Dec. 9, 1958 F. W. YANCEY 2,863,150

SAFETY DEVICES FOR STAPLING MACHINES

Filed Nov. 26, 1956

FIG. 1.

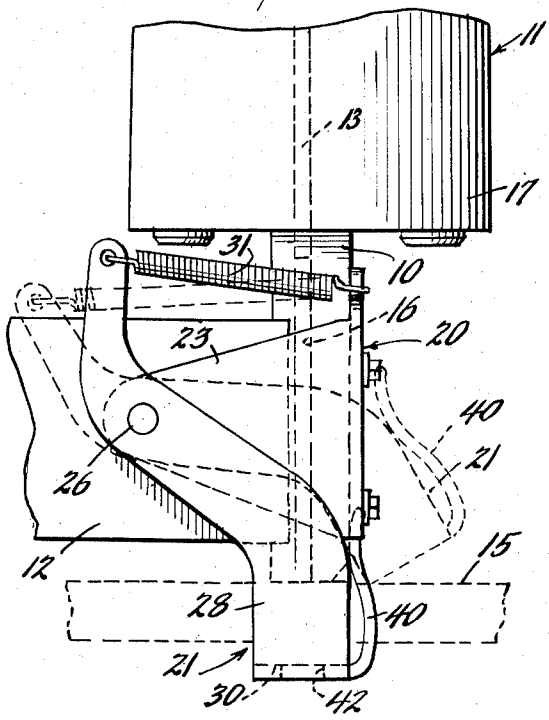


FIG. 2.

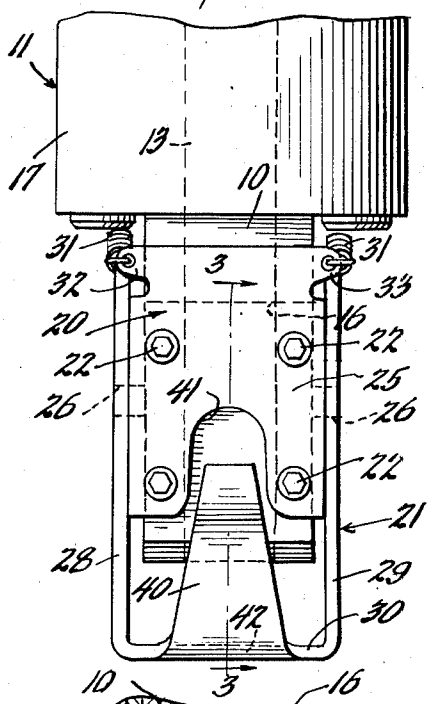


FIG. 3.

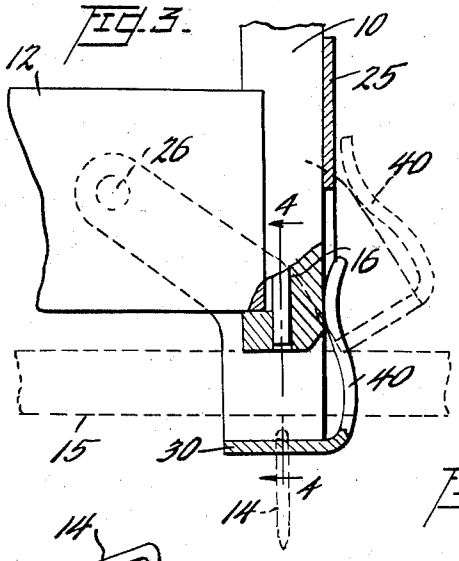


FIG. 4.

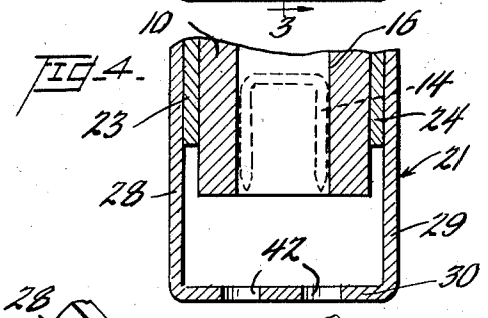


FIG. 5.

