Aug. 6, 1946. L. PERRAULT 2,405,446

ROLL SUPPORTING DEVICE

Filed Nov. 2, 1943 3 Sheets-Sheet 1

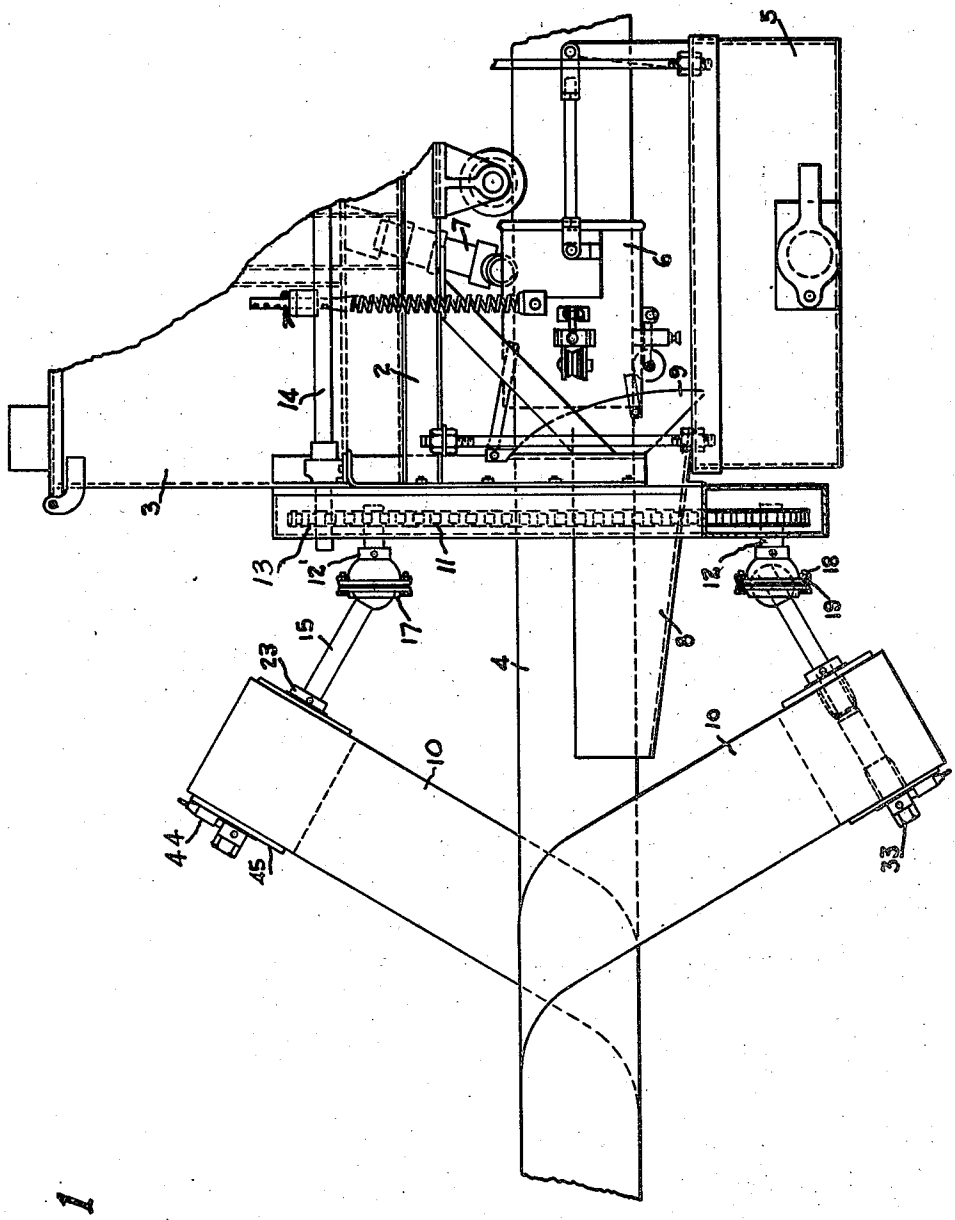


