

No. 755,292.

PATENTED MAR. 22, 1904.

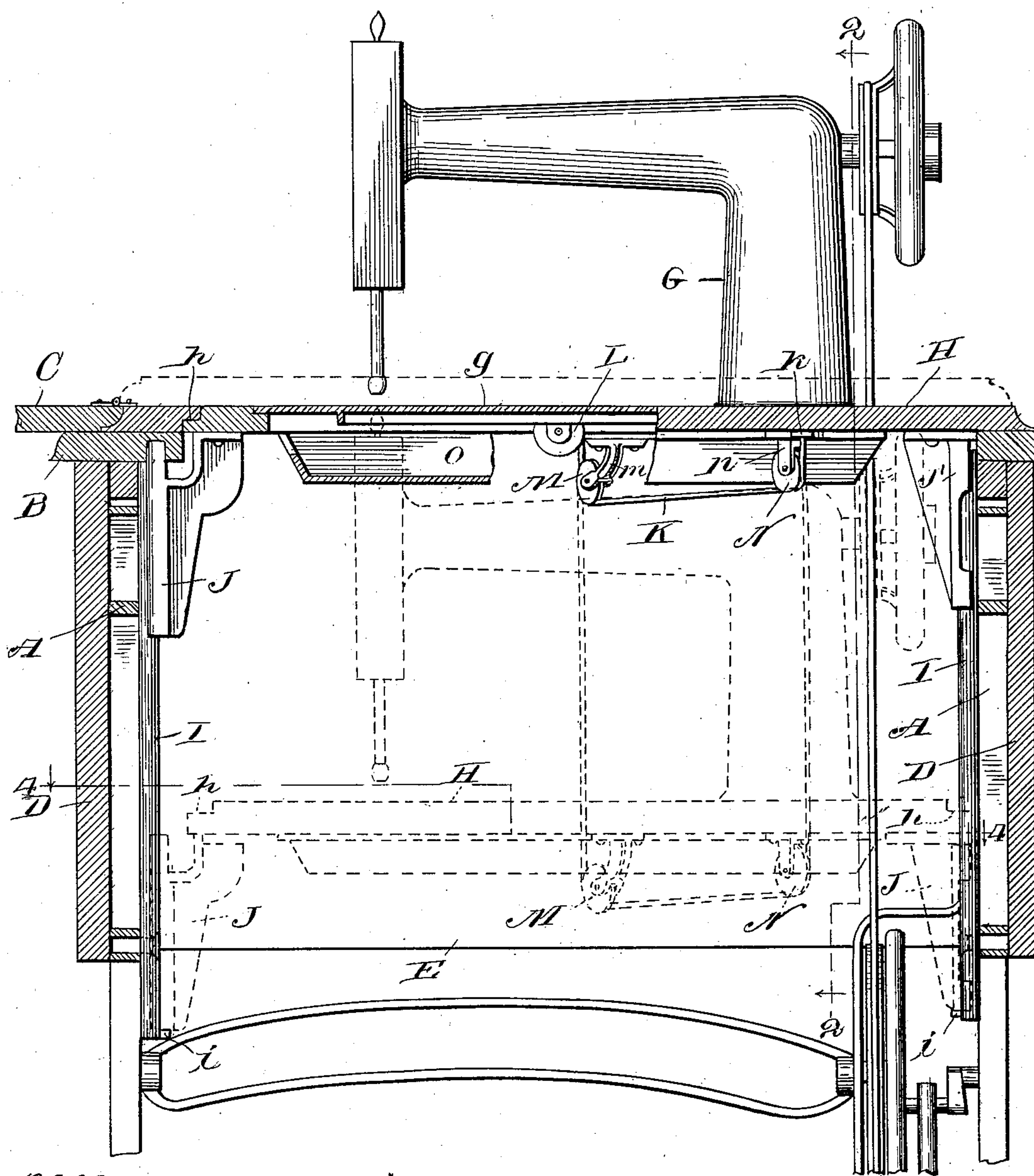
W. C. FREE.  
SEWING MACHINE CABINET.

