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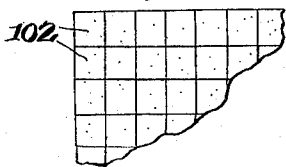
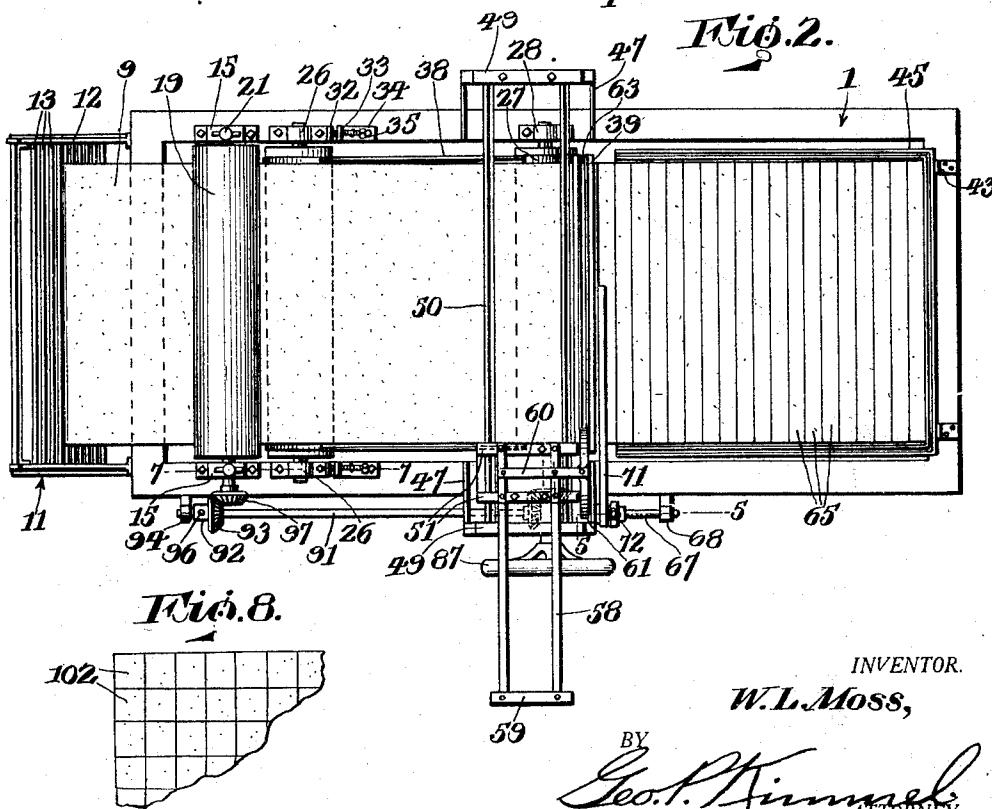
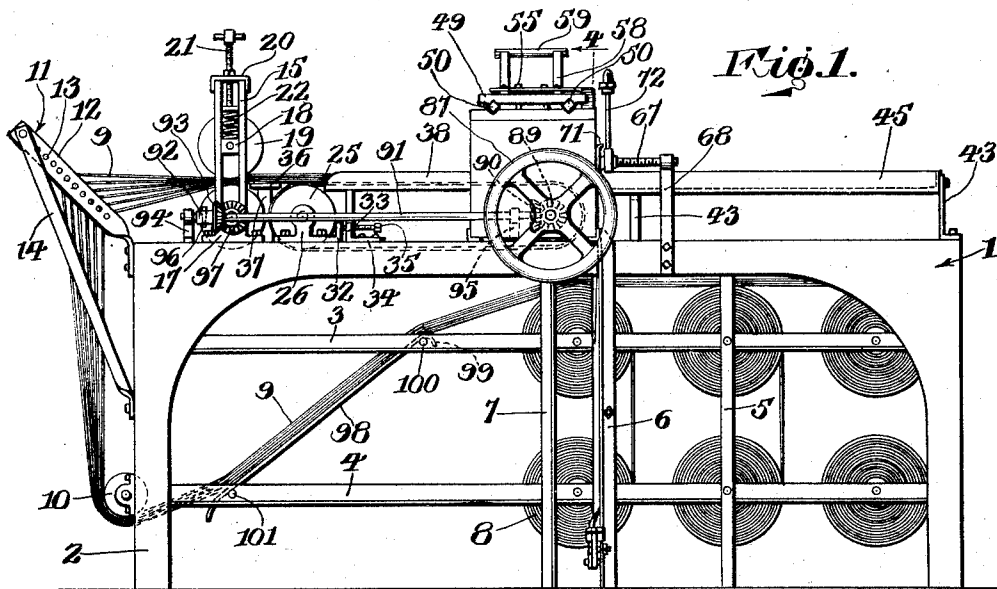
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CLOTH CUTTING MACHINE

