

Nov. 21, 1944.

T. R. BENNETT

2,363,112

WEB ROLL SUPPORT

Filed Nov. 16, 1940

5 Sheets-Sheet 1

Fig. 1.

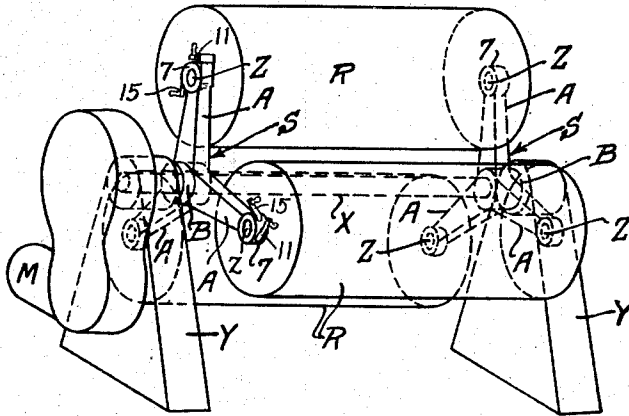


Fig. 4.

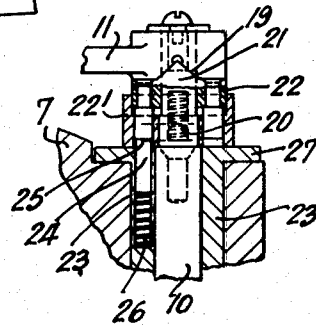


Fig. 3.

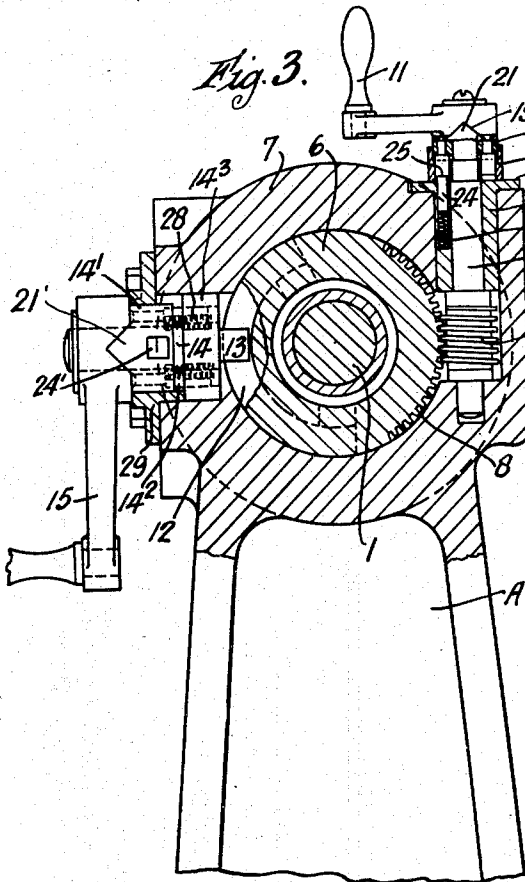
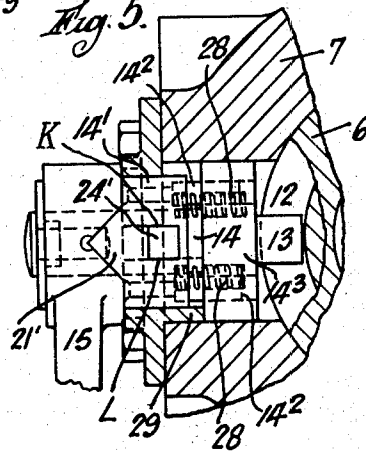


Fig. 5.



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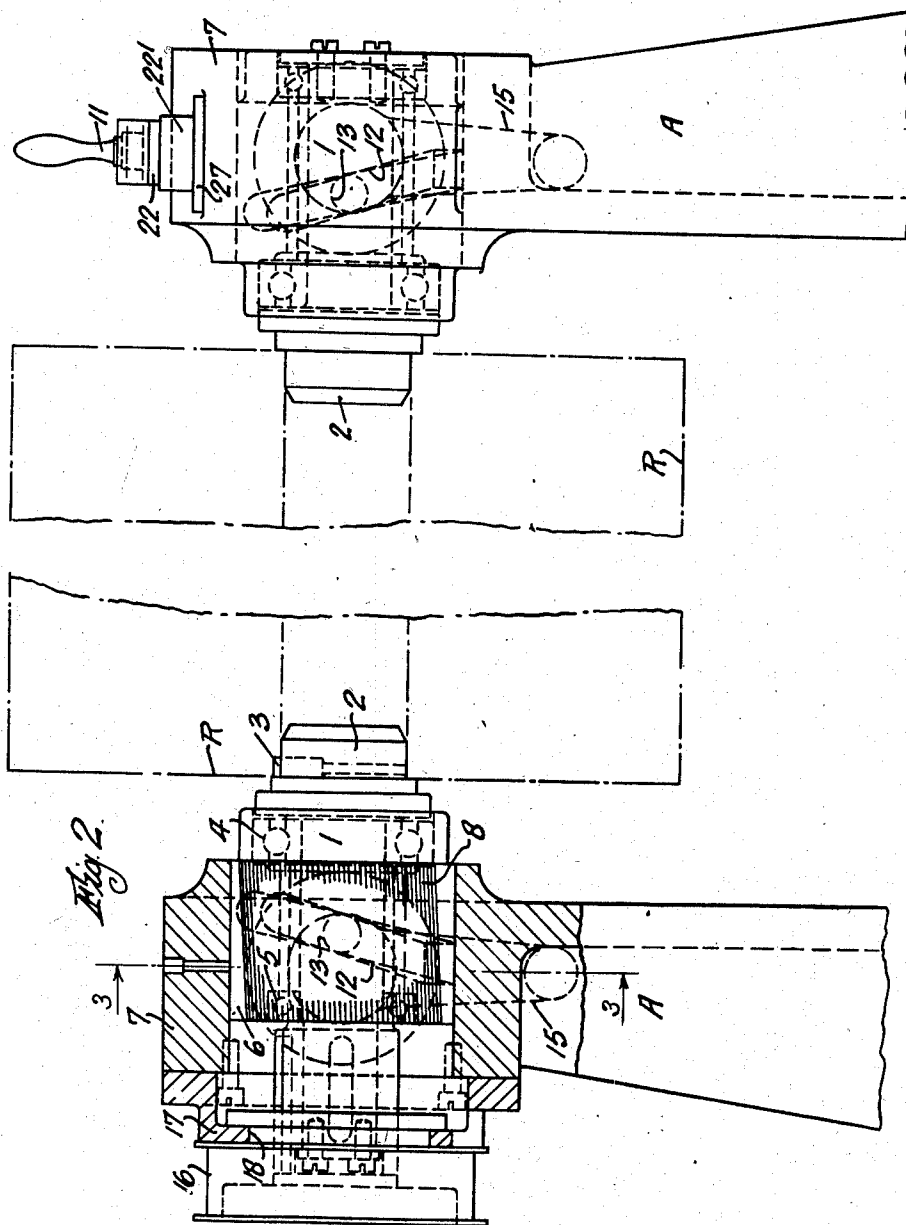
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5 Sheets-Sheet 2



