Dec. 16, 1952 G. F. CLARK ET AL 2,621,868

STOCK REEL OR COIL HOLDER

Filed July 3, 1950 2 SHEETS—SHEET 1

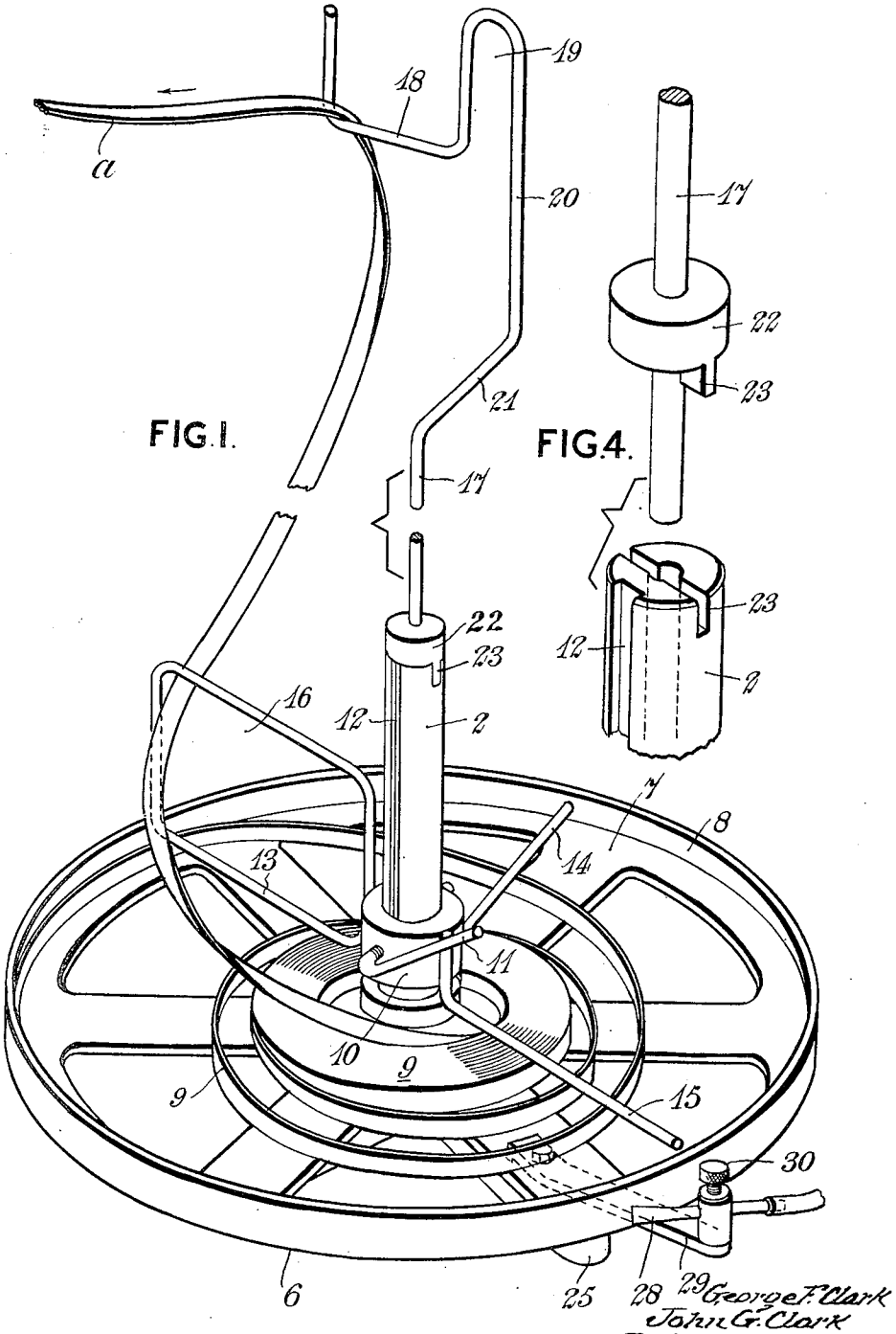


FIG. 1.

FIG. 4.