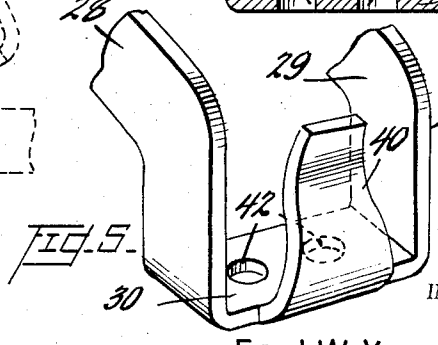
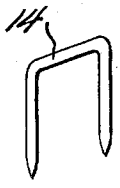


FIG. 6.



INVENTOR

Fred W. Yancey,

BY H. J. Winegar

ATTORNEY

United States Patent Office 2,863,150
Patented Dec. 9, 1958

2,863,150

SAFETY DEVICES FOR STAPLING MACHINES

Fred W. Yancey, Winston-Salem, N. C., assignor to Western Electric Company, Incorporated, New York, N. Y., a corporation of New York

Application November 26, 1956, Serial No. 624,382

5 Claims. (Cl. 1—49)

This invention relates to safety devices for stapling machines and more particularly to guards for preventing accidental discharge of staples from power stapling machines.

It is an object of the present invention to provide a simple and economically constructed safety device for stapling machines.

Another object of the invention is to provide guards which will catch staples accidentally discharged from stapling machines.

A still further object of the invention is to provide guards which will be moved out of the path of the staples when a stapling machine is brought into contact with an object to be stapled.

A safety device for a stapling machine illustrating certain features of the invention may comprise a guard member mounted movably on a stapling machine and resiliently urged into position in the path of a staple driven by a plunger in the machine to prevent accidental discharge of a staple from the machine.

A clear understanding of the invention may be had by reference to the following detailed description, when considered in conjunction with the accompanying drawing, in which:

Fig. 1 is a side elevational view of a stapling machine having a guard comprising a preferred form of the present invention;

Fig. 2 is a front elevational view of the structure shown in Fig. 1;

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 2 in the direction of the arrows with some of the parts being shown in section and others in elevation;

Fig. 4 is a fragmentary, transverse, vertical section taken on the line 4—4 of Fig. 3;

Fig. 5 is a fragmentary perspective view of the staple engaging portion of the guard, and

Fig. 6 is a view illustrating the type of staple used in the stapling machine.

Referring now to the drawings, wherein like reference characters designate the same part throughout the several views, the safety device of the present invention is constructed to be mounted upon a depending portion **10** of a stapling machine designated by the numeral **11**. The depending portion **10** serves to support a staple magazine **12**. It also serves to guide a plunger **13** to a position where it may strip the foremost staple **14** of a group of staples **14** from the magazine **12** and drive it into an article **15** which it is desired to operate upon. The plunger **13** travels in a guide passage **16** and may be driven by any suitable piston, not shown, mounted in a cylinder **17** forming a portion of the stapling machine **11**.

Suitably attached to the surfaces of the depending portion **10** opposite to the surface on which the magazine **12** is mounted, is a bracket **20** that pivotally supports a guard member designated generally by the numeral **21**. The bracket **20** may be mounted upon the depending portion **10** of the stapling machine **11** by machine screws **22**. The bracket **20** is U-shaped in cross-section and has legs

23 and **24** (Fig. 4) that extend along the sides of the magazine **12**, whereas the base **25** of the bracket rests flat against the front face of the depending portion **10**. Pivot pins **26** are mounted in the bracket **20** adjacent to the extremities of the legs **23** and **24**, to pivotally support the guard member **21**.

Guard member **21** is generally U-shaped in configuration and has two arms **28** and **29** and a base **30**. The arms **28** and **29** are in the form of a flattened S (Fig. 1) and receive the pivot pins **26** adjacent to their mid points. Springs **31** are attached to the upper ends of the arms **28** and **29**. The other ends of the springs **31** are fixed to small projections **32** and **33** on the base **25**. The springs **31** thus urge the guard member **21** to the position shown in full lines in Figs. 1, 2, 3, and 4. In this position a stop **40**, which may be formed integrally with the base **30** of the guard, will pass through a notch **41** cut into the base **25** of the bracket **20** and will engage the front face of the depending portion **10**. Thus, the guard member **21** will be accurately located in a position where a pair of apertures **42** in the guard member will be in alignment with prongs of a staple **14** driven downwardly by the plunger **13** through the passage **16**.

