May 15, 1956 A. N. HALE 2,745,525

ELECTRIC TRANSMITTER FOR SEWING MACHINES

Filed July 23, 1954 4 Sheets-Sheet 1

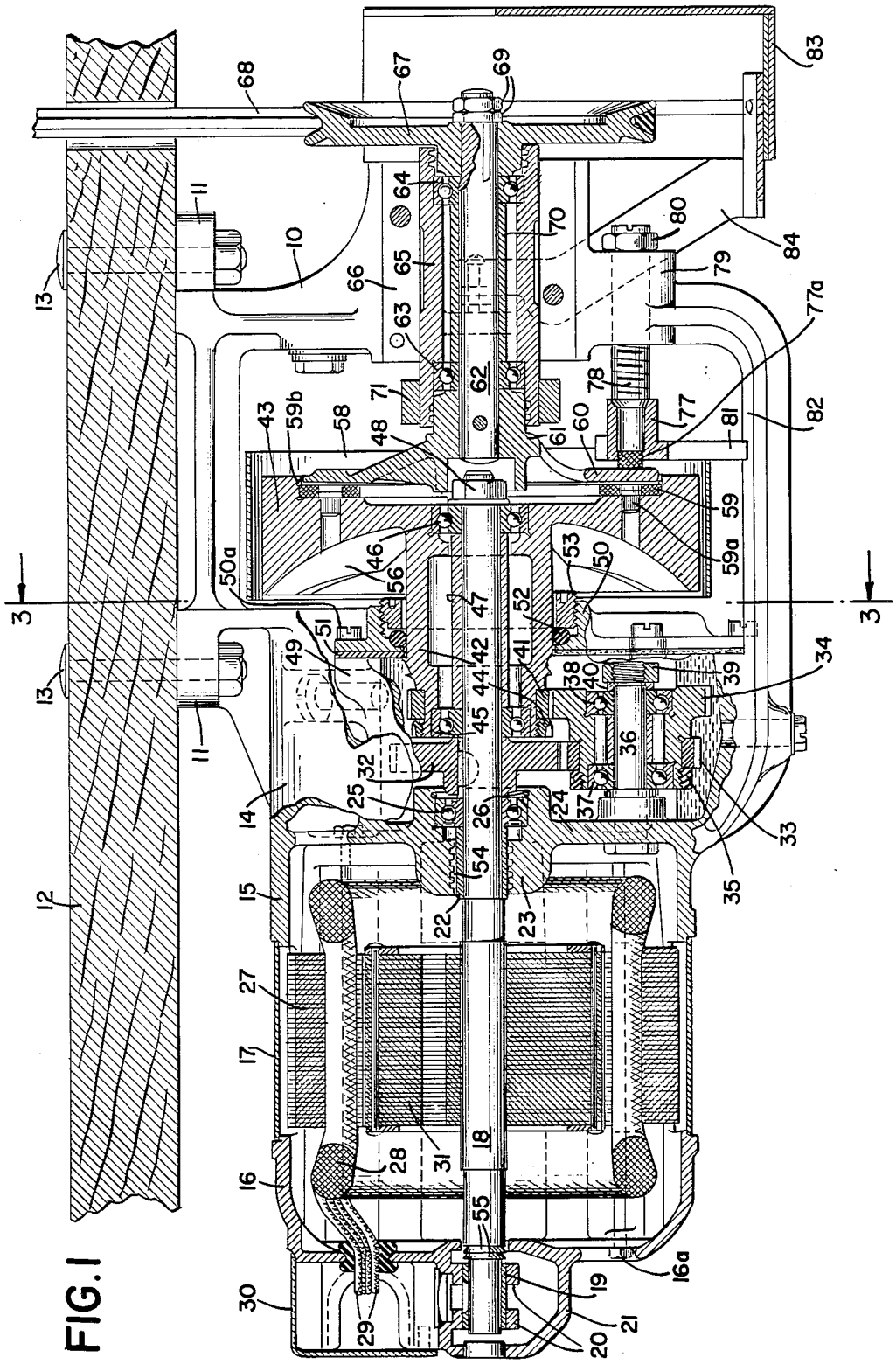


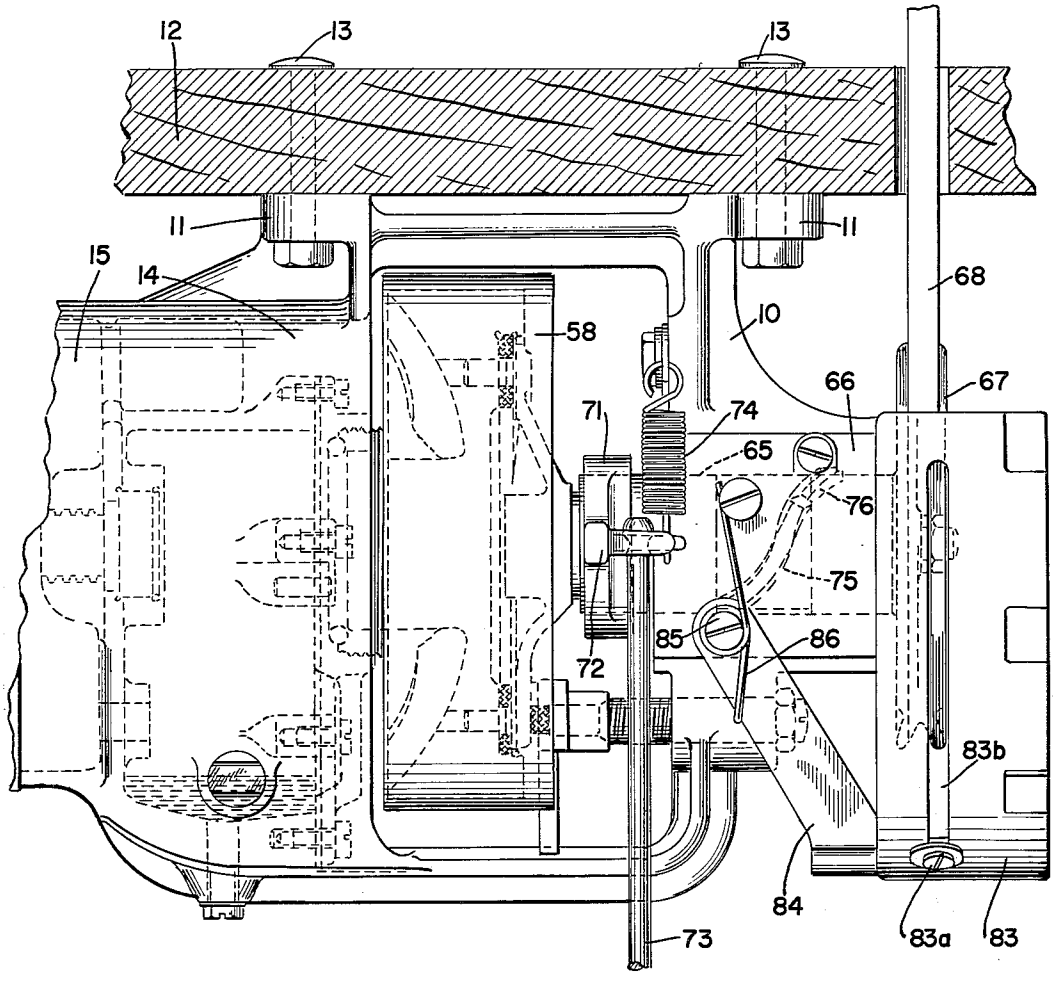
FIG. 1

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ELECTRIC TRANSMITTER FOR SEWING MACHINES

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FIG. 2

