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2,514,461

ELECTRIC POWER TRANSMISSION FOR SEWING MACHINES

Filed March 14, 1944

3 Sheets-Sheet 1

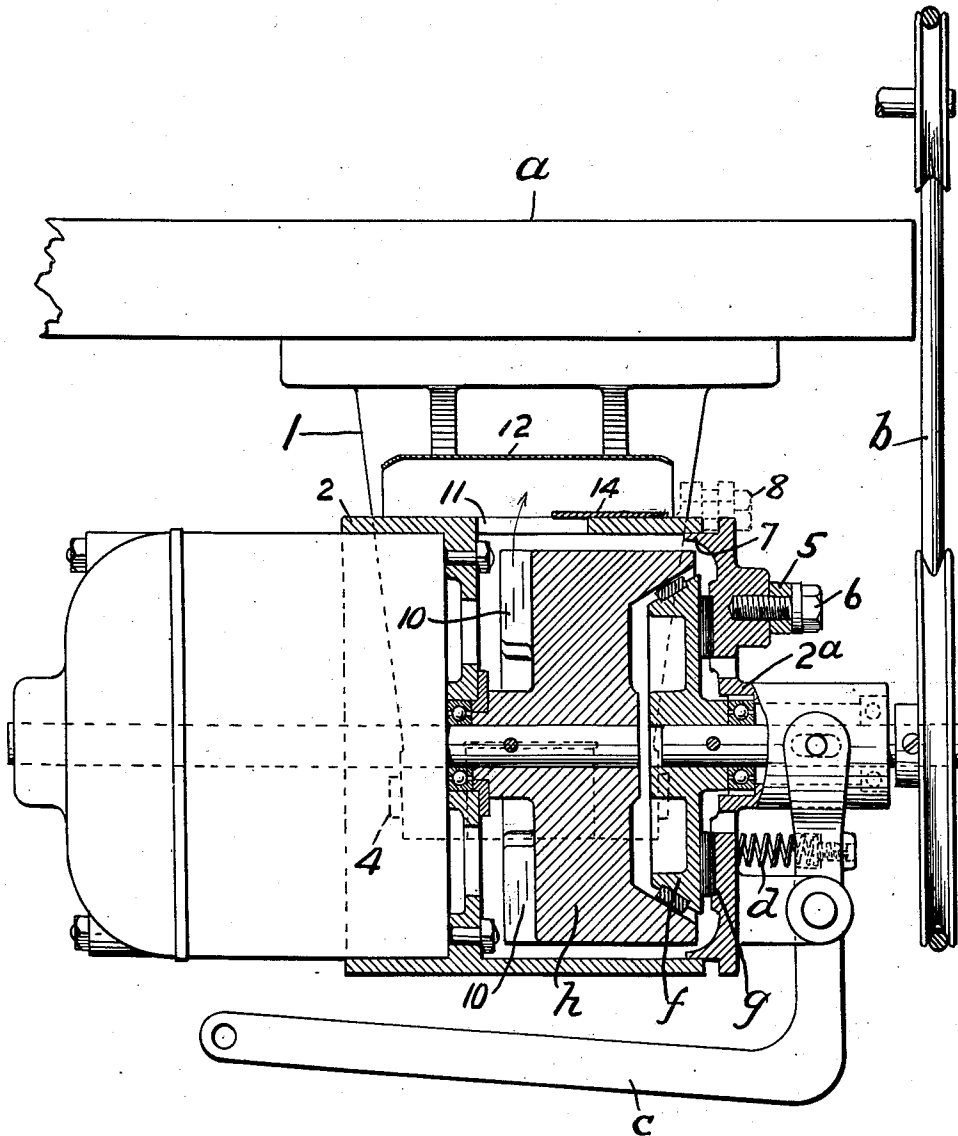


FIG. 1.

