J. E. GOFORTH.

SEWING MACHINE.

APPLICATION FILED JAN. 31, 1921.

1,398,546. Patented Nov. 29, 1921.

Fig 4

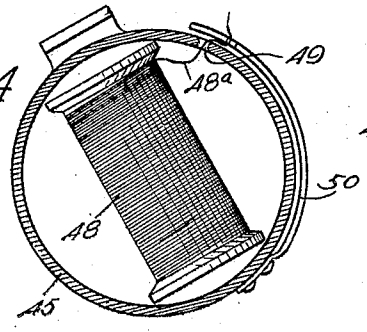


Fig 5

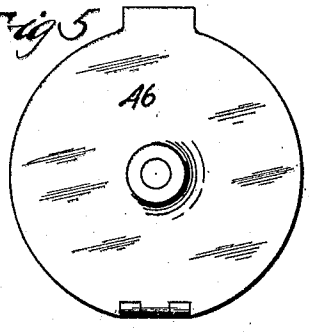


Fig 3

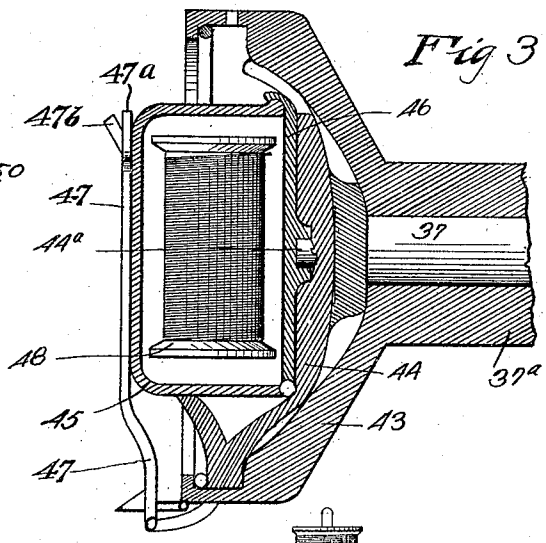


Fig. 1.

Fig 2

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JAMES E. GOFORTH, OF DES MOINES, IOWA.

SEWING-MACHINE.

1,398,546. Specification of Letters Patent. Patented Nov. 29, 1921.

Application filed January 31, 1921. Serial No. 441,307.

To all whom it may concern:

Be it known that I, JAMES E. GOFORTH, a citizen of the United States, and a resident of Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Sewing-Machine, of which the following is a specification.

The object of my invention is to provide a sewing machine, particularly of the type used in factories, capable of operation from a foot treadle at a much higher rate of speed than the ordinary sewing machine.

A further object is to provide such a sewing machine with a new gearing arrangement for imparting motion to the operative parts.

Still a further object is to provide in such a machine a novel thread feeding means.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 shows a front elevation of a sewing machine embodying my invention, parts being shown in section.

Fig. 2 shows a vertical, sectional view through the operative shaft at the joint therein.

Fig. 3 shows a detailed, sectional view of the bobbin holding case.

Fig. 4 shows a detailed, sectional view through the bobbin container with the thread spool therein; and

Fig. 5 shows a rear end view of the bobbin or spool container.

In the accompanying drawings, I have used the reference numeral 10 to indicate generally the frame of a sewing machine embodying my invention. At the upper part of the frame is the table or platform 11, having the hinged shelf 12. Pivotally mounted in any suitable way as by hinges 13^a on the platform 11 is the bed or base 13 of the sewing machine mechanism. The joints at the ends of the base 13 are shown at A and B.

Mounted in the usual way at the lower part of the frame 10 is a foot treadle 14.

Rotatably mounted on the frame is a shaft 15, having the crank 16. The treadle 14 is connected by a pitman 17 with the crank 16.

On the shaft 15 is affixed a large beveled gear 18, which meshes with a small beveled gear 19 on a shaft 20 mounted in bearings 21 and 22 on the frame 10.

Mounted on the base 13 in line with the shaft 20 is a shaft 23.

The shafts 22 and 23 are operatively connected when the base 13 is in its upright position ready for use by the following device.

On the upper end of the shaft 20 is a fitting 24 and on the lower end of the shaft 23 is a coacting fitting 25. The adjacent faces of the fittings 24 and 25 are cut to fit each other and are arranged with successive shoulders 26, 27, 28 and 29 like stair steps.

The fitting 24 has a central, conical lug 30 on its upper surface adapted to be received in a conical recess in the lower surface of the fitting 25 for centering the shafts.

On the upper end of the shaft 23 is a beveled gear 31, which meshes with a beveled gear 32 on the horizontal operating shaft 33 of the sewing machine mechanism. On the shaft 23 is a beveled gear 35 arranged in mesh with a beveled gear 36 on the shuttle operating shaft 37, which extends through a bearing 37^a.

At one end of the shaft 37, there is mounted on the bearing 37^a a casing 43 for the rotary shuttle 44, having the pin 44^a.

Supported on the pin 44^a is the bobbin or spool container 45, having the hinged cover member 46. This container 45 is held stationary by a clamp arm 47 hinged to the casing 43 in the ordinary way. The free end of the arm 47 has forked spaced fingers 47^a, which receive between them the projecting lug 47^b on the container 45 for thereby holding the container against rotation.

The spool 48 is placed in the container 45 and the thread 48^a is extended from the spool through the slot 49, under the tension member 50 and then through the bed 13 to position adjacent to the needle.

I have found that, with the special gearing arrangement herein described, I am able to run the sewing machine mechanism very steadily and with a minimum jar and vibration, and particularly am enabled to operate the sewing machine mechanism much more rapidly than can be done with the ordinary belt connection. In fact I am able to triple and quadruple the stitches over and above the number, which can be made with the belt connection.

In sewing machines used in factories,

considerable delay and loss of time is experienced on account of the necessity of frequently winding thread from a spool onto the bobbin. This delay and loss of time, I have avoided in my present construction by placing the spool in the receptacle 45, so that the thread is fed continuously from the spool.

It will be noted that the sewing machine head may be tilted in the ordinary way on account of the joint between the shafts 23 and 20 without any difficulty, and that when the head is raised to upright position for use, the shafts will be locked together for rotation.

My machine is of simple and inexpensive construction in so far as my improvements are concerned, and it will be noted that the principal mechanism of the sewing machine may be used in exactly the form heretofore employed and that my device may be applied as an attachment or may be built as a part of the machine in the factory with a minimum modification of the machines now in use.

Some changes may be made in the construction and arrangement of the parts of my improved machine, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

It is obvious that a machine of this construction may be power operated by connecting a motor or the like in proper manner.

I claim as my invention:

1. In a sewing machine, a frame, a sewing machine head having an operating shaft, a gearing device mounted on said frame, an upright shaft operatively connected with said gearing device, an upright shaft supported on said head, gearing devices for connecting said last upright shaft, and the operating shaft of the head, a rotary shuttle, a shaft for operating said rotary shuttle, gearing devices for connecting said second upright shaft and said shuttle operating shaft.

2. In a sewing machine, a frame, a sewing machine head having an operating shaft, a gearing device mounted on said frame, an upright shaft operatively connected with said gearing device, an upright shaft supported on said head, gearing devices for connecting said last upright shaft and the operating shaft of the head, a rotary shuttle, and means for operating said rotary shuttle from said second upright shaft.

Des Moines, Iowa, January 20, 1921.

JAMES E. GOFORTH.