APPLICATION FILED JULY 18, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

*Fig. 1.*



*Witnesses:*

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H. M. M. Donnell

*Inventor*

William C. Free

by *J. W. Hopkins*

*Atty.*

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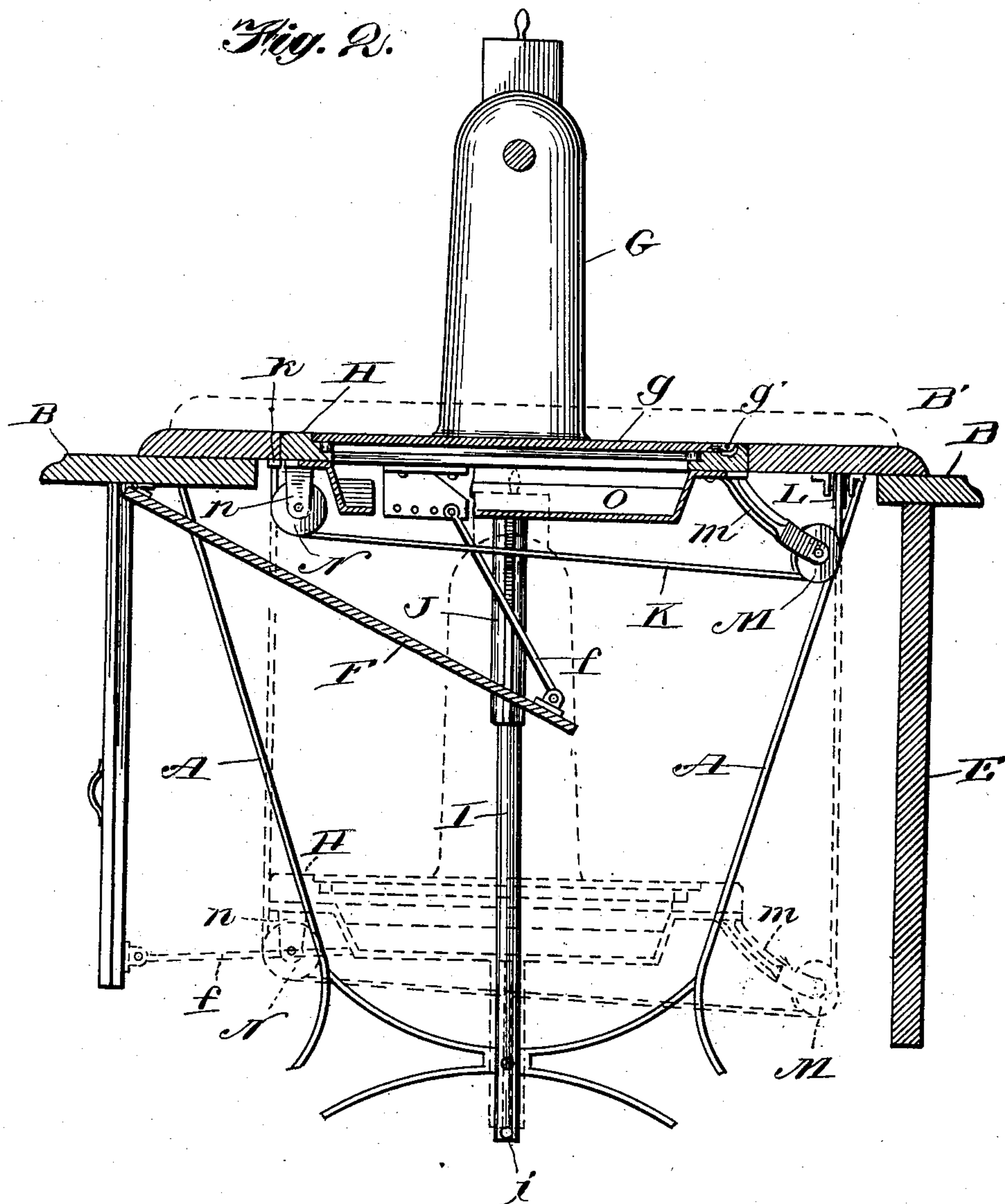
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3 SHEETS—SHEET 2.