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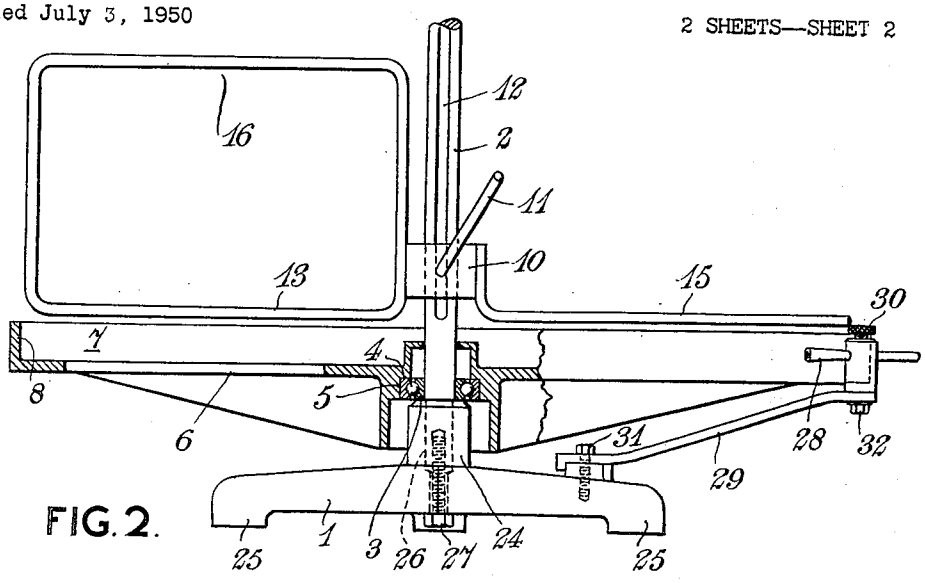


FIG. 2.

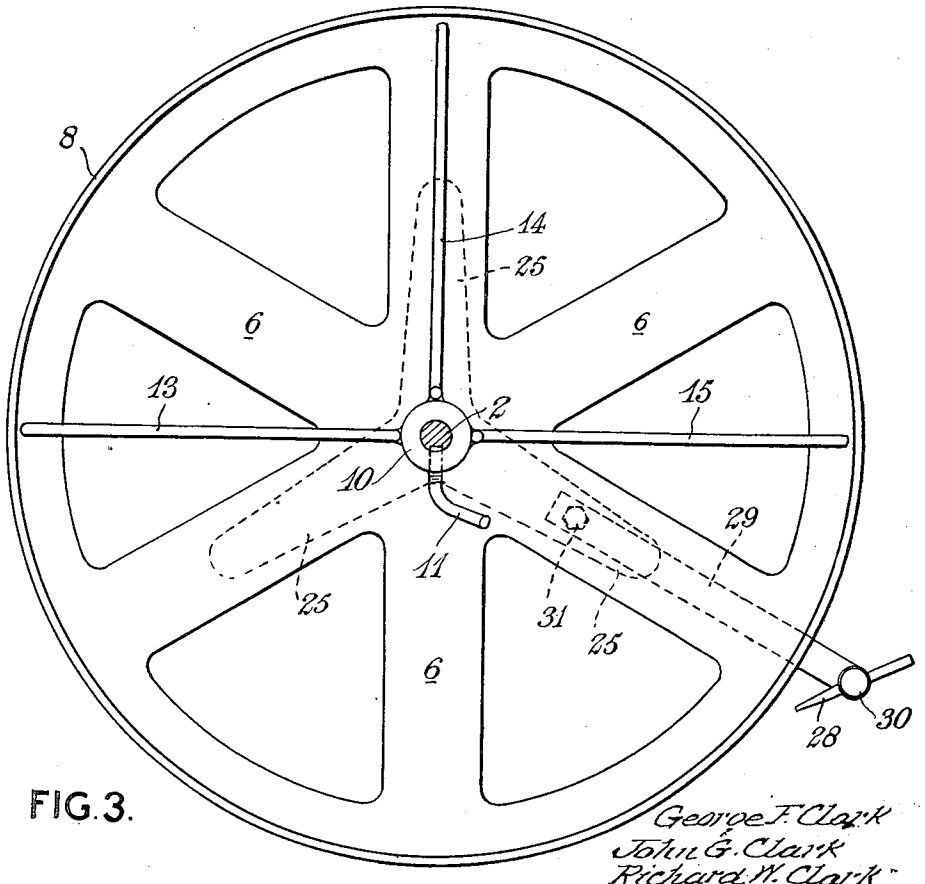


FIG. 3.