Fig. 1

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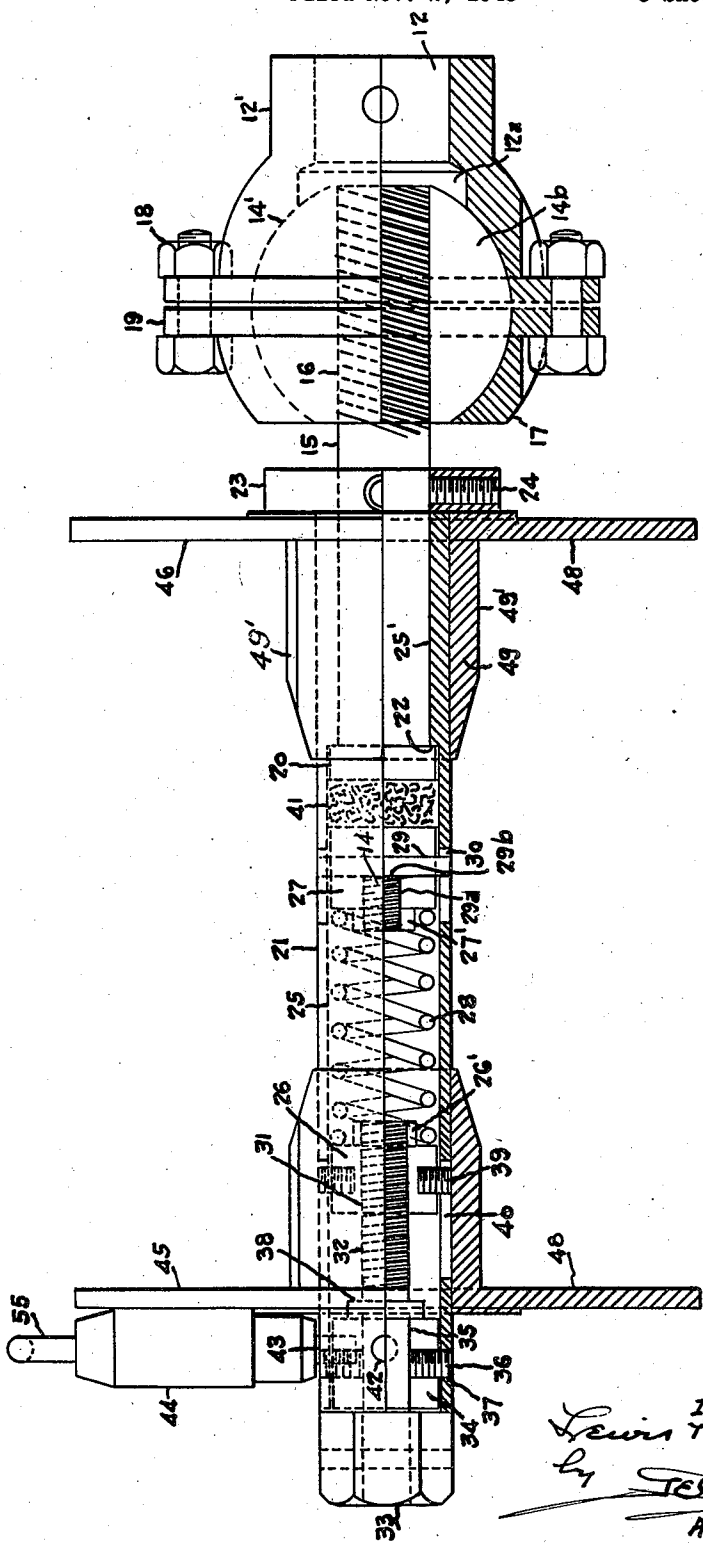


