W. C. FREE.

SEWING MACHINE CABINET.

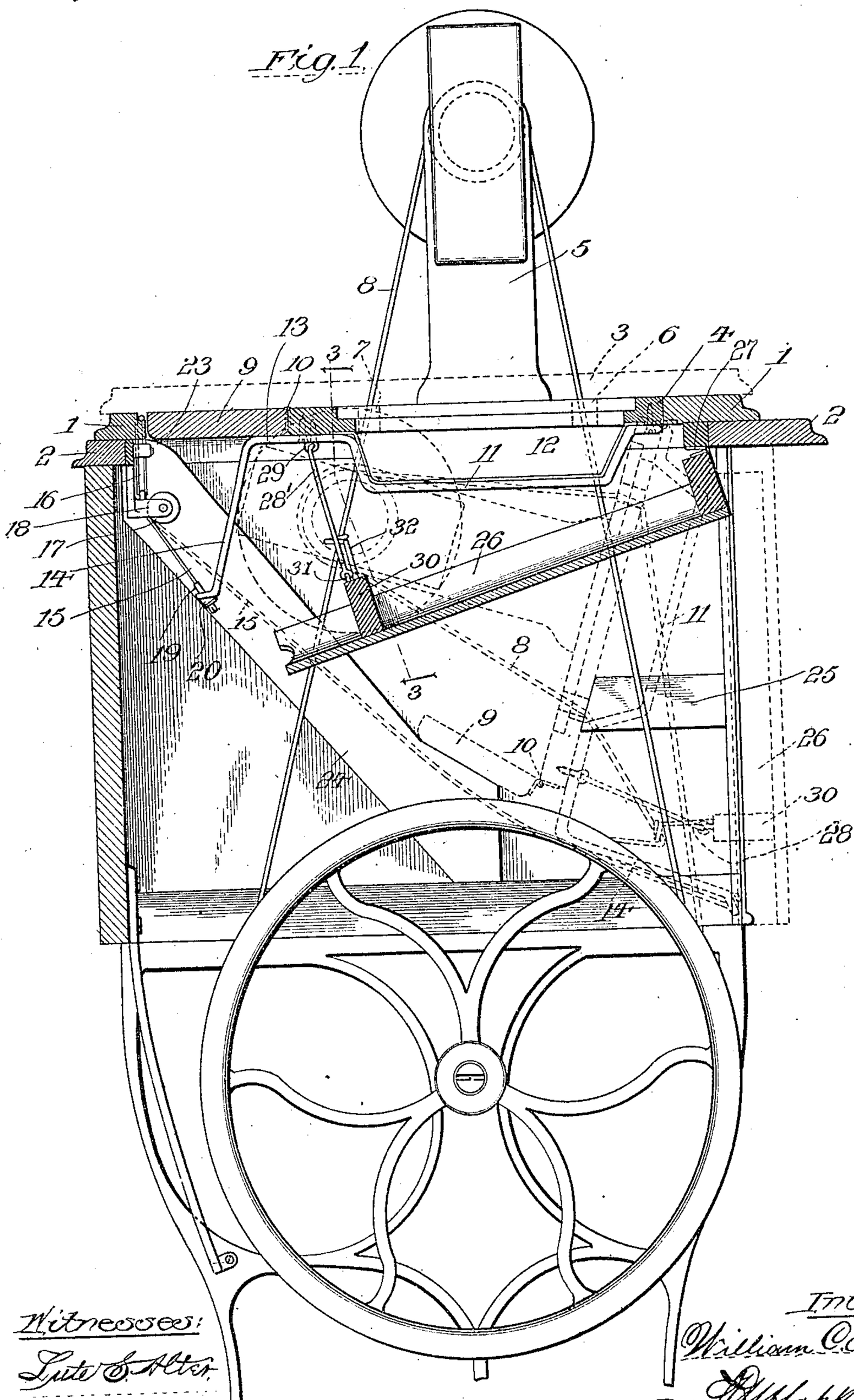
APPLICATION FILED OCT. 9, 1902.

943,866.

Patented Dec. 21, 1909.

3 SHEETS—SHEET 1.

Fig. 1.

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3 SHEETS—SHEET 2.

