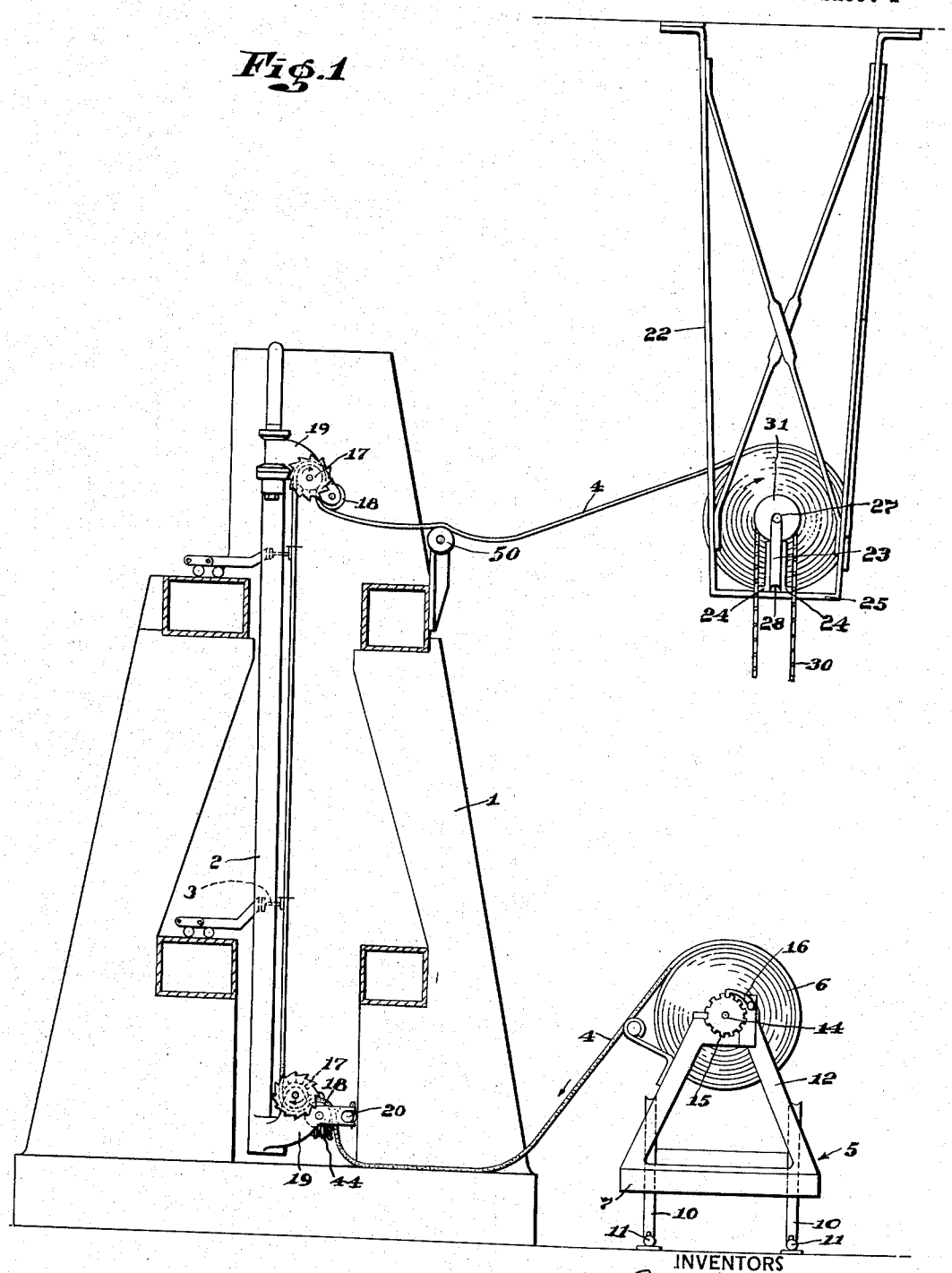
Aug. 19, 1941. R. G. KNOWLAND ET AL 2,253,380

FABRIC SUPPORTING AND FEEDING APPARATUS

Filed July 25, 1939 4 Sheets-Sheet 1

Fig. 1




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FABRIC SUPPORTING AND FEEDING APPARATUS

