 34 mounted on an arm 28a formed as a part of the lever arm 28. The lever arm 28 is normally held in the position shown in Fig. 5 by a coil spring 35 and when this arm swings toward the left from the position shown in Fig. 5, the brake drum is released by the brake shoe 34 so that it is then free to rotate under the influence of the spring 33 to initiate the rotation of the reel 18. Thus, by the time that the slack of strip material extending around the pulley 26 has been removed in response to a pull upon that material in the direction of the arrow 30, the rotation of the reel will have been started so that further strip material can then be withdrawn from the reel. This method of providing slack material to be withdrawn from the apparatus and for initiating the rotation of the reel and the apparatus for effecting these operations do not in themselves constitute a part of the present invention but are described and claimed in the copending application of Kjell A. Falck-Pedersen, Serial No. 351,701, filed April 28, 1953.

The present invention is directed primarily to the construction of the base 15 where it permits the coil 19 to be moved into engagement with the reel 18 without great effort on the part of the operator and this invention may be employed with other forms of reels and other forms of driving mechanism therefor differing from those which have been described above.

For the purpose of permitting the coil 19 to be moved readily into engagement with the reel 18, the base 15 is provided with an inclined surface or ramp 15b which extends upwardly from each end of the base within a groove bounded by side walls 15c. These inclined surfaces terminate at the middle portion of the base in a cavity 15d adapted to receive a portion of the circumferential surface of the coil 19 when the coil reaches the position

shown in Fig. 2 after having been rolled up the surface 15b from the position shown in Fig. 1. From the cavity 15d, the base is provided with a surface 15e which extends downwardly and inwardly into the cavity 15f of the base which is adapted to receive the lower portion of the reel 18 and the lower portion of the coil 19 when the coil is in position on the reel. When the coil has been moved to a position where its lower part rests in the cavity 15d, it is tilted inwardly as shown in Fig. 2, until the upper part thereof overhangs and rests upon the flange 21c of the reel plate 21. The coil is then pushed inwardly and down the inclined surface 15e until the entire coil fits over the flange 21c. The other plate 22 may then be fitted over the hub 20 and the nut 23 may be moved into threaded engagement with the threaded end of the hub to secure the plate 22 securely in position. The parts are then in readiness for the withdrawal of the strip material in the manner previously described.

Although one form of the invention has been shown and described by way of illustration, it will be understood that it may be constructed in various other embodiments coming within the scope of the appended claims.

We claim:

1. The combination in a coil unreeler, of a supporting base, and a reel carried by said base for supporting a coil of flexible strip material, said base having an inclined ramp extending upwardly from the end thereof whereby said coil may be rolled to a position opposite said reel, said base being further provided with a cavity for positioning said coil opposite said reel, and with an inclined surface over which the lower part of said coil may be caused to slide to a position beneath a part of said reel.

2. The combination in a coil unreeler, of a supporting base, and a rotatable reel carried by said base for supporting a coil of strip material to be unreeled, said reel comprising complementary parts each provided with an annular portion adapted to fit within said coil, one of said parts being removable, said base having an inclined ramp extending parallel to the plane of the reel for permitting

said coil to be rolled to a position opposite the other part of said reel after said one part has been removed, said base having a depression to receive the lower part of said reel and into which the lower part of said coil may be moved as it is transferred from said ramp into engagement with said annular flange of said other part of said reel, said base having an inclined surface over which the lower part of said coil is adapted to slide as it is moved into engagement with said last named flange.

3. The combination in a coil unreeler of a one-piece base adapted to rest upon a floor, and a reel carried by said base for supporting a coil of flexible strip material, said base having an inclined groove in its upper surface extending upwardly from one end thereof to the plane of said reel whereby a coil may be rolled over said surface to a position opposite said reel, said base having a cavity therein at the side of said groove and beneath said reel.

4. The combination in a coil unreeler of a one-piece base adapted to rest upon a floor, and a reel carried by said base for supporting a coil of flexible strip material, said base having an inclined groove in its upper surface extending upwardly from one end thereof to the plane of said reel whereby a coil may be rolled over said surface to a position opposite said reel, said base having a cavity therein at the side of said groove and beneath said reel, said base being further provided with an inclined surface extending downwardly from said groove into said cavity, whereby a coil may be caused to slide over said surface from said groove onto said reel.

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