Fig. 2

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ROLL SUPPORTING DEVICE

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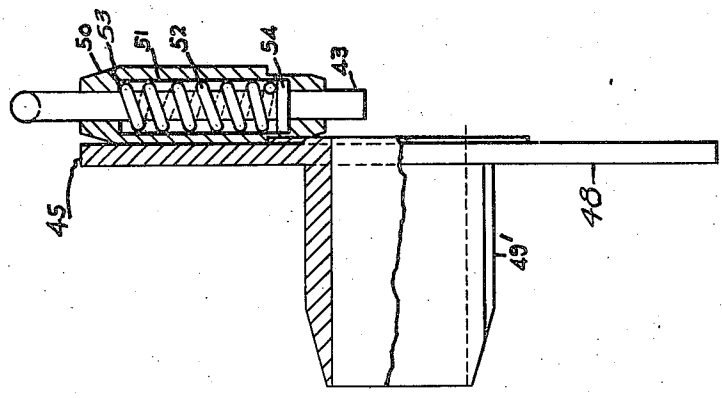


Fig. 4

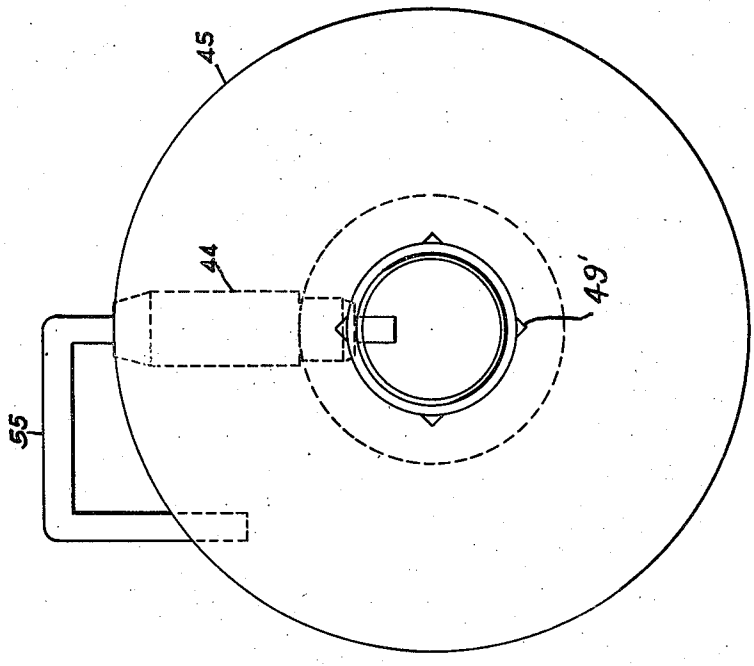


Fig. 3

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UNITED STATES PATENT OFFICE

2,405,446

ROLL SUPPORTING DEVICE

Lewis Perrault, Tulsa, Okla., assignor of one-half to The Philip Carey Manufacturing Company, a corporation of Ohio, and one-half to Perrault Bros., a copartnership composed of Lewis and Amslie Perrault

Application November 2, 1943, Serial No. 508,690

11 Claims. (Cl. 242—11)

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This invention relates to a reel supporting device and more particularly to a reel supporting arm for carrying rolls of wrapping material on pipe wrapping or pipe coating and wrapping machines.

In pipe wrapping machines one or more rolls of wrapping materials are mounted upon a wrapping head through which the pipe is projected for revolving the roll or rolls about the pipe for applying the wrapping material on the pipe. The wrapping head usually comprises a member adapted to, or attached to a device adapted to, move along a pipe line on traction rollers contacting the pipe. An annular ring is rotatably mounted on the member with rolls of wrapping material thereon so that as the ring is revolved about the pipe by suitable driving mechanism, the wrapping material will be spirally wrapped about the pipe with the edges of the wrapping material abutting or overlapping as desired.

The reels are preferably secured so that they will readily unwind, but not too freely to allow slack. Inasmuch as a proper amount of braking action is required upon the rolls to prevent slack and because they need to be so frequently changed for new supplies of wrapping material, much time is required for adjusting the braking tension of the rolls each time that a new roll is put on the reel.