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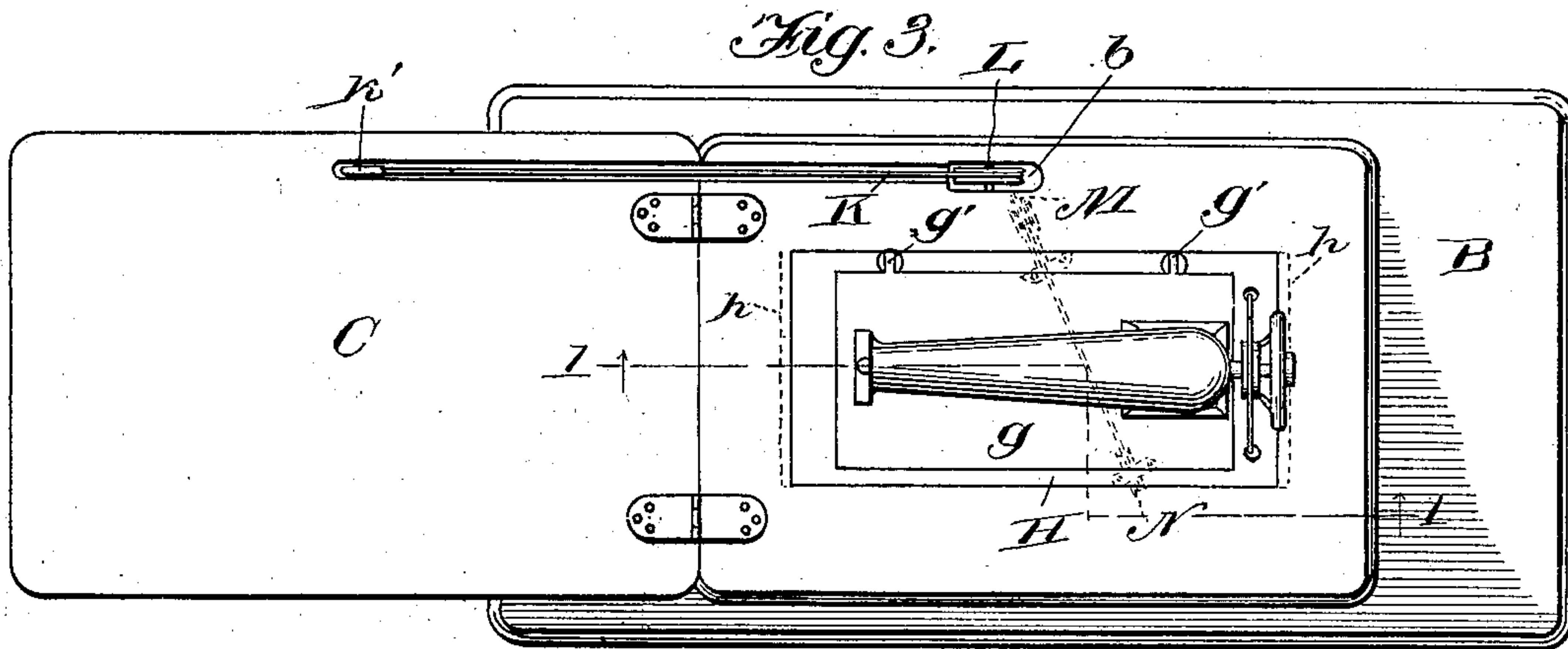
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