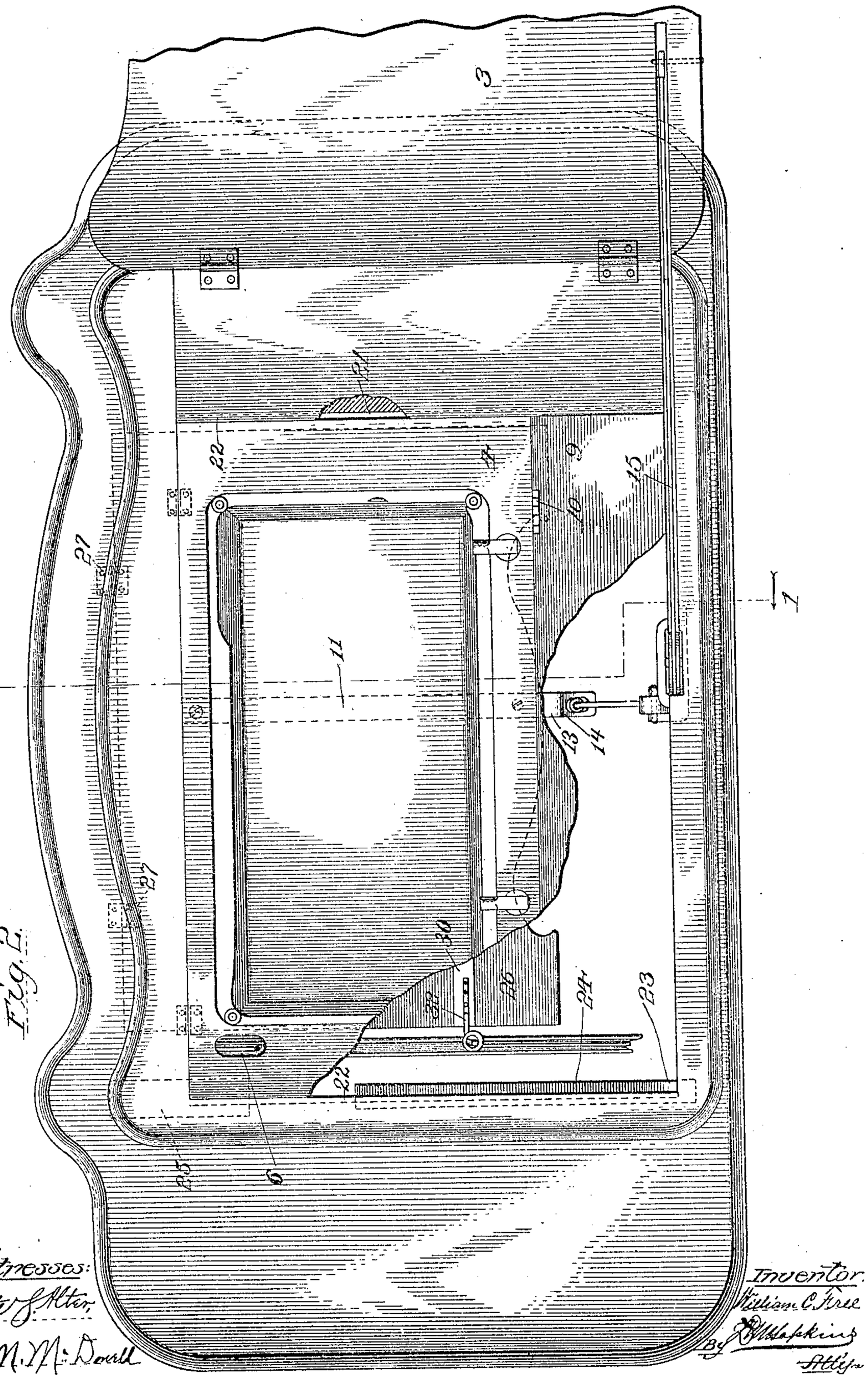


Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 3.

