Jan. 3, 1928.

K. MAIER ET AL

1,655,152

INTERMEDIATE GEARING FOR SEWING MACHINES AND THE LIKE

Filed Jan. 26, 1925

2 Sheets-Sheet 1

Fig. 1.

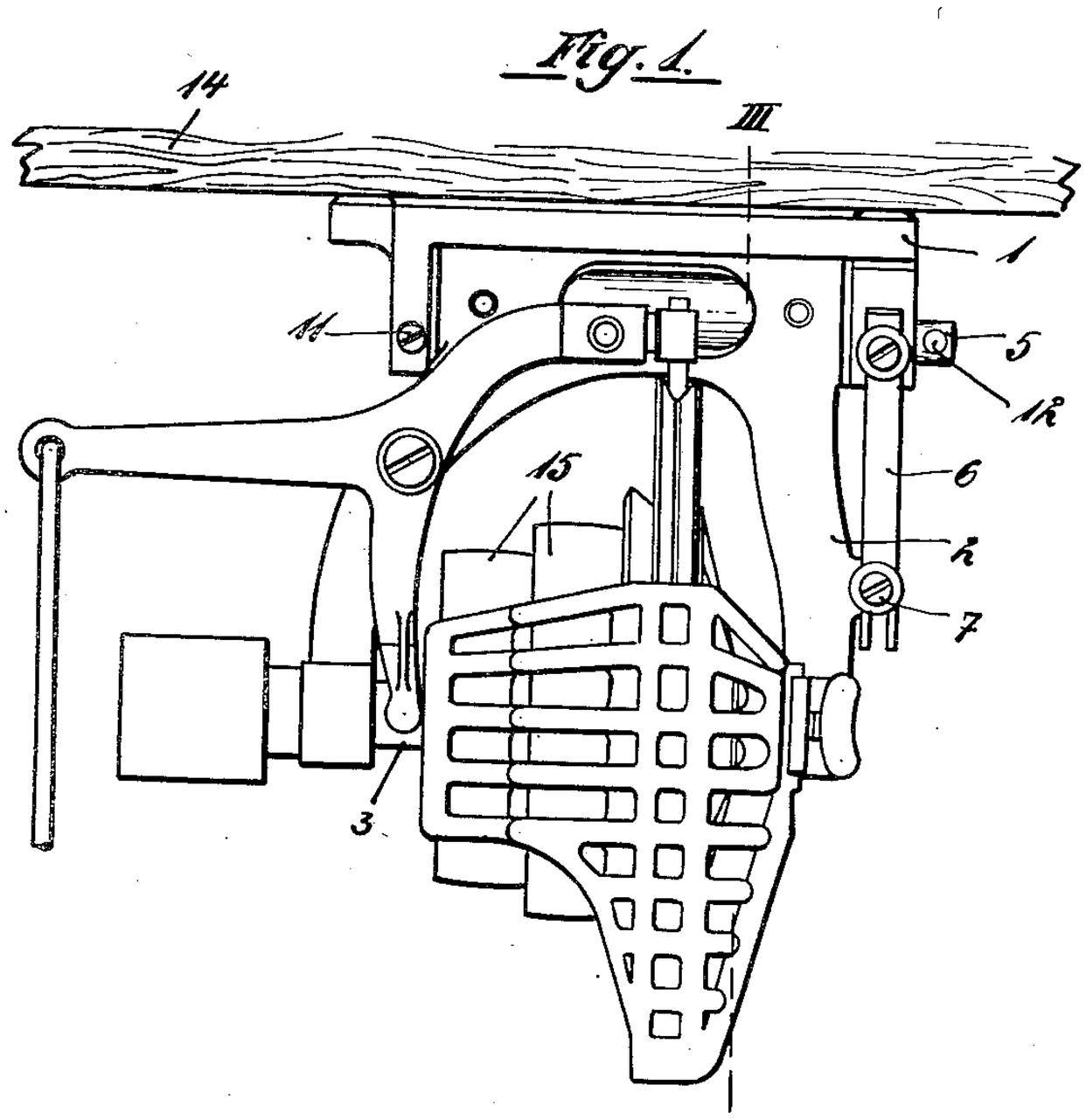
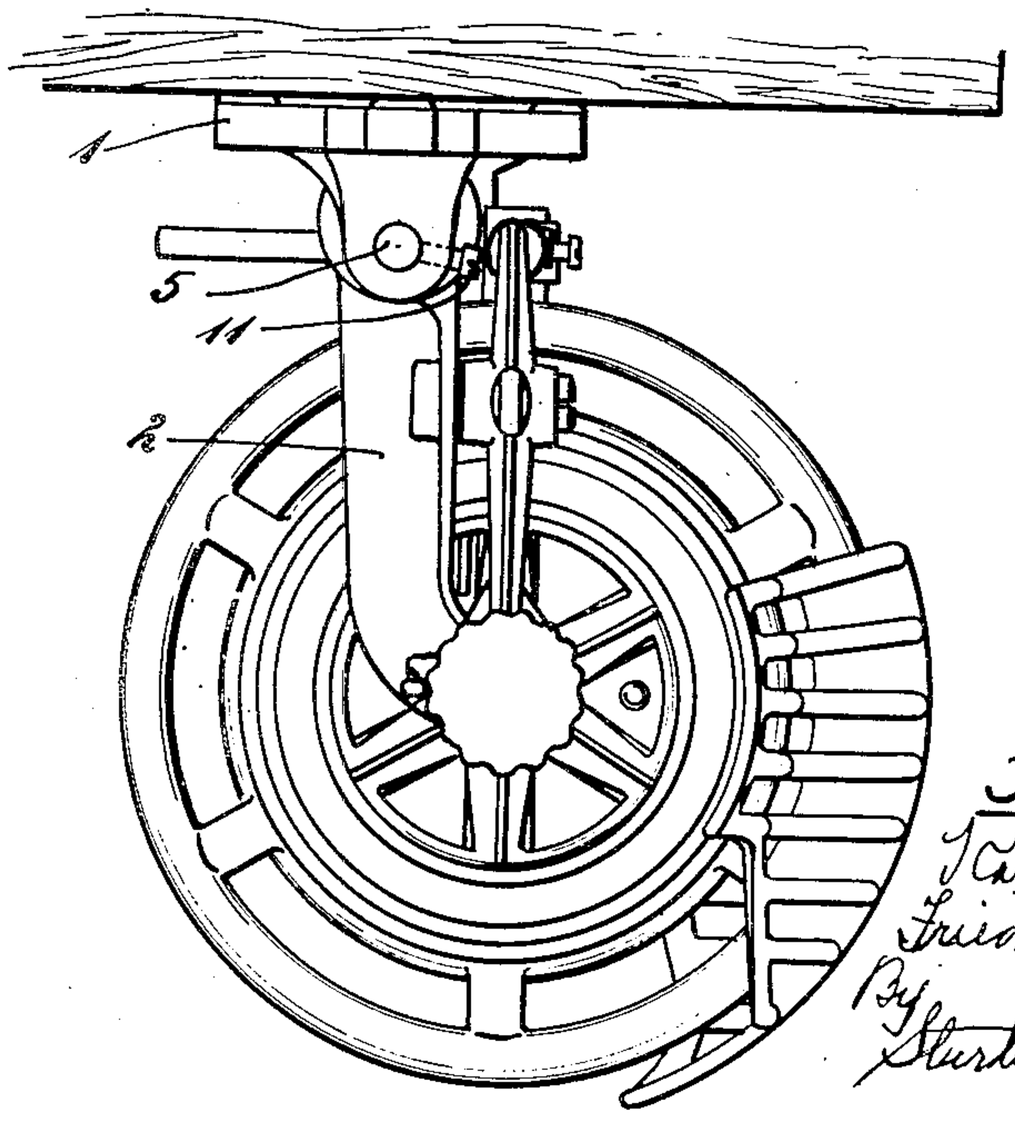


