

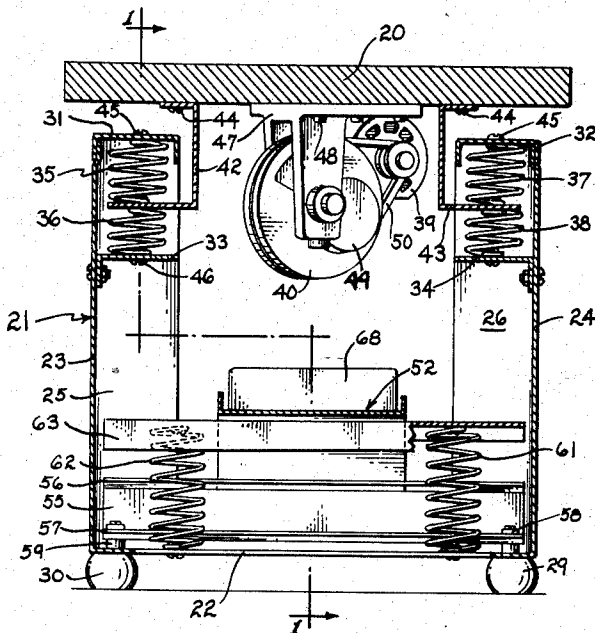
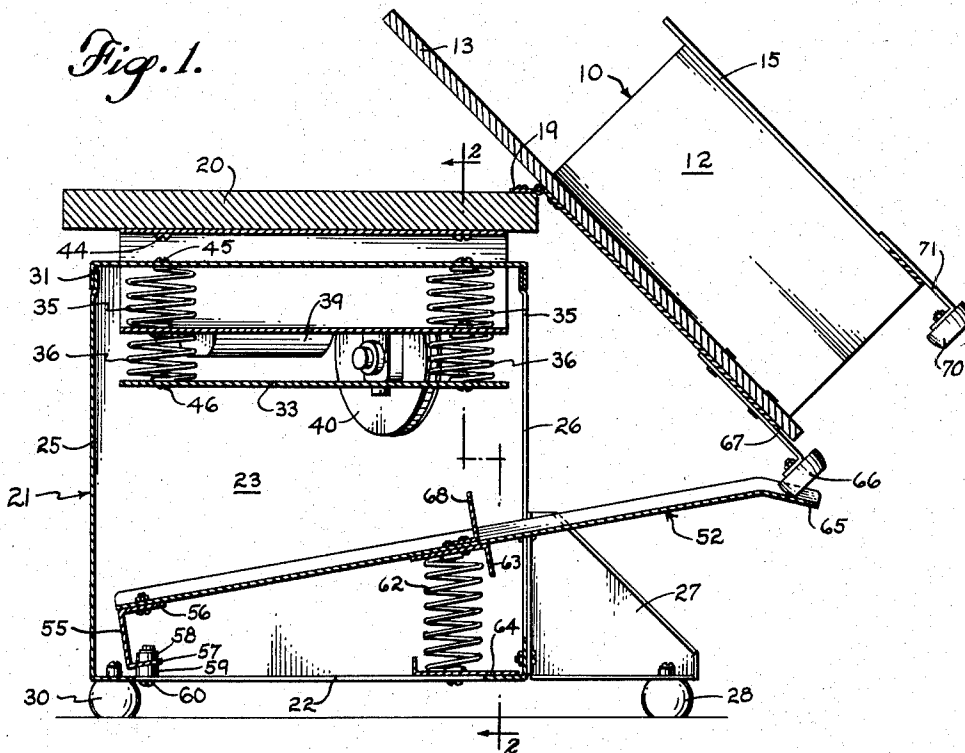
April 21, 1959

W. R. PEUGNET
PAPER JOGGING MACHINE

2,883,191

Filed Dec. 16, 1957

2 Sheets-Sheet 1



WILLIAM R. PEUGNET
INVENTOR.

