

Aug. 8, 1961

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2,994,881

JOGGING AND STAPLING MACHINE

Filed May 11, 1959

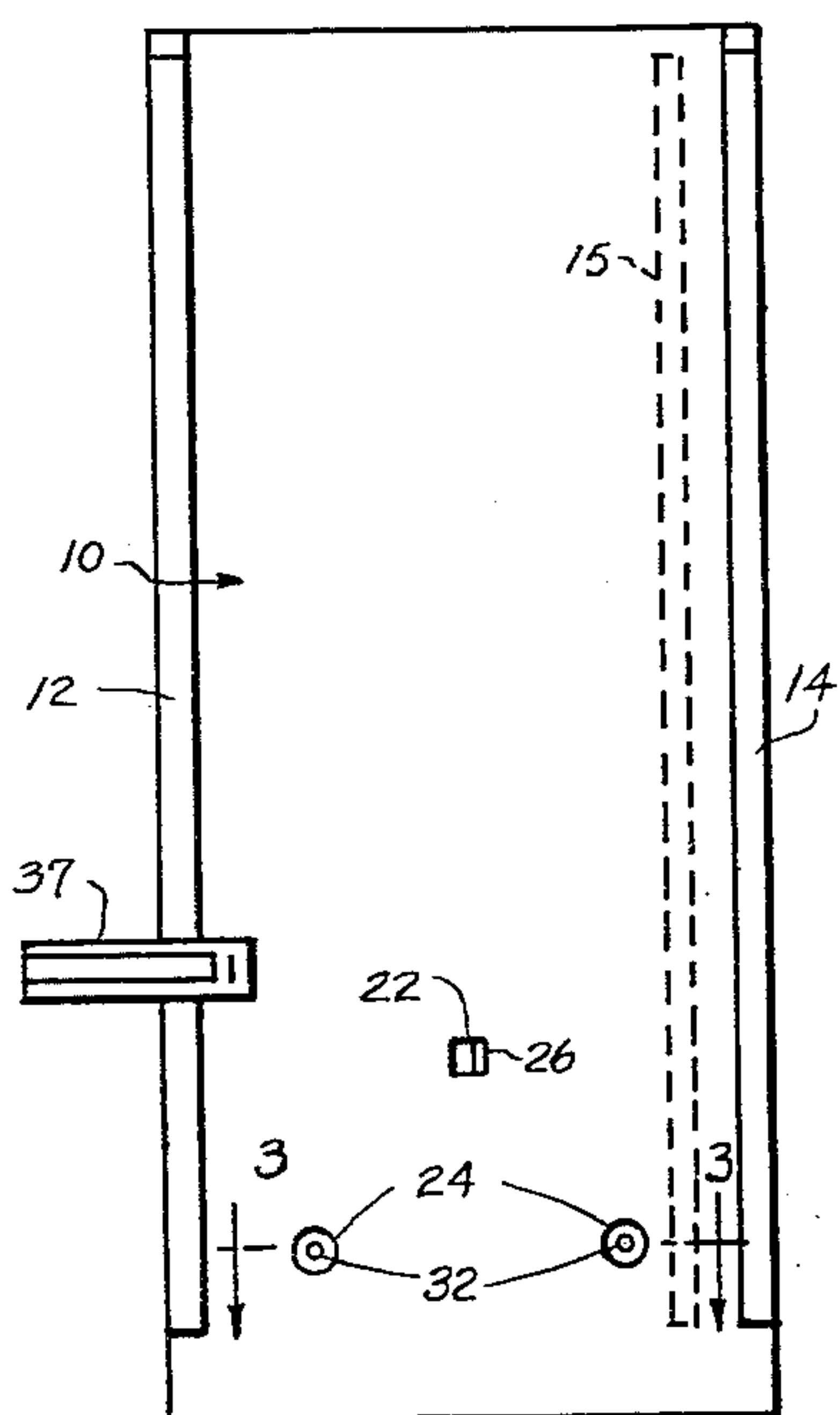


Fig. 1

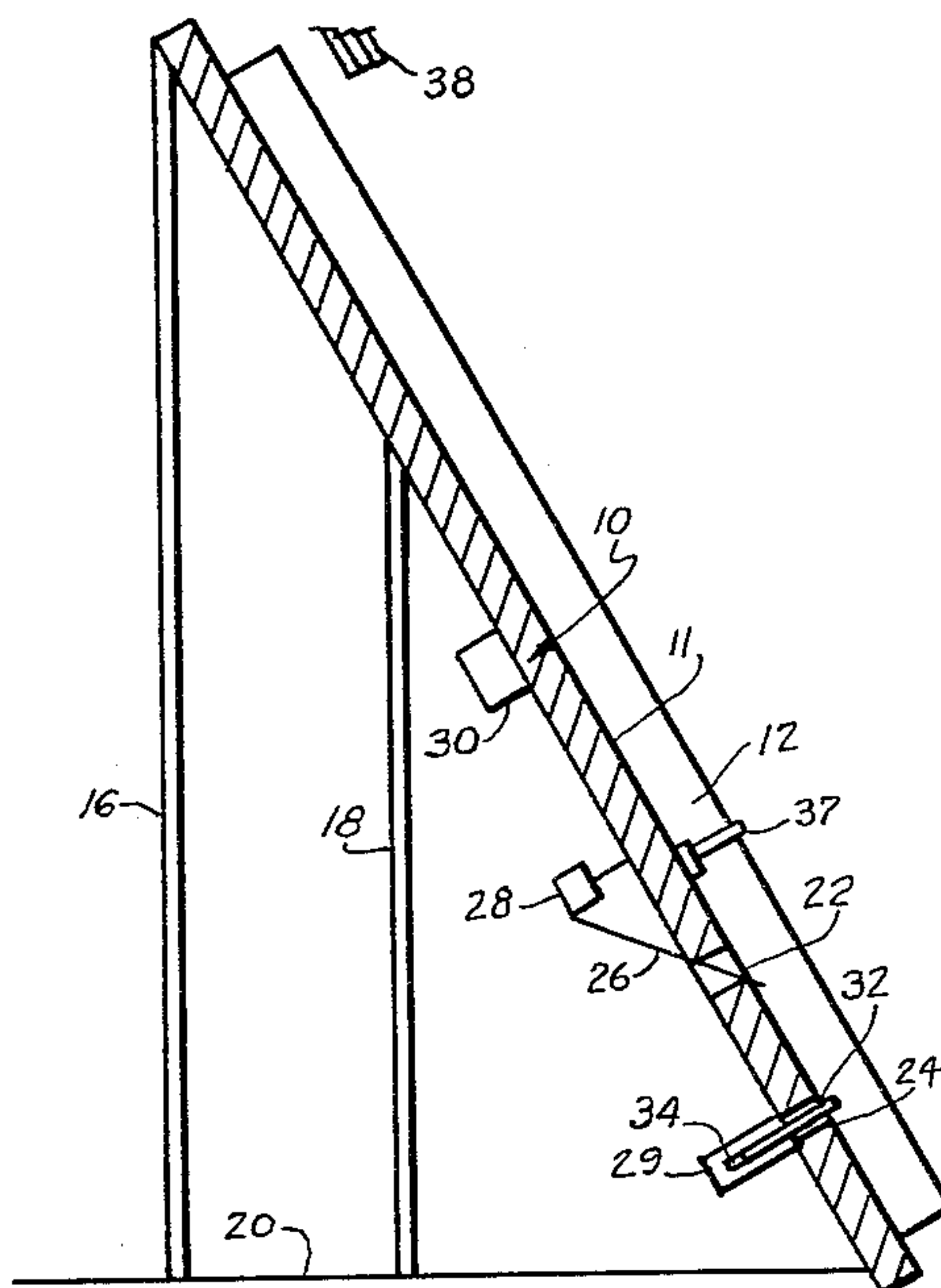


Fig. 2

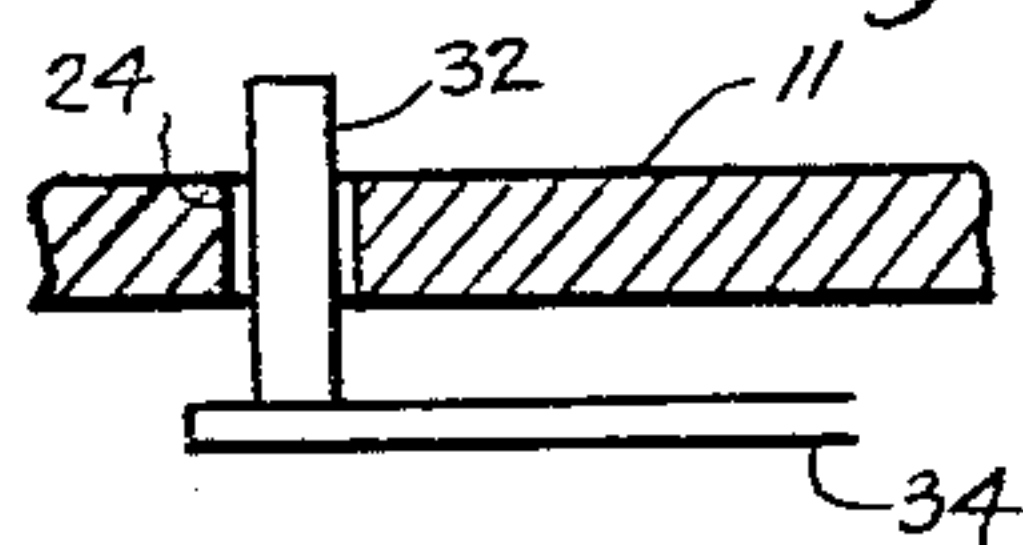


Fig. 4

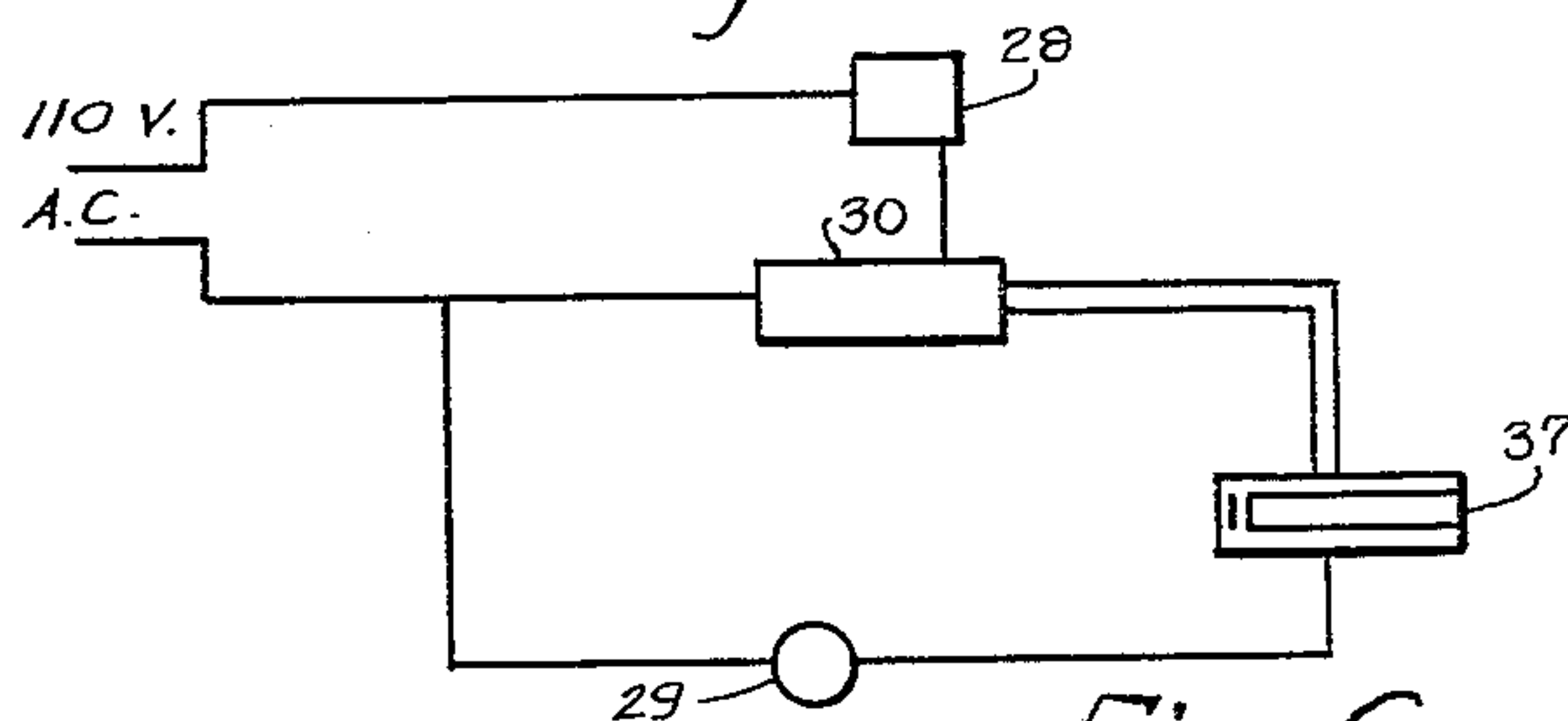


Fig. 6

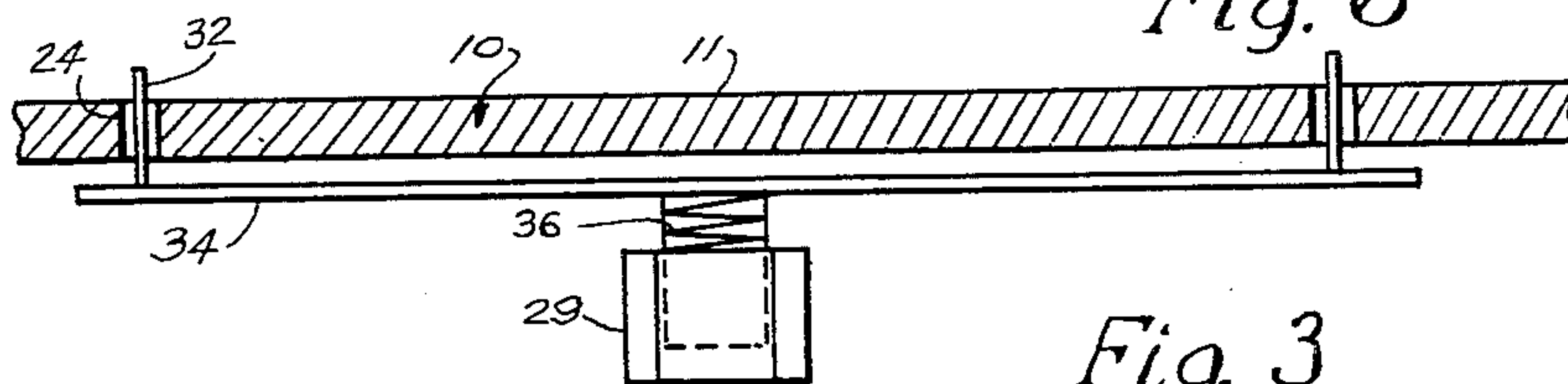


