April 5, 1932. J. V. GONZALEZ 1,852,880

THREAD CONDUCTING DEVICE FOR SEWING MACHINES

Filed March 31, 1930 2 Sheets-Sheet 1

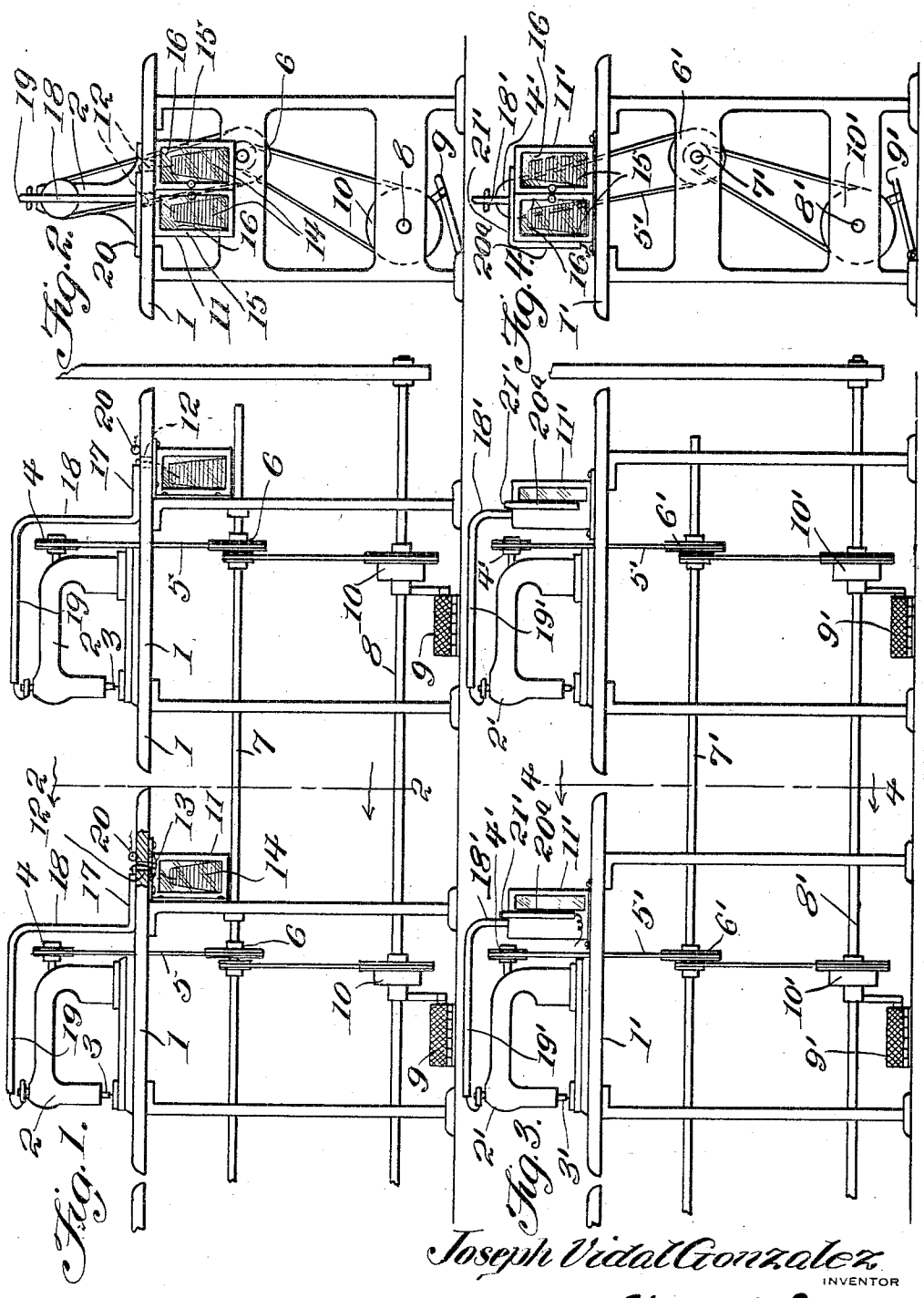

Fig. 1.