BY *Kubert Miller*
ATTORNEY

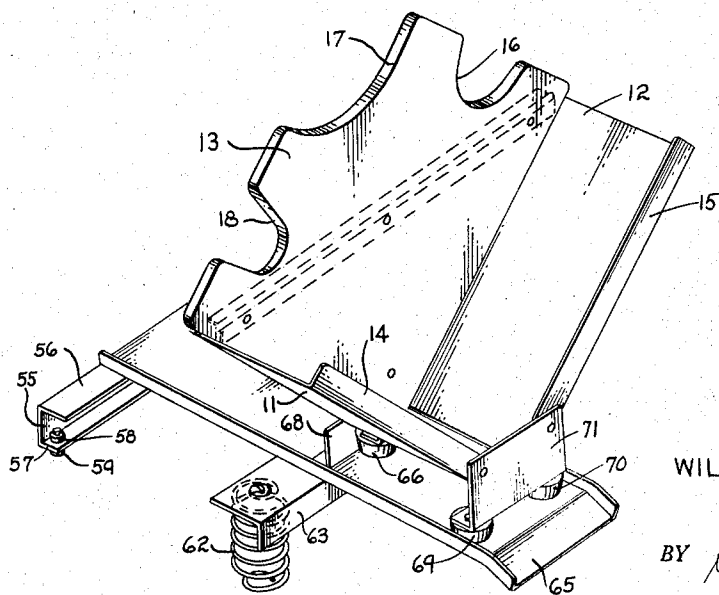
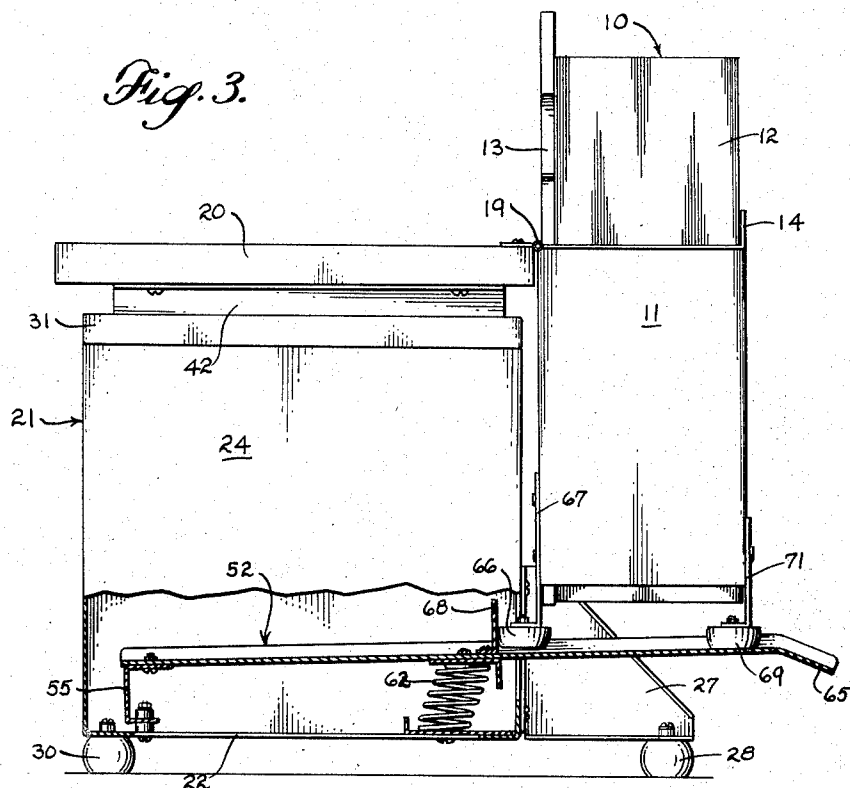
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WILLIAM R. PEUGNET
INVENTOR.

BY *Hubert Miller*
ATTORNEY

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PAPER JOGGING MACHINE

William R. Peugnet, St. Louis, Mo.

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8 Claims. (Cl. 271—89)

This invention relates to a paper jogging machine and more particularly to such machine utilizing a vibratory motion to align the edges of a stack of paper sheets.

Conventional paper jogging machines usually include a vibrating table, platform, or paper-holding tray supported on springs and employing an electric motor-driven eccentric weight attached to the vibrating table. One disadvantageous feature of such machines is that, in order to properly jog or collate a stack of paper sheets of substantial thickness, it is necessary to employ very strong springs to support the weight of the platform, tray, and paper. The required strength of the springs increases the stiffness of the springs to a degree that a considerable portion of the vibrating action is transferred to the jogger cabinet and thereby to the entire machine to cause unwanted movement of the machine across, and sometimes off, a desk or other supporting structure. While this disadvantage may be remedied by extremely massive cabinets to absorb the vibratory action tending to move the machines, the considerable weight of the cabinets is undesirable due to the increase in manufacturing costs and difficult portability of the machines. Another objectionable feature of such machines is that the paper-holding tray is supported in a fixed vertical position preventing easy loading of the paper sheets on the tray, as the sheets tend to curl and fall to one side of the tray.