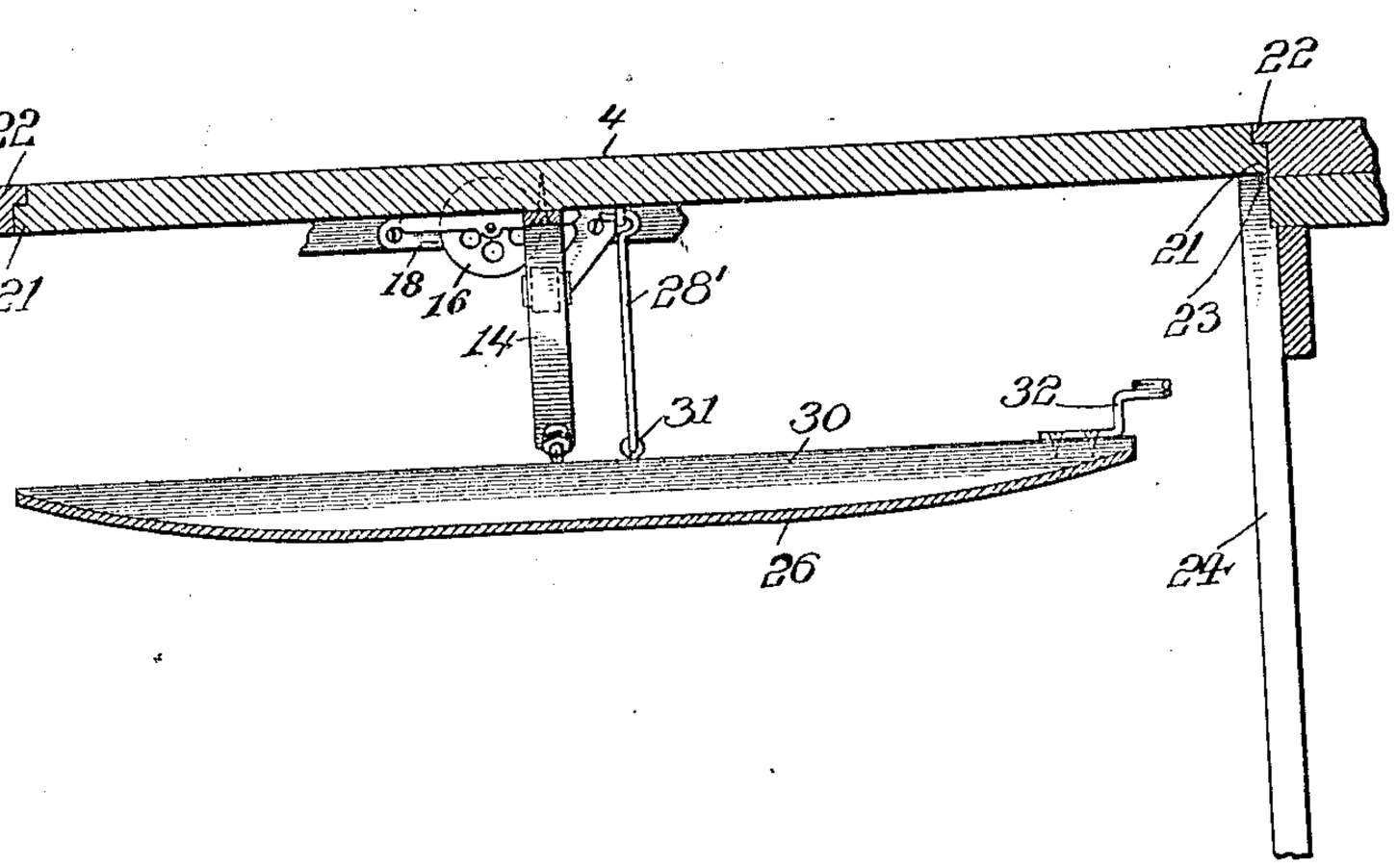


Fig. 5.

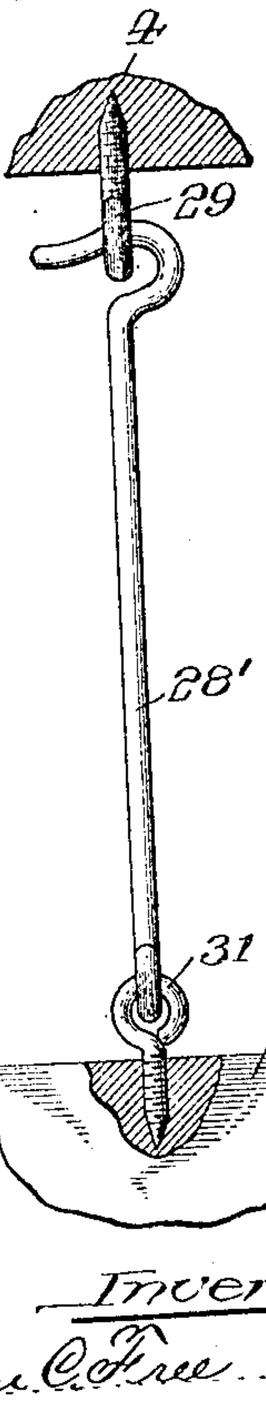


Fig. 4.