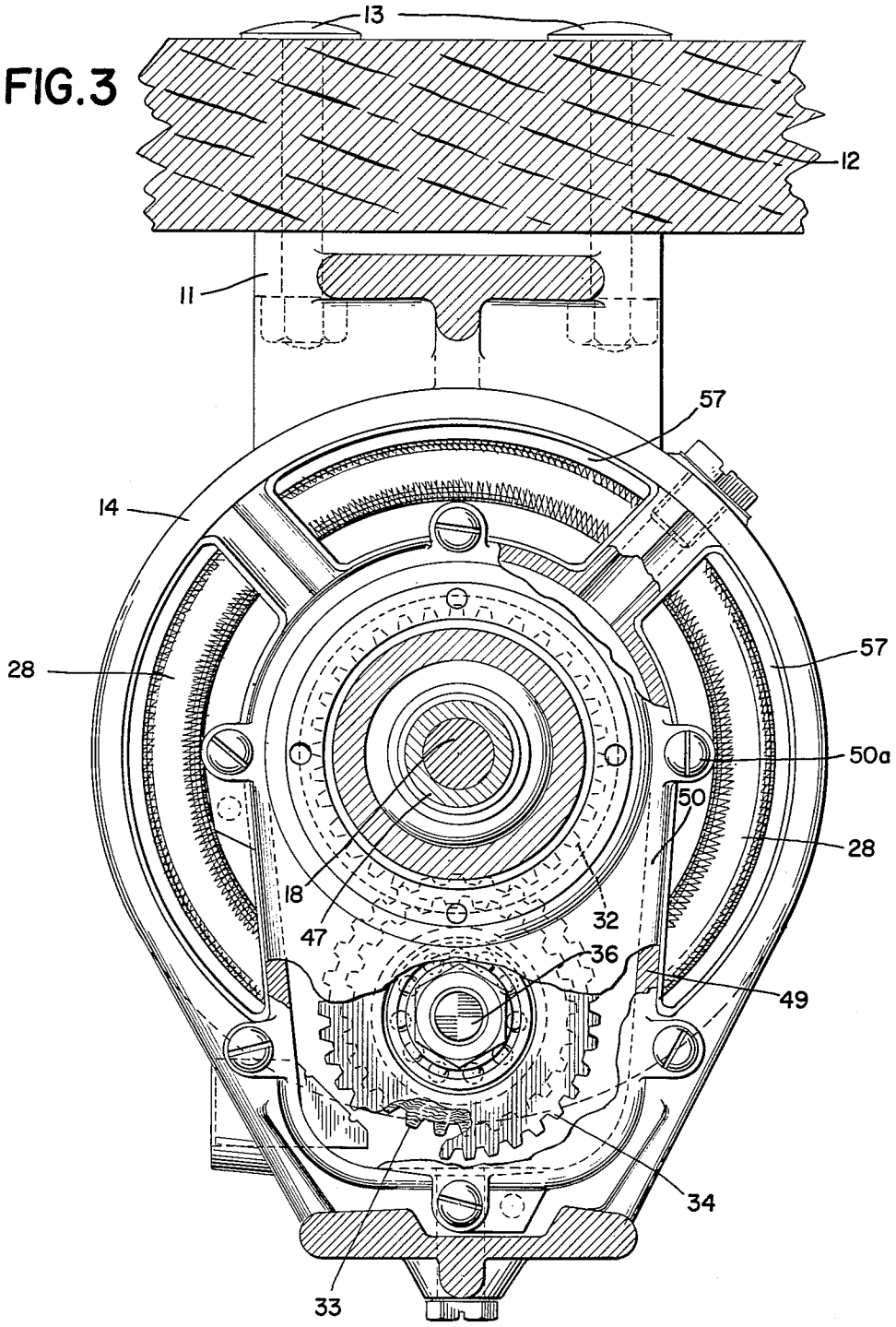


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ELECTRIC TRANSMITTER FOR SEWING MACHINES

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FIG.3



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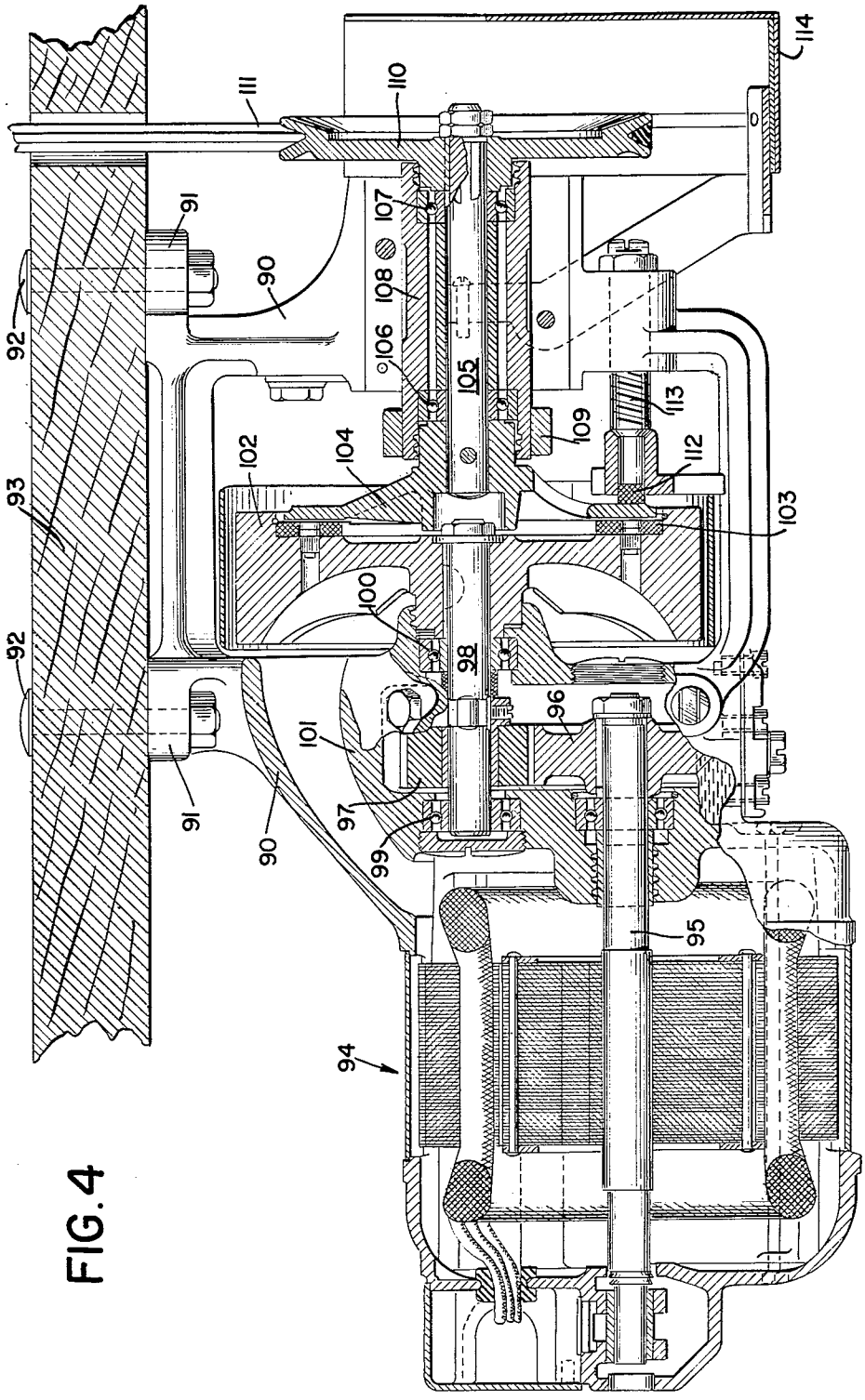


FIG. 4

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ELECTRIC TRANSMITTER FOR SEWING MACHINES

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Application July 23, 1954, Serial No. 445,276

12 Claims. (Cl. 192—3.5)

This invention relates to an electric power unit for driving a sewing machine. The unit comprises an electric motor, a flywheel and a clutch, with novel connections between these elements which adapt the unit for high speed operation of a sewing machine.