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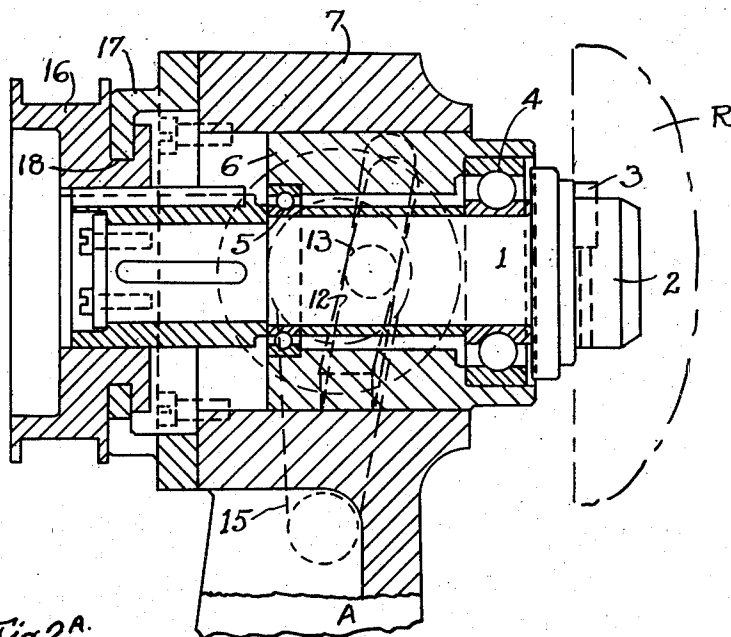


Fig. 2A.

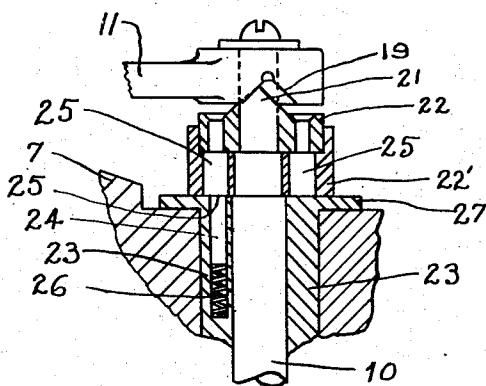


Fig. 4A.

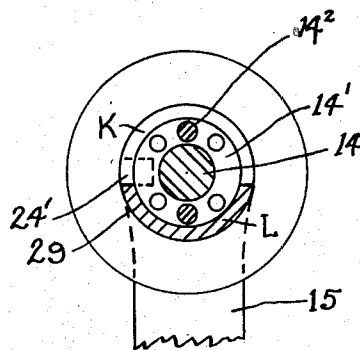


Fig. 5A.