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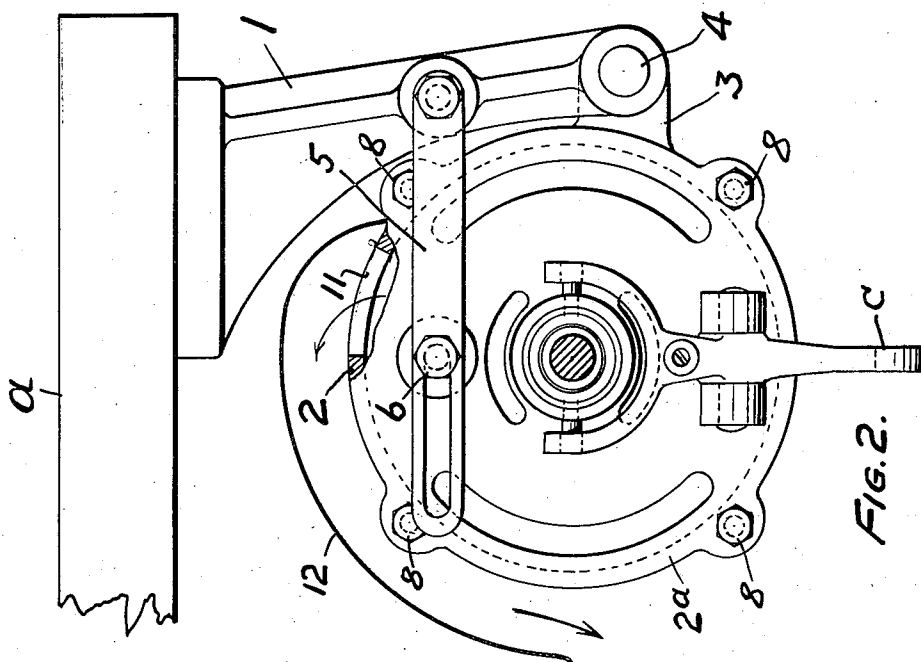


FIG. 2.

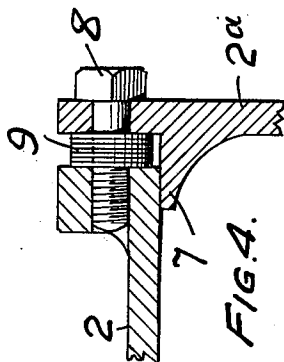


FIG. 4.

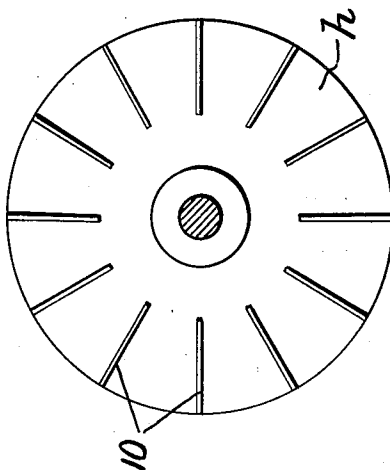


FIG. 3.

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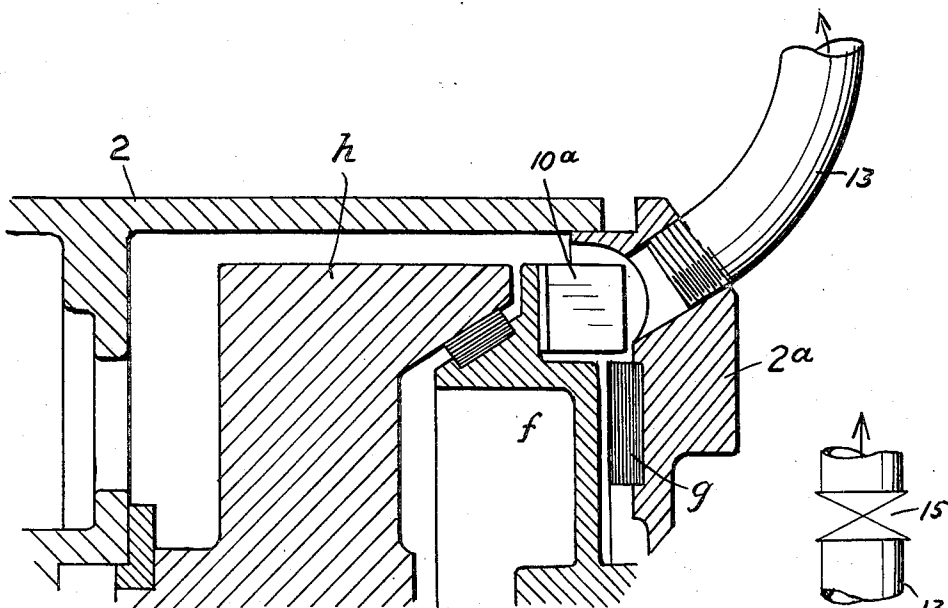