For efficient and uniform operation of a sewing machine it is desirable to provide a power source which is capable of quick acceleration and deceleration of the machine and which will operate the machine at a substantially uniform speed throughout a stitch forming operation, regardless of variations in the load in the course of forming a seam. To achieve the latter result it has been considered desirable to employ an induction motor, and in order to attain a maximum speed this is usually of the two pole type. Such motors operating on 60 cycle alternating current have a theoretical speed of 3,600 R. P. M. but a rated speed of about 3,450 R. P. M.

The importance of quick acceleration and deceleration will be appreciated when it is considered that a sewing machine is subject to very frequent starting and stopping. Only a few seconds are required to form a seam of average length. Therefore, little benefit would be derived from a machine capable of maximum operation at, say, 5,000 R. P. M., if a large portion of the time is consumed in getting up to speed. With the present trend toward higher and higher speeds the importance of rapid acceleration to the normal high speed is accentuated. For good efficiency in the operation of a sewing machine it is desirable to bring the machine to substantially its maximum operating speed within about 1/10 of a second. Even more rapid acceleration is desirable. In general, it has been found that a machine may be gotten up to around 90% of its maximum speed within 5 to 30 hundredths of a second, depending upon the machine and its driving means. From this point the machine more gradually increases in speed to its maximum. Factors which enter into the problem of acceleration are the characteristics of the machine itself contributing to inertia, the inertia of the clutch plate and driving pulley of the power unit, the type of belt employed to connect the power unit with the machine, the belt tension, and the like.

To attain machine speeds above 5,000 R. P. M. with present power units, so-called electric transmitters, it has become necessary to increase the size of the motor pulley in relation to the machine pulley. However, this has led to belt slippage, due to the smaller arc of contact with the machine pulley, and has thus increased the length of time required to bring the machine substantially to its maximum speed. This condition becomes quite objectionable when the pulley diameters are such that the machine is operated at more than about one and a half times the speed of the motor.

It has been a primary object of the present invention to provide a power unit capable of bringing a sewing machine driven thereby up to substantially its maximum speed within a minimum of time, say within 1/10 of a second or even less.

A further object has been to provide a unit of the foregoing character which will operate the sewing machine at substantially its maximum speed for the major portion of its operation in forming a seam, without fluctuation as a result of variations in the load incident to the formation of the seam. This is important to the production of substantially uniform stitches.

Toward the foregoing ends the new power unit has a single speed motor, preferably a two pole induction motor having a rated speed of 3,450 R. P. M. The shaft of this motor is connected through step-up gearing with a shaft which carries a flywheel. This is preferably driven at an angular speed of about 1.5 times the speed of the motor shaft and, therefore, a flywheel of given weight is capable of overcoming substantially higher inertia of the driven parts. If desired, a smaller or lighter flywheel may be employed in accordance with the invention than that now usually employed and still provide improved acceleration of the driven machine, due to improved belt contact.

A further feature of the new power unit is the provision of a relatively lightweight driven assembly incorporating the driven clutch element of the unit. This assembly includes the driven clutch element, a shaft to which it is secured and a motor pulley. These parts are so constructed as to introduce a minimum amount of inertia into the driven elements. Since the constantly driven flywheel is rotated at a speed in excess of 5,000 R. P. M. the ratio of the diameter of the motor pulley to that of the machine pulley may be relatively small in order to drive the machine at say 6,500 R. P. M. This makes possible a reduction in the inertia effect of the motor pulley. Moreover, the lightening of the intermittently driven parts of the unit reduces the momentum of these parts and thus brings about more rapid deceleration of the machine when the clutch is disengaged and the brake is applied to the driven clutch plate.

Another feature of the invention is the provision of noiseless speed increasing gearing between the motor shaft and the flywheel shaft, this gearing being enclosed within a lubricant retaining housing and being abundantly lubricated. Noiseless and efficient operation of the unit is thus insured.

In a preferred embodiment of the invention the flywheel is coaxial with the motor shaft and its hub surrounds the motor shaft and is mounted thereon by means of antifriction bearings. If the flywheel is driven at 1.5 times the angular speed of the motor shaft the flywheel hub rotates about the shaft at an angular speed in relation to the latter of only half the speed of the shaft.

The flywheel may, however, be mounted on a shaft which is not coaxial with the motor shaft but is displaced to one side thereof. This enables the use of a simpler gear connection between the two shafts to bring about the desired step-up in angular speed of the flywheel. It also reduces the overall length of the unit. However, it increases the overall height or width of the unit somewhat.