Fig. 3

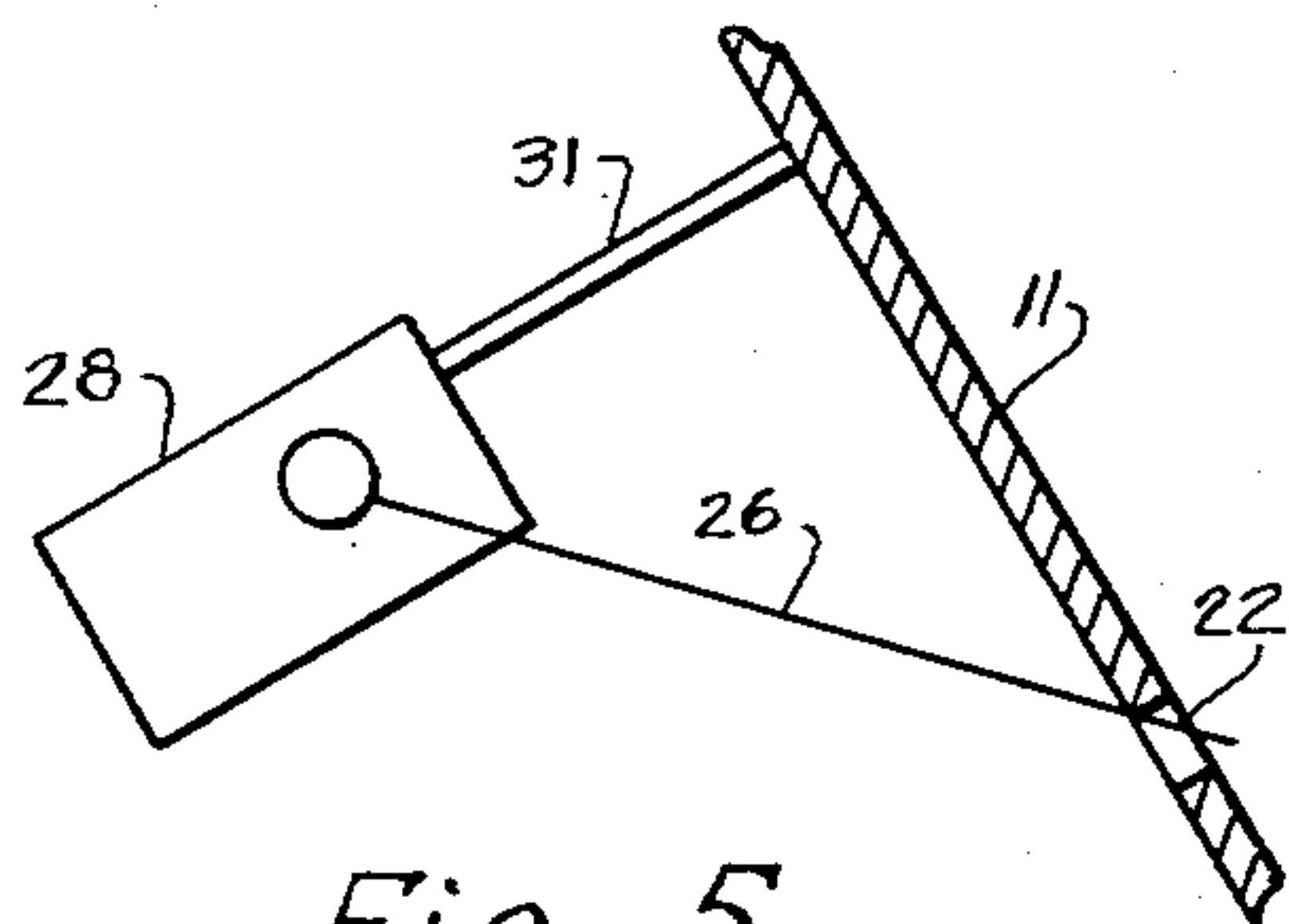


Fig. 5

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2,994,881
JOGGING AND STAPLING MACHINE
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Filed May 11, 1959, Ser. No. 812,517
1 Claim. (Cl. 1—106)

This invention relates to automatic paper working machines and, more particularly, to an improved automatic paper working machine for simultaneously jogging and fastening preassembled sheets of paper.

Heretofore, manual labor has been required to first assemble the required sheets of paper into an aligned set and then to fasten each set by means of a staple to form a pamphlet or booklet. In the printing and duplicating art, this problem is an everyday occurrence and has been solved only by the use of expensive automatic stapling and collating equipment.

An object of the invention is to provide a device for jogging and fastening preassembled sheets of paper simultaneously.

Another object of the invention is to provide a novel device for jogging and fastening sheets of paper at a low cost and high efficiency.

Still another object of the invention is to provide an improved automatic paper working machine that is economical to manufacture and assemble, durable, and reliable in operation.

In accordance with the present invention, a better utilization of labor is obtained by the fact that a single, inexpensive device simultaneously jogs and staples assembled sheets together in one efficient operation.