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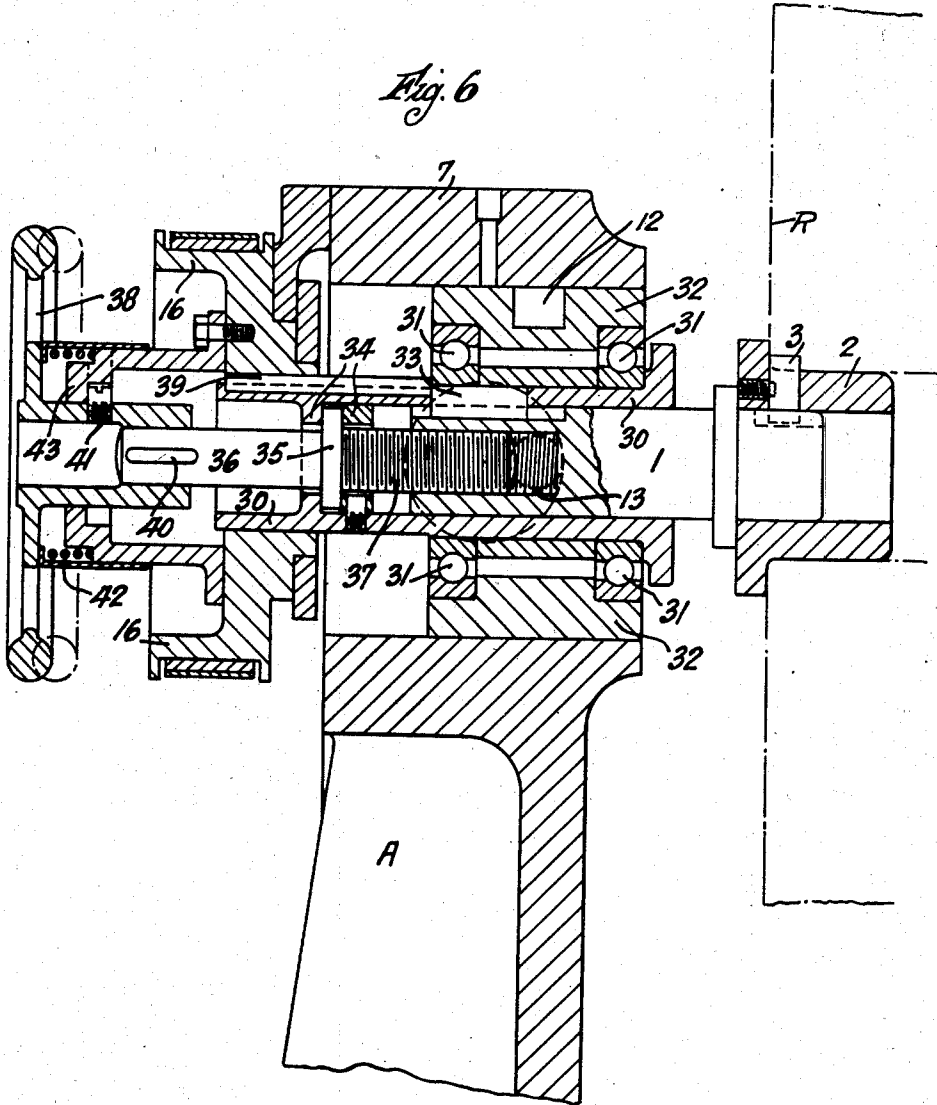
2,363,112

WEB ROLL SUPPORT

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Fig. 6



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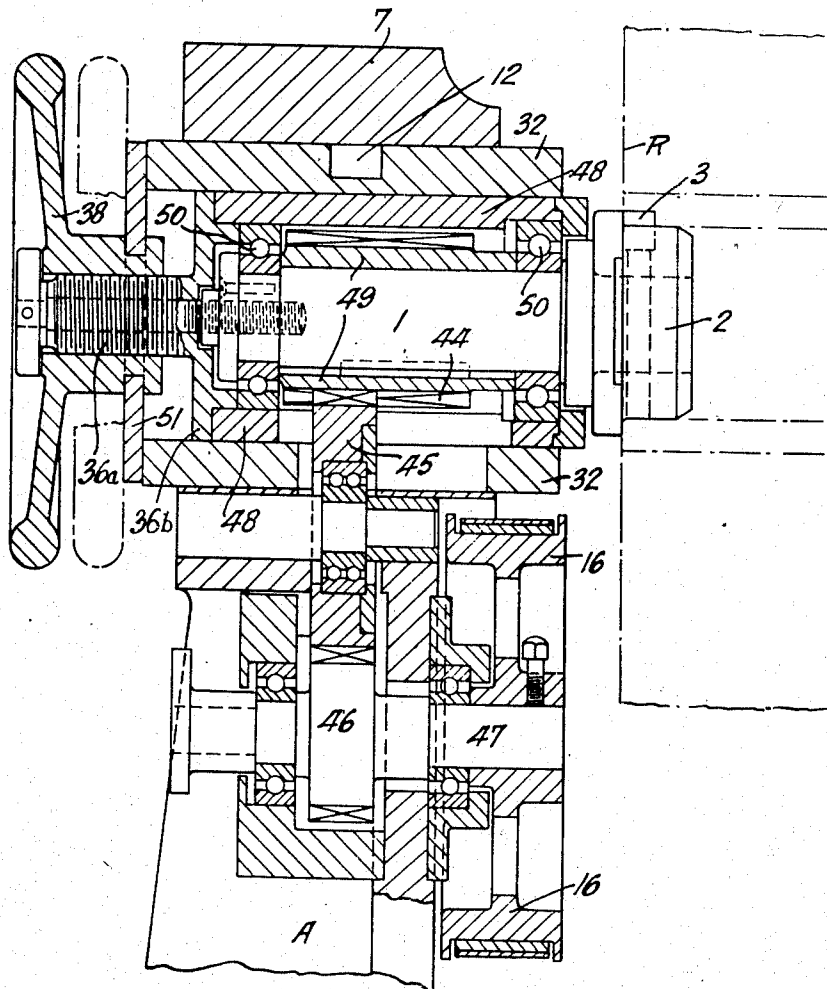
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Fig. 7.



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UNITED STATES PATENT OFFICE

2,363,112

WEB ROLL SUPPORT

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Application November 16, 1940, Serial No. 365,864
In Great Britain November 27, 1939

21 Claims. (Cl. 242—68)

This invention relates to improvements in supports for web rolls such as are employed for the paper web supply to printing machines. Such supports commonly comprise spaced supporting members or structures (usually in the form of spiders) capacitated rotatably to carry a plurality of rolls between them, the supporting members being angularly movable in unison to enable the various rolls to be brought successively into web feeding position; generally these supporting members carry chuck components which are retractable to enable rolls to be positioned between them and then advanced to engage in a central aperture in the rolls and the supporting members are themselves relatively adjustable as to their spacing to enable rolls of different width to be accommodated, and are adjustable together to enable a main side-lay adjustment to be made. The present invention is more especially concerned with supports of the general kind referred to and also in which control of the rate at which the rolls are allowed to be rotated by the pull of the web passing to the machine is regulated by the action of adjustable brakes carried by the support at each roll position, the brakes operating on one or both of the chucks of each roll position and serving thus to regulate the tension in the web passing from the roll in use.