Other objects, features and advantages of the invention will appear from the detailed description of several illustrative embodiments of the same which will now be given in conjunction with the accompanying drawings, in which:

Fig. 1 is a view, largely in longitudinal vertical section but partly in front elevation, showing a preferred embodiment of the new power unit;

Fig. 2 is a front elevational view of a portion of the unit;

Fig. 3 is a vertical sectional view through the unit taken along the line 3—3 of Fig. 1, certain parts being broken away; and

Fig. 4 is a view similar to Fig. 1 showing a modified form of power unit embodying certain important features of the invention.

For purposes of illustration the invention has been

shown as applied to a power unit of the general character disclosed in the patent to Peets et al. 2,004,055, granted June 4, 1935. Reference may be had to said patent for certain details not fully shown herein.

Referring now to Figs. 1, 2, and 3, the new unit comprises a main frame **10** having a plurality of feet **11** at its upper end by which the frame may be attached to the under face of a table top **12** by means of bolts **13**. It will be understood that the top **12** forms a part of a sewing machine table or other support on which the machine to be driven is mounted. Frame **10** has a central, substantially enclosed housing portion **14** from which extends, toward the left (Fig. 1), an annular flange **15** forming an end bonnet for an electric motor. A bonnet **16** forms the opposite end of the housing of the motor, and spaced flanges on the two bonnets are encircled by a cylindrical sheet metal band **17** which completes the enclosure for the motor. Tie rods **16***a* extending from one bonnet to the other serve to retain the motor housing in assembled relation. Within the motor housing is a shaft **18** which is journalled adjacent its left end (Fig. 1) in a bushing **19** carried by inwardly extending portions **20** of a housing **21** integral with the bonnet **16**. At the opposite end of the motor housing the shaft **18** carries a sleeve **22** and beyond this is journalled in a bearing portion **23** provided centrally of a partition wall **24** within the portion **14** of the frame. A ball bearing unit **25** mounted in the frame portion **23** provides an anti-friction bearing for the shaft **18**. A spring ring **26** serves to retain the bearing unit in place.

Within the motor housing is a field core **27** having incorporated in it an exciting winding **28**. Suitable leads **29** extend from the latter into a connection housing **30**, secured to the bonnet **16**, by means of which power is supplied to the motor. On the shaft **18** there is mounted a rotor **31**, which may be of the conventional squirrel cage induction type. The motor may, for example, be a three-phase, 60 cycle two pole motor adapted to operate at a rated speed of 3,450 R. P. M.

Keyed to the shaft **18**, just beyond the partition wall **24** of the frame, is a metal gear **32** which meshes with a laminated plastic gear **33** carried by the hub of a metal gear **34**. A screw threaded retaining ring **35** serves to hold the gear **33** on the hub of gear **34**. The latter is suitably journalled on a stud **36**, carried by the partition wall **24**, which extends into the enclosed housing at the right of said wall (Fig. 1).

Roller bearing units **37** and **38**, mounted on the opposite ends of the gear **34** and its hub, provide an anti-friction bearing between the gear and the stud **36**. A threaded collar or nut **39**, mounted on a screw threaded portion of the stud **36**, serves to retain the assembly comprising the gear **34** and the roller bearing units on the journal portion of the stud **36**. A lock washer **40** is provided between the nut **39** and the outer face of the roller bearing unit **38**.

Gear **34** meshes with a laminated plastic gear **41** secured to a hub **42** of a flywheel **43**. A screw threaded retainer or clamping ring **44** serves to hold the gear **41** against a shoulder of the hub **42**. This hub and the flywheel are journalled on the shaft **18** by means of ball bearing units **45** and **46**. A spacing sleeve **47** surrounding the shaft **18** serves to retain the inner members of the ball bearing units in properly spaced relation, and the parts are held in assembled position by means of a nut **48** having screw threaded engagement with the right end of the shaft **18**. By the employment of alternate metal and plastic gears in the gear train which serves to connect the motor shaft with the flywheel, the noise incident to the employment of all metal gears is greatly reduced. Moreover, this is achieved without the excessive wear of the gears which would result if all of the meshing gears were formed of laminated plastic material.

The gearing described is of such character that the flywheel is driven at a desired angular speed higher than that of the shaft **18**. Preferably it is driven at a speed of about 1.5 times that of the shaft. For this purpose the gears **32** and **33** may have a 1.3 to 1 peripheral speed ratio, while the gears **34** and **41** may have a 1.154 to 1 peripheral speed ratio. The gearing is enclosed within a lubricant retaining housing formed in part by the wall **24** and by a surrounding wall **49**. The opposite face of the housing is closed by a plate **50** and a gasket **51**. The plate and gasket are held in position by screw **50***a* (Fig. 1). To prevent discharge of lubricant from the housing, a sealing ring **52**, formed of rubber or the like, is provided within a hub portion of the plate **50** and is urged into sealing relation with the wall of the housing and with the periphery of the hub **42** of the flywheel by means of a screw threaded clamping ring **53**. The escape of lubricant from the housing at the opposite side thereof is prevented by screw threaded formations **54** on the hub extension of wall **24**. This screw threaded formation is such as to drive toward the interior of the housing any lubricant which tends to creep outwardly along the sleeve **22** carried by the shaft **18**. Similarly, the escape of lubricant from the housing **21** of the bonnet **16** into the interior of the motor is prevented by frusto-conical oil slinger formations **55** on the shaft **18**.