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UNITED STATES PATENT OFFICE

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CLOTH-CUTTING MACHINE

Application filed September 24, 1928. Serial No. 307,925.

This invention relates to a cloth cutting machine and has for its primary object to provide in a manner as hereinafter set forth, a machine for the purpose aforesaid by means of which cloth webs are fed from several rolls and the several webs simultaneously cut into strips with the width of the strips accurately controlled.

A further object of the invention is to provide in a manner as hereinafter set forth, a machine for cutting webs of cloth into strips as aforesaid, including as a part thereof means for rendering the web feeding mechanism inoperative whereby the strips may be fed through the cutting mechanism to be cut into blocks with the dimensions thereof accurately controlled.

A further object of the invention is to provide a machine for the purpose set forth which is simple in construction, durable, positive in operation, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists in the novel construction, combination and arrangement of parts as hereinafter more particularly described and illustrated in the accompanying drawings, wherein for the purpose of illustration is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the accompanying drawings in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of a cloth cutting machine constructed in accordance with this invention.

Figure 2 is a top plan thereof.

Figure 3 is a vertical, longitudinal section therethrough.

Figure 4 is a transverse section taken on line 4—4 of Figure 1.

Figure 5 is an enlarged, detailed section taken on the line 5—5 of Figure 2.

Figure 6 is an enlarged, fragmentary detail of the controlling mechanism for clamping the cloth to the cutter board.

Figure 7 is an enlarged, sectional detail taken on line 7—7 of Figure 2.

Figure 8 is a plan view of a number of blocks of cloth as produced by my improved cutting machine.

Referring to the drawings in detail the numeral 1 indicates generally a frame formed with suitable supporting legs 2 and provided on either side thereof with a pair of horizontal braces 3, 4 and with suitable vertical braces 5, 6 and 7. The braces 3 and 4 are adapted to mount a plurality of rolls of cloth 8, the webs 9 of which are extended towards the rear of the machine to pass under a guide roller 10, the bearings of which are secured to the frame at the rearward end thereof. Disposed above the roller 10 is a guiding element 11 for the web which consists of a pair of side members 12, the lower ends of which are secured to the upper rearward corners of the frame 1 and which extend in an upward and a rearward direction, and a plurality of spaced rods 13 connecting the side members 12. A brace 14 is provided for each of the side members 12, the upper end of which is secured to the upper end of the side members 12 and the lower ends of which are secured to the rearward post 2. Each of the webs 9 is adapted to pass over one of the rods 13 of the guide member 11.

Mounted on top of the frame 1 at either side thereof and in spaced relation to the guide member 11 is an upright channel member 15 which is secured by means of suitable holdfast devices 16 to the frame 1. Seated in the bottom of the members 15 are the ends of a spindle for a roller 17 and mounted in said channels above the ends of said spindle is a pair of slidable blocks 18 which form bearings for the ends of the spindle of a roller 19. A cap 20 is provided for each member 15 through which is threaded an adjusting rod 21, between the lower end of which and the block 18 is disposed a compression spring 22. The ends of the springs 22 are secured to the rods 21 and bearing blocks, thereby providing a spring suspension for the roller 19. The tension of the springs 22 on the roller 19 may be increased

or diminished as desired by manipulation of the adjusting rods 21.