The main object of the present invention is to provide in such a mechanism as that referred to and including the brakes, an arrangement which will enable the chuck or other roll engaging components to be adjusted endwise individually with respect to the supporting members in addition to the adjustment of the supporting members themselves, the arrangement enabling the chuck components at each roll position to be separately adjusted in the supporting members to effect individual adjustment for "side-lay," the adjusting arrangement being such as will be accommodated in the space which is normally occupied by the various parts including the brakes.

The invention is illustrated in the accompanying drawings in which Figure 1 is a general perspective view; Figure 2 is a side elevation partly in section; Figure 2A is a view similar to a portion of Figure 2 with more of the parts in section; Figure 3 is a sectional view as seen on line 3—3 of Figure 2; Figure 4 is a fragmental view of a portion of the mechanism shown in Figure 3 illustrating parts in locked position; Figure 4A is a view similar to Figure 4 illustrating parts in unlocked position; Figure 5 is a fragmental view of another portion of the mechanism shown in Figure 3; Figure 5A is a fragmental view separately

showing some of the parts illustrated in Figure 5; Figure 6 is a view similar to Figure 2A showing a modified form of the invention; and Figure 7 is a view similar to Figure 2A showing another modified form of the invention.

Referring firstly to Figure 1, the invention is shown applied to a support capacitated to carry three rolls; each supporting member is in the form of a three-armed spider S and the arms A of each spider extend radially from a central boss B and the two bosses are carried for rotation by a central main supporting shaft X arranged to be rotated in end bearings or pedestals Y by an electric motor M so that rolls R in the three roll positions of the arms A can be brought successively into running position, the outer end of each of the three arms A being provided with a roll supporting device Z to engage in a central aperture in the rolls, the opposed chucks of the corresponding arms of the two spiders engaging in opposite ends of the roll. One or other, or if desired both, of the spiders S are adjustable axially of the supporting shaft X so that the spacing between the arms can be adjusted to enable rolls of different width to be accommodated in the support and in addition the spiders are adjustable bodily together to enable a main side-lay adjustment to be effected, this being effected by axially moving the shaft X itself.

Reference will now be made to Figures 2-7 which illustrate three different forms of construction. In all of these figures only one chuck position is shown and referred to, it being understood that the other chuck positions are similar.

The roll supporting device Z for one end of a roll consists of a spindle 1 having at one end a chuck 2 to engage in the central aperture in one end of a roll, this chuck having a lug 3 which is forced into the roll so that the rotation of the roll is transmitted to the spindle 1. The spindle is rotatably supported through spaced ball or roller bearings 4, 5 in a sleeve 6 which is itself supported for both angular and axial movement in a boring formed in a boss 7 at the outer end of the arm A of the spider S, the spindle being held also against axial movement with respect to the sleeve 6 by the bearings 4, 5. A part of the periphery of the sleeve 6 is formed with teeth 8 which are engaged tangentially of the sleeve, by a screw or worm 9 carried by a spindle 10 rotatable in the spider arm, the spindle 10 extending beyond the outer end of the arm and there being provided with an operating handle 11. Another part of the periphery of the sleeve is formed with a cam groove 12 into which extends a stud 13 set eccentrically on

a second spindle 14 which is mounted in the spider arm to rotate about an axis passing radially through the axis of the spindle 1 or sleeve 6, the spindle 10 being disposed on one side of the sleeve and the spindle 14 on the other side. This spindle 14 extends beyond the side of the spider arm and is, at its extended portion, provided with an operating handle 15.

It will now be seen that the sleeve 6 (and consequently the chuck 2) can be moved axially in two ways; firstly by holding the spindle 14 against movement so as to hold the stud 13 stationary, and by rotating the spindle 10, the sleeve 6 is caused to rotate in the spider boss 7 and the cam groove 12 in the sleeve 6 will react against the fixed stud 13 to cause the sleeve 6 to move axially, the teeth 8 on the sleeve being cut sufficiently long to enable this axial movement to occur with respect to the screw or worm 9 on the spindle 10; secondly by rocking the handle 15, the eccentric stud 13 operates as a crank-pin to move the sleeve 6 axially by direct action against the walls of the cam groove 12. It will be obvious that the first action produces a relatively slow axial movement (due to the reduction of the screw thread 9 and the equivalent action between the cam groove 12 and the fixed stud 13) while the second action produces a relatively fast axial movement of the sleeve due to the direct action of the stud 13 on the groove 12. In addition, these two adjustments co-operate with one another in such manner that the datum position from which one adjustment operates is regulated by the position of the other adjustment.

The chuck arrangement for the other end of the roll may be similar to that described, the second chuck arrangement being provided with the adjusting means by which a relatively slow and a relatively quick action is obtained.