The flywheel **43** is preferably provided with a plurality of air propelling vanes **56** (Fig. 1) on the face of the flywheel facing toward the motor. These vanes serve to propel a cooling stream of air around the enclosed lubricant housing and through openings **57** (Fig. 3) in the wall **24** of the frame. Overheating of the motor and the driven parts is thus prevented. A sheet metal guard **58**, which may suitably be formed in two semi-circular sections to facilitate assembly, is supported in any suitable way from the frame **10** and surrounds the flywheel.

Within a recess formed in the right face (Fig. 1) of the flywheel **43** is mounted a friction ring **59** formed of any suitable friction providing material. This is provided with a number of studs **59***a* cooperating with openings in the flywheel and is held in place by a snap ring **59***b*. Ring **59** cooperates with a clutch plate **60** having a hub **61** secured to a shaft **62**. The latter is journalled in spaced roller bearing units **63** and **64** mounted in a sleeve **65** carried by a bearing portion **66** of the frame **10**. To facilitate assembly of the parts, the bearing **66** is split along the plane of Fig. 1. At the outer or right end of the shaft **62** there is secured thereto a pulley **67** having a V-shaped groove in its periphery arranged to receive and drive a V-belt **68** which extends upwardly through an opening in the table **12** to a pulley on the sewing machine (not shown). The shaft **62**, pulley **67**, and other parts rotatable therewith are held in assembled relation by means of a pair of nuts **69** having screw threaded engagement with the outer end of the shaft **62**. A spacing sleeve **70** surrounding the shaft serves to hold the bearing unit **63** and **64** in properly spaced relation.

Secured to the inner end of the sleeve **65** is a collar **71** (Figs. 1 and 2) having a radially extending arm **72** which receives the upper end of a rod **73** that extends downwardly to a foot treadle or knee press or other suitable means operable at will by the operator for rocking the collar **71** and sleeve **65** when desired. A spring **74** normally urges the arm **72** upwardly and retains the parts in the position indicated in Fig. 2. At this time the clutch plate **60** is spaced slightly from the friction ring **59** of the flywheel so that the pulley assembly will not be driven. When the collar **71** is rocked in the manner explained, however, a spiral projection **75** on the sleeve **65** cooperating with a spiral groove **76** in the inner surface of a relieved central portion of the bearing **66** will cause the sleeve **65** and the parts carried thereby to be shifted toward the left (Fig. 1). This brings about engagement of the clutch plate **60** with friction ring **59** and the driving of the pulley assembly at the speed of rotation of the flywheel **43**. Upon release of the foot treadle connected with the rod **73** the spring **74** will restore the parts to the position indicated in Figs.

1 and 2, at which time the clutch is disengaged and the clutch plate 60 is brought into engagement with a brake shoe 77 to bring the shaft 62 quickly to rest. To minimize the inertia of the parts and thus insure quick stopping of the shaft 62, the clutch plate 60, pulley 67, and other rotating parts of the assembly are preferably made as light as possible consistent with the work these parts must perform. Brake shoe 77 is swivelly mounted on the reduced outer end of a screw threaded stud 78 cooperating with a screw threaded opening in a portion 79 of the frame. The screw stud is held in adjusted position by means of a lock nut 80. To hold the brake element 77 against turning on the stud 78, it is provided with a downwardly extending arm 81 the lower end of which has spaced surfaces cooperating with the upper surface of a portion 82 of the frame. As shown, the brake shoe carries a friction lining 77*a* which cooperates with the adjacent face of the plate 60 to effect the braking action.

A pulley guard 83 is preferably provided around the major portion of the pulley 67. This guard is secured by a pair of screws 83*a* (Fig. 2) to the lower end of a pivoted U-shaped bracket 84. The latter is pivoted at 85 on the frame and is normally urged into the position shown in Fig. 2 by a spring 86. When it is desired to have access to the pulley for replacement of the belt or the like, the guard may be swung downwardly with the bracket 84, about the pivot 85. To enable mounting of the power unit in a variety of different angular positions in relation to the table, the guard 83 is provided with elongated slots 83*b* cooperating with the screws 83*a*, so that the circumferential position of the guard in relation to the bracket 84 may be adjusted to avoid interference with the belt 68.

It is believed that the construction and operation of the unit will be clear from the foregoing description. Assuming that the motor is of the character indicated, having a rated speed of 3,450 R. P. M., the flywheel 43 will be constantly rotated at a higher angular velocity, e. g. 5,175 R. P. M., if the gear ratios mentioned above are employed. It will be understood that when the sewing machine is in use, the motor and the flywheel will be constantly driven. The operator of the sewing machine, through the use of the foot treadle connected with the rod 73, controls the operation of the clutch to cause the sewing machine to be started and stopped at frequent intervals in the course of seaming garments and the like. The high angular speed of the flywheel and the low inertia of the parts driven when the clutch is engaged serves to insure rapid acceleration of the machine to its maximum desired speed. So also, the low inertia of the driven parts insures rapid deceleration and stopping of the machine when the clutch plate 60 is disengaged from the friction ring 59 and engaged with the brake element 77.