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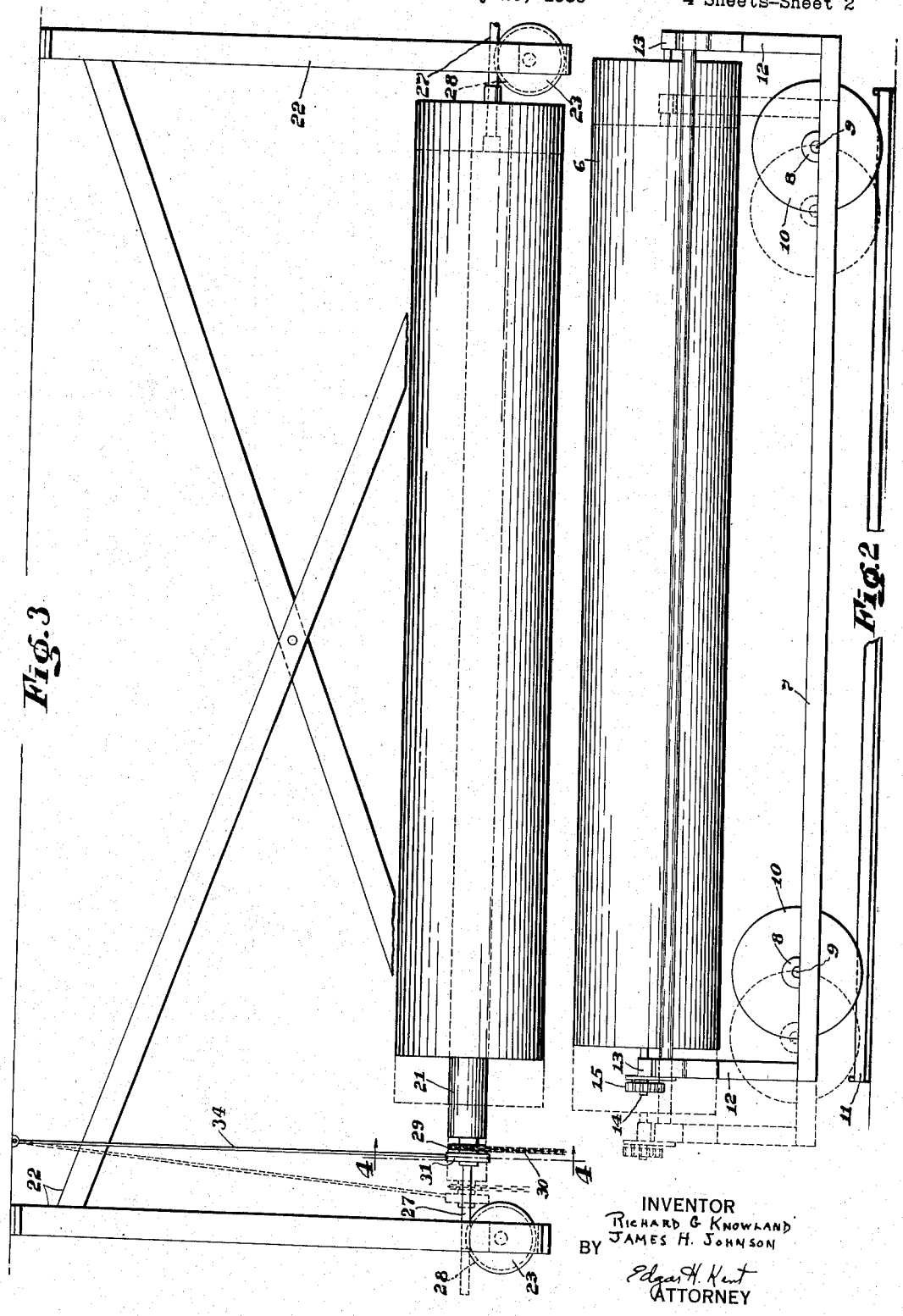



Fig. 3

Fig. 2

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FABRIC SUPPORTING AND FEEDING APPARATUS

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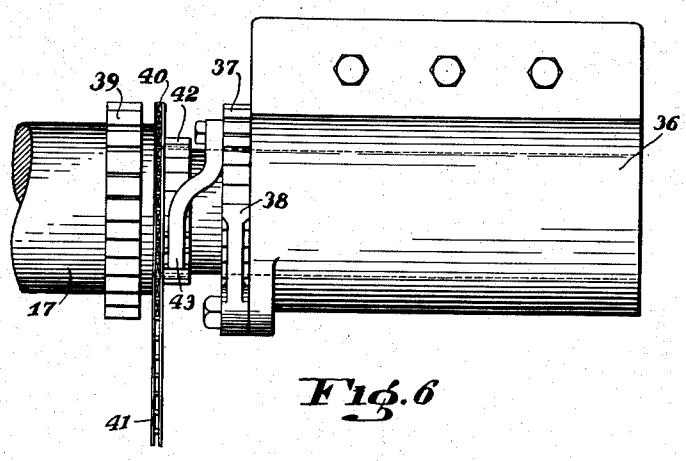