Thus, regarding the two chucks for the opposite ends of a roll, when a roll is to be introduced into position, the sleeves are caused so as to move axially by the quick action produced by the spindle 14 and its stud 13 as to carry the opposed chucks 2 away from one another. When the roll R has been brought into position between the chucks 2, the spindles 14 are rocked in the reverse direction to thrust the chucks 2 into the central apertures in the roll R which thus is held by the chucks 2 in readiness to be rotated. If it is desired to make an individual adjustment to bring the roll into correct alignment with the web in use (such a condition arising from various causes, e. g., due to variation in width of different rolls, in variation in the length of the cores on which the rolls are wound—the chucks being forced into the cores which are tubular—in variation in the “centreing” of the width of the roll on the core and in variation in the diameters of the bore at the ends of the tubular core, all of which would cause the roll to be badly aligned with the web in use), then the spindles 10 are rotated to cause the relatively slow action to be produced, the chucks 2 of the selected roll position at the opposite ends of the roll being moved (in the same, or if necessary in opposite, directions), this adjustment being a fine adjustment by reason of the screw action of the adjusting mechanism.

In order now to provide a braking action on the roll so as to control its rate of rotation (and hence the tension in the web passing from the roll) the following arrangement is provided for the chuck arrangement at one or if desired at both ends, of the roll position.

The chuck 2 on the spindle of one roll supporting device is located on one side of the arm A of the spider S and the spindle 1 extends through the sleeve 6 and projects beyond the other side of the boss 7. This projecting end has a slidable but non-rotatable fit in a brake drum 16 held to the said other side of the boss 7 against axial movement by a flange 17 which is made in sections and secured to the outer face of the boss 7 and extends into a circular recess 18 formed in a boss on the brake drum 16, the flange 17 allowing the drum to rotate with the spindle. The brake drum forms part of any conventional brake arrangement, i. e., it is engaged peripherally by a brake band or by brake shoes which can be contracted on to the drum by screw and nut or lever mechanism. It will now be seen that when the spindle 1 is caused to rotate by rotation of a roll R due to the pull of the web passing from that roll, the brake band or shoes will exert a braking action on rotation of the spindle 1 and hence on the unwinding of the roll, this in turn regulating the tension of the web passing from the roll and the degree of tension being adjusted by adjustment of the brake band or shoes.

The mechanism employs a small number of parts and can readily be arranged to be accommodated in the limited space which is usually available.

Means is provided to lock the handle 11 against accidental operation, and is illustrated in Figures 3, 4 and 4A. The handle 11 is rotatable on the spindle 10 and is formed with a cam groove 19, which engages with a cam projection 21, formed on a sleeve 22. The sleeve 22 is axially slidable on the spindle 10 and also slidable, though not rotatable with respect to a sleeve 22' which is secured to the spindle 10. A spring 20 carried in opposing bores in the sleeves 22 and 22' acts to separate the sleeves and press the cam projection 21 into firm engagement with the cam groove 19. As shown in Figure 4A, the sleeves 22 and 22' are held against relative rotation by pins 25, secured to and extending downwardly from the sleeve 22 and into suitable bores in the sleeve 22'. A stationary bush 23 in which the spindle 10 is rotatably supported, is provided with a flange 27 and is bored to receive a locking pin 24, which is pressed upwardly by a spring 26. In the position of the parts shown in Figure 4, the pin 24 extends into one of the bores to engage the pin 25 extending downwardly into the sleeve 22'. The point of meeting of the pins is above the surface of the flange 27, and hence the sleeves 22' and 22 are locked in position, and the cam projection 21 being spring pressed into the cam groove 19, the handle 11 also is held against rotation. However, when force is applied to turn the handle 11, the first action is to press the cam projection 21 downwardly, and thus cause the sleeve 22 to press the pins 25 and 24 downwardly until their meeting surfaces, as shown in Figure 4A, are in alignment with the top surface of the flange 27. When this occurs, the sleeves 22 and 22' are free to rotate, and such rotation may be effected by continued rotation of the handle 11, the motion being transmitted through the cam 21 and the sleeves 22 and 22' and the spindle 10 to the worm 9.

A somewhat similar arrangement is provided for locking the handle 15 but in this case since the handle 15 is not required to have more than 180° of movement the construction is slightly modified. As depicted in Figures 5 and 5A a sleeve 14' equivalent to the sleeve 22 carries a

transverse pin 24' and is pressed by springs 28 to carry this pin 24' into a recess formed in a fixed bush 29, the sleeve 14' being in slidable driving connection with a block 14³ on the spindle 14 by pins 14², one side of the recess being carried down beyond the other side. When the handle 15 is first operated, the cam 21' as before first causes the sleeve 14' to move to carry the pin 24' clear of the shorter side (indicated at K) of the recess so as to allow the pin 24' and hence the sleeve 14' to be rotated in one direction; this rotation is effected by continued movement of the handle 15 but is limited by the pin 24' coming into engagement with the longer side (indicated at L) of the recess, the extent of movement thus permitted being 180°.

In the modified arrangement shown in Figure 6, the spindle 1 which carries the chuck 2 extends through an inner sleeve 30 which is rotatably mounted in spaced ball or roller bearings 31 carried within an outer sleeve 32 slidable axially in a bore in the boss 7 at the outer end of the spider arm A. The inner sleeve 30 and the spindle 1 are held against relative rotation while the spindle 1 is permitted to move axially in the inner sleeve 30 by a key connection 33. The outer sleeve 32 is formed in its outer periphery with the recess 12 into which extends the stud 13 which is mounted eccentrically on the spindle 14 which has the operating handle 15 and latching mechanism described.

The inner sleeve 30 is held against relative axial movement with respect to the outer sleeve 32 so that when the outer sleeve 32 is moved axially by manipulation of the operating handle 15 the inner sleeve 30 is correspondingly moved axially.