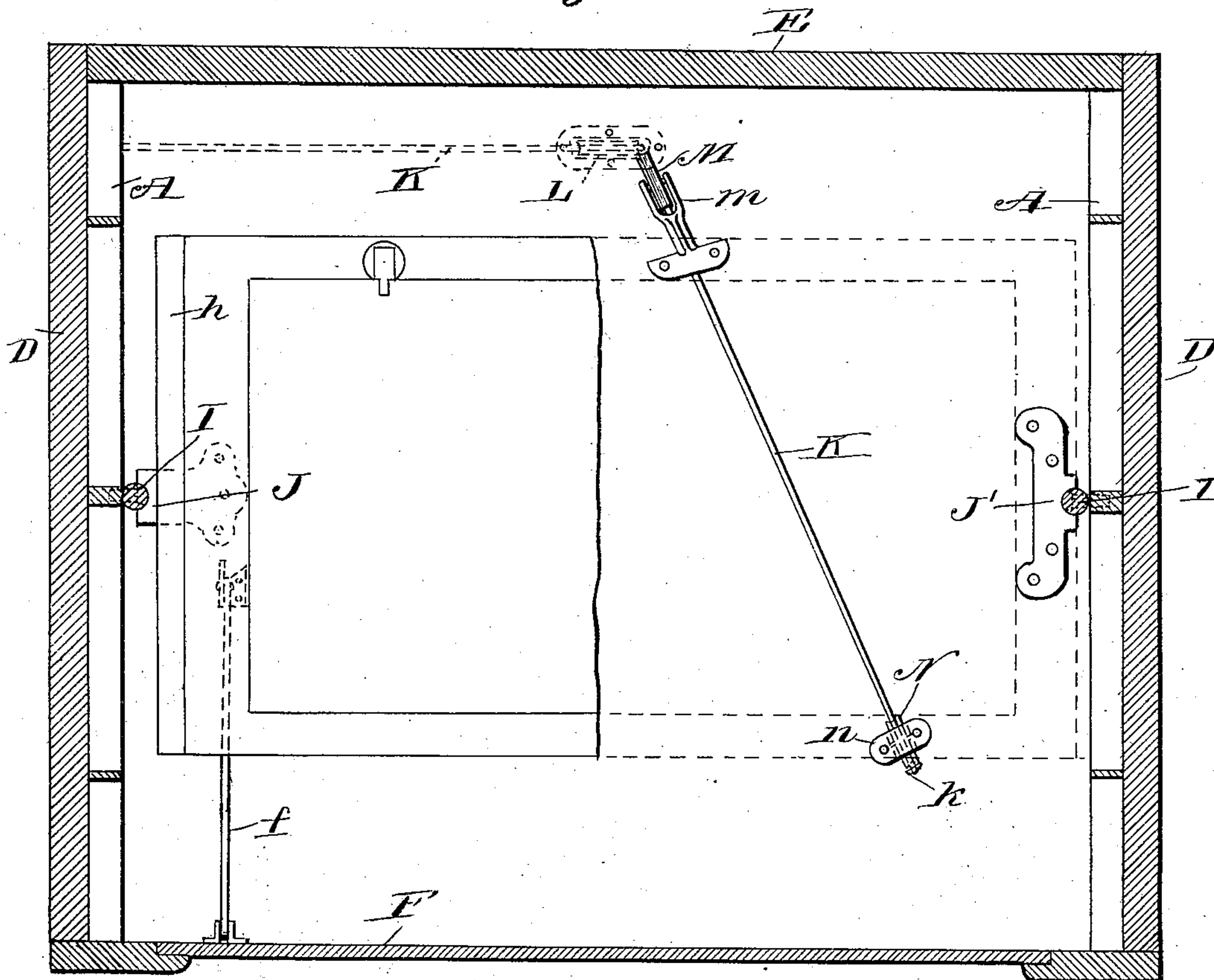
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NO MODEL.