Fig. 6

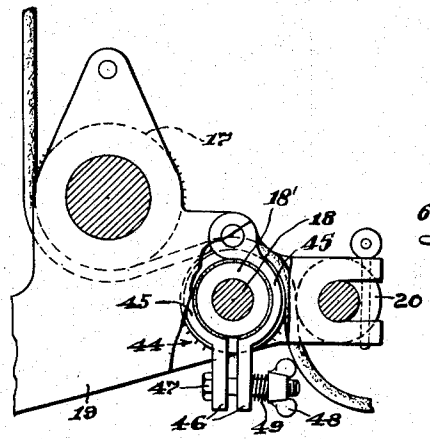



Fig. 8

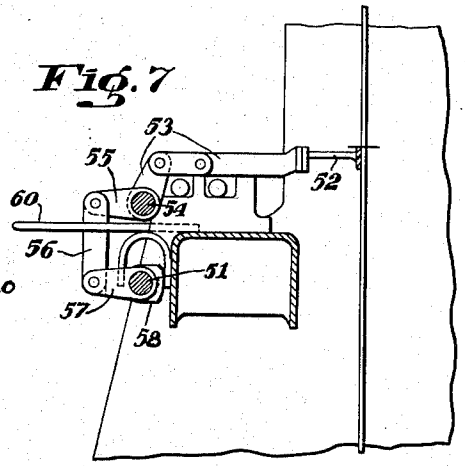



Fig. 7

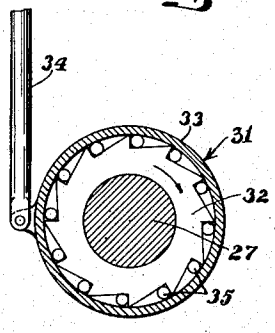



Fig. 4

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FABRIC SUPPORTING AND FEEDING APPARATUS

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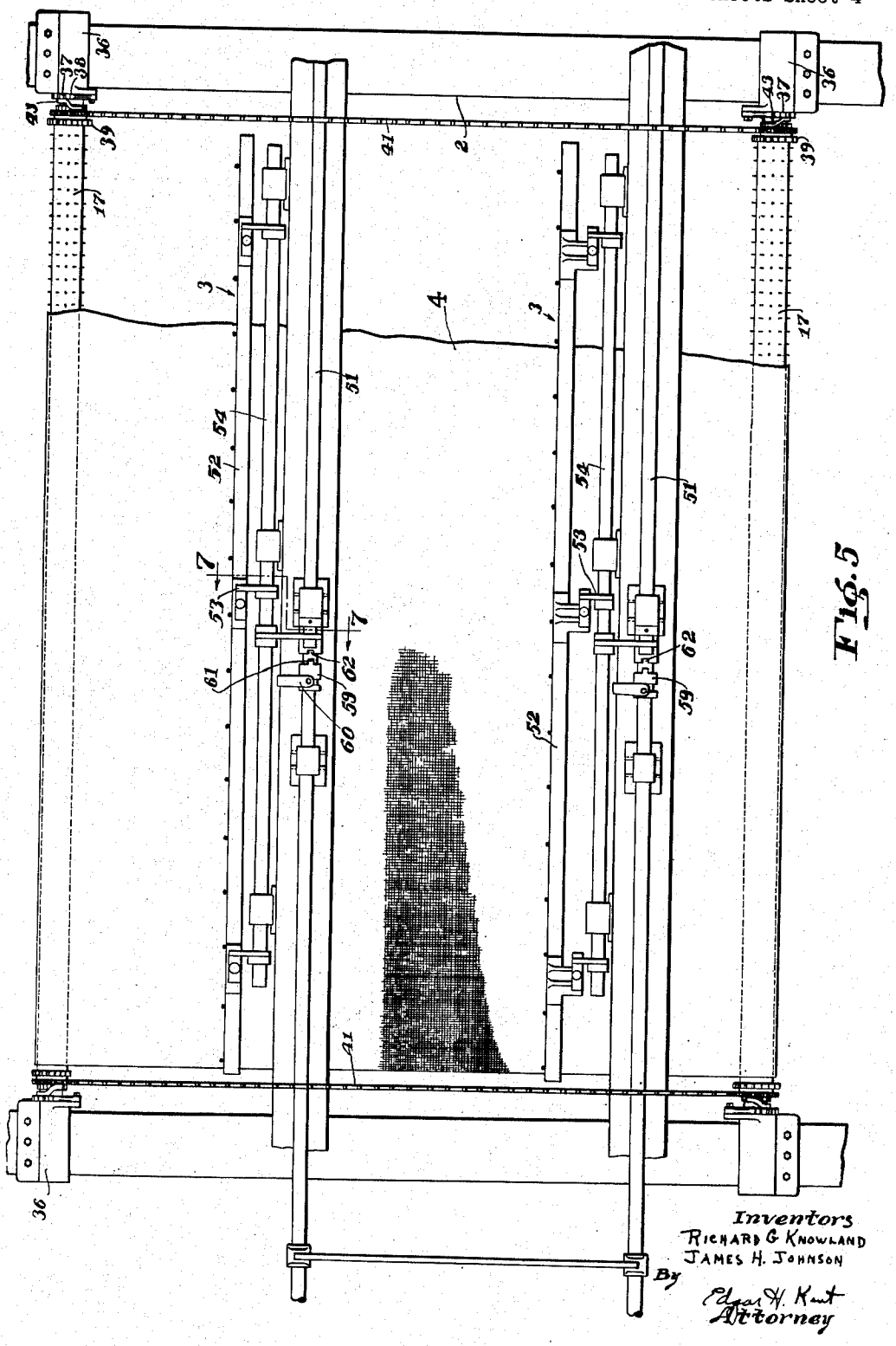