One important object of the invention is to provide an improved paper jogging machine which is light in weight, readily portable, and produces effective vibratory action to properly and quickly collate the paper sheets while transferring negligible vibratory action to the cabinet or to its support.

Another object of the invention is to provide an improved paper jogging machine in which the weight of the paper holding tray and its load is partially supported for vibratory movement by a resiliently supported platform, and partially by an independent resiliently supported panel, thus permitting a reduction in the stiffness of resilient members supporting both the platform and the panel, and minimizing the transmission of vibrations to the supporting base or cabinet.

Another object of the invention is to provide an improved jogging machine of the type described in which an auxiliary spring suspension for the paper-holding tray partially supports the tray and its load while the full force and effect of the vibrating action of the table is transmitted to the tray.

A further object of the invention is to provide an improved paper jogging machine of the type described in which an auxiliary load-supporting panel is supported on springs independently of the spring suspension of the vibrating table and tray, and cooperates with the table to aid in supporting the tray and its load.

A further object of the invention is to provide an improved paper jogging machine featuring a paper-holding tray pivotally connected to and depending down-

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ward from an edge of the vibrating table for pivotal movement to an inclined or tilted position to facilitate loading of paper sheets in the tray and thereafter to a vertical position for quickly collating the paper sheets during vibratory action of the machine.

The invention will be more clearly understood when the following detailed description is read in connection with the accompanying drawing, in which:

Fig. 1 is a longitudinal sectional view through a jogging machine embodying my invention, and is taken along the line 1—1 of Fig. 2; the paper-holding tray being shown in an inclined position;

Fig. 2 is a lateral sectional view through the jogging machine, and is taken along line 2—2 of Fig. 1;

Fig. 3 is a side elevation of the jogging machine with the paper-holding tray shown in vertical collating position, portions of the machine being broken away and shown in longitudinal section to more clearly illustrate the various parts of the machine; and

Fig. 4 is an isometric view of the paper-holding tray and its auxiliary spring support.

In the drawing the numeral 10 designates a paper holding tray as a whole. The tray includes an inclined end wall 11, an inclined end wall 12 meeting the end wall 11 at right angles, and an upright side wall 13 connected to the two end walls. The end walls are preferably sheet metal and formed to provide angularly disposed aligned flanges 14 and 15, respectively, and parallel to the side wall 13 to contain the paper sheets in the tray. The side wall 13 has a plurality of arcuately shaped notches 16, 17 and 18 for facilitating removal of collated paper sheets. The side wall 13 of the tray may be formed of wood for connection by screws to one leaf of a hinge 19 of the piano type, the other leaf being secured by screws to the top of a wood table or platform 20 connected to a vibration-producing structure supported within a cabinet, indicated generally at 21.

The cabinet 21 is formed of thin sheet metal and includes a horizontal bottom wall 22, and two spaced parallel upright side walls 23 and 24 which may be formed as integral portions of the bottom wall 22. Each side wall has inwardly turned angularly disposed end flanges, the rear flange on the side wall 23 being indicated at 25 and the rear flange on the wall 24 being shown at 26. Projecting laterally of the spaced front flanges of the walls 23 and 24 are triangularly shaped supports bolted to the flanges, one of the supports being indicated at 27. The supports are provided with rubber ball-shaped feet, such as shown at 28, cooperating with similar rubber feet 29 and 30 secured to the bottom wall 22 to resiliently support the jogging machine on the flat surface of a desk or table.

The open upper ends of the side walls are capped by and support horizontal elongated channel strip 31 and 32. Below the strips 31 and 32 and disposed within the side walls 23 and 24 are angle strips 33 and 34 secured to the side walls by bolt and nut assemblies as shown in Fig. 2. The strips 31 and 33, and side wall 23, form a housing for two sets of superposed relatively light springs 35 and 36. Similarly, two sets of superposed springs 37 and 38 are disposed within a housing formed by the side wall 24 and strips 32 and 34. The spring sets are located in spaced relation to each other with two spring sets being disposed at opposite ends of the strips 31 and 33 and the other two spring sets located at opposite ends of the strips 32 and 34.