3 SHEETS—SHEET 3.



*Fig. 4.*



Witnesses:

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# UNITED STATES PATENT OFFICE.

WILLIAM C. FREE, OF CHICAGO, ILLINOIS.

## SEWING-MACHINE CABINET.

SPECIFICATION forming part of Letters Patent No. 755,292, dated March 22, 1904.

Application filed July 18, 1902. Serial No. 116,088. (No model.)

*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 specification.

The present invention relates to a cabinet of such construction that when not in use the head of the machine may be bestowed within the cabinet, so as to be completely concealed and protected and out of the way, leaving the top of the cabinet clear and unobstructed for use as a table.

The invention relates more particularly to such a cabinet in which the head of the machine has a bodily vertical movement as distinguished from a swinging movement about a horizontal pivot or support.

In a still more restricted sense the invention relates to a cabinet in which the power for raising and lowering the head is derived from a table-leaf hinged to the top of the cabinet at one end of the opening through it and is transmitted to the head through the medium of a flexible connection—such as a cord, wire, cable, chain, or any equivalent device—trained over suitably-arranged pulleys.

In this specification the connection here referred to will be designated by the term "cable," but always with the understanding that this term is intended to comprehend any suitable flexible connection that will answer the requirements.

A cabinet having the characteristics thus broadly stated is not new, and I therefore desire to have it understood that my present invention consists in the hereinafter-described improvements in cabinets of the class indicated.

One of the objects of the present invention is to provide improved means for guiding the head in its up and down movement, to the end that the strains shall be evenly distributed throughout the framing or cabinet-work and to the end that unequal strains that would either tend to distort or injure the frame or cabinet-work or else necessitate the use of objectionably heavy parts are avoided. To this end I provide upon opposite sides of the

horizontal head-supporting platform or the path traveled thereby long vertical guides, and I provide the platform with brackets or slides adapted to engage said guides, so that the brackets or slides, as well as the platform itself, are confined to movement which is rectilinear, or practically so. In addition to this I apply the lifting force to the supporting-platform at points which tend to balance the parts and cause them to move in right lines. To this end I use a single cable, which passes beneath the head-supporting platform and which is trained over pulleys fixed to said platform and located upon opposite sides of the vertical plane of the guides aforesaid, one end of said cable being fixedly attached to a fixed part of the cabinet, while the other is attached to the hinged leaf aforesaid, being trained at an intermediate point over a pulley supported by a fixed part of the cabinet. I prefer to so locate the pulleys that the cable will pass through or at any rate close to the vertical plane of the center of gravity of the machine-head and the accessories involved in its up and down movements, because this arrangement tends toward a perfect balance, since it eliminates those strains which would tend to disturb such balance.

Still another object of the invention is to provide in a cabinet of the class described means that will protect the working parts of the machine from dirt and impurities of the atmosphere, that will catch and hold oil that may be dropped by said parts, and that will leave said parts freely accessible by simply tipping the head backward in customary manner. To these ends I hinge the base-plate of the head to the vertically-movable platform, and I secure to the under side of this platform a drip-pan, which incloses the working parts as completely as desired. In order to permit the use of such a pan and at the same time make use of the balanced arrangement of parts already described, the platform-pulleys are mounted in brackets which are secured to the under side of the platform and project downward therefrom far enough to cause the cable to clear the bottom of the pan.

Still other objects of the invention will appear hereinafter.



In the accompanying drawings, which are made a part of this specification, Figure 1 is a longitudinal section in irregular vertical planes of the sewing-machine cabinet embodying the invention, so much of a sewing-machine as is necessary in order to show its relation to the cabinet being shown in outline. Fig. 2 is a vertical transverse section thereof. In Figs. 1 and 2 the parts are shown by full lines in the positions which they occupy when the cabinet is open and the machine in position for use, the positions which said parts occupy when the cabinet is closed and the machine-head stowed therein being indicated by dotted lines. Fig. 3 is a plan view, on a smaller scale, of a cabinet embodying the invention, the parts being shown in the positions which they occupy when the cabinet is open. Fig. 4 is a horizontal section thereof in irregular planes.