FIG. 5

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# UNITED STATES PATENT OFFICE

2,253,380

## FABRIC SUPPORTING AND FEEDING APPARATUS

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Application July 25, 1939, Serial No. 286,436

20 Claims. (Cl. 112—90)

The present invention relates to embroidery, turfing and like machines, in which a stretch of base fabric is shifted longitudinally and laterally, as by pantograph or jacquard controlled shifting frame, to present fresh meshes to yarn projecting needles in accordance with a predetermined pattern.

With such machines the practice has been to mount a supply roll of base fabric on one end of the shifting frame and to feed it across the frame to a take-up roll on the opposite end. Because of the impracticability of mounting large or heavy rolls of fabric on the shifting frame, this practice has imposed an undesirable limitation on the length of a strip of base fabric that may be processed by the machines, particularly where the base fabric is of a bulky or heavy character.

It is an object of the present invention to enable use of such machines to process long lengths of heavy, bulky fabric, such as carpeting, by providing apparatus for feeding the fabric over the shifting frame with which only a small portion of the length of the fabric is carried by the frame at any one time. It is a further object of the invention to provide such apparatus in which the stretch of fabric on the frame may partake of the shifting of the frame without undue strain on the fabric or drag on the frame.

A further object is to provide, in conjunction with such apparatus, novel mechanism for maintaining the portion of the fabric carried by the frame in the path of the needles under substantially constant tension at all times while yet permitting feeding of the fabric over the frame and allowing other portions of the fabric to be maintained in slack condition. Other objects and advantages of the invention will be apparent from the ensuing more particular description and from the accompanying drawings, in which:

Fig. 1 is an end view, with parts broken away, of apparatus of the present invention applied to an embroidery or turfing machine;

Fig. 2 is a side elevation of the supply roll and supporting carriage shown in Fig. 1;

Fig. 3 is a side elevation of the take-up roll and supporting carriage of Fig. 1 with part of the frame broken away;

Fig. 4 is an enlarged section on the line 4—4 of Fig. 3, showing the interior construction of the take-up roll clutch;

Fig. 5 is an elevation, from the needle bank side of one panel of the machine illustrated in Fig. 1, showing the fabric supporting rollers and fabric tensioning mechanism on the frame and two needle rails and operating mechanism for said panel, other parts of the machine being broken away;

Fig. 6 is an enlarged view of one of the end mountings for the upper fabric tensioning roller shown in Fig. 5;

Fig. 7 is a vertical section on the line 7—7 of Fig. 5, through one of the needle rails and its operating mechanism;

Fig. 8 is an end view of the fabric supporting and tensioning rollers at the lower edge of the frame with parts of the supporting frame structure broken away.

In the drawings, 1 represents an embroidery or turfing machine of conventional design which has centrally a vertically disposed frame 2 movably mounted for shifting both laterally and vertically by suitable jacquard or pantograph control mechanism (not shown). As will be understood, the machine contains one or more banks of yarn projecting needles, indicated at 3, extending longitudinally of the machine at one side of the frame 2, together with suitable co-operating mechanism (not shown) for passing the needles at regular intervals through a stretch of fabric disposed on the frame 2 to form embroidery or turfing in the fabric according to the pattern determined by the shifting of the frame.

The apparatus provided by the present invention comprises novel mechanism for feeding a base fabric strip 4 over the frame 2 and includes in general fabric supply and take-up carriages both mounted independently of the frame 2 but free to partake of the lateral shifting motion of the frame, and fabric-engaging rollers on the frame co-operating with the supply and take-up to position successive short stretches of the fabric on the frame under tension suitable for the operation thereon of the machine.

The supply carriage 5 for supply roll 6 of fabric 4 is disposed at one side of the machine 1 with its longitudinal axis parallel to frame 2 and comprises a frame 7 to the sides of which are secured, through bearings 8, axles 9 of anti-friction wheels 10 on which it is free to move along the floor at the side of machine 1, as indicated by the dotted lines in Fig. 2. Tracks 11 for the wheels 10 may be provided on the floor extending along the machine parallel to the frame 2. Frame 7 has secured at each end upwardly extending frames 12 which support bearings 13 in which the core shaft 14 of supply roll 6 is rotatably mounted. Shaft 14 is provided with a square-toothed ratchet 15 with which a dog 16,

secured to one of the frames 12, may be engaged to lock the shaft 14 against rotation in either direction.