FIG. 5.

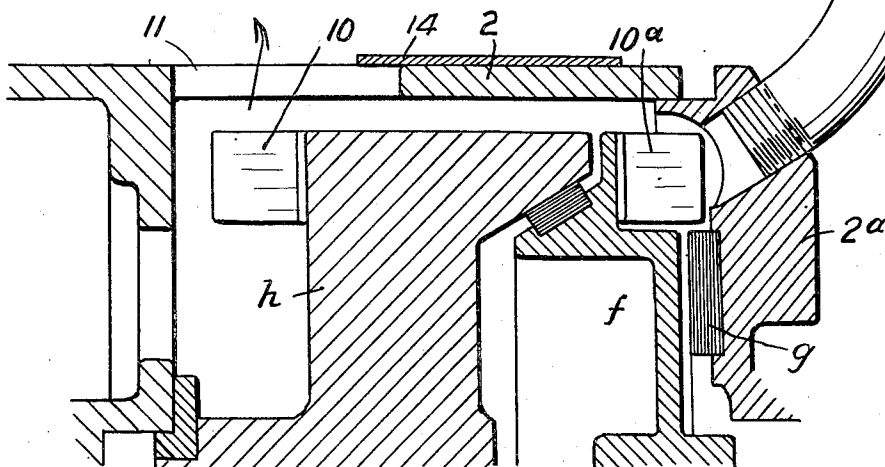


FIG. 6.

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## UNITED STATES PATENT OFFICE

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ELECTRIC POWER TRANSMISSION FOR  
SEWING MACHINES

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Application March 14, 1944, Serial No. 526,458

1 Claim. (Cl. 248-16)

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The principal objects of the present invention are: to provide means for tightening a driving belt used to stop, start and drive a sewing machine; to provide improved means for adjusting the brake device used to stop a sewing machine; to provide a draft of air for the comfort of the operator for cooling the needle and removing lint and the like from the work, table or both; and for air-cooling or ventilating the transmission mechanism.

Other objects of the invention will appear from the following description at the end of which the invention will be claimed.

In the following description reference will be made to the accompanying drawings forming part hereof and in which:

Fig. 1 is a front view partly in section of mechanism embodying features of the invention and showing in dotted lines parts that would be concealed and which are shown in Fig. 4;

Fig. 2 is an end view with parts removed looking from right to left in Fig. 1;

Fig. 3 is an end view of the motor driven clutch element looking from left to right in Fig. 1;

Fig. 4 is a sectional view illustrating upon an enlarged scale a portion of the motor housing and of the right hand end cover plate in Fig. 1;

Fig. 5 is a sectional, diagrammatic or schematic view drawn to an enlarged scale and illustrating a modification; and

Fig. 6 is a view similar to Fig. 5 illustrating another modification.