Turning now to Fig. 4, there is illustrated a modified form of the new power unit. This comprises a main frame 90 having feet 91 secured by means of bolts 92 to the under face of a sewing machine table top or other support 93. An electric motor 94 is carried by the frame 90 in the manner described in relation to Fig. 1. Motor 94, however, has a shorter shaft 95 which terminates slightly beyond the bearing retaining portion of the right end bonnet which is integral with the frame 90. Adjacent the outer end of the shaft 95 there is keyed thereto a metal gear 96 which meshes with a laminated plastic gear 97 secured to a shaft 98. The latter is journalled in ball bearing units 99 and 100 mounted in spaced relation in a housing portion 101 of the frame 90. At its outer or right end, which projects through said housing portion of the frame, the shaft 98 carries a flywheel 102 similar to flywheel 43 of Fig. 1. A friction ring 103 is suitably secured to the right face of the flywheel 102 and is arranged to cooperate with a clutch plate 104 whenever the latter is shifted toward the left. This clutch plate is secured to a shaft 105 coaxial with shaft 98 and journalled in ball bearing units 106 and 107 mounted in a sleeve 108 carried by a bearing portion of the frame 90. A collar 109, similar to collar 71 of Fig. 2, is secured to the sleeve 108 and is arranged to cause rocking of the sleeve under control of a foot treadle or the like to bring about a slight axial shifting of the sleeve 108 to engage the clutch plate 104 with friction ring 103. At the outer end of shaft 105, secured for rotation therewith is a pulley 110 having a V-groove adapted to receive a V-belt 111 which connects the pulley 110 with a pulley (not shown) on the main operating shaft of a sewing machine mounted on the table 93. When the clutch assembly is in the position indicated in Fig. 4, a surface on the right face of the clutch plate 104 is engaged with a brake element 112 swivelly mounted on a screw threaded stud 113 which is adjustable in the manner explained in relation to stud 78 of Fig. 1.

The primary difference between the embodiment of Fig. 4 and that of Figs. 1 to 3, inclusive, is the offset relationship between the motor shaft 95 and the flywheel supporting shaft 98. This enables the use of a single pair of gears for driving the flywheel from the motor shaft at an angular speed higher than that of the motor shaft. The gears 96 and 97 must be suitably selected to provide the desired step-up of speed. As shown, the gears may suitably be mounted in a lubricant retaining portion of the frame, and the flywheel may be provided with air impelling means to assist in cooling the motor and other parts of the unit. A belt guard 114, similar to guard 83, may be provided around the major portion of pulley 110.

In lieu of gearing 96 and 97 to connect the shafts 95 and 98, the latter may be interconnected by a belt and pulley arrangement, if desired. The belt and pulleys should be of a character insuring a positive drive between the shafts and may for this purpose be similar to that disclosed in the patent to Rubel, No. 2,628,583, granted February 17, 1953. It will be understood that the pulley mounted on the shaft 95 will be of larger diameter than that mounted on the shaft 98.

In lieu of the fixed mounting of the entire frame 10 or 90 in relation to the table top, as shown in the drawings, provision may be made for angular adjustment of the motor and clutch carrying portions of the frame and a support member secured to the table top. This will facilitate tightening of the belt which connects the motor driven pulley with the pulley on the sewing machine. Suitable arrangements for this purpose are disclosed in the patents to Le Vesconte et al., No. 2,390,220, granted December 4, 1945, and Peterson, No. 2,481,867, granted September 13, 1949.

While several illustrative embodiments of the invention have been disclosed in considerable detail and various modifications have been suggested, it will be understood that other changes may be made in the construction and arrangement of various parts of the unit within the scope of the invention. Certain features described in relation to one embodiment may be incorporated in the other.

What is claimed is:

1. A power drive for a sewing machine which comprises a frame, an electric motor having a shaft journalled in said frame, a flywheel journalled in said frame, connections from said motor shaft for rotating said flywheel, said connections including speed increasing means for driving said flywheel at greater angular speed than said motor shaft, a driven shaft carried by said frame, means including a clutch connecting said flywheel with said driven shaft and a pulley carried by said driven shaft adapted for belt connection with a sewing machine.

2. A power drive for a sewing machine which comprises a frame, an electric motor having a shaft journalled in said frame, a flywheel journalled in said frame, connections from said motor shaft for rotating said flywheel, said connections including speed increasing means for driving said flywheel at greater angular speed than said motor shaft, a driven shaft carried by said frame, means including a clutch connecting said flywheel with said driven shaft, means operable at will for controlling the engagement and disengagement of said clutch, and a

pulley carried by said driven shaft adapted for belt connection with a sewing machine.