At the top and bottom of frame 2, laterally extending fabric supporting and tensioning rolls 17 and idler rolls 18 are rotatably mounted in bearings in side extensions 19 of the frame. An idler roll 20 is also rotatably mounted in the lower frame extension 19 beside the lower idler roll 18. The rolls 17 and the lower idler roll 18 are spiked as shown or provided with any suitable friction surface to prevent slippage of the fabric thereover, and means, hereinafter described, is provided to maintain the stretch of fabric between the rolls under substantially constant tension while permitting fabric to be passed over the frame by rotation of the rolls.

Take-up roll 21 for the finished fabric is, like supply roll 6, disposed beyond and parallel to the frame 2 and is also mounted on anti-friction bearings which permit it to move freely laterally with the frame 2. The mounting for the roll 21 is shown as comprising a frame 22, suspended from the ceiling, having at each lower end a mounting yoke for an anti-friction wheel 23, said yokes being formed by spaced bracket members 24 secured to crosspieces 25 of frame 22 and provided with bearings for the hubs of wheels 23.

Take-up roll 21 is fixedly mounted on a shaft 27 supported at each end by one of the wheels 23, each of said wheels being provided with a peripheral groove 28 in which the shaft 27 rests and which prevents the shaft from slipping off the sides of the wheel, while permitting endwise shifting of the shaft by rotation of the wheel, and also permitting rotation of the shaft on the wheel. It will thus be apparent that the roll 21 is rotatably supported by and between wheels 23 by the shaft 27 and that the wheels 23 act as anti-friction bearings to permit roll 21 and shaft 27 to be shifted longitudinally in either direction, as indicated by dotted lines in Fig. 3. Shaft 27 extends sufficiently beyond the ends of roll 21 to permit horizontal movement of the roll 21 between wheels 23 equal to that of the shifting frame 2 without pulling either end of the shaft rearwardly over the wheel 23. Roll 21 may be rotated, in conjunction with shaft 27, to take up the finished fabric by suitable mechanism such as a sprocket wheel 29, secured to shaft 27 adjacent an end of roll 21, and sprocket chain 30 mounted on said sprocket, and is limited to unidirectional rotation by a clutch 31 mounted on shaft 27 adjacent the sprocket wheel 29. As shown in Fig. 4, the clutch 31 comprises a toothed ratchet 32 fixed to shaft 27 with the steep sides of the teeth facing the direction of desired rotation for the roll 21 and shaft 27, clockwise in Fig. 4; a drum 33 having an inner bearing surface surrounding said ratchet and held against rotation by a link 34 pivotally secured at one end to a side of the drum and at the other end pivotally connected to the ceiling, the connections of said link to the drum and ceiling being pivoted to permit said drum to shift laterally with the shaft 27; and roller bearings 35 disposed longitudinally in the notches between successive teeth of the ratchet 32. When the ratchet 32 is turned in the direction to press the steep faces of the teeth against the roller bearings 35, the bearings, being retained in the deepest part of the notches, will rotate on their own axes against the inner bearing surface of the drum permitting the ratchet 32 to be turned freely in that direction inside the drum 33. When it is attempted to turn the ratchet 32 in the opposite direction, however, the rollers ride up the inclined faces of the teeth and jam between the teeth and the drum, preventing rotation. Thus the roll 21 and shaft 27 can be rotated by means of the sprocket 29 and chain 30 in the direction to take up fabric from the machine but are prevented from rotating in the opposite direction under the pull of the fabric.

Referring now to the means for maintaining tension on the stretch of fabric between the rolls 17 on the frame 2, these rolls are, as shown in Figs. 5 and 6, rotatably mounted at their ends in bearings 36 at the top and bottom of the frame 2. Fixed to the rolls 17, adjacent the bearings 36, are ratchets 37, the teeth of the two ratchets on the upper roll being oppositely directed to the teeth of the two ratchets on the lower roll. Pawls 38 on the bearings 36 are adapted to be releasably engaged with said ratchets to prevent rotation of the rolls in the same direction the ratchets and pawls for the upper roll being directed to permit rotation of that roll only in the direction to feed fabric to the take-up roll 21. A second set of ratchets 39 is fixed to the roll 17 adjacent the ratchets 37, these latter ratchets being used for turning the rolls in setting the tension.

The mechanism so far described is adapted to set the tension on the initial stretch of fabric on the frame 2 as follows: The fabric is passed from the supply roll 6 through a lateral passage in the base of machine 1 between the idler rolls 20 and 18 and under the roll 17 at the base of the frame 2, thence across the frame over the top roll 17 and under the top idler roll 18. The pawls 38 are then set in the ratchets 37 and one of the rolls 17 is rotated by means of a ratchet wrench applied to one of the ratchets 39 until suitable tension has been applied to the stretch of the fabric between it and the other roll 17, the other roll 17 being held against rotation with the first roll by means of its ratchets 37 and cooperating pawls 38, and the fabric being held from slippage with respect to these rolls by the spike or other friction surface on the rolls 17, and the idler rolls 18 which maintain a considerable wrap of the fabric about the rolls 17.

