V. BLOOM.

SEWING MACHINE STRUCTURE.

APPLICATION FILED JAN. 11, 1909.

943,623. Patented Dec. 14, 1909.

6 SHEETS—SHEET 1.

Fig. 11.

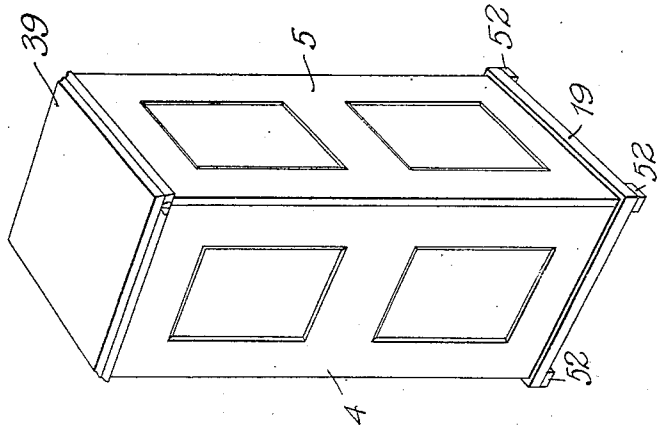
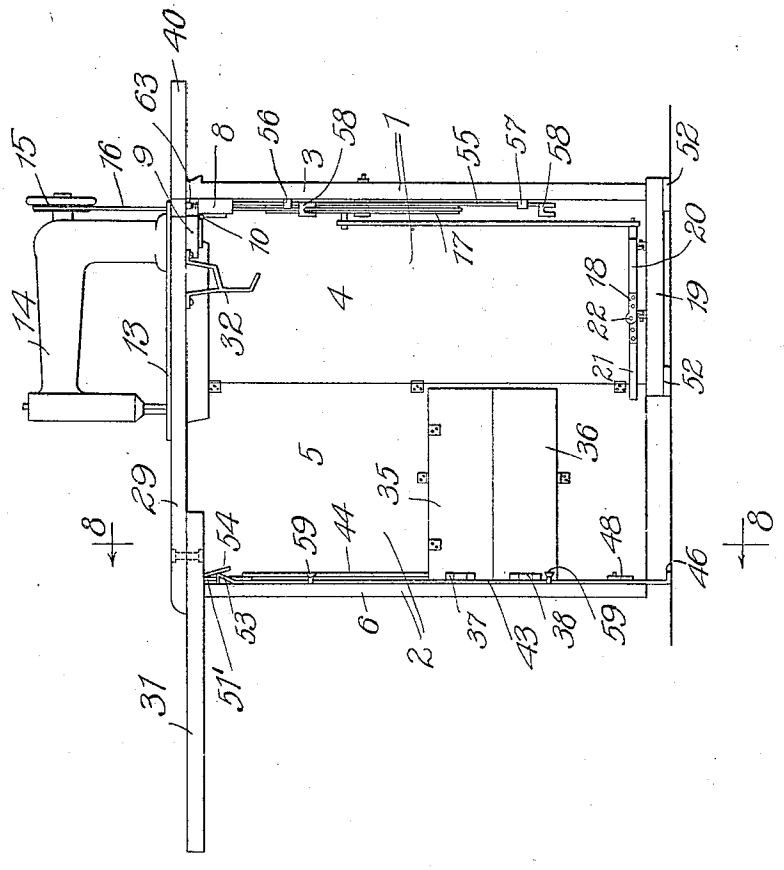


Fig. 1.



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6 SHEETS—SHEET 2.

Fig. 2.

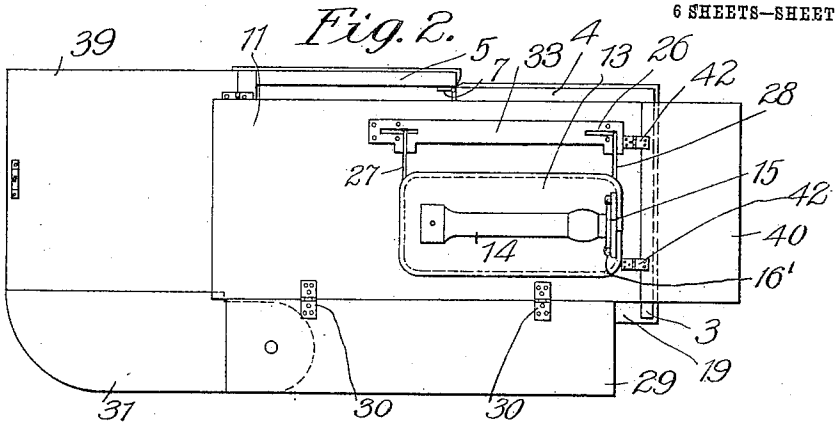


Fig. 3.

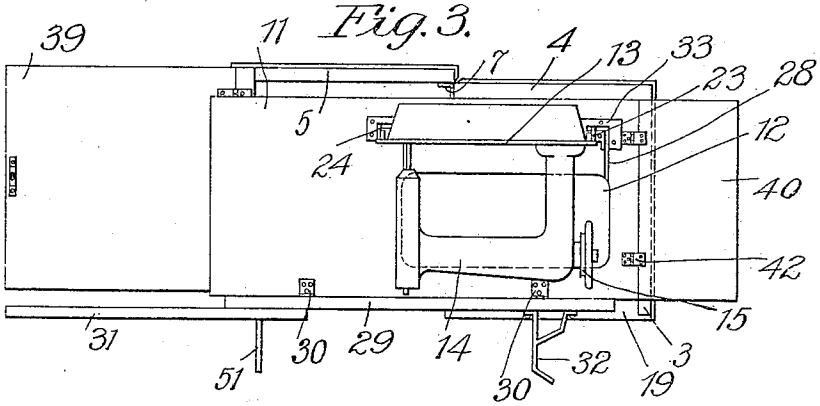