Mounted on the frame 1 by means of suitable supporting legs 23 is a table 24. Disposed between the rearward end of the table 24 and the roller 17 is a roller 25, the spindle of which is journaled in bearings 26 mounted on the frame 1. Adjacent the forward end of the table 24 is a similar roller 27 the spindles of which are journaled in bearings 28 mounted on the frame 1. Mounted for rotation about the rollers 25 and 27 is an endless belt 28' which passes over the bottom of the table 24. In order that the tension of the belt 28 may be adjusted, the bearings 26 are mounted on the frame 1 in a manner to provide for the adjustment of said bearings longitudinally of the frame. The mountings of the bearings 26 comprise suitable bolts 29 which extends through apertured ears 30 formed on the bearings 26 and further extend through slots 31 which are formed in the frame 1 longitudinally thereof. The forward ear of each bearing 26 is formed with an upturned nose 32 and in opposed relation to said nose is a vertical arm 33 which is secured as at 34 to the frame 1. Threaded through the arm 33 is an adjusting screw 35, the end of which bears against the upturned nose 32. By loosening the bolts 29 the bearings 26 may be moved forwardly or rearwardly as desired and held in adjusted position by the tension of the belt 28 in one direction and by the abutment of the adjusting screws 35 against the noses 32 in the opposite direction.

Disposed between the rollers 17 and 25, in horizontal alignment with the bottom of the table 24, is a protecting strip 36 which is mounted on the frame 1 by means of suitable brackets 37. As the webs 9 pass between the rollers 17 and 25 and are guided by said strips onto the upper surface of the belt 28. The table 24 is provided on either side thereof with an upstanding flange 38 which is of a height to extend above the webs 9 when the latter are being carried over the bottom of the table 24 by the belt 28.

Adjacent the roller 27 is a cutter board 39 which is supported by means of a bracket 40 mounted on a cross piece 41 extending transversely of the frame 1 at the top thereof. The upper surface of the cutter board 39 is in horizontal alignment with the top of the belt 28 with the latter resting on the table 24 and the board 39 is formed with a bevelled edge in order that the webs 9 may freely pass from the belt 28 over the board 39. Disposed rearwardly of the cutter board 39 is a supporting table 42 which is mounted on suitable legs 43 carried by the frame 1 and the upper surface of which is disposed in a slightly lower horizontal plane than the upper surface of the

cutter board 39. Mounted on the supporting table 42 is a removable pan 44, the upper surface of which is in horizontal alignment with the upper surface of the cutter board 39 so that the webs 9 may pass freely from the cutter board 39 to the pan 44. The rearward edge of the pan 44 is bevelled to conform in contour with the forward edge of the cutter board 39. The pan 44 is formed with an upstanding flange 45 which is preferably of the same height as the flange 38 of the table 24 and extends along both sides and the forward end of the pan.

Mounted on the cross piece 41 and a similar cross piece 46 at either side of the frame 1 is a motor housing 47, the outer wall 48 of which projects a substantial distance beyond the sides of the frame 1. Mounted on the top of each housing 47 is a clamp 49 for supporting the respective ends of a pair of spaced bars 50 which extend transversely of the machine. The bars 50 are of rectangular cross section and are mounted with the corners thereof disposed to the vertical and horizontal. Extending transversely across the bars 50 is a pair of spaced bars 51, the lower surfaces of which are recessed as indicated at 52 to receive the upper corners of the bars 50 therein.

Disposed beneath the bars 51 is another pair of transversely extending bars 53, the upper surfaces of which are recessed as indicated at 54 to receive the lower corners of the bars 50 therein. The pairs of bars 51 and 53 are disposed in vertical alignment and are connected together by means of suitable holdfast devices 55. Secured to the lower surface of the transverse bars 53 is a plate 56 from which is suspended a motor 57. Secured to the bars 51 is a pair of handle members 58 which extend at a slight upward inclination transversely of the machine and terminate in a grip portion 59. Secured to the handle members 58 and projecting from one side thereof is a connecting brace 60 to the free end of which is secured an arcuate guard 61 for a cutting disc 62 which is mounted on the shaft of the motor 57. The cutting disc 62 is disposed directly over a groove 63 formed in the cutter board 39 and extending longitudinally thereof. When the webs 9 are positioned over the cutter boards 39, said webs may be severed by moving the motor 57 transversely of the machine by means of the handle member 58 and 59. Such movement of the motor 57 causes the cutting disc 62 to sever the webs during the travel of the cutting disc with its edge within the groove 63. The outer wall 48 of each housing 47 is provided with a bumper 64, which is preferably of rubber, to arrest the outward movement of the motor 57 and prevent any shock thereto.