The above described tensioning operations could, of course, be repeated for each fresh stretch of fabric supplied to the frame, the lower pawls 38 being disengaged from their ratchets 37 to release the tension and permit the lower roll 17 to be rotated with the upper roll to draw a completed stretch of fabric off over the top of the frame and to replace it with a fresh stretch from the supply roll 6, and then re-engaged to permit a resetting of the tension. However, this method is time-consuming and apt to result in variations in the tension on successive stretches and improper registration of successive stretches producing inferiorities in the product. Hence the present invention provides means, now to be described, for maintaining the tension, initially applied to the first stretch of fabric as previously described, substantially constant while successive stretches are drawn onto the frame and subjected to the action of the needles.

As shown in Figs. 5 and 6, there are loosely mounted on each of the rolls 17 between the ratchets 37 and 39, sprocket wheels 40, corresponding sprocket wheels on the two rolls being connected by a continuous sprocket chain 41 stretched tight between them. To the outer side of each of said sprocket wheels 40 there is se-

cured a ratchet 42, said ratchets 42 having oppositely directed teeth to those on the ratchets 37 on the same roll and consequently said ratchets 42 on the upper roll having oppositely directed teeth to those on the lower roll 17. Pawls 43 secured to the inner side of each of the ratchets 37 are adapted to be releasably engaged with the ratchets 42, said pawls and ratchets co-operating to tie the rolls 17 to the sprockets 40 in such manner that the rolls can turn in the opposite directions in which they are urged by the tension of the fabric, only by also turning the sprockets 40 in the same manner. Obviously, the chain 41 prevents such relative rotation of the sprockets 40.

The mechanism just described permits movement of the fabric over the rolls 17 while it is held under a pre-set tension. In order to apply the tension set for the first stretch of fabric to successive stretches drawn onto the frame from a supply of slack fabric, an adjustable friction brake 44 is provided on the lower idler roll 18. As shown in Fig. 8, this brake comprises a split brake drum 45 pivoted on the frame extension 19 and surrounding a collar 18' on the shaft of the lower idler roll 18. On the opposite side of the roll shaft from the pivot, the two sides of the split drum terminate in opposed projecting flange portions 46 which receive transversely therethrough a bolt 47 on which is threaded a wing nut 48. Between the wing nut 48 and the adjacent flange 46 there is interposed a coil spring 49. The flange 46 adjacent the wing nut is slidable on the bolt and may be adjusted to and from the other flange 46 by means of the wing nut and spring to vary the compression of the brake drum 45 on the shaft of the roll 18.

When the tension has been set on the initial stretch of fabric on the frame 2 in the manner previously described, brake 44 is adjusted so that its resistance to rotation of the lower idler roll 18 is substantially equal to the back pull of the tension on the upper roll 17. When it is desired to draw a fresh stretch of fabric onto the frame, the pawls 43 are engaged with their corresponding ratchets 42 and the pawls 38 are released from the ratchets 37. The rolls 17 are now prevented from turning under the pull of the tension of the fabric by the sprocket wheels 40 and sprocket chains 41 through the ratchets 42 and pawls 43 because, as previously explained, such turning of the rolls would necessitate a like turning of the sprockets 40 which is prevented by the sprocket chain 41, or, in other words, the tension of the fabric on one side of the frame is balanced by the tension of the chain on the other side. The rolls 17 are, however, now free for rotation in unison in the direction to feed fabric toward the take-up roll 21 and consequently the initial stretch of fabric may be drawn off over the top roll 17 and a fresh stretch drawn onto the frame from the supply roll 6, as by turning the upper roll 17 with a ratchet wrench applied to the ratchet 39, the tension initially set on the first stretch being automatically transferred to the fresh stretch by the drag of the brake 44 on the lower idler roll 18. The tension maintaining mechanism comprising the sprocket wheels 40, chains 41, ratchets 42 and pawls 43, permits up and down movements of the fabric on the frame, as may be necessary for proper registration of successive stretches, without dissipation of the tension. When the fresh stretch of fabric is properly registered on the frame, pawls 38 may be re-engaged with ratchets 37 to hold the fresh stretch in fixed position on the frame while subjected to the operations of the machine.

From the top idler roll 18 the finished fabric is led over an idler roll 50 on the side of the machine to the take-up roll 21 on which it is wound by the mechanism previously described. The idler roll 50 supports the fabric and prevents chafing.

Supply roll 6 and take-up roll 21 are free to move longitudinally on their respective anti-friction bearings in correspondence with the edgewise movements of the frame 2 so that they may remain in substantially fixed relation with the frame 2 in its different edgewise positions. The edgewise movement of the frame 2 may be communicated to the supply and take-up rolls through the base fabric alone, particularly where a heavy fabric such as rug material is being processed, or, if desired, supplementary rigid connections between the frame 2 and the movable carriages of these rolls may be provided. Sufficient slack is provided in the fabric portions extending between the supply and take-up rolls and frame 2 to accommodate the vertical motion of the frame as required by the pattern control without strain on the fabric.