The springs cooperate with the strips 31 and 33 of the cabinet to resiliently suspend and support the vibration-producing structure comprising the table 20, an electric motor 39, and an eccentrically-weighted pulley 40 driven by the motor. More particularly, spaced parallel elon-

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gate channel-section strips 42 and 43 have their top walls secured to the bottom of the table 20 by screws 44, the bottom wall of the strip 42 extending between and being engaged by the superposed springs 35 and 36, and the bottom wall of the strip 43 being disposed between the springs 37 and 38, as shown in Fig. 2. To prevent displacement of the springs, the upper springs may have their reduced upper end coils secured to the engaged strips 31 and 32 by nut and bolt assemblies 45 as shown, and the lower springs have their bottom end coils similarly secured to the strips 33 and 34 by nut and bolt assemblies 46. A bracket 47 is fastened to the bottom of the table 20 by screws 48, the bracket having spaced parallel arms provided with aligned bearings receiving a shaft fixed to the pulley 40 provided with an eccentric weight 49. The pulley is rotated by the electric motor 39, fastened to the bottom of the table, and drivingly connected by a belt 50 to the pulley.

It will be apparent that, upon energization of the electric motor, the eccentrically-weighted pulley will rotate to impart a vibratory action to the table 20, and through the medium of the hinge 19, to the paper holding tray 10.

An important feature of the present invention is the provision of an auxiliary spring suspension structure to aid in supporting the weight of the paper holding tray 10 and its load, and to aid in absorbing vibrations imparted to the tray 10 by the table 20. The structure illustrated is of the cantilever type.

This structure includes a flat elongate sheet metal panel or support 52, the inner end of which is transversely pivoted within housing 21. At its inner end support 52 is secured to the upper flange 56 of a transverse channel section strip 55 by means of bolt and nut assemblies, as shown in Fig. 1. The other flange 57 of the channel section strip 55 is mounted between laterally spaced pairs of rubber washers 58 and 59, the washers being held in position by bolt and nut assemblies 60. The holes in flange 57 through which the bolts 60 project are elongated in order to provide a free pivotal movement of the panel 52 about a transverse axis.

The other end of panel 52 projects beyond the front of the cabinet 21 and terminates in a down turned lip 65. This panel 52 is supported in the inclined position shown in Fig. 1 by means of a pair of laterally spaced springs 61 and 62. The lower ends of these springs are anchored to and supported by a transverse plate 64 which in turn is spot welded or otherwise secured to an inwardly projecting flange at the front of the cabinet proper. The springs are anchored by means of metal screws or by bolt and nut assemblies, as shown. The upper ends of the springs bear against a transverse angle section strip 63 the central portion of which is spot welded directly to the panel 52. The upper ends of the springs 61 and 62 are anchored to the strip 63 by metal screws. A transversely disposed stop 68 in the form of an angle section strip has one flange secured to the panel support 52 by spot welding or by any other suitable means.

Before the operation of the machine is described it should be noted that tray 10 is provided with three rubber feet 66, 69 and 70 (Fig. 4) which are located to rest on the upper surface of the spring suspended support 52 when the tray assumes a vertical position, as clearly illustrated in Fig. 3. Foot 66 is mounted on a centrally located angle strip 67, which is secured by rivets to tray wall 13. Feet 69 and 70 are similarly mounted on an angle plate 71 which is secured by rivets to tray flanges 14 and 15 (Fig. 4).

Operation

Before loading the tray with paper to be collated, the operator grasps the angle plate 71 at the lower end of the tray and pulls the bottom of the tray outward and upward to the position shown in Fig. 1. In this position rubber foot 66 rests on lip 65. With the tray in such an inclined position paper sheets may be placed in the tray

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and will lie flat against side wall 13, with no tendency whatever for the sheets to curl.

Motor 39 is then started and the previously described vibrating structure immediately imparts vibrations to table 20, and through hinge 19 to the tray and its load of paper. The vibrations imparted to the tray, plus the pull of gravity due to the load of paper in the tray, cause the tray foot 66 to gradually move down the inclined panel support 52 until the two outer feet 69 and 70 also rest flat on the upper surface of panel support 52, as clearly shown in Fig. 3. Stop plate 68 is contacted by foot 66 and further inward pivotal movement of the tray 10 is prevented. The vibratory action of the machine is allowed to continue until all paper in the tray is completely collated.