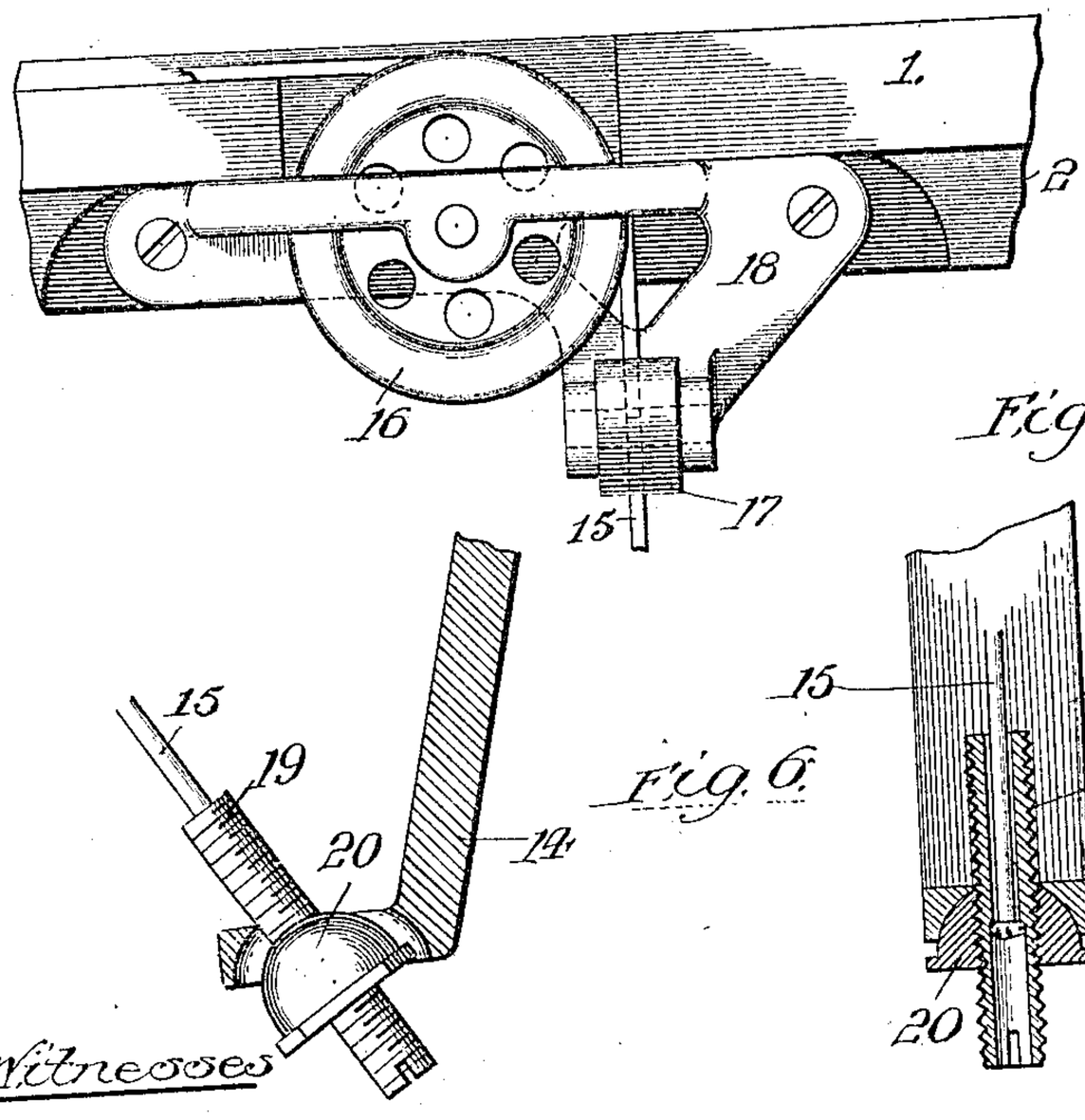


Fig. 7.




Fig. 6.

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# UNITED STATES PATENT OFFICE.

WILLIAM C. FREE, OF CHICAGO, ILLINOIS, ASSIGNOR TO ILLINOIS SEWING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## SEWING-MACHINE CABINET.

943,866. Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed October 9, 1902. Serial No. 126,490.

*To all whom it may concern:*

Be it known that I, WILLIAM C. FREE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sewing-Machine Cabinets, of which the following is a specification.