While in the drawings we have shown but one pair of supply and take-up rolls applied to the machine, it will be obvious that a plurality of pairs of these rolls may be disposed along a single machine where the shifting frame is wide enough to accommodate several widths of base fabric, as is contemplated in Fig. 5 of the drawings. In such machines separate needle rails will generally be provided for each fabric strip, or panel of the machine, the needle rails in each horizontal row being operated from a single drive shaft extending longitudinally of the machine, such as the shaft 51 shown in Fig. 5. In Figs. 5 and 7 there are illustrated drive connections between the needle rails and the corresponding drive shaft 51 which enable disconnection of any rail from the shaft so that the rails of any panel may remain inactive while those of other panels are operated, as may be desirable in certain instances. In said figures, the slidably mounted needle rails 52 are fixedly connected by appropriate linkage 53 to a rock shaft 54 rotatably mounted on the machine above the shaft 51. A lever arm 55 fixed to the rock shaft 54 is connected by a link 56 to a corresponding lever arm 57 mounted loosely on the shaft 51 by a collar 58, said link 56 being pivotally connected at its ends to said arms. A clutch disc 59 is keyed to the shaft 51 adjacent the collar 58 and is slidable, by means of a handle lever 60, to engage the clutch teeth 61 thereof in corresponding notches 62 in the collar 58. Shaft 51 is partially rotated by suitable drive mechanism (not shown) and when the clutch 59 is engaged with the collar 58 the oscillations of shaft 51 rock the shaft 54 through the lever arms 57 and 55 and link 56 which in turn reciprocates the needle rail 52 through the linkage 53. When the clutch 59 is disengaged from the collar 58, the collar 58 is loose on the shaft 51 and the lever arm 57 pivots about the shaft 51 and the end of the link 56 as the shaft 51 oscillates, so that the shaft 54 and the needle rail 52 remain idle. Thus, by manipulation of the clutches 59, the needle rails of any panel may be connected to or disconnected from the drive shafts 51 at will.

While we have shown in the drawings and described herein preferred embodiments of the in-

vention, it will be apparent that changes may be made therein without departing from the spirit and scope of the invention.

We claim:

1. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, and means on said frame for supporting a portion of said base fabric thereon under tension and for drawing base fabric from said supply carriage onto said frame.

2. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, and means on said frame for supporting a portion of said base fabric thereon under tension while permitting slack in the fabric portion between the frame and the supply.

3. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, and means on said frame for drawing base fabric from said supply carriage across said frame while maintaining the fabric portion on the frame under substantially constant tension.

4. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, a pair of fabric supporting rolls on said frame, said rolls having a fabric gripping surface and rotatable to draw fabric from the supply on said carriage across said frame, and means co-operating with said rolls to maintain successive portions of said fabric under tension between said rolls.

5. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, a pair of fabric supporting rolls on said frame, said rolls having a fabric gripping surface and rotatable to draw fabric from the supply on said carriage across said frame, and means for releasably locking each of said rolls against rotation in the direction to feed fabric toward the other of said rolls while permitting rotation of at least one of said rolls in the opposite direction whereby to provide tension on the fabric between said rolls.

6. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, a pair of fabric supporting rolls on said frame, said rolls having a fabric gripping surface and rotatable to draw fabric from the supply on said carriage across said frame, means for rotating one of the rolls relatively to the other to provide tension on the fabric between said rolls and means to prevent opposite relative rotation of said rolls while permitting rotation of both rolls in unison to pass fabric under tension across said frame.

7. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, fabric engaging rollers on said frame rotatable to draw fabric from the supply on said carriage across said frame and an adjustable brake on one of said rolls adapted to resist rotation of said roll in the direction to feed fabric across said frame.

8. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, and means on said frame for drawing base fabric from said supply carriage across said frame while maintaining the fabric portion on the frame under substantially constant tension, said last named means comprising a pair of rolls rotatably mounted on said frame and having a fabric gripping surface, a ratchet fixed to each of said rolls adjacent an end thereof, means on said frame to releasably engage said ratchets to prevent rotation of said

rolls in the direction to feed fabric toward each other while permitting rotation of at least one of said rolls in the opposite direction, a sprocket wheel loosely mounted at an end of each of said rolls, an endless chain connecting said sprocket wheels, means to releasably connect said ratchets with said sprocket wheels, a third roll on said frame adapted to engage the fabric between said first named rolls and said supply carriage, and an adjustable brake engageable with said last named roll to resist rotation thereof in the direction to feed fabric toward said first named rolls.

9. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, means on said frame for supporting a portion of said fabric thereon under tension and for drawing base fabric from said supply carriage onto said frame, means disposed to one side of said frame and supported independently thereof for taking up fabric drawn across said frame, and means mounting said last named means for relatively free shifting movement laterally with said frame and parallel thereto.

10. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, fabric take-up means disposed to one side of said frame and supported independently thereof, means mounting said take-up means for relatively free shifting movement laterally with said frame and parallel thereto, fabric supporting means on said frame permitting passage of fabric over said frame from the supply to the take-up means and means for maintaining tension in the fabric portion supported on said frame while permitting slack in the fabric portions between the frame and the supply and the take-up means.

11. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, fabric take-up means disposed to one side of said frame and supported independently thereof, means mounting said take-up means for relatively free shifting movement laterally with said frame and parallel thereto, and fabric supporting means on said frame permitting fabric to be drawn from said supply across the frame to said take-up means while maintaining the fabric portion on the frame under substantially constant tension.

12. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, a pair of fabric supporting rolls on said frame, said rolls having a fabric gripping surface and rotatable to draw fabric from the supply on said carriage across said frame, means co-operating with said rolls to maintain successive portions of said fabric under tension between said rolls, means disposed to one side of said frame and supported independently thereof for taking up fabric drawn across said frame by said rolls and means mounting said last named means for relatively free shifting movement laterally with said frame and parallel thereto.

13. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, a pair of fabric supporting rolls on said frame, said rolls having a fabric gripping surface and rotatable to draw fabric from the supply on said carriage across said frame, means co-operating with said rolls to maintain successive portions of said fabric under tension between said rolls, a fabric take-up roll disposed to one side of said frame, and supported independently thereof, a bearing mounting for said roll permitting shifting of said roll laterally with said frame and parallel thereto, and means to rotate said roll in the direction to take up fabric drawn across said frame.

14. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric disposed to one side of said shifting frame and supported independently of said frame, means mounting said carriage for relatively free shifting movement laterally with said frame and parallel thereto, a pair of fabric supporting rolls on said frame, said rolls having a fabric gripping surface and rotatable to draw fabric from the supply on said carriage across said frame, means co-operating with said rolls to maintain successive portions of said fabric under tension between said rolls, a fabric take-up roll disposed to one side of said frame, and supported independently thereof, a bearing mounting for said roll permitting shifting of said roll laterally with said frame and parallel thereto, means to rotate said roll in the direction to take up fabric drawn across said frame, and means to prevent rotation of said roll in the opposite direction.

15. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a pair of fabric supporting rolls on said frame, said rolls having a fabric gripping surface and rotatable to draw fabric across said frame, means for rotating one of the rolls relatively to the other to provide tension on the fabric between said rolls and means to prevent opposite relative rotation of said rolls while permitting rotation of both rolls in unison to pass fabric under tension across said frame.

16. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising fabric engaging rollers on said frame rotatable to draw fabric across said frame and an adjustable brake on one of said rolls adapted to resist rotation of said roll in the direction to feed fabric across said frame.

17. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising means on said frame for supporting a portion of the base fabric thereon under tension and for drawing the fabric across said frame, means disposed to one side of said frame and supported independently thereof for taking up fabric drawn across said frame, and means mounting said last named means for relatively free shifting movement laterally with said frame and parallel thereto.

18. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a carriage for a supply of base fabric, means on said frame for drawing base fabric from said supply carriage across said frame while maintaining the fabric portion on the frame under substantially constant tension, said last named means comprising a pair of rolls rotatably mounted on said frame and having a fabric gripping surface, means for rotating one of the rolls relatively to the other to provide tension on the fabric between said rolls, means to prevent opposite relative rotation of said rolls while permitting rotation of both rolls in unison to pass fabric under tension across said frame, a third roll rotatably mounted on said frame and adapted to engage and grip the fabric between said first named rolls and said supply carriage, and an adjustable brake engageable with said last named roll to resist rotation thereof in the direction to feed fabric toward said first named rolls.

19. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a pair of fabric supporting rolls on said frame, said rolls having a fabric gripping surface and rotatable to draw fabric across said frame, lock means on each of said rolls adjacent an end thereof, means on said frame releasably engageable with said lock means to prevent opposite relative rotation of said rolls, a wheel rotatably mounted on each of said rolls adjacent said lock means, means connecting said wheels to prevent rotation of one wheel opposite to the other while permitting both wheels to rotate in unison in the same direction, and means for releasably locking said wheels against rotation relative to said rolls in opposite directions.

20. In combination with an embroidery, turfing or like machine having a shifting frame for moving a base fabric edgewise across the paths of yarn projectors, fabric supporting and feeding apparatus for positioning successive portions of a continuous base fabric on said shifting frame comprising a pair of fabric supporting rolls on said frame, said rolls having a fabric gripping surface and rotatable to draw fabric across said frame, lock means on each of said rolls adjacent an end thereof, means on said frame releasably engageable with said lock means to prevent opposite relative rotation of said rolls, a sprocket wheel rotatably mounted on each of said rolls adjacent said lock means, an endless chain connecting said sprocket wheels to prevent rotation of one wheel opposite to the other while permitting both wheels to rotate in unison in the same direction, and means for releasably locking said sprocket wheels against rotation relative to said rolls in opposite directions.

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