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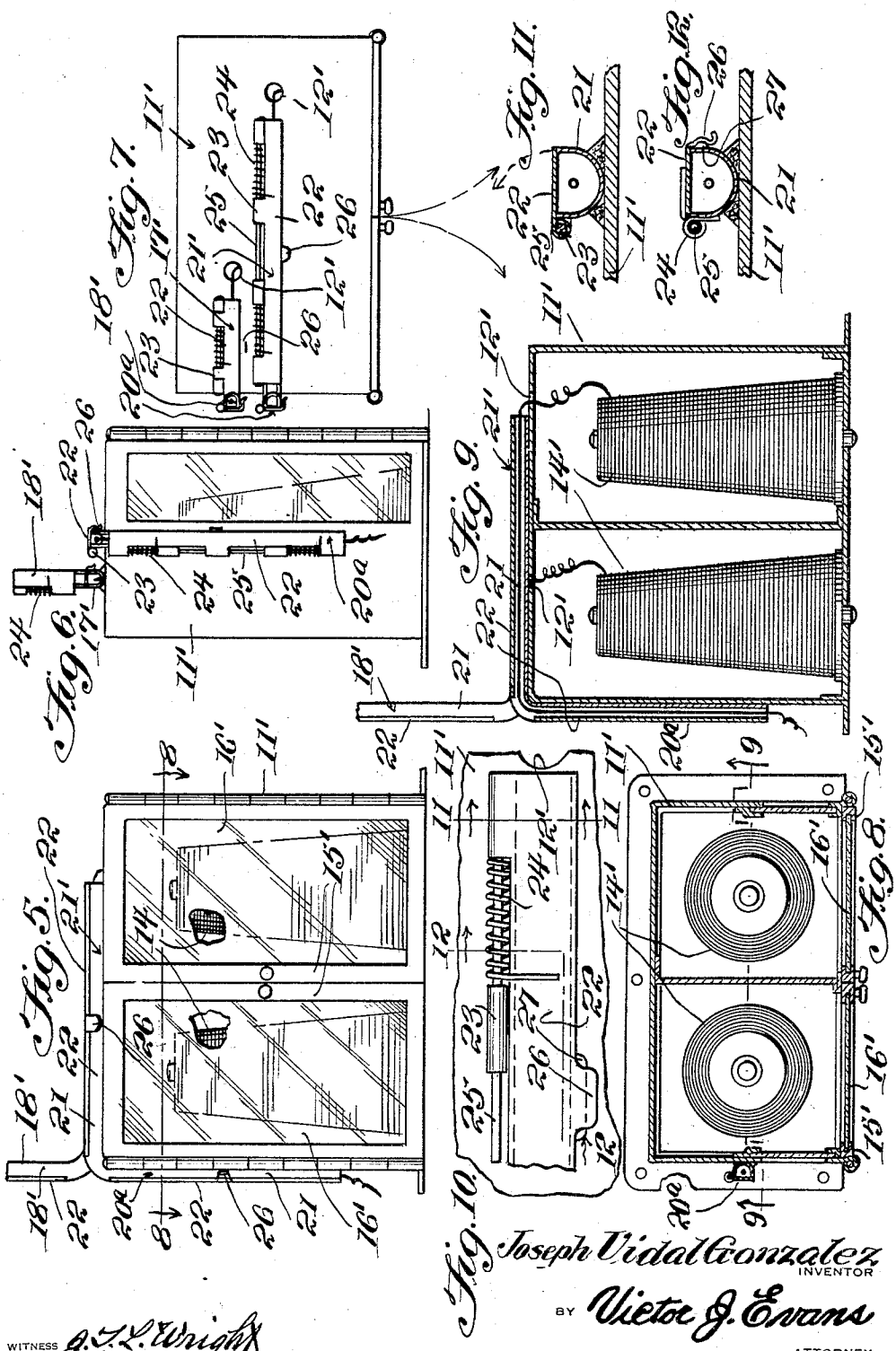

Fig. 7.

Fig. 11.

Fig. 12.

Fig. 9.

Fig. 5.

Fig. 8.

Fig. 10.

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UNITED STATES PATENT OFFICE

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THREAD CONDUCTING DEVICE FOR SEWING MACHINES

Application filed March 31, 1930. Serial No. 440,587.

This invention relates to thread storing and conducting devices for sewing machines and more particularly to a thread storing and conducting device for use in connection with industrial sewing machines as distinguished from those intended primarily for home use, and the invention has as one of its objects to provide a device for this purpose, by which thread may be conducted to the needle of a sewing machine from a bobbin of thread so that, where the device is installed upon sewing machines in factories, where clothing and other fabric products are made, a greater quantity of thread may be stored for use than is possible with the ordinary machine employing a bobbin and, furthermore, the time which is ordinarily consumed in winding a bobbin on an ordinary sewing machine, may be employed in continued sewing.

Another object of the invention is to provide a thread conducting device for sewing machines, embodying means whereby two bobbins of thread may be stored, ready for the use of thread from either bobbin, so that where it is required to use thread of one color for a period of time and then a thread of another color or a different character, this may be done without removing a bobbin such as the ordinary bobbin, thereby necessitating only a rethreading of the sewing machine needle in order to effect the change in thread.

Another object of the invention is to provide a device of the class described, which is especially designed for industrial or factory use in that it contemplates the provision of means for housing bobbins of thread leading either from the bobbin or bobbins from the smaller end thereof, so that there is no likelihood of knotting, of the thread and, likewise, it is more readily fed to the sewing machine needle than where an ordinary small shuttle and spool of thread are employed as in the case of the ordinary sewing machine for household use.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings, and specifically pointed out in the appended claim.

In describing my invention in detail, reference will be had to the accompanying drawings, wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a view in front elevation illustrating two sewing machines connected for operation in unison and equipped with the device of the present invention, and in which embodiment of the invention, the bobbin containers or housings are concealed from view.

Figure 2 is a sectional view on the line 2—2 of Figure 1, looking in the direction indicated by the arrows.