Fig. 2.



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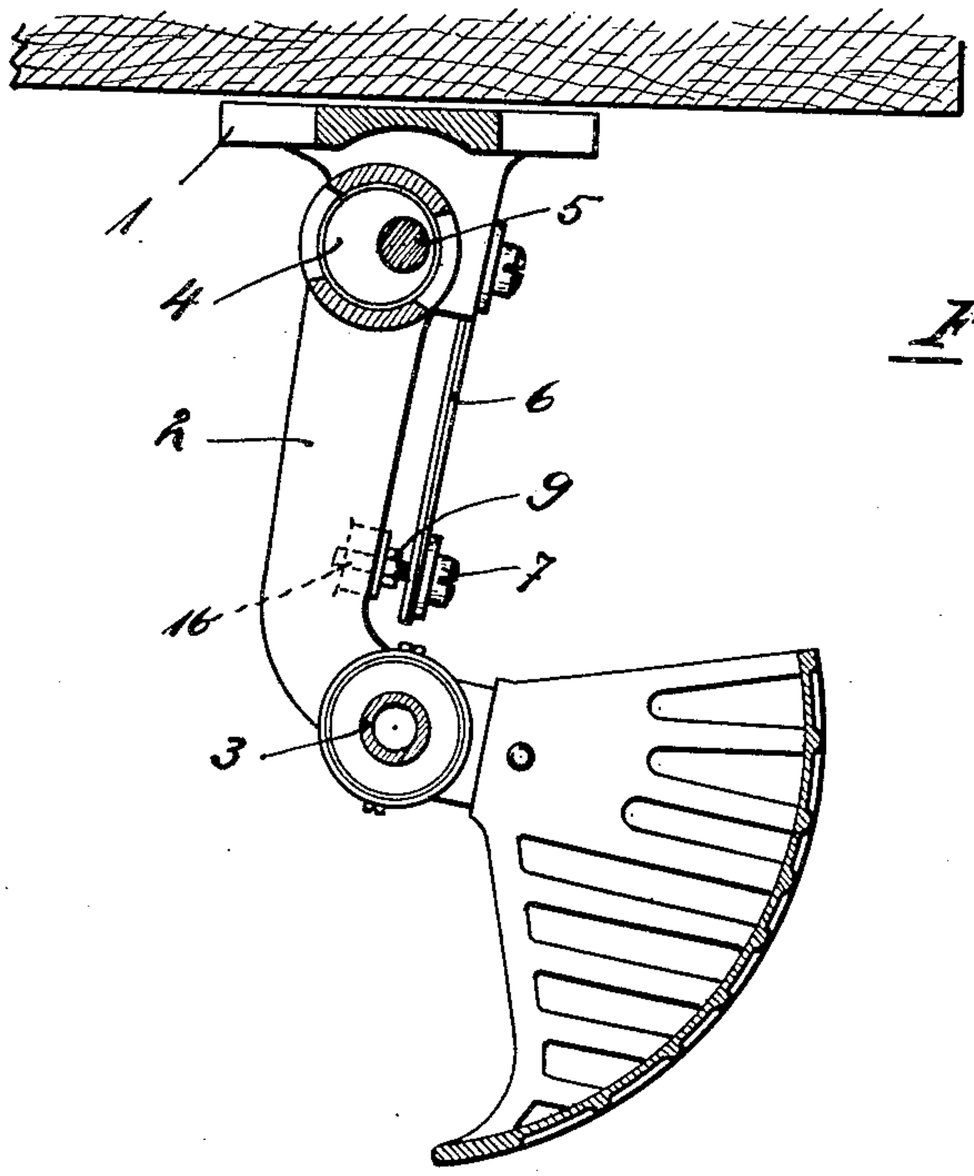
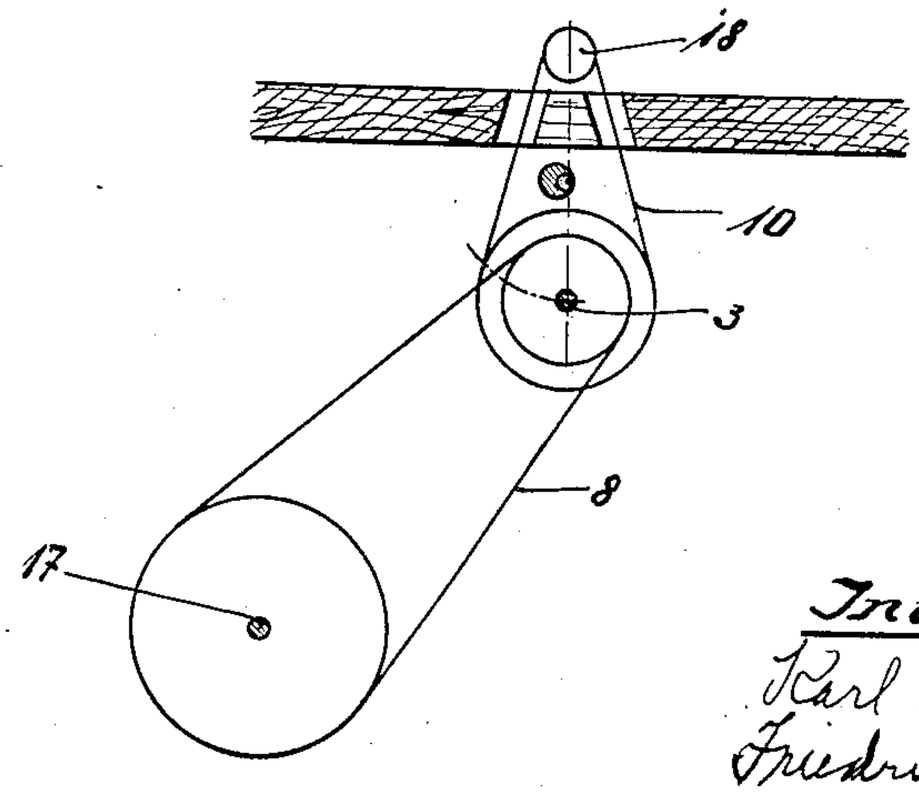


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

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INTERMEDIATE GEARING FOR SEWING MACHINES AND THE LIKE.

