March 14, 1961 A. J. MATUZAS 2,974,354

SEWING MACHINE HINGES WITH RELEASABLE LATCHES

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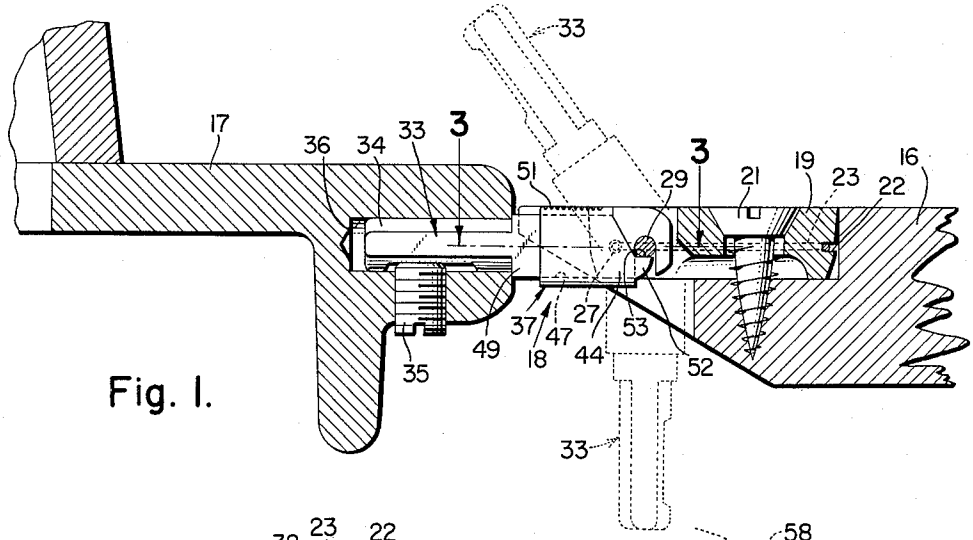


Fig. 1.

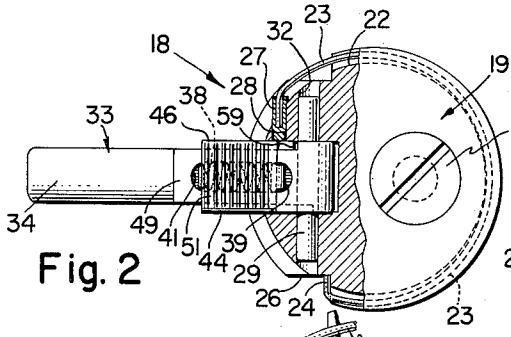


Fig. 2

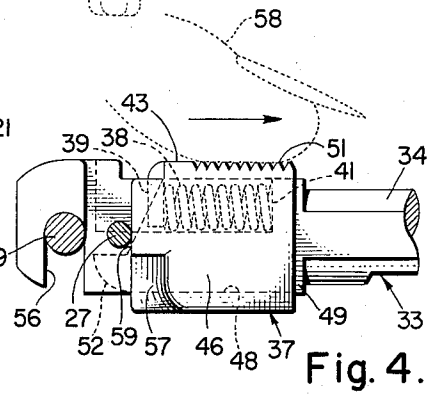


Fig. 4.

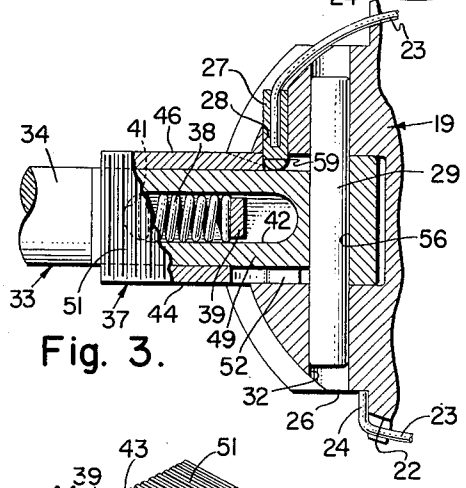


Fig. 3.