Figure 3 is a view similar to Figure 1, illustrating a modified form of the invention in which the bobbin containers are located upon the tops of the machines.

Figure 4 is a vertical sectional view on the line 4—4 of Figure 3, looking in the direction indicated by the arrows.

Figure 5 is a detail view in front elevation of one of the bobbin containers or holders, and illustrating the manner in which thread may be led in different directions from two bobbin compartments.

Figure 6 is a view in side elevation of the device of Figure 5.

Figure 7 is a top plan view thereof.

Figure 8 is a horizontal sectional view on the line 8—8 of Figure 5.

Figure 9 is a vertical sectional view on the line 9—9 of Figure 6.

Figure 10 is a detail view illustrating one of the thread conducting conduits of the device.

Figure 11 is a vertical transverse sectional view on the line 11—11 of Figure 10, looking in the direction indicated by the arrows.

Figure 12 is a similar view on the line 12—12 of Figure 10, looking in the direction indicated by the arrows.

The stands of sewing machines equipped with the invention may be of the standard type employed in factories and, in practice, the machines may be connected in a row to provide for simultaneous application of power thereto, and each machine will include

the usual top indicated by the numeral 1 and head 2 in which the needle bar 3 is mounted for vertical reciprocation and, in place of the usual combined hand and fly wheel of the ordinary sewing machine, a pulley 4 is employed and a belt 5 is trained over this pulley and over another pulley 6 upon a shaft 7 which may be common to two or more of the machines, and which shaft may be operated from a driven shaft 8 by a pulley belt driven as shown in the drawings, and the said shaft 8 driven from any suitable source of power supply, a foot pedal 9 being mounted beneath each machine and constituting means for controlling a clutch 10 so that by exerting pressure upon the pedal, power may be transmitted from the shaft 8 to the pulley 4 of the machine.

The above is of course the usual practice except that the sewing machines usually employed, embody the usual mechanism common to household sewing machines. In the embodiment of the invention shown in Figures 1 and 2 of the drawings, a casing 11 is mounted beneath the top 1 of the sewing machine and preferably by means securing it to the frame structure which supports the said top, and the top is provided with an opening 12 which is in substantial registration with an opening 13 formed in the top of the casing. Where the casing is to contain two bobbins, the bobbins, indicated by the numeral 14, will be arranged within compartments formed by a partition wall within the casing, and doors 15 will be hinged to the front or side of the casing, and provided with glass panes 16 through which the bobbins of thread may be readily observed, and the quantity of thread remaining readily determined.

The invention contemplates the direct feeding of the thread from the bobbin to the needle at the lower end of the needle bar 3, and in order that the thread may be conducted with accuracy, a tubular conduit 17 is arranged at one end portion upon the top of the sewing machine, in the embodiment shown in Figures 1 and 2 of the drawings, and with its end in close proximity to the opening 12 in said top, and is then led upwardly as indicated by the numeral 18 beside the pulley 4, and thence horizontally as at 19 above the head of the sewing machine, and to a point vertically in alinement with the needle bar 3, the thread being led from this end of the conduit directly to the needle and being placed under suitable tension due to the size of the bobbin, and the contact of the thread with the conduit.

The end of the portion 17 of the conduit is arranged to receive a thread taken from the bobbin in one of the compartments 14 and another conduit, indicated by the numeral 20 will be arranged upon the top of the sewing machine and with one end thereof in juxtaposition to the opening 12 which communicates with the other compartment 14 so that thread may be led through this conduit 20.

The embodiment of the invention shown in Figures 3 to 9 inclusive is identical with the embodiment shown in Figures 1 and 2 except that the casing 11 for the bobbins is mounted upon the upper side of the top 1 of the sewing machine instead beneath the top. Likewise, the conduit 21′ is, in this embodiment, led across the top of the casing, and thence downwardly as indicated by the numeral 20*a*, and therefore the parts in these figures which correspond to parts in Figures 1 and 2, are indicated by the corresponding reference numerals, primed.

In this latter embodiment of the invention, as well as in the embodiment shown in Figures 1 and 2, the conduit through which the thread is led from the bobbin, is formed in two sections, one indicated by the numeral 21 and comprising the main section, and a flat section 22, which constitutes a cover or closure section, these sections being hingedly connected as indicated by the numeral 23, and springs 24 being arranged upon the pintles 25 of the hinges 23 to yieldably hold the sections 22 in closed position, it being understood that by actuating a spring finger latch 26, mounted upon the section 22, and engageable with a keeper 27, the section 22 may be swung to open position, against the tension of the spring 24 to permit of the thread being led longitudinally in the section 21, thus greatly facilitating the leading of the thread from the bobbin to the needle bar of the sewing machine.

What I claim is:—

A thread conducting device for sewing machines comprising a casing adapted to be supported by the machine, means within the casing for supporting a bobbin of thread, a conduit mounted upon the casing and adapted to lead the thread from the bobbin toward the needle bar of the machine, said conduit being open at its side and a spring pressed cover section hinged through the conduit and adapted to close over the open side thereof.

In testimony whereof I affix my signature.

JOSEPH VIDAL GONZALEZ.