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UNITED STATES PATENT OFFICE

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STOCK REEL OR COIL HOLDER

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In Great Britain December 9, 1949

8 Claims. (Cl. 242—33)

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This invention relates to improvements in stock reels or coil holders from which strip material is fed into, for instance, pressing machines or the like the object being such as to facilitate the feed and to prevent kinking and grabbing by overcoming the static inertia of heavy coils of material.

Heretofore it has been usual to take the material from the outside of the reel and it has been found that this method tightens the stock upon itself and causes grabbing.

According to the present invention the coil is laid on a freely rotating horizontally arranged disc or flanged tray and the strip material is fed from the centre over guiding means straight to the pressing machine and as the material is drawn off the inside of the coil of the reel material tends to reduce in diameter until the natural spring of the material thus induced turns the reel. The arrangement is such that there is no snatching because there is no tightening of the material. The size or weight of the coil has no effect whatever on the working efficiency of the reel and no time is lost in setting the coil up to get it running true as all that is necessary is to place the coil on the disc or tray and pick up the inside end and feed it to the pressing machine. The material itself acts to keep the coil slack.

The invention still further consists in mounting the disc or tray on an antifriction bearing such as a ball bearing, in providing means to assist the rotation of the disc or tray, and in fitting the resilient guide detachably in the upper end of the post.

One form of the invention will now be described with reference to the accompanying drawings in which:

Figure 1 is a perspective view of a coil holder showing the form the strip material takes when being fed into a gripping mechanism of, for instance, a pressing machine;

Figure 2 is a sectional elevation of the stock reel or coil holder;

Figure 3 is a plan thereof, and

Figure 4 is a perspective view of the means for the attachment of a resilient guide to the vertical post of the coil holder.

As shown the device for feeding strip material comprises a base 1 fitted or formed with an upright post 2 of cylindrical shape. On the lower end of this post 2 and supported by the base 1 is the inner race 3 of an antifriction bearing such as a ball bearing 4. On the outer race 5 of this bearing 4 is mounted a disc or tray 6 of circular

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shape having a well 7 formed by a flange 8 on its periphery. This tray 6 which is horizontally arranged is adapted to receive a coil 9 of strip metal such as that used for feeding into a pressing machine or the like, not shown. On the post 2 is adjustably mounted a carrying member for arms which are adapted to hold the coil 9 within the tray 6. Conveniently this arm member comprises a boss 10 slidably mounted on the post 2 and having means whereby it may be locked in its vertically adjustable position. In the form shown these means comprise a handle member 11 screwed into the boss 10 to engage in a longitudinal groove 12 formed in the post 2 whereby rotation of the arm carrying member will be prevented. The boss 10 is fitted with a plurality of radially arranged arms 13, 14 and 15 extending to adjacent the inner wall of the flange 8 of the tray 6. These arms 13, 14 and 15 are conveniently in the form of rods and one arm member 13 is bent to provide a loop 16 of substantially rectangular shape through which the strip metal from the coil 9 is adapted to pass. On the upper end of the post 2 is mounted detachably a rod member 17 bent and shaped to give a certain amount of resilience. Conveniently this member 17 is bent to provide a U-shaped guide 18 at its upper end and the intermediate portion of the member 17 is bent at one side of the guide to provide a loop 19, a downwardly extending portion 20 and an angular or inclined portion 21. The lower end of this member 17 is formed or provided with an enlargement 22 to rest on the upper end of the post 2 and a pin and slot connection 23 is provided to prevent rotation of the guide as shown in Fig. 4. The base 1 preferably comprises a boss 24 formed with a plurality of radially extending feet 25 and this boss 24 is formed with an aperture 26 for the reception of the lower end of the post 2 whereby it may be secured in position by a screw 27 screwed into a threaded aperture in the lower end of the post 2.

If desired, means may be provided to assist the rotation of the tray 6. These means may comprise a nozzle 28 directed to impinge air from a compressed air supply, not shown, onto the outer periphery or flange 8 of the tray 6. This nozzle 28 is conveniently mounted on an arm support 29 secured to one of the feet 25 of the base 1. This nozzle is fitted with a milled adjusting screw 30 whereby the supply of compressed air may be controlled. Preferably the jet of air is so arranged and controlled as to be hardly sufficient to turn the tray 6. The arm

support 29 is connected to one of the feet 25 of the base 1 by a single bolt 31 so that the arm 29 can be partially rotated on the bolt 31 so that its outer end will lie within the periphery of the tray 6 for transport purposes. The nozzle 28 is also connected to the arm 29 by a bolt 32, so that it can be removed when desired.