The cabinet may comprise the customary cast-iron legs A, top B, permanently secured thereto and having an opening through it for permitting the machine-head to be raised and lowered, a leaf C, hinged to the top, end pieces D, and a back piece E, fixedly secured to the legs, and a hinged front piece F, the top, leaf, ends, back, and front being so constructed and arranged that they form a casing open only at bottom, within which the machine-head G may be stowed when not in use.

The invention is not concerned with the details in the construction of the cabinet, or rather the frame thereof, further than as hereinafter pointed out.

The front F is hinged to the top B at its upper edge, and at its lower edge it is connected, by means of a link *f*, with a vertically-movable platform H, by which the machine-head G is carried. The platform H is in the form of a rectangular frame having around its inner edge a rabbet, in which the base *g* of the machine-head is received, so that the top of said base and the top of the platform are flush. At its rear side the base is connected with the platform by hinges *g'*, so that the head may be tipped back in the customary manner for the purpose of giving access to the parts beneath the base.

The top preferably comprises two parts, one of which is in the form of a large rectangular frame permanently secured to the legs A and the other of which is in the form of a smaller rectangular frame B', resting upon the part first aforesaid and permanently secured thereto. The object of this construction is to bring the then upper surface of the leaf C flush with the top of the frame B' when the leaf is open, as shown more clearly in Figs. 1 and 3. The part B' of the top has an opening through which the machine-head moves as the platform H is moved up and down, and the platform enters and fits this opening snugly, so that its upper surface is flush with part B' and so that when in place, as shown by full

lines in the drawings, the platform is absolutely and positively held against any horizontal movement whatever. The platform has also portions *h*, which engage the under side of the top and when in engagement positively prevent any further upward movement of the platform. In the drawings I have shown the parts *h* as consisting of short flanges projecting from the ends of the platform.

The platform is guided in its up and down movements by vertical guides, which I have shown as consisting of two vertical rods I, secured centrally to the legs A and extending from the top of the cabinet downward a sufficient distance to permit of the necessary vertical movement of the head. These guides are engaged by brackets J and J', carried by the platform H, the brackets being provided with features complementary to the guides, so that the brackets are confined to rectilinear movements. Their bearing-surfaces are of sufficient length to prevent any considerable tipping or angular movement of the platform, so as to prevent binding upon the guides, due to any tendency on the part of the platform to such tipping or angular movement. Near the bottom of the guides are stops *i*, which are adapted to engage the brackets J J' and support them and their accessories when the platform is lowered to bring the machine-head within the cabinet, as indicated by dotted lines.

For raising and lowering the platform I use a single cable K, one end of which is permanently connected to the under side of the top, as shown at *k*, while the other end is connected at *k'* to the leaf C. Between these points of connection the cable is trained over pulleys L, M, and N. The pulley L is journaled to a bracket supported by the top B, said top being provided with an opening *b*, through which the cable passes. The pulleys M and N are supported by brackets *m* and *n*, respectively, which are carried by and project downward from the under side of the platform H. The pulleys L and M are so located with respect to each other that the portion of the cable which extends from the periphery of one to the periphery of the other will be vertical, and the pulley N is so located with respect to the point of attachment *k* that the portion of the cable which extends from said point of attachment to the periphery of the pulley N will be vertical. With this arrangement the strains which the cable puts upon the platform H will be vertical and parallel with the guides I.

It will be understood without further description that the opening of the leaf C (or, in other words, moving it from the position indicated by dotted lines in Figs. 1 and 2 to the position shown by full lines in Figs. 1 and 3) will draw the cable upward over the pulley L, and thus cause the platform and its accessories to be lifted from the position indicated by the



dotted lines in Figs. 1 and 2 to the positions shown by full lines in said figures. The reverse movement of the leaf will allow the platform and its accessories to move downward from the positions shown by full lines to the positions indicated by dotted lines.