The present invention relates to a cabinet of that class in which the machine head is mounted upon a platform hinged at one side of an opening through the top of the cabinet, so that it may be placed in horizontal position for supporting the machine head in position for use, or lowered to permit the machine head to sink through the opening and into a space provided for it within the cabinet, where it is concealed and protected when not in use. The hinged platform is sometimes made in two parts; viz: a main part, which has a seat for the machine head, and a narrow wing or leaf hinged to the outer or free side of said main part. This hinged leaf sometimes has considerable pressure put upon it and when sustained only by its hinges this pressure tends to loosen or strain the hinges and cause the leaf to sag.

One object of the invention is to prevent this, and to this end I provide means in addition to its hinges, for supporting it. Preferably it is additionally supported both at its hinged side and at its outer or free side. For supporting it at its hinged side, I prefer to use a part carried by the main part of the platform and projecting forward therefrom so as to engage the under side of the leaf when in position for use. This part may be in the form of a bracket arm which enters into the construction of certain other parts hereinafter described. For supporting it at its outer or free side, I prefer to use a fixed rest over which it projects, and for directing its movement and causing it to automatically pass upward and onto the top of said rest, I use a guide fixed to the cabinet. In addition to this function of the guide it sustains the leaf as it moves up and down and prevents it from striking the driving wheel or other parts.

Another object of the invention is to increase the stability with which the machine head is held in working position, and to this end I provide stops for engaging the platform and limiting its upward movement, and means, including a cable connected at one end to the hinged top of the cabinet and at the other end to the platform and suitably arranged pulleys over which said cable is trained, for lifting the platform, the cable being of such length that it will force and hold the platform firmly in contact with the stops.

Another object of the invention is to avoid injurious strains upon the parts that are instrumental in thus holding the platform in elevated position and to this end I incorporate an elastic arm in the connection between the platform and the hinged top of the cabinet.

Other objects of the invention will appear hereinafter.

In the accompanying drawings, which are made a part of this specification, Figure 1 is a vertical section of a sewing machine cabinet embodying the invention, the machine head being shown in outline. The cutting planes of the parts here shown in section are indicated by the line 1—1, Fig. 2. Fig. 2 is a plan view of a sewing machine cabinet embodying the invention, a portion of the hinged platform being broken away. Fig. 3 is a section of a portion thereof on the line 3—3, Fig. 1, looking in the direction of the arrow. Fig. 4 is an elevation, on a larger scale, of the pulleys, over which the cable is trained, and their supporting bracket. Fig. 5 is an elevation, on a larger scale, of the adjustable connection between the platform and the apron. Figs. 6 and 7 are sectional elevations on an enlarged scale, showing the means for anchoring the end of the cable.

The top of the cabinet comprises two rectangular frames 1 and 2, secured one upon the other and to the frame 1 is hinged an extension leaf 3. The frame 1 is somewhat smaller than the frame 2 and to its front side is hinged a platform 4 by which the machine head 5 is carried. This platform has through it openings 6 and 7 for the passage of the band 8. The platform comprises the main part 4 and an extension wing or leaf 9 which is connected to the free side of the part 4 by hinges 10 so that the parts 4 and 9 break downward. The platform is strengthened by a bar 11 which is secured to its front and rear sides and has its intermediate portion deflected downward far enough to allow above it space necessary for the drip pan 12. The bar 11 is continued

rearward past its point of attachment to the rear side of the part 4 of the platform, as shown at 13 and this part 13 projects beyond the free side of the part 4 of the platform and engages the under side of the leaf 9, so that the hinged side of the leaf is supported by means additional to its hinges. Beyond the portion 13 the bar is continued rearward and downward as shown at 14 to form an arm to which is connected one end of a cable, or other flexible device 15, the other end of which is attached to the hinged leaf 3 of the cabinet top.

At points intermediate of its ends the cable is trained over a pair of pulleys 16 and 17 journaled in the bracket 18 secured to the top of the cabinet. The pulley 16 lies in the vertical plane of that portion of the cable which extends from it to the hinged leaf 3. In other words it has a horizontal axis which is parallel with the axis about which said leaf moves and perpendicular to the axis about which the platform moves. The pulley 17 has a horizontal axis located in a horizontal plane below the horizontal plane of the axis of the pulley 16 and in a vertical plane perpendicular to the vertical plane of the axis of the pulley 16, so that the periphery of the pulley 17 lies in the vertical plane of the pulley 16. With this arrangement of the two pulleys that portion of the cable which lies between its points of contact with them is tangential to both of them. This distributes the strains so that they fall upon them in planes perpendicular to their axes, respectively, and this avoids all tendency on the part of the cable to run off of the pulleys.