In operation and when it is desired to feed strip metal into, for instance, a pressing machine, not shown, the resilient guide 17 and the member carrying the arms 13, 14 and 15 are removed from the post 2 and the usual coil 9 of strip material to be operated upon is placed in the well 7 of the tray 6. The arm member and the freely detached guide member 17 are then replaced on the post 2 and the arm member is locked thereon by its handle 11 in a suitable position to prevent the coil 9 from rising. The inner end of the coil 9 is threaded through the rectangular shaped loop 16 of the arm member 13 and then raised and drawn over the resilient guide 17 so that it rests on the U-shaped portion 18 of the guide 17. The free end indicated at *a* in Fig. 1 is now in a position to be inserted into the feeding mechanism of the machine, not shown. It will be seen that upon operation of the machine the static inertia of the coil 9 will be overcome and the tray 6 will be rotated as the coil 9 of strip material is unwound from its centre. If desired the tray 6 may be assisted in its rotation by the compressed air jet 28. Thus the material will be fed in an efficient manner without kinking or snatching.

What we claim is:

1. A coil holder comprising a vertically disposed post, a tray-like support for a coiled strip, said support being journalled on said post below the upper end thereof and having upstanding coil confining means about its peripheral portion, guide and retaining means removably mounted on said post to enable positioning of a coiled strip on said support around said post, said means including means overlying said support to retain the coiled strip thereon and guide means for the inner end of the strip as it is drawn from the coil, and means for fixing said guide and retaining means to said post to restrain said guide and retaining means from rotation as the strip is drawn off from the center of the coil.

2. A coil holder comprising a vertically disposed post, a tray for supporting a coiled strip, said tray being journalled on said post below the upper end thereof and having an upstanding peripheral flange for confining a coil on the tray, a guide and retaining device removably mounted on said post to enable positioning of a coiled strip on said tray around said post, said device including arms overlying said tray to retain the coiled strip thereon and a guide on one of said arms for guiding the inner end of the strip as it is drawn from the coil, and means for fixing said guide and retaining device to said post to restrain said guide and retaining means from rotation as the strip is drawn off from the center of the coil.

3. A coil holder comprising a vertically disposed post, a tray for supporting a coiled strip, said tray being journalled on said post below the upper end thereof and having an upstanding peripheral flange for confining a coil on the tray, a guide and retaining device removably mounted on said post to enable positioning of a coiled strip on said tray around said post, said device including arms overlying said tray to retain the coiled strip thereon and a loop guide on one of said arms for guiding the inner end of the strip as it is drawn from the coil, a second resilient guide above said loop guide, and means for fixing said guide and retaining device to said post and restraining said guides from rotation as the strip is drawn off from the center of the coil.

4. A coil holder as claimed in claim 3 wherein the resilient guide comprises a support removably mounted on said post and a vertically disposed strip bent to U-shape at its upper end with one branch thereof reversely bent to one side to provide a loop supported by a downwardly extending portion and an angularly inclined portion fixed to said support.

5. A coil holder as claimed in claim 4 wherein said post has an axial bore and a radial slot in its upper end, and said support is spaced from the lower end of said resilient guide strip which is inserted in said axial bore, said support fitting onto the upper end of the post and having a pin fitting in said slot to prevent rotation.

6. A coil holder as claimed in claim 3 wherein said post has a longitudinal keyway and said arm carrying device comprises a boss carrying said arms and having a handle member screwed therein to engage in said keyway.

7. A coil holder comprising a base, a post vertically disposed on said base, a tray for supporting a coiled strip, said tray being journalled on said post below the upper end thereof and having an upstanding peripheral flange for confining a coil on said tray, guide and retaining means removably mounted on said post to enable positioning of a coiled strip on said support around said post, said means including means overlying said support to retain the coiled strip thereon and guide means for the inner end of the strip as it is drawn from the coil, means for fixing said guide and retaining means to said post to restrain said guide and retaining means from rotation as the strip is drawn off from the center of the coil, and an air jet nozzle supported by said base laterally of said tray and directed toward said flange at an angle to the radius of said tray and in the direction of rotation of said tray as the strip is drawn from the coil.

8. A coil holder as claimed in claim 7 wherein the air jet nozzle is mounted on an arm secured to the base and is rotatably supported thereby to vary the position of the nozzle.

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