The aim of the present invention is to provide a novel and improved roll supporting arm which can be readily adjusted to provide the proper braking action for allowing unwinding of the rolls and will permit change of the rolls without disturbing the adjusted degree of braking action. Moreover, the braking mechanism is confined within the supporting arm where it is compactly arranged and protected from disturbance.

For a better understanding of the invention, reference may be made to the accompanying drawings, in which:

Fig. 1 is an elevational view of a portion of a pipe coating and wrapping machine provided with a reel supporting arm embodying the invention;

Fig. 2 is a side elevational view, partly in cross section, of the supporting arm with a reel thereon;

Fig. 3 is an end elevational view of the arm and the reel thereon; and

Fig. 4 is a cross sectional view of the locking device for the roll.

Referring to the drawings in which like numerals are used to designate like parts, Figure 1 is the rear portion of a pipe coating and wrapping machine of the general construction shown

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in application Ser. No. 374,916, filed January 17, 1941 (Patent No. 2,344,264).

The machine comprises a frame member 2 having mounted thereon a supply tank 3 above the pipe line 4, an auxiliary or overflow tank 5, below the pipe line, and a resiliently mounted collar or wiper 6 disposed to move along with the machine beneath the pipe. Coating material is deposited on the top of the pipe from the supply tank through a discharge nozzle 7. An excess coating material wiped from the pipe is flowed into the auxiliary tank. A drip collector 8 and a protector 9 are disposed at the end of the auxiliary tank to collect the drip from the pipe substantially up to the point where the wrapping material 10 is applied.

The wrapping material is applied by a wrapping device comprising generally a gear ring 11 rotatably mounted upon radially disposed rollers and carrying stubs 12. The gear ring is driven by a gear 13 mounted on a shaft 14 which is connected by suitable driving connection to a motor on the frame.

The stubs 12 are each provided with a head 12*a* to seat within the complement recess of a socket member 12' having a spherical portion 14' to receive a ball member 14*b* to which the arm 15 is connected in any suitable manner, such as screw threads 16. The ball member is secured within the socket by the clamp ring 17 which has a spherical portion to complement spherical portion 14' in socket member 12'. The clamp ring is secured to the stub member by bolts 18 projecting through flanges 19 on each of the mating members. A ball and socket joint is provided whereby the wrapping roll may be disposed at the desired angle.

Arm 15 is provided with a head 20 and is inserted in the bore of the cylindrical member 21 with the head bearing against the seat 22. A thrust collar 23 is fixed to the arm by any means, such as one or more set screws 24, to bear against the end of the cylindrical member 21. The inner wall portion 25' of the cylindrical member, between the seat 22 and the thrust collar, provides a bearing surface for rotating about the arm.

The cylindrical member is of suitable length to support the rolls of wrapping material and has a bore 25 extending from the seat 22. Within the bore are inserted plugs or collars 26 and 27 separated by a spring 28. An end of each of the plugs or collars may advantageously be reduced at 26' and 27' respectively to seat the ends of the spring within the sockets resulting from the reduced portions. The plugs or collars are of

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a circumference to fit within the bore of the cylindrical member but to move longitudinally in the bore. The plug or collar **27** has a pin **29** projecting therethrough and into oppositely disposed slots **30** formed in the cylindrical member. A screw threaded recess **29a** is provided in the plug **27** in order that a set screw **29b** may be inserted to abut against pin **29** and hold it in position.

Plug or collar **26** has a screw threaded bore **31** to receive the end of spring-adjusting screw **32**. A head **33** is provided at the other end of the screw, which head is preferably of a size not exceeding the outside diameter of the cylindrical member in order not to interfere with slipping the reels on said member. A collar or filler **34** is interposed between the cylindrical member and the screw, the screw projecting through a bore **35** in the collar or filler. A set screw **36** may be projected through the collar or filler to impinge against the adjusting screw. The set screw is of sufficient length to project in the recess **37** in the cylindrical member to prevent the filler **34** from turning. The set screw is preferably impinged against the adjusting screw to prevent it from being turned except with a wrench applied to the head of the adjusting screw. A collar **38** is fixed to or integral with the adjusting screw to bear against the end of the collar or filler **34**.