In order to accurately control the width of the strips 65 cut from the webs 9 by the cutting disc 62, I provide a gauging mechanism

indicated generally by the numeral 66. The gauging mechanism includes a calibrated arm 67 disposed longitudinally of the machine at one side thereof which is rotatably supported at one end within a bracket 68 carried by the frame 1 and which is rotatably supported at the other end within a side member of a housing 47.

The end of the arm 67 within the housing 47 is provided with a set screw controlled collar 69 for retaining the arm in position. Mounted on the arm 67 is a collar 70 which is formed integral with a stop member 71, which extends transversely of the machine directly in the path of the webs 9. Threaded through the collar 70 is a handle member 72, the inner end of which bears against the arm 67 for preventing relative movement between the collar 70 and the arm 67. By loosening the handle 72, the collar 70 may be moved along the calibrated surface of the arm 67 in order to control the distance between the stop member 71 and the cutting disc 62. By exerting an outward pressure on the handle 72, the arm 67 is caused to rock in its mounting and the stop member 71 is elevated out of the path of the webs 9.

In order to hold the webs 9 firmly in position on the cutter boards 39, I provide a pair of presser bars 73, one of which is disposed on either side of the cutting disc 62, and which rests directly on the webs 9. The pressure bars 73 are caused to normally exert a pressure on the webs 9 by means of a pair of yokes 74 which respectively have their bifurcated ends 75' connected to the respective ends of the bars 73, and each of which is connected to a bell crank 75 pivoted to a bracket 76 which is suspended from the cutter board 39. The bell cranks 75 are connected together by means of a rod 77 and one of said bell cranks has secured thereto a tension spring 78 which has its opposite end secured to the frame 1. One of the yokes 74 is formed with an extension 79, the lower end of which is pivotally connected as indicated at 80 to a lever 81. The lever 81 is pivoted, as indicated at 82, to the frame of the machine and extends outwardly therefrom, terminating in a foot pedal 83. A downward actuation of the foot pedal 83 causes an upward motion to be imparted to the extension 79 on one of the yokes 74, thereby directly elevating one end of the pressure bars 73, and through the bell cranks 75 and connecting rods 77 elevating the opposite ends of the pressure bars 73.

I provide for a true vertical movement of each yoke 74 by means of a bracket 84 suspended from the cutter board 39 and having an apertured horizontal portion 85 through which the yoke 74 extends. To prevent binding between the yoke 74 and bell cranks 75, connection therebetween is made by means of an elongated slot 86 formed in the bell crank

75 and a pin 87 provided on the yoke 74 to extend through the slot 86.

Motion is imparted to the belt 28 by means of a hand wheel 87 which is secured to an extension 88 to the spindle of the roller 27. The hand wheel 87 may be rotated in either direction, whereby a corresponding motion is imparted to the belt 28. Mounted on the extension 88 to rotate therewith is a bevelled gear 89 which is in mesh with a similar bevelled gear 90 fixedly secured to one end of a shaft 91. The opposite end of the shaft 91 loosely extends through a collar 92 formed integral with the bevelled gear 93 and is journaled in a bracket 94 mounted on the frame 1. The shaft 91 extends through a similar bracket 95 which is located adjacent the bevelled gear 90. In order that the bevelled gear 93 may be rotated with the shaft 91 when desired, a tapered opening is formed transversely through the collar 92 which may be aligned with a similar opening through the shaft 91. With the openings in the collar 92 and shaft 91 in alignment, a tapered pin 96 may be inserted therethrough, which causes the bevelled gear 93 to rotate with the shaft 91 and also holds such bevelled gear into mesh with a bevelled gear 97 fixedly secured to the spindle of the roller 17. With the bevelled gears 93 and 97 in mesh, rotation of the hand wheel 87 causes the rotation of the rollers 27 and 25 and belt 28, and also causes the rotation of the rollers 17 and 19. With the pin 96 removed, the belt 28 may be rotated by means of the hand wheel 87 while the rollers 17 and 19 remain stationary.