The end of the cable is anchored to the arm 14 through the medium of a tubular screw 19 notched to receive a screw driver and a nut 20, adapted to receive a wrench. A shoulder on the interior of the screw forms a bearing for an enlargement of the cable, permitting the screw to turn upon the cable without twisting it. The nut has a spherical surface seating upon the spherical walls of an elongated slot in the arm 14, forming a universal joint. The cable is preferably of such length that when the leaf 3 is fully open, flanges 21 on the ends of the platform will bear against similar flanges 22 on the top of the cabinet so that the cable is under considerable tension and the platform is thereby firmly held against movement in any direction. The flanges 21 and 22 constitute stops for limiting the upward movement of the platform and the connections between the leaf 3 and the platform prevent its downward movement. In order to avoid the strain thus produced from injuring any of the parts the arm 14 is made elastic so that it will yield more or less, as may be necessary, but still it is of sufficient strength to firmly support the platform.

The outer edge of the leaf 9 of the platform is supported by a rest 23 and this rest preferably takes the form of a shoulder at the upper end of an inclined guide 24. This guide may consist of a strip of wood suitably secured to the cabinet and having its upper edge shaped so as to sustain and guide the leaf 9 in its up and down movements. As will be seen by dotted lines in Fig. 1, when the platform is in its lowermost position the guide holds the leaf 9 out of contact with the wheel and as the platform moves either upward or downward the guide prevents the leaf from striking against the pulley 17 or its bracket or against the cable 15. In addition to this as the platform is nearing its uppermost position, the guide being rounded at its upper end, will direct the outer side of the leaf 9 onto the rest 23. The downward movement of the platform is limited by a stop 25 fixed to some suitable part of the cabinet.

The front of the cabinet consists of a panel or apron 26 which is supported by hinges 27 so that it may be moved from the position shown by full lines in Figs. 1 and 3 and partly by full lines and partly by dotted lines in Fig. 2 to the position indicated by dotted lines in Fig. 1. When in the latter position its vertical sides bear against side jambs, one of which is shown at 28, so as to close the opening between said jambs and complete the front of the cabinet. For moving this apron it is connected with the platform through the medium of a hook 28′ and an eye 29. The hook is preferably attached to a cleat 30 at the back of the apron 26 through the medium of a screw eye 31 and the eye 29 with which the hook engages is provided with a screw stem adapted to be screwed into the under side of the platform. 4. The stop 25 positively determines the position of the platform. The connection between the platform and the apron 26 should be such that the apron comes to a bearing against the jambs 28 so as to present a finished appearance. The exact length necessary for this purpose may be had by screwing one or another of the screw eyes 29 or 31 either into or out of the part it engages.

For taking up the slack in the belt or band as the platform is being lowered a take-up 32 is arranged to be moved as the platform moves. I have shown this take-up as consisting of a bent arm secured to the cleat 30 and having an eye or loop through which the rear side of the band 8 passes, said eye or loop being so located that when the platform is elevated and the machine head in position for use the eye or loop will be in close proximity to the rear side of the band so that as the platform is being lowered it will engage the band before the latter has had a chance to slacken.

In the continued lowering movement of the platform the take-up will draw the rear side of the band over the top of the wheel as indicated by dotted lines in Fig. 1. In thus taking up the slack the rear side of each of the openings 6 and 7—but more especially the rear side of the opening 6—is instrumental in that it forms a support or bearing around which the band is bent.

Having thus described my invention the following is what I claim as new therein and desire to secure by Letters Patent:

In a device of the class described, the combination with the top having an opening through it, a platform hinged at one side of said opening and comprising a main portion and the leaf hinged to the free side of said main portion, stops for positively arresting the upward movement of the platform and leaf and a hinged extension leaf adapted to cover the opening in the top, of means for transmitting movement from said hinged extension leaf to the platform, said transmitting means comprising a bar attached to the under side of the platform and having an intermediate portion 11 deflected downward, a rigid portion 13, attached to the platform proper and projecting beyond the free side thereof and engaging the under side of the hinged leaf thereof, and a portion 14 projecting downward and rearward and forming an elastic arm, a cable attached at one end to said elastic arm and at the other end to the hinged extension leaf, and means engaging the cable at an intermediate point for guiding it, substantially as described.

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