The inner sleeve 30 is formed at the end remote from the chuck end so as to provide abutments 34 between which extends a flange 35 formed on a rod 36 which is co-axial with the spindle 1 and extends from the flange in both directions; the end extending towards the chuck is screw-threaded at 37 and engages in a screw-threaded aperture formed co-axially in the end of the spindle 1 remote from the chuck; the end of the rod extending in the other direction passes out of the end of the inner sleeve 30 and is provided with an operating handwheel 38. Hence when the inner sleeve 30 is caused to move axially by manipulation of the outer sleeve 32, the axial movement is imparted through the flange 35 on the rod 36 and through the screw-threaded connection of this rod to the spindle 1 which thus also partakes of the axial movement. This axial movement, which is transmitted to the chuck is the equivalent of the coarse or quick adjustment referred to for enabling the chuck to be retracted and advanced to load a roll in position. The fine adjustment is obtained in this construction by rotating the rod 36 with respect to the inner sleeve 30 (this being permitted by the flange and abutment connection 34, 35 between these two parts). When the rod 36 is thus rotated, the rod being held against axial movement by the inner sleeve (which is itself held through the outer sleeve 32 and eccentric stud 13) would cause the spindle 1 to be moved axially in the inner sleeve 30 and so set up a fine adjustment on the chuck.

In order to provide, in such a construction, for braking the roll, the extended end of the inner sleeve 30 of the roll supporting device for one end of roll is placed, through a key 39, in a slidable but non-rotatable fit in the brake drum

16 of a braking mechanism similar to that already described, the drum being mounted on the sleeve 30 between the outer face of the arm A of the spider and the operating handwheel 38 on the screwed rod. With this arrangement, since the spindle 1 is in sliding but non-rotatable connection with the inner sleeve 30 which is itself in slidable but non-rotatable connection with the brake drum 16, the rotation of the spindle 1 is always transmitted to the drum 16 while at the same time the spindle 1 can be axially adjusted either quickly by the eccentric stud 13 (in which case the outer sleeve 32, the inner sleeve 30 and the screwed rod 36 move together with the spindle 1) or slowly by rotating the screwed rod 36 (in which case the spindle 1 slides in the inner sleeve 30).

It will be appreciated that in this construction the operating handwheel 38 and screwed rod 36 normally rotate with the chuck spindle 1 and the inner sleeve 30 and the fine adjustment is effected by rotating the handwheel 38 with respect to the chuck spindle 1; in order to hold the handwheel 38 and the chuck spindle 1 against such relative rotation due to inertia effects during rotation of the roll, the operating handwheel 38 is slidable on a key 40 on the end of the rod 36 and a pin 41 is screwed into a boss on the handwheel; the handwheel is biased by a spring 42 to carry the handwheel 38 to an extreme position shown in full lines in Figure 6, whereby the pin 41 is thrust into a slot in a hollow cylindrical member 43 secured to the brake drum 16, the slot locking the pin 41 and the handwheel against rotation with respect to the drum 16 and hence with respect to the chuck spindle 1 which is connected through the sleeve 30 to the drum 16. When it is desired to employ the handwheel 38 to make an adjustment, the handwheel is pushed in to the dotted line position against the spring 42 to carry the pin 41 clear of the slot and so enable the handwheel 38 and the screwed rod 36 to be turned relatively to the chuck spindle.

In both of the arrangements described the brake drum 16 is concentric with the spindle 1; in a further modification shown in Figure 7 the brake drum 16 is set to one side of the spindle 1 and is connected to the spindle for rotation with the spindle by gearing. In this construction the spindle 1 is provided with gear teeth 44 in mesh with which is an intermediate or idler gear wheel 45 rotatably supported on the arm A of the spider and this idler gear meshes with a gear wheel 46 fast on a second spindle 47 parallel with the chuck spindle 1 but off-set therefrom towards the main shaft X of the spider arms A. On this second spindle is secured the brake drum 16 which through the gearing is caused to rotate with the chuck spindle 1 and which through the associated brake band or shoes reacts to regulate the rotation of the spindle and hence the tension of the web passing from the roll R supported by the chucks 2. The brake drum 16 and its mechanism is in this arrangement accommodated between the planes which are necessarily occupied by the chuck arrangement and so the provision of the brake requires no greater space widthwise than would in any case have to be provided for the chuck spindle.

This modification follows generally the construction of the modification last referred to insofar as it employs a screwed rod 36a co-axial with the chuck spindle 1 for effecting the fine adjustment and an outer sleeve 32 having a recess 12 to receive the eccentric stud 13 for effecting the

quick adjustment. However, in the arrangement shown in Figure 6 the screwed rod extended into the chuck spindle 1 which acted as a travelling nut to the rod 36, but in the present case the operating handwheel 38 forms a stationary nut to the rod 36a which preferably has a flange 36b formed on its inner end, the flange being suitably secured to a sleeve 48 around a bush 49 on the spindle 1. The bush 49 forms a spacer between ball or roller bearings 50 by which the spindle is rotatably supported within the sleeve 48, the bush 49 being secured to the spindle 1 and having the gear teeth 44 formed on it. The chuck spindle 1 and its bush 49 are held against axial movement in the sleeve 48 but are permitted rotation in it through the spaced ball or roller bearings 50. This sleeve 48 is slidably but non-rotatably mounted in a sleeve 32 which corresponds to the outer sleeve 32 referred to in the last modification, and the operating handwheel 38 is held by a flange or plate 51 against axial movement with respect to the outer sleeve 32 while being free to rotate with respect to the outer sleeve. Hence the handwheel 38 is rotated to effect a fine adjustment, and the screwed rod 36a is moved axially moving with it the sleeve 48 to which the rod 36a is secured, this in turn moving axially the chuck spindle 1 which is rotatable in this sleeve, the whole sliding in the outer sleeve 32 which remains held by the eccentric stud 13. The quick adjustment is effected as in the previous constructions by moving the spindle 14 carrying the eccentric stud 13 which moves the outer sleeve 32 axially and carries with it the assembly (including the chuck spindle 1, the screwed rod 36a and the sleeve attached to it).