It will be noted that the pivot pins **26** are mounted on the bracket **20** at a point well to the left (Fig. 1) of the guide passage **16**. Thus, when the stapling machine is moved down to cause the lower end of the depending portion **10** to engage with an article **15** to be stapled, the end surface of the base **30** of the guard member **21** will engage the article **15** and the guard member **21** will be rocked to the position shown in dash lines in Figs. 1 and 3. When rocked to this position, the guard member will be out of the path of movement of the staples **14**.

In the event that the plunger **13** is accidentally actuated when the depending portion **10** of the machine is not in engagement with an article **15** to be stapled, the portion of the base **30** intermediate the two apertures **42** will catch the base of the staple **14** and prevent it from accidentally being discharged from the machine. This will prevent the possibility of an operator being injured by the accidental discharge of staples from the machine. The springs **31** are selected to have a tension such that they normally will retain the guide member **21** in the position shown in solid lines in the various figures, but are light enough to be elongated merely by the weight of the stapling machine itself. Consequently, when the stapling machine is set upon an article **15** into which is desired to drive staples, the guard member will be moved out of the path of the staples and staples may be driven by actuating the plunger **13**.

Although a specific construction of a safety device for stapling machines has been described hereinbefore, it will be understood that various modifications may be made thereof without departing from the scope of the present invention.

What is claimed is:

1. A safety device for a stapling machine having a staple driving plunger, comprising a plate attachable to the stapling machine, a guard member pivoted on said plate, and resilient means urging said guard member into the path of a staple driven by said plunger to block accidental discharge of a staple from the machine whereby the member may be moved against the bias of the resilient means out of the path of a staple driven by the plunger when the machine is engaged with a workpiece to be stapled.

2. A safety device for a stapling machine having a staple driving plunger, comprising a plate attachable to the stapling machine, a guard member pivotally mounted on said plate, a spring for urging said guard to a position where it will block a staple driven by the plunger, and a stop on the guard for accurately locating it in position to

block a staple whereby the member may be moved against the bias of said spring out of the path of a staple driven by the plunger when the machine is engaged with a workpiece to be stapled.

3. A safety device for a stapling machine having a power-operated staple driving plunger comprising a guard member having apertures in it for receiving the prongs of a staple driven by said driving plunger, resilient means for urging said guide to a position where the apertures in the guard are in alignment with the prongs of a staple being driven by the power-operated plunger, and means for pivotally attaching said guard to the stapling machine for movement out of said position when the stapling machine is engaged with a part to be stapled.

4. A safety device for a stapling machine having a power-operated staple driving plunger, comprising a guard member having apertures in it for receiving the prongs of a staple driven by said driving plunger, resilient means for urging said guide to a position where the apertures in the guard are in alignment with the prongs of a staple being driven by the power-operated plunger, said guard being pivotally attached to the stapling machine for movement out of said position when the stapling machine is engaged with a part to be stapled, the pivotal mounting for the guard member being remote from the path of the

staple whereby pressure applied to the guard member in moving the stapling machine to stapling position will remove the guard member from its blocking position.

5. A safety device for a stapling machine having a power-operated staple driving plunger and means for feeding staples into the path of the plunger, comprising a pivot plate attachable to the stapling machine, a guard member pivotally mounted on said pivot plate at a point remote from the path of said staples being driven by said plunger, spring means for urging said guard member position to block the discharge of a staple, a stop on said guard member for accurately positioning it in said position, said guard member being U-shaped in cross-section and pivoted on opposite sides of the stapling machine, said guard having apertures formed therein which will align with the prongs of a staple being fed by the plunger when said guard is accurately positioned in said position, and said guard in pivoting about its pivotal support being movable out of said position.

References Cited in the file of this patent

UNITED STATES PATENTS

1,945,377	Posnack	Jan. 30, 1934
2,424,649	Crosby	July 29, 1947