In the embodiment shown, six rolls of cloth are supported by the machine but it is to be understood that this number may be increased or diminished as desired. In order that this number may be increased, a greater number of bars 13 connecting the side members 12 of the guide elements 11 are shown than are necessary for the number of webs 9 illustrated. In order to prevent slack in the webs between the rolls 8 and the guide roller 10 I provide a supporting plate 98, the upper end of which is curved as at 99 to fit over a rod 100 extending between the side braces 3 and the lower end of which rests on a rod 101 extending between the side braces 4.

In the operation of my machine, the ends of the webs 9 are drawn by hand over a supporting plate 98, under the guide roller 10, over the rods 13, and inserted between the rollers 17 and 19. With the pin 96 in position, the hand wheel 87 is actuated by means of which rotation is imparted to the roller 17 and the belt 28. The collar 70 is adjusted along the calibrated arm 67 to position the stop member 71 relative to the cutting disc 62 in accordance with the width of the strip it is desired to cut from the webs 9. Rotation of the hand wheel 87 is continued until the ends of the webs 9 are brought into contact with the stop

member 71. When the ends of the webs 9 approach the cutter board 39, the pedal 83 is pressed downwardly to elevate the pressure bars 73 to permit the webs 9 to pass freely thereunder. When the ends of the webs 9 are in position against the stop member 71, the foot pedal 83 is released which permits the spring 78 to operate to force the pressure bars 73 firmly against the upper surface of the webs 9. The cutting disc 62 is then caused to roll along the grooves 63 by means of the handle members 58 and 59 by means of which a strip 65 is severed from the webs 9. The handle 72 is then pulled outwardly to elevate the stop member 71 to permit the strip 65 to pass freely thereunder, and the foot pedal 83 is again depressed to permit the webs 9 to be advanced under the pressure bars 73. The stop member 71 is then returned to its position in the path of the web and the operation repeated.

When it is desired to cut the strips 65 into blocks 102 as illustrated in Figure 8, the hand wheel 87 is rotated in a reverse direction until the ends of the webs 9 are adjacent the rollers 17 and 19. The pan 44 is then removed from its supporting table 24 and positioned transversely of the belt 28. The pan is then removed whereby the strips 65 are deposited directly on the belt 28 with the strips extending lengthwise of the machine. The pin 96 is then removed which permits the belt 28 to be rotated without any motion being imparted to the roller 17. The gauging mechanism 66 and foot pedal 83 are then operated in the same manner as above described in connection with cutting the webs 9 into the strips 65.

If desired, each pan full of strips 65 may be cut into blocks 102 as described as soon as the strips 65 are produced, or they may be stored until the webs 9 from the rolls 8 are exhausted. Under the latter plan the strips 65 may be cut into blocks 102 without the necessity of removing the pin 96 to disconnect the bevelled gears 93 and 97.

It is thought that the many advantages of a cloth cutting machine in accordance with this invention may be readily understood, and although the preferred embodiment is as illustrated and described, yet it is to be understood that various changes in the details of construction may be resorted to which fall within the spirit of the invention or the scope of the appended claims.

What I claim is:

1. In a cloth cutting machine, a support for a plurality of rolls of cloth, mechanism for simultaneously feeding the webs off said rolls, a carrier element adjacent said feeding mechanism for receiving said webs therefrom, a cutter mechanism adjacent said carrier element, operating to simultaneously cut said webs into strips, and an adjustable gauging mechanism for positioning the free ends of

said webs relative to said cutter mechanism to govern the width of said strips.

2. In a cloth cutting machine, a support for a plurality of rolls of cloth, mechanism for simultaneously feeding the webs off said rolls, a carrier element adjacent said feeding mechanism for receiving said webs therefrom, a cutter mechanism adjacent said carrier element, operating to simultaneously cut said webs into strips, and an adjustable gauging mechanism for positioning the free ends of said webs relative to said cutter mechanism to govern the width of said strips, said gauging mechanism including a stop member disposed transversely of the webs and in the path of the latter.