To enable the intermediate idler gear 45 to mesh with the teeth on the bush 49, the outer sleeve 32 and the sleeve 48 slidable in it are cut away to permit the idler gear to pass into mesh with the teeth which are made sufficiently long axially to retain their mesh with the intermediate pinion during any position of axial adjustment.

What I claim is:

1. A web roll support having in combination a supporting structure, means mounting said structure for rotation, a plurality of rotatable chuck members supported in said structure in opposed relation to receive a plurality of rolls between them, mechanism to effect both a coarse and a fine axial adjustment of each chuck member, and a brake member operably connected to rotate with one of the opposed chuck members of each pair.

2. In a web roll support comprising in combination, a pair of spaced supporting members and means mounting said members for rotation and axial movement either bodily together or relatively to one another in the axial direction respectively, a plurality of rotatable chuck members, means carrying the said chuck members for axial movement in said supporting members, the said chuck members being disposed in opposed relation to support a plurality of rolls between them, mechanism to effect a coarse and a fine axial adjustment of each said chuck member, and a brake member operably connected with at least one of said opposed chuck members of each pair.

3. A web roll support having in combination a supporting structure, means mounting said structure for rotation, a plurality of rotatable chuck members supported in said structure, in opposed relation to receive a plurality of rolls between them, mechanism to effect both a coarse and a fine axial adjustment of each chuck member, a

brake member operably connected with one of the opposed chuck members holding each supported roll, the said axial adjustment mechanism including for each chuck member a sleeve having a cam groove and in which the chuck member is rotatable, a movable abutment engaging the cam groove, means to move the abutment to effect the coarse adjustment, and means to move the sleeve angularly while restraining the abutment against movement, to effect the fine adjustment.

4. In a web roll support comprising in combination spaced supporting members and means mounting said members for rotation and axial movement either bodily together or relatively to one another in the axial direction respectively, a plurality of rotatable chuck members axially movable in said supporting members, the said chuck members being disposed in opposed relation to support a plurality of rolls between them, mechanism to effect a coarse and a fine axial adjustment of each said chuck member, a brake member operably connected with one of said opposed chuck members holding each supported roll, the said axial adjustment mechanism including for each chuck member a sleeve having a cam groove and in which the chuck member is rotatable, a movable abutment engaging the cam groove, means to move the abutment to effect the coarse adjustment, and means to move the sleeve angularly while restraining the abutment against movement, to effect the fine adjustment.

5. A web roll support having in combination a supporting structure, means mounting said structure for rotation, a plurality of rotatable chuck members supported in said structure in opposed relation to receive a plurality of rolls between them, mechanism to effect both a coarse and a fine axial adjustment of each chuck member, and a brake member co-axial with and operably connected to rotate with one of the opposed chuck members of each pair.

6. In a web roll support comprising in combination, a pair of spaced supporting members and means mounting said members for rotation and axial movement either bodily together or relatively to one another in the axial direction respectively, a plurality of rotatable chuck members, means carrying the said chuck members for axial movement in said supporting members, the said chuck members being disposed in opposed relation to support a plurality of rolls between them, mechanism to effect a coarse and a fine axial adjustment of each said chuck member, and a brake member co-axial with and operably connected to rotate with one of said opposed chuck members of each pair.

7. A web roll support comprising in combination spaced supporting members, means mounting said members for rotation and axial movement either bodily together or relatively to one another in the axial direction respectively, a plurality of rotatable chuck members axially movable in said supporting members, the said chuck members being disposed in opposed relation to support a plurality of rolls between them, mechanism to effect a coarse and a fine axial adjustment of each said chuck member, a brake member co-axial with and associated with at least one of said opposed chuck members holding each supported roll, the said axial adjustment mechanism including for each chuck member a sleeve having a cam groove and in which the chuck member is rotatable, a movable abutment engaging the cam groove, means to move the abutment to effect the

coarse adjustment, and means to move the sleeve angularly to effect the fine adjustment.

8. A web roll support having in combination a supporting structure, means mounting said structure for rotation, a plurality of rotatable chuck members supported in said structure in opposed relation to receive a plurality of rolls between them, mechanism to effect both a coarse and a fine axial adjustment of each chuck member, and a brake mechanism off-set from and operably connected with one of the opposed chuck members of each pair.

9. In a web roll support comprising in combination, a pair of spaced supporting members and means mounting said members for rotation and axial movement either bodily together or relatively to one another in the axial direction respectively, a plurality of rotatable chuck members, means carrying the said chuck members for axial movement in said supporting members, the said chuck members being disposed in opposed relation to support a plurality of rolls between them, mechanism to effect a coarse and a fine axial adjustment of each said chuck member, and a brake mechanism off-set from and operably connected with one of said opposed chuck members of each pair.

10. In a web roll support comprising in combination spaced supporting members and means mounting said members for rotation and axial movement either bodily together or relatively to one another in the axial direction respectively, a plurality of rotatable chuck members axially movable in said supporting members, the said chuck members being disposed in opposed relation to support a plurality of rolls between them, mechanism to effect a coarse and a fine axial adjustment of each said chuck member, a brake mechanism off-set from and operably connected with one of said opposed chuck members holding each supported roll, the said axial adjustment mechanism including for each chuck member a sleeve having a cam groove and in which the chuck member is rotatable, a movable abutment engaging the cam groove, means to move the abutment to effect the coarse adjustment, and means to move the sleeve angularly while restraining the abutment against movement to effect the fine adjustment.