The collar **26** is provided with one or more screws **39** projecting into elongated recesses **40** in the cylindrical member. These prevent the collar from turning and cause it to be adjusted longitudinally by the screw in order to compress the spring to proper compression.

Interposed between collar **27** and head **20** on the arm is a friction disc **41**, preferably fiber. The friction disc bearing against the ends of the collar and head provides a braking action to prevent free unwinding and slack in the roll.

The end of the cylindrical member is provided with a number of recesses **42** circumferentially disposed to be engaged by a clasp **43** in the locking member **44** disposed on the end of the reel head **45**.

The reel comprises two separate heads **45** and **46** each provided with an annular member **48** and a hub portion **49**, the outer wall of the hub being substantially cylindrical so that it can be readily inserted in the bore of a roll of wrapping material but provided with small ribs **49'** which will engage the wrapping material to revolve with it. Reel head **46** need not be fixed to the cylindrical member inasmuch as it will be forced to rotate with it by fixation of the other reel head to the cylindrical member.

Reel head **45** is provided with the locking member **44** which comprises a clasp pin **43** supported in a holder **50** having a socket **51** in which a spring **52** is mounted to seat at one end against the shoulder **53** of the holder and at the other end against a collar **54** on the clasp pin. One end of the clasp pin projects to provide a handle **55** whereby the clasp pin may be lifted against the compression of the spring. The end of the handle may conveniently be projected to extend past the annular portion **48** of the reel disc to prevent same from swinging into interference with the wrapping material mounted on the hubs of the reel heads between the annular members.

By having a series of recesses **42** disposed circumferentially about the cylindrical member, the latch member may be more quickly attached as any one of the recesses can receive the clasp pin and by slightly turning the reel head one of the recesses will receive the clasp pin.

From the above detailed description of the structure, the operation of the device is apparent but will be briefly described.

When the roll of wrapping material on the reel is exhausted, the reel head with the latch thereon is disengaged and removed from the cylindrical member. A new supply roll is pushed on over the cylindrical member over the hub portion of the reel head **46** and abutting against the annular ring thereof. Then the other reel head with the catch thereon is pushed on against the other side of the supply roll with its hub portion likewise fitting into the roll and the annular ring bearing against its opposite side. The head is manipulated until the catch engages a recess in the cylindrical member thereby causing the cylindrical member to rotate with the roll of wrapping material in unwinding. The cylindrical member rotates upon the arm which is supported in the ball and socket support and which is adjusted to the proper angle. A braking action is effected against the head of the arm by reason of the friction disc being pressed there against by the spring. The compression of the spring is adjusted by the screw which actuates the collar or plug with which the screw is connected.

Features of the invention are the simplicity and compactness of structure and with the parts concealed and protected against disturbance after being properly adjusted.

It will be understood that there may be various changes in details of construction without departing from the spirit of the invention.

I claim:

1. In a pipe wrapping device having an annular ring carrying a real of wrapping material and rotatably mounted upon a frame or carriage member which is provided with driven traction wheels for moving the device along a pipe line, an arm for supporting the reel carrying a supply of wrapping material comprising a hollow tubular member, a shaft on which said tubular member is adapted to be rotated, a friction device in the hollow member interposed between the shaft and said hollow member, and means for adjusting the friction device.

2. In a pipe wrapping device having an annular ring carrying a reel of wrapping material and rotatably mounted upon a frame or carriage member which is provided with driven traction wheels for moving the device along a pipe line, an arm for supporting the reel carrying a supply of wrapping material comprising a hollow tubular member, a shaft on which said tubular member is adapted to be rotated, a friction device in the hollow member interposed between the shaft and said hollow member, a spring actuating the friction device, and means for adjusting the compression of the spring.