It will be noted that during the above described collating action the weight of the tray 10 and its load of paper is supported not only by the springs 36 and 38 but also by the springs 61 and 62. By thus increasing the total number of springs used to support the total weight of the table 20, the tray 10 and its paper load, the springs used may be much more flexible and resilient than otherwise. By using lighter weight and more flexible springs the vibratory motions transmitted to table 20 and to the tray 10 are much more effective. Furthermore, by making the panel 52 and its supporting springs entirely independent of the spring suspension which supports the table 20, the vibratory motions required for properly collating the paper in tray 10 are much more easily absorbed and prevented from being transmitted to the cabinet 21. Consequently, any tendency of the cabinet to "walk" across its supporting surface is eliminated. As a result there is no necessity for the cabinet to be made of heavy material. Instead, it can be made of light weight sheet metal so that the entire jogger is easily portable.

Having described the invention with sufficient clarity to enable those familiar with this art to construct and use it, I claim:

1. In a paper jogger, a power vibrated platform; a housing beneath the platform; a paper holding tray pivotally connected to said platform along one of its edges only and depending downward therefrom alongside said housing, the pivotal connection providing for swinging movement of said tray between an inclined position and a vertical position; means carried by said housing for resiliently suspending said platform and thereby said tray; an auxiliary tray support pivotally connected to said housing and having a portion extending beneath and engaging said tray; and spring means independent of the platform suspending means engaging said support for resiliently urging it into supporting contact with said tray, said tray support acting to support the tray in either a vertical or inclined position.

2. A paper jogger comprising: a supporting base structure; a rigid planar power vibrated table or platform resiliently supported in a substantially horizontal plane on said base for vibratory movement with relation thereto; a paper-holding tray connected near its upper end to said platform along one platform edge only, said trap depending downward from the platform and alongside said base and supported by the platform for vibratory movement therewith; and an auxiliary spring suspension structure independently supported on said base structure and projecting outward therefrom beneath said tray to contact the tray and aid the platform in supporting the weight thereof.

3. The jogger described in claim 2 in which the upper portion of the tray is pivotally connected to said one edge of the platform along a horizontal axis, thus affording swinging movement of the lower portion of the tray outward away from the base into a plane disposed at an obtuse angle with respect to the plane of the platform, to facilitate loading of the tray.

4. The jogger described in claim 2 in which the platform is resiliently supported on said base structure by

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means of a plurality of coil springs, and said spring suspension structure is also supported on said base structure by means of coil springs.

5. The jogger described in claim 2 including means mounted on said platform for imparting vibratory motion thereto.

6. A paper jogger comprising: a platform supporting base structure; a rigid planar substantially horizontal platform; means mounted on said base structure resiliently supporting the platform in a position above said base structure for vibratory movement with relation thereto, an edge of said platform extending laterally outward beyond said base structure; a paper holding tray having its upper portion secured to and along the said edge of said platform, the remaining portion of the tray depending downward therefrom, the platform thus serving to support the tray; and means resiliently supported on said base independent of the platform and its resilient supporting means, extending laterally outward from the base into a position beneath the lower portion of the tray for contact therewith to provide additional resilient support for the tray; and means for imparting vibratory movement to the platform and through the platform to said tray.

7. The jogger described in claim 6 in which the upper portion of the tray is pivotally secured along said edge of the platform thus affording swinging movement of the lower portion of the tray outward into a plane disposed

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at an obtuse included angle with respect to the plane of the platform, to facilitate loading of the tray.

8. A paper jogger comprising: an upright housing constituting a platform supporting base; a planar platform disposed horizontally above and adjacent the upper end of said base, a linear edge of said platform extending outward beyond an adjacent portion of said base; means within said base resiliently supporting said platform for vibratory movement; a paper holding tray pivotally connected near one of its ends along the said linear edge of the platform and depending downwardly therefrom alongside said base; an elongated rigid panel having one end pivotally mounted within said base, the other end extending outward from the base beneath the lower portion of said tray in a location to contact and aid in supporting the weight of the tray; means supported by the base for resiliently supporting the outer portion of said panel in the mentioned position; and means for vibrating the platform, and through the platform, said paper holding tray.

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