3. In a cloth cutting machine, a support for a plurality of rolls of cloth, mechanism for simultaneously feeding the webs off said rolls, a carrier element adjacent said feeding mechanism for receiving said webs therefrom, a cutter mechanism adjacent said carrier element, operating to simultaneously cut said webs into strips, and an adjustable gauging mechanism for positioning the free ends of said webs relative to said cutter mechanism to govern the width of said strips, said gauging mechanism including a stop member disposed transversely of the webs and in the path of the latter, and further including a calibrated rod extending longitudinally of the webs for adjustably supporting said stop member.

4. In a cloth cutting machine, a support for a plurality of rolls of cloth, mechanism for simultaneously feeding the webs off said rolls, a carrier element adjacent said feeding mechanism for receiving said webs therefrom, a cutter mechanism adjacent said carrier element, operating to simultaneously cut said webs into strips, and an adjustable gauging mechanism for positioning the free ends of said webs relative to said cutter mechanism to govern the width of said strips, said carrier element including a pair of spaced rollers and an endless rotatable element carried thereby.

5. In a cloth cutting machine, a support for a plurality of rolls of cloth, mechanism for simultaneously feeding the webs off said rolls, a carrier element adjacent said feeding mechanism for receiving said webs therefrom, a cutter mechanism adjacent said carrier element, operating to simultaneously cut said webs into strips, an adjustable gauging mechanism for positioning the free ends of said webs relative to said cutter mechanism to govern the width of said strips, driving means common to said feeding mechanism and carrier element, and means to provide for driving the carrier element independent of the feeding mechanism whereby the strips may be transported by the carrier element to the cutting mechanism to be severed into blocks.

6. In a cloth cutting machine, a support for a plurality of rolls of cloth, mechanism for simultaneously feeding the webs off said rolls, a carrier element adjacent said feeding mechanism for receiving said webs therefrom, a cutter mechanism adjacent said carrier element, operating to simultaneously cut said web into strips, an adjustable gauging mechanism for positioning the free ends of said webs, relative to said cutter mechanism to govern the width of said strips, and means for holding said webs stationary with respect to said cutting mechanism during the operation of the latter.

7. In a cloth cutting machine, a support for a plurality of rolls of cloth, mechanism for simultaneously feeding the webs off said rolls, a carrier element adjacent said feeding mechanism for receiving said webs therefrom, a cutter mechanism adjacent said carrier element, operating to simultaneously cut said webs into strips, an adjustable gauging mechanism for positioning the free ends of said webs relative to said cutter mechanism to govern the width of said strips, means for holding said webs stationary with respect to said cutting mechanism during the operation of the latter, and manually operable means connected with said holding means for releasing the latter to permit relative movement between said webs and cutting mechanism.

8. In a cloth cutting machine, a frame for supporting a plurality of rolls of cloth, a pair of superposed rollers carried by the frame, means for guiding the webs of said cloth rolls between said rollers, a carrier element adjacent said rollers for receiving said webs, a cutting mechanism adjacent said carrier element and operating to cut said webs into strips, a stop member disposed transversely of said frame in the path of said web, and a calibrated arm for adjustably supporting said stop member whereby the latter may be accurately positioned relative to said cutter mechanism to govern the width of said strips.

9. In a cloth cutting machine, a frame for supporting a plurality of rolls of cloth, a pair of superposed rollers carried by the frame, means for guiding the webs of said cloth rolls between said rollers, a carrier element adjacent said rollers for receiving said webs, a cutting mechanism adjacent said carrier element and operating to cut said webs into strips, a stop member disposed transversely of said frame in the path of said web, a calibrated arm for adjustably supporting said stop member whereby the latter may be accurately positioned relative to said cutter mechanism to govern the width of said strips, and means to selectively provide for the simultaneous actuation of said carrier element and rollers and for the actuation of said carrier element independently of said rollers.

10. In a cloth cutting machine, a support for a plurality of rolls of cloth, mechanism

for simultaneously feeding the webs off said rolls, a carrier element adjacent said feeding mechanism for receiving said webs therefrom, a cutter mechanism adjacent said carrier element, operating to simultaneously cut said webs into strips, and a stop for engagement with the free ends of said webs to position said free ends with respect to the cutter mechanism.

In testimony whereof, I affix my signature hereto.

WALTER L. MOSS.

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