The length of the cable is preferably such that the flanges *h* of the platform will come to bearings against the top a trifle before the leaf reaches its fully-open position, so that the final movement of the leaf will put the cable under sufficient tension to press the platform firmly and solidly against the top, and thereby hold it as against any downward pressure which will be put upon it in ordinary use. It is also preferably such that the brackets *J* and *J'* will come in contact with the stops *i* a trifle before the leaf reaches its closed position, so that the cable is relieved of the weight of the platform and its accessories, and said weight is thrown directly onto the guides, thus relieving the cable, the pulleys, and the wooden portions of the cabinet of the weight of the platform and the parts carried by it when the machine-head is stowed away. Another advantage of this arrangement is that it permits a slight movement of the leaf near its closed position independent of the other parts, so that the fingers may be inserted under it for lifting it before any substantial weight falls upon it. I prefer also to so locate the pulleys that the cable will pass through or close to the vertical line of the center of gravity of the platform and the parts carried by it, because this arrangement tends to distribute the weight of the parts equally on the opposite side of the lines of force which are exerted upon the platform in raising and lowering it. In the drawings I have shown that portion of it which passes from the pulley *M* to the pulley *N* as being on a diagonal line, which passes beneath the vertical arm of the head.

For the purpose of catching any oil that may drip from the working parts and at the same time inclosing and protecting said parts a drip-pan *O* is secured to the under side of the platform *H*. This pan is of sufficient depth to accommodate the moving parts, (not shown in the drawings,) and in order to accommodate the pan the brackets *m* and *n* are made of sufficient length to bring the cable below the bottom of the pan.

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

1. In a sewing-machine cabinet, the combination of a top having an opening through it, a leaf hinged to the top at one end of said opening and adapted when closed to cover the opening and when open to form an extension of the top, a platform movable up and down and adapted to carry a machine-head, a pulley supported by the cabinet at one side of said opening, a cable attached to the cabinet at the

opposite side of said opening, whence it crosses the opening, below the top, passes upward over said pulley and is attached to the leaf and means engaging the cable between its point of attachment to the cabinet and its point of contact with the pulley, for transmitting movement from the cable to the platform, substantially as described.

2. In a sewing-machine cabinet, the combination of a top having an opening through it, a leaf hinged to the top at one end of said opening and adapted when closed to cover the opening and when open to form an extension of the top, a platform movable up and down and adapted to carry a machine-head, a pulley supported by the cabinet at one side of said opening, a cable attached to the cabinet at the opposite side of said opening whence it crosses the opening, below the top, passes upward over said pulley and is attached to the leaf, pulleys engaging the cable between its point of attachment to the cabinet and its point of contact with the pulley first aforesaid, and means interposed between said pulleys and the platform, whereby as the leaf is opened said pulleys are moved upward and the platform is moved with them, substantially as described.

3. In a sewing-machine cabinet, the combination of a top having an opening through it, a leaf hinged to the top at one end of said opening and adapted when closed to cover the opening and when open to form an extension of the top, a horizontal platform adapted to support a machine-head and movable bodily up and down, guides for confining the platform to rectilinear movement, a pulley supported by the cabinet at one side of said opening, a cable attached to the cabinet at the opposite side of said opening, whence it crosses the opening, below the top, passes upward over said pulley and is attached to the leaf, and means carried by the platform and engaging the cable between its point of attachment to the cabinet and its point of contact with said pulley for transmitting movement from the cable to the platform, substantially as described.

4. In a sewing-machine cabinet, the combination of a top having an opening through it, a leaf hinged to the top at one end of said opening and adapted when closed to cover the opening and when open to form an extension of the top, a horizontal platform adapted to support a machine-head and movable bodily up and down, a pulley supported by the cabinet at one side of said opening, a cable attached to the cabinet at the opposite side of said opening whence it crosses the opening, below the top, passes upward over said pulley and is attached to the leaf, and vertical guides at the two remaining sides of said opening for guiding the platform in its up and down movement, and holding it horizontal, substantially as described.