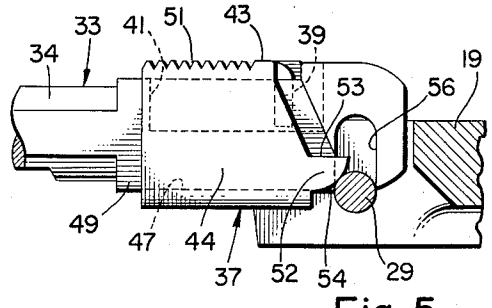


Fig. 5.

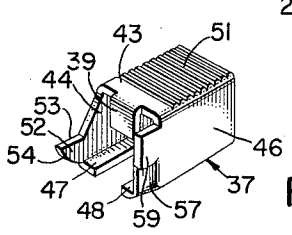


Fig. 6.

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SEWING MACHINE HINGES WITH RELEASABLE LATCHES

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2 Claims. (Cl. 16—175)

This invention relates to sewing machine cabinets or tables and more particularly to a hinge device equipped with a releasable latch whereby a sewing machine can be hinged to a cabinet or table and selectively, by operation of the latch, quickly detached therefrom.

In the past, many different kinds of hinges have been used to mount sewing machines in cabinets. However, the leaves of these hinges have generally been connected by an inseparable, or at least a hard to separate, means, or the leaves have simply been connected by an open hook in the manner shown in United States Patent No. 2,477,433. In the first instance, it was usually necessary to remove or loosen a pin, a bolt or a screw every time the sewing machine was completely detached from its cabinet mounting. In the second instance, the open hooks were, at times, so insecure that the sewing machine would inadvertently become detached from the cabinet. Therefore, in order to alleviate the difficulties heretofore experienced, it was found desirable to provide a hinge having an improved latch incorporated therein whereby a sewing machine could be positively pivoted to a cabinet, but at the same time, to provide an easily operable means whereby the sewing machine could easily be detached from the cabinet. Therefore, one of the objects of the present invention is to provide a hinge incorporating as a part thereof an improved easily operable latch.

Another object of the invention is to provide an improved hinge and latch combination which is especially adapted for use when mounting a sewing machine in a table or cabinet.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the drawings:

Fig. 1 is a vertical sectional view taken through a portion of a sewing machine cabinet having a sewing machine supported by a hinge and latch device embodying the present invention,

Fig. 2 is a plan view of the hinge and latch device shown in Fig. 1,

Fig. 3 is a sectional view taken in the plane of the line 3—3 of Fig. 1,

Fig. 4 is an enlarged elevational view showing one side of the hinge and latch device,

Fig. 5 is an enlarged elevational view showing the other side of the hinge and latch device, and

Fig. 6 is a perspective view of a slider forming part of the hinge and latch device shown in Figs. 1–5, inclusive.

Referring more specifically to the drawings, there is disclosed a cabinet **16**, a portion of a sewing machine frame **17**, and a hinge and latch device **18**, the latter

pivotally connecting the sewing machine frame **17** to the cabinet **16**. The subject hinge and latch device **18** comprises a leaf **19** which is secured to the cabinet **16** by a wood screw **21**. The leaf **19** is in the form of a substantially cylindrical disk having a peripheral groove **22** for accommodating a circular wire spring **23**. One end of the spring **23** has a hook **24** which is received in a notch **26** (Fig. 2) cut from one side of the leaf **19**. The other end of the spring **23** carries a plunger or detent **27** received in a hole **28** formed in the other side of the leaf **19**. The leaf **19** also carries a pintle connecting means **29** located in a bore **32**. The pintle **29** pivotally supports a second leaf **33** having a cylindrical end **34** entered into a cavity **36** formed in the sewing machine frame **17**, the end **34** being held in the cavity **36** by a set screw **35**.