Referring to the drawings, more particularly to Figs. 1 and 2, 1 is a bracket fixedly depending from beneath the table *a* upon which a sewing machine, not shown, is mounted. 2 is a motor housing hinged at its periphery to the bracket. As shown the motor housing is provided with a lug 3 which is connected to the ends of the bracket by hinge pin 4 or the like. 5 is a link pivoted at one end to the bracket at a point intermediate of its length and adjustably attached to an end portion of the housing at the other end for varying its effective length. The slot and bolt connection 6 is a means for adjustably connecting the link and housing and by means of it the housing can be turned about its fulcrum 4 so as to tighten and loosen the jointless or endless belt *b* which transmits power to a sewing machine not shown. The sewing machine is stopped when the lever *c* is released and the spring *d* comes into action and shifts the driving clutch element *f* toward the right into contact with the brake ring *g* attached to the end cover plate of the motor housing. It is desirable that the clutch

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element *f* and the parts which it drives, including the sewing machine, may be stopped quickly or at once. Therefore, means are provided for accurately adjusting the position of the brake ring *g* attached to the end or head of the motor housing. For this purpose the head of cover 2<sup>a</sup> of the motor housing is provided with a flange 7 which slidably fits into the open end of the cylindrical portion of the motor housing. The cover plate of the housing is secured thereto by lag screws 8. 9 indicates a nest of washers surrounding the lag screws 8 and interposed between the motor housing and the end cover so that by the addition or subtraction of one or more washers the position of the end plate and of the brake ring *g* which it carries can be accurately adjusted in respect to the driven clutch element and in this way a quick or sudden clutch element stop is insured. The motor driven clutch element 20 *h* is provided on its face with radially arranged vanes 10 and in its rotation these vanes propel air from the inside to the outside through openings 11 and there is a guard 12 arranged at the outside of the housing and it serves to deflect air as indicated by the arrow in Fig. 2 away from the operator, so that the operator while cooled is not subjected to an excessive draft.

Referring to Figs. 1 and 4, 14 indicates a movable or slidable shutter by means of which the size of the opening 11 may be increased or diminished, or the opening may be closed so that the operator can adjust the draft of air according to conditions or requirements.

As shown in Fig. 5, the vanes or fan blades 10<sup>a</sup> are arranged on the driven clutch element *f* so that they are operative to produce a supply of air only when the clutch is in engagement and the sewing machine is in operation. The supply or draft of air thus produced is made available at the top of the table *a*, where it is directed toward the needle (not shown) and serves not only to cool the needle but also to remove dust, lint and the like. This purpose is accomplished by means of a hose or conveyor 13 which extends from the motor housing.

Referring to Fig. 6, the constantly rotating motor driven clutch element *h* is provided with vanes 10 and the driven, intermittently rotating element *f* is provided with vanes 10<sup>a</sup> so that the operator has available at all times a supply of air, which air is blown to cool the needle and remove lint only while the sewing machine is in operation.

When it is not desired to have a draft of air supplied above the table, use is made of a valve

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15 interposed in the air line 13 and diagrammatically illustrated in Fig. 6. This valve diagrammatically illustrated at 16 as well as the shutter 14 may be arranged for operation at any point convenient to the operator.

It will be obvious to those skilled in the art that modifications may be made in details of construction and arrangement without departing from the spirit of the invention which is not limited in respect to such matters or otherwise than the appended claim may require.

I claim:

In a power transmission apparatus of the character described, a motor drive assembly including a motor and a drive pulley associated therewith and adapted to be belt-connected to a driven pulley, a bracket for supporting said motor assembly, said bracket including a relatively fixed rigid member having a freely extending part to which said motor assembly is pivotally connected with the motor axis paralleling the axis of its pivotal support, a link pivotally connected to one side of said bracket at a point spaced from the pivotal connection of said motor assembly with said bracket, said link extending transversely of the motor axis for securement to one end of the motor at a point spaced vertically above the motor axis and being provided

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with an elongated slot in the region of its securement to said motor, and a stud projecting through the slot in said link and threaded into said end of the motor for locking the link to said motor, the effective length of the link being varied accordingly as its slotted portion is shifted relatively to said locking stud whereby to maintain the motor drive in angularly adjusted position relatively to said bracket.

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