5. In a sewing-machine cabinet, the combi-



nation of a top having an opening through it, a leaf hinged to the top at one end of said opening and adapted when closed to cover the opening and when open to form an extension of the top, a horizontal platform adapted to support a machine-head and movable up and down, a pulley supported by the cabinet at one side of the opening, a cable attached to the cabinet at the opposite side of said opening whence it crosses the opening, passes over said pulley, and is attached to the leaf, pulleys carried by the platform and engaging the cable, vertical guides located at the remaining two sides of the opening, and slides carried by the platform and engaging the guides, substantially as described.

6. In a sewing-machine cabinet, the combination of a top having an opening through it, a hinged leaf adapted to cover said opening, a platform movable up and down and adapted to support a machine-head, a pulley supported by the cabinet at one side of the opening, a cable attached to the cabinet at the opposite side of said opening whence it crosses the opening, below the top, passes over said pulley and is attached to the leaf, and means carried by the platform and engaging the cable between its point of attachment to the cabinet, and its point of contact with the pulley through the medium of which the platform is supported, said point of attachment and pulley being located in a vertical plane which passes through the center of gravity of the platform and its accessories, substantially as described.

7. In a sewing-machine cabinet, the combination of a top having an opening through it, a leaf hinged to the top at one end of said opening and adapted when closed to cover the opening and when open to form an extension of the top, a horizontal platform movable bodily up and down and adapted to carry the machine-head, a pulley supported by the cabinet at one side of said opening, a cable attached to the cabinet at the opposite side of said opening whence it crosses the opening below the top, passes over said pulley and is attached to the leaf, and pulleys carried by the platform and engaging the cable between its point of attachment to the cabinet and its point of contact with the pulley first aforesaid, the several pulleys and the point at which the cable is attached to the cabinet being so located that the depending portions of the cable are vertical, substantially as described.

8. In a sewing-machine cabinet the combination of a top having an opening through it, a leaf hinged to the top at one end of said opening and adapted when closed to cover the opening and when open to form an extension of the top, a horizontal platform movable bodily up and down and adapted to support a machine-head, a pulley supported by the cabinet at the rear side of said opening, a cable attached to the cabinet at the front side of said

opening, said pulley and the point of attachment of the cable being so located that a line passing from the circumference of the pulley to said point of attachment lies in a vertical plane which crosses said opening, said cable being passed over said pulley and attached to the leaf, means engaging the cable between its point of attachment to the cabinet and its point of contact with the pulley for transmitting movement from the cable to the platform, vertical guides secured to the frame of the cabinet at the ends of the opening and lying in a vertical plane passing centrally through the opening, and slides carried by the platform and engaging the guides, substantially as described.

9. In a sewing-machine cabinet, the combination of a top having an opening through it, a hinged leaf adapted when closed to cover the opening and when open to form an extension of the top, a platform movable up and down and adapted to carry the machine-head, a pulley supported by the cabinet at one side of said opening, a cable attached to the cabinet at the opposite side of said opening whence it crosses the opening, passes over said pulley and is attached to the leaf, a pair of pulleys carried by the platform and engaging the cable, and means for guiding the platform in its up-and-down movement, the platform being provided with a part which enters the opening and fits it snugly, and with flanges for engaging the under side of the top and preventing the further upward movement of the platform as the leaf is nearing its open position, substantially as described.

10. In a sewing-machine cabinet, the combination of a top having an opening through it, a leaf hinged to the top at one end of the opening and adapted when closed to cover said opening and when open to form an extension of the top, a horizontal platform movable bodily up and down and adapted to support a machine-head, guides for confining the platform to a rectilinear movement, a pulley supported by the cabinet at the rear side thereof, a cable having one end attached to the cabinet at the front side thereof and its other end attached to the leaf, a pair of pulleys located in a vertical plane touching the periphery of the pulley first aforesaid and the point at which the cable is attached to the cabinet, and brackets attached to the platform and supporting said pair of pulleys with the periphery of one of them in vertical line with the periphery of the pulley first aforesaid and the periphery of the other in vertical line with the point at which the cable is attached to the cabinet, substantially as described.

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Witnesses:

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