3. A power drive for a sewing machine which comprises a frame, an electric motor carried by said frame, said motor having a power transmitting shaft, a flywheel rotatably mounted on said frame, connections from said shaft to said flywheel for driving the latter at greater angular speed than said shaft, a driven shaft carried by said frame, means including a clutch connecting said flywheel with said driven shaft, means controlled by the operator for causing engagment and disengagement of said clutch, and a pulley carried by said driven shaft adapted for belt connection with a sewing machine.

4. A power drive for a sewing machine which comprises a frame, an electric motor carried by said frame, said motor having a power transmitting shaft, a flywheel rotatably mounted on said frame, gearing connecting said shaft to said flywheel for driving the latter at greater angular speed than said shaft, a driven shaft carried by said frame, means including a clutch connecting said flywheel with said driven shaft, means controlled by the operator for causing engagement and disengagement of said clutch, and a pulley carried by said driven shaft adapted for belt connection with a sewing machine.

5. A power drive for a sewing machine which comprises a frame, an electric motor carried by said frame, said motor having a power transmitting shaft, a flywheel rotatably mounted on said frame, gearing connecting said shaft to said flywheel for driving the latter at greater angular speed than said shaft, said gearing comprising a metal gear and a laminated plastic gear, a driven shaft carried by said frame, means including a clutch connecting said flywheel with said driven shaft, means controlled by the operator for causing engagement and disengagement of said clutch, and a pulley carried by said driven shaft adapted for belt connection with a sewing machine.

6. A power drive for a sewing machine which comprises a frame, an electric motor carried by said frame, said motor having a power transmitting shaft, a flywheel rotatably mounted on said frame, gearing connecting said shaft to said flywheel for driving the latter at greater angular speed than said shaft, a lubricant retaining housing on said frame enclosing said gearing, a driven shaft carried by said frame, means including a clutch connecting said flywheel with said driven shaft, means controlled by the operator for causing engagement and disengagement of said clutch, and a pulley carried by said driven shaft adapted for belt connection with a sewing machine.

7. A power drive for a sewing machine which comprises a frame, an electric motor carried by said frame, said motor having a power transmitting shaft, a flywheel rotatably mounted on said frame, in coaxial alinement with said shaft, gearing connecting said shaft to said flywheel for driving the latter at greater angular speed than said shaft, a driven shaft carried by said frame, means including a clutch connecting said flywheel with said driven shaft, means controlled by the operator for causing engagement and disengagement of said clutch, and a pulley carried by said driven shaft adapted for belt connection with a sewing machine.

8. A power drive for a sewing machine which comprises a frame, an electric motor carried by said frame, said motor having a power transmitting shaft, a flywheel rotatably mounted on said shaft for rotation in relation thereto, gearing connecting said shaft to said flywheel for driving the latter at greater angular speed than said shaft, a driven shaft carried by said frame, means including a clutch connecting said flywheel with said driven shaft, means controlled by the operator for causing engagement and disengagement of said clutch, and a pulley carried by said driven shaft adapted for belt connection with a sewing machine.

9. A power drive for a sewing machine which comprises a frame, an electric motor carried by said frame, said motor having a power transmitting shaft, a flywheel rotatably mounted on said frame, connections from said shaft to said flywheel for driving the latter at greater angular speed than said shaft, a driven shaft carried by said frame, in axial alinement with the axis of said flywheel, a clutch plate secured to said shaft adjacent said flywheel, means operable by the operator for shifting said driven shaft axially to carry said clutch plate into frictional engagement with said flywheel for operation of said driven shaft by the motor, a brake for arresting rotation of said driven shaft upon release of said shaft shifting means, and a pulley secured to said driven shaft adapted for belt connection with a sewing machine.

10. A power drive for a sewing machine which comprises a frame, an electric motor having a driving shaft, a flywheel and a driven clutch member mounted on said frame in coaxial alinement with each other, gearing connecting said flywheel with said motor shaft for rotation of said flywheel at greater angular speed than said motor shaft, means for shifting said clutch member into frictional engagement with said flywheel for direct driving connection therebetween, and a pulley rigidly connected with said clutch member for rotation thereby, said pulley being adapted for belt connection with a sewing machine.

11. A power drive for a sewing machine which comprises a frame, an electric motor having a driving shaft, a flywheel and a driven clutch member mounted on said frame in coaxial alinement with each other, said flywheel having a hub mounted on said motor shaft and rotatable in relation thereto, gearing connecting said flywheel with said motor shaft for rotation of said flywheel at greater angular speed than said motor shaft, means for shifting said clutch member into frictional engagement with said flywheel for direct driving connection therebetween, and a pulley rigidly connected with said clutch member for rotation thereby, said pulley being adapted for belt connection with a sewing machine.

12. A power drive for a sewing machine which comprises a frame, an electric motor having a driving shaft, a flywheel and a driven clutch member mounted on said frame in coaxial alinement with each other, gearing connecting said flywheel with said motor shaft for rotation of said flywheel at greater angular speed than said motor shaft, means for shifting said clutch member into frictional engagement with said flywheel for direct driving connection therebetween, spring means for disengaging said clutch member from said flywheel upon release of said shifting means, a brake for arresting rotation of said clutch member when so disengaged, and a pulley rigidly connected with said clutch member for rotation thereby, said pulley being adapted for belt connection with a sewing machine.

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