Application filed January 26, 1925, Serial No. 4,808, and in Germany February 4, 1924.

Our invention refers to intermediate gearing more especially for use with sewing machines and the like. It is an object of our invention to provide a gearing which allows tightening quickly and easily the belts connecting the shafting as well as the sewing machine with the intermediate gearing without being compelled to shorten the belts or to stop the shafting. The novel intermediate gearing further has the property of bringing about a transmission of power from the shafting to the sewing machine which is at the same time elastic and free of shocks.

As is well known to those skilled in the art, if the intermediate gearing used in connection with a sewing machine or the like lacks means for tightening the belt or tightening means which can be actuated only with difficulty, fresh belts must be placed around the pulleys with an unnecessarily high tension in order to render an early retightening unnecessary. However, this mode of proceeding involves a high wear of the belts as well as of the bearings. These drawbacks can easily be obviated by providing means whereby the belt can be tightened easily. Moreover, the sewing machine table must be kept free from vibrations which arise in consequence of the belts being tightened too much. This is provided for by the provision of a damping device.

In the drawings affixed to this specification and forming part thereof a device embodying our invention is illustrated diagrammatically by way of example.

In the drawings

Fig. 1 is a front elevation and

Fig. 2 is a side elevation of an intermediate gearing embodying our invention, the gearing being shown applied to the underside of a sewing machine table.

Fig. 3 is a cross section on the line III—III in Fig. 1.

Fig. 4 is a diagram showing the transmission of power from the shafting to the sewing machine.

Referring to the drawings, 14 is the sewing machine table, 1 is a bed plate fixed to the underside of this table and 2 is the frame supporting the stationary spindle 3 for the pulleys 15 of the intermediate gearing. The frame 2 can be fixed in horizontal as well as in vertical position. It is mounted for rocking motion on eccentric discs 4 keyed onto a spindle 5. A leaf spring 6 fixed to the bed plate 1 carries a set screw 7 mounted in its free end, this screw extending into a threaded hole 16 in the frame 2. By turning screw 7 clockwise the belt 8 transmitting power from the shafting 17 to the spindle 3 of the intermediate gearing is tightened. The set screw can be fixed in position by means of a nut 9.

In order to tighten the belt 10 leading from the intermediate gearing to the sewing machine spindle 18 the spindle 5 is rotated, whereby the eccentric discs 4 mounted on it act towards varying the distance between the spindle 3 and bed plate 1. A clamping screw 11 acting on spindle 5 serves for fixing this spindle in its position. From the above it will be noted that an intermediate gearing has been provided wherein a belt driven pulley is mounted on the intermediate shaft and a belt driving pulley is also mounted on this intermediate shaft, and means is provided for supporting this intermediate shaft so that it may be moved through the rocking of the supporting frame to tighten the belt on the driven pulley. This rocking frame is mounted on an eccentric which is capable of being turned for shifting the shaft bodily so as to tighten the driving belt operated by the pulley on the intermediate shaft.

Obviously the new intermediate gearing takes up very little room and can easily be combined with other parts of the sewing machine drive, such as the clutch, brake and the like.

We wish it to be understood that we do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

We claim:—

1. Intermediate gearing for sewing machines comprising a support, a spindle mounted in said support, an eccentric on said spindle, a frame pivotally mounted on said eccentric, an intermediate shaft mounted on said frame, a belt driven pulley carried by said shaft, a belt driving pulley carried by said shaft, means whereby said frame may be adjusted on said eccentric for tightening the belt on the driven pulley, and means for turning said spindle for bodily shifting said frame for tightening the belt on said driving pulley.

2. Intermediate gearing for sewing machines and the like comprising a bed plate,

a spindle mounted on said plate, an eccentric disc on said spindle, a frame mounted on said disc for rocking motion, an intermediate shaft supported by said frame and a spring adapted to counteract rocking motion of said frame.

3. Intermediate gearing for sewing machines comprising a support, an intermediate shaft, a frame pivotally mounted on said support and carrying said intermediate shaft, a belt driven pulley on said intermediate shaft, a belt driving pulley on said intermediate shaft, spring means acting to maintain a constant tension on the belt running on one of said pulleys, and means whereby said frame may be bodily shifted on the support for tightening the belt on the other pulley.

In testimony whereof we affix our signatures.

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FRIEDRICH LUTZ.