The above as well as other objects and advantages of the present invention will become apparent from the following description, the appended claim and the accompanying drawing wherein:

FIGURE 1 is a top plan view of the device,

FIGURE 2 is a side view of the device taken partially in cross-section,

FIGURE 3 is an enlarged sectional view taken along line 3—3 of FIGURE 1,

FIGURE 4 is a fragmentary enlarged sectional view of the pin assembly shown in FIGURE 3,

FIGURE 5 is an enlarged, partially sectional view of the micro-switch assembly shown in FIGURE 2, and

FIGURE 6 is a semi-diagrammatic view of a stapler including an electric circuit in which it is positioned for automatic actuation thereof.

Referring to the drawing, wherein like numerals refer to like parts, there is shown a tray 10 with an upper surface 11 and having a stationary side 12 and an adjustable side 14 for a purpose to be described hereinafter. The tray 10 is inclined as shown in FIGURE 2 and is supported by a pair of braces 16, 18 resting on a floor or platform 20. Located in the lower portion of tray 10 centrally between the sides 12, 14 is a slot 22 and holes 24 located below and on each side of the slot 22.

As best shown in FIGURE 5, a wire 26 is bent within the slot 22 so as to extend upwardly above the upper surface 11 of tray 10. The other end of wire 26 is connected to a micro-switch 28, the switch being supported adjacent tray 10 by a brace 31. Also mounted under the tray is a pull solenoid 29 and a delayed action relay

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30. The holes 24 provide access for pins 32 which are of sufficient length so as to be elevated above the upper surface 11 of tray 10. Pins 32 are secured to a rod 34 which extends under the tray 10 and is best shown in FIGURES 3 and 4. A coil spring 36 urges the rod 34 outwardly in order to normally maintain pins 32 above the upper surface 11. In addition, an electric stapler 37 is affixed to the stationary side 12 for automatically fastening preassembled sheets of paper 38.

The device operates in the following manner:

The tray 10 is inclined and supported by braces 16, 18 so as to permit an assembled set of paper 38 to slide by gravity through the full length of the tray. Sides 12, 14 of the tray 10 form a U-shaped channel for papers 38 and one side 14 is adjustable in order to form the channel of the same width as the papers 38. As the set of papers slide down the tray 10, they pass over slot 22 and thereby depress wire 26. The wire 26, in turn, closes microswitch 28 and activates a delayed action relay 30.

The papers 38 bounce and jog against the pin stops 32 and finally come to rest. The relay 30 has, in this interval of time, given the papers sufficient opportunity to settle and then activates the stapler 37 causing the set of sheets to be fastened together.

At this point, the pull solenoid 29 is caused to actuate and lower rod 34. The pins 32 connected to rod 34 are thus dropped below the surface 11 of tray 10 to permit the stapled set of papers 38 to drop into a bin (not shown). As the fastened papers proceed through tray 10 into the bin, the trailing edge of the sheets releases the wire 26 and the pins 32 again protrude over surface 11 in the receiving tray 10. Thus, an entire cycle of operation is completed and a new set of papers may be dropped into the tray 10. The electric circuit for completing the above operation is best shown in FIGURE 6.

While it will be apparent that the preferred embodiment of the invention disclosed is well calculated to fulfill the objects above stated, it will be appreciated that the invention is susceptible of modification, variation and change without departing from the proper sense or fair meaning of the subjoined claim.

What is claimed is:

A jogging and stapling machine comprising a chute having a downwardly inclined bottom wall, and laterally adjustable side walls extending upwardly from said bottom wall, said bottom wall having spaced aligned apertures formed in the bottom wall adjacent to the lower end thereof, vertically movable jogging pins extending upwardly through said apertures, a stapling head positioned over the bottom wall intermediate said side walls, actuating means adjacent the lower end of said bottom wall and spaced upwardly from said movable pins for energizing said stapling head to staple sheets in the chute and means responsive to operation of the stapling head for lowering the pins below the level of the bottom wall, whereby the stapled-sheets will slide downwardly in said chute.

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