3. In a pipe wrapping device, an arm for supporting a supply of wrapping material comprising a hollow tubular member, a shaft projecting into the tubular member on which said tubular member is adapted to be rotated and having a portion seated against an offset ledge in the hollow member, spaced apart collars or plugs within the tubular member for holding a friction device against the shaft, a spring interposed between the collars or plugs, an adjusting means for adjusting one of the collars to compress the spring, a wrapping carrying reel, and means for causing the wrapping carrying reel to be rotated with the hollow member.

4. In a pipe wrapping device, an arm for supporting a supply of wrapping material compris-

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ing a hollow tubular member having a bearing surface adjacent a stepped portion, a shaft having one end inserted in the tubular member and rotatably engaging the bearing surface, spring pressed friction means within the tubular member bearing against the end of the shaft and providing a brake between the shaft and tubular member, and means carried by the tubular member for adjusting the compression of the spring.

5. A supply roll device comprising a reel and a supporting means for the reel, said supporting means comprising a hollow cylindrical member having an interior thrust seat for seating a thrust collar on an arm, spaced apart plugs longitudinally movable within the hollow cylindrical member with a compression spring disposed to impinge against the plugs, a friction device interposed between one of the plugs and the thrust collar on the arm, means for regulating the compression of the spring, and a key device for positively engaging the reel with the hollow cylindrical reel supporting member.

6. A supply roll device comprising a reel and a supporting device for the reel, said supporting device comprising a hollow cylindrical member having an interior thrust collar, an arm having a thrust bearing portion seating against the interior thrust collar of the tubular cylindrical member and having one end projecting from the cylindrical member, spaced apart plugs longitudinally movable within the hollow cylindrical member with a compression spring disposed to impinge against the plugs, a friction device interposed between one of the plugs and the arm, means for actuating one of the plugs to regulate the compression of the spring, and means for keying the reel to the hollow cylindrical member.

7. A supply roll device comprising a reel and a supporting device for the reel, said supporting device comprising a hollow cylindrical member having an interior thrust collar, an arm having a thrust bearing portion seating against the interior thrust collar of the tubular cylindrical member and having one end projecting from the cylindrical member, spaced apart plugs longitudinally movable within the hollow cylindrical member with a compression spring disposed to impinge against the plugs, a friction device interposed between one of the plugs and the arm, means for actuating one of the plugs to regulate the compression of the spring, and a spring

pressed pin for locking the reel with or releasing same from the hollow cylindrical member.

8. A supply roll device comprising a reel having separate heads and a hollow cylindrical member for supporting the reel, a series of recesses circumferentially disposed about the cylindrical member, a spring pressed pin disposed on the outside of one of the heads of the reel associated with the recesses for locking the reel with or releasing same from the hollow cylindrical member, and a handle for manipulating the pin.

9. A pipe wrapping device comprising a frame adapted to move along a pipe line, an annular ring disposed about the pipe line, gear mechanism for rotating the ring about the pipe line, and a reel of wrapping material mounted upon the ring by a hollow cylindrical member rotatably mounted upon an arm which is adjustably mounted upon the annular ring and has a free end projecting within one end of the hollow cylindrical member, a friction device interposed between the hollow member and the free end of the arm, and means in the end of the hollow cylindrical member opposite to that which receives the free end of the arm for axially adjusting the friction member.

10. A supply roll device comprising a reel and a supporting means for the reel, said supporting means comprising a stub and arm adjustably jointed together, a hollow cylindrical member rotatably mounted upon the arm with an end of the arm projecting within the hollow cylindrical member, a friction member within the hollow cylindrical member adjacent the end of the arm, a spring means for pressing the friction member against the arm, and means in the end of the cylindrical member opposite to the arm for adjusting the spring.

11. A support for a roll supply of material comprising a hollow cylindrical member rotatably mounted upon the end of an arm projecting within one end of said hollow member, a spring housed with the hollow cylindrical adjacent the end of the arm, a friction member interposed between the spring and the arm, and means associated with the end of the hollow cylindrical member opposite to the end in which the arm is projected for adjusting the spring against the friction member.

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