The leaf **33** carries a latch or a slider **37** which is biased in one direction by a helical compression spring **38** one end of which engages the inside surface of a leg **39** formed on the slider **37**. The other end of the spring **38** engages the end **41** of a depression **42** formed in the leaf **33**. The depression **42** houses the spring **38** and receives the depending leg **39**. The slider **37** by reason of having a top **43**, a first side wall **44**, a second side wall **46** and two bottom flanges **47** and **48**, almost completely surrounds a squared portion **49** of the leaf **33**. The upper surface of the top **43** has a serrated finger engageable surface **51**, and the first side **44** of the slider **37** has a tongue **52** provided with an upper flat edge **53** and a lower curved edge **54**. The flat edge **53**, as best seen in Fig. 1, engages and thereby maintains the pintle **29** in the opening of a hook **56** formed on the end of the leaf **33** remote from cylindrical end **34**. The curved edge **54**, as best seen in Fig. 5, is engaged by the pintle **29** when the hook type connecting means **56** is placed on the pintle **29** and forced downwardly. When this occurs, the curved edge **54** acts as a cam and forces the slider or latch **37** away from the hook **56** against the force of the spring **38**. When the slider **37** is forced away from the hook **56** a sufficient distance, the pintle **29** enters the hook **56** and eventually the slider **37** is forced by the spring **38** toward the hook into the position shown in Fig. 1, wherein the flat edge **53** underlies the pintle **29** and prevents the leaf **33** from becoming detached from the leaf **19**.

Also while the hook **56** is being placed over and forced downwardly on the pintle **29**, a cam surface **57** formed on the second side wall **46** depresses the plunger **27** sufficiently to clear the outer surface of the wall **46**. The depressed plunger **27** is clearly shown in Fig. 2.

When it becomes desirable to remove the sewing machine **17** from the cabinet **16**, the serrated surface **51** is engaged by the operator's finger **58** and the slider or latch **37** is moved to the position shown in Figs. 3 and 4, wherein the tongue **52** no longer holds the pintle **29** in the hook **56**. When the slider or latch **37** is in this fully retracted position, the plunger **27** moves forward under pressure of the spring **23** and is engaged by an end **59** of the slider or latch **37** (Fig. 3). This holds the slider or latch **37** in the retracted position as shown in Figs. 3 and 4, and allows the hook **56** to be removed from the pintle **29**. When the sewing machine **17** is lifted from the cabinet **16**, the leaf **33** is of course removed from contact with the leaf **19** and the plunger **27** is disengaged from the end **59** of the slider **37**, thereby allowing the spring **38** to return the slider **37** to the fully forward position in which the tongue **52** substantially closes the entrance to the hook **56**.

Having thus described the nature of the invention, what I claim herein is:

1. A hinge device especially adapted for mounting a sewing machine in a sewing machine cabinet, said hinge

device comprising a first leaf in the form of a cylindrical disc, a pintle on said first leaf, a second leaf in the form of an elongated member having a cylindrical end adapted to be secured to the sewing machine, and having a depression, a hook on said second leaf, a latch slidably mounted on the end of said second leaf remote from said cylindrical end, a helical spring positioned in the depression in said second leaf and said helical spring biasing said latch toward said hook, a tongue formed on said latch, said tongue having a flat edge for holding said hook to said pintle, and said tongue having a curved edge for moving said latch against the bias of said spring when said hook is pressed toward said pintle.

2. A hinge device especially adapted for mounting a sewing machine in a sewing machine cabinet, said hinge device comprising a first leaf in the form of a cylindrical disc having a peripheral groove, a circular wire spring positioned in said groove, a detent carried by one end of said wire spring, a pintle on said first leaf, a second leaf in the form of an elongated member having a cylindrical end adapted to be secured to the sewing machine and having a depression, a hook on said second

leaf, a latch slidably mounted on the end of said second leaf remote from said cylindrical end, a cam surface formed on said latch and said cam surface being adapted to depress said detent, a helical spring positioned in the depression in said second leaf and said helical spring biasing said latch toward said hook, a tongue formed on said latch, said tongue having a flat edge for holding said hook to said pintle, and said tongue having a curved edge for moving said latch against the bias of said helical spring when said hook is pressed towards said pintle, and an end formed on said latch, said end engaging said detent and thereby holding said latch against the bias of said helical spring.

References Cited in the file of this patent

UNITED STATES PATENTS

413,298	De Kalb	Oct. 22, 1889
784,574	Langdon et al.	Mar. 14, 1905
2,673,776	Barnhart	Mar. 30, 1954
2,835,545	Peterson	May 20, 1958