11. In a web roll supporting mechanism, a frame, a sleeve rotatably and slidably mounted in the frame, a roll supporting spindle rotatably mounted in the sleeve and being secured against relative axial movement in respect thereto, cooperating means operable when the sleeve is held against rotation to axially move the sleeve and the spindle supported thereby, said cooperating means being operable by rotation of said sleeve to also axially move the sleeve and the spindle supported thereby, and means to rotate the sleeve.

12. In a web roll supporting mechanism, a frame, a sleeve rotatably and slidably mounted in the frame, a roll supporting spindle rotatably mounted in the sleeve and being secured against relative axial movement in respect thereto, cooperating means operable when the sleeve is held against rotation to axially move the sleeve and the spindle supported thereby, said cooperating means being operable by rotation of said sleeve to also axially move the sleeve and the spindle supported thereby, means to rotate the sleeve, said cooperating means including an operable part on the frame, means to lock the said part while said sleeve is being rotated by said sleeve rotating

means, and means to lock said sleeve rotating means while the part is actuated.

13. In a web roll supporting mechanism, a frame, a sleeve rotatably and slidably mounted in the frame, a roll supporting spindle rotatably mounted in the sleeve and being secured against relative axial movement in respect thereto, a first rotatable member adapted to act on the sleeve to axially move it and the spindle, and a second rotatable member adapted to rotate the sleeve, said sleeve and said first member operatively cooperating to cause axial movement of the sleeve when it is rotated by the second member.

14. In a web roll supporting mechanism, a frame, a sleeve rotatably and slidably mounted in the frame, a roll supporting spindle rotatably mounted in the sleeve and being secured against relative axial movement in respect thereto, a first rotatable member adapted to act on the sleeve to axially move it and the spindle, means to lock said first means, and a second rotatable member adapted to rotate the sleeve, said sleeve and said first member operatively cooperating to cause axial movement of the sleeve when it is rotated by the second member, and means to lock said second member against being actuated.

15. In a web roll supporting mechanism, a frame, a sleeve rotatably and slidably mounted in the frame, a roll supporting spindle rotatably mounted in the sleeve and being secured against relative axial movement in respect thereto, a first rotatable member adapted to act on said sleeve to axially move it to project one end of the spindle beyond the frame to engage a roll, a second rotatable member adapted to rotate the sleeve, said sleeve and said first member operatively cooperating to cause axial movement of the sleeve when it is rotated by the second member, and a brake mechanism secured to the other end of the spindle.

16. In a web roll supporting mechanism, a frame, a sleeve rotatably and slidably mounted in the frame, a roll supporting spindle rotatably mounted in the sleeve and being secured against relative axial movement in respect thereto, said sleeve having a quick cam groove in a portion of its periphery and gear teeth on another portion of its periphery, an eccentrically mounted and rotatable abutment carried by said frame and cooperating with the cam groove in the sleeve to move it axially when the abutment is rotated, and a rotatable member cooperating with the gear teeth on the sleeve to rotate it to cause cooperating action between the cam groove and the abutment to axially move the sleeve.

17. In a web roll supporting mechanism, a frame, a sleeve rotatably and slidably mounted in the frame, a roll supporting spindle rotatably mounted in the sleeve and being secured against relative axial movement in respect thereto, a quick cam groove provided in the sleeve, means to rotate the sleeve, and rotatable means carried by the frame to cooperate with the cam groove to axially move the sleeve at a time when the rotatable means is rotated and at a time when the sleeve is rotated.

18. In a device for supporting web rolls, a plurality of arms, a sleeve in each of the arms, a roll supporting spindle rotatable in and axially movable only with each sleeve, a chuck at one end of each spindle adapted to engage a web roll, a brake member operably connected to the other end of each spindle, and means operably connected to each sleeve intermediate the ends of

the spindle to separately effect coarse and fine axial adjustment thereof.

19. In a device for supporting web rolls, a plurality of arms, a sleeve rotatable and slidable in each arm, a roll supporting spindle rotatable in and slidable with the sleeve and having a chuck on one end adapted to engage a web roll, a brake member operably connected to the other end of the spindle, a coarse adjustment mechanism supported by the arm and adapted to hold and to slide the sleeve axially, and a fine adjustment mechanism supported by the arm and adapted to hold and to rotate the sleeve with respect to the arm.

20. A web roll support having in combination, a supporting structure, means mounting said structure for rotation, a plurality of chuck members supported in said structure in opposed relation to receive a plurality of rolls between them, mechanism to effect a coarse axial adjustment of each chuck member, a second mechanism to effect a fine axial adjustment of each chuck member, the said coarse axial adjustment mechanism including for each chuck member a sleeve having a cam groove and in which the chuck member is rotatable, a movable abutment engaging the cam groove, and means to move

the abutment; the said fine axial adjustment mechanism including for each chuck member a means to move the sleeve angularly while restraining the abutment against movement.

21. In a roll support comprising in combination, spaced supporting members and means mounting said members for rotation and axial movement either bodily together or relatively to one another in the axial direction respectively, a plurality of rotatable chuck members axially movable in said supporting members the said chuck members being disposed in opposed relation to support a plurality of rolls between them, mechanism to effect a coarse axial adjustment of each chuck member, a second mechanism to effect a fine axial adjustment of each chuck member, the said coarse axial adjustment mechanism including for each chuck member a sleeve having a cam groove and in which the chuck member is rotatable, a movable abutment engaging the cam groove, and means to move the abutment, the said fine axial adjustment mechanism including for each chuck member a means to move the sleeve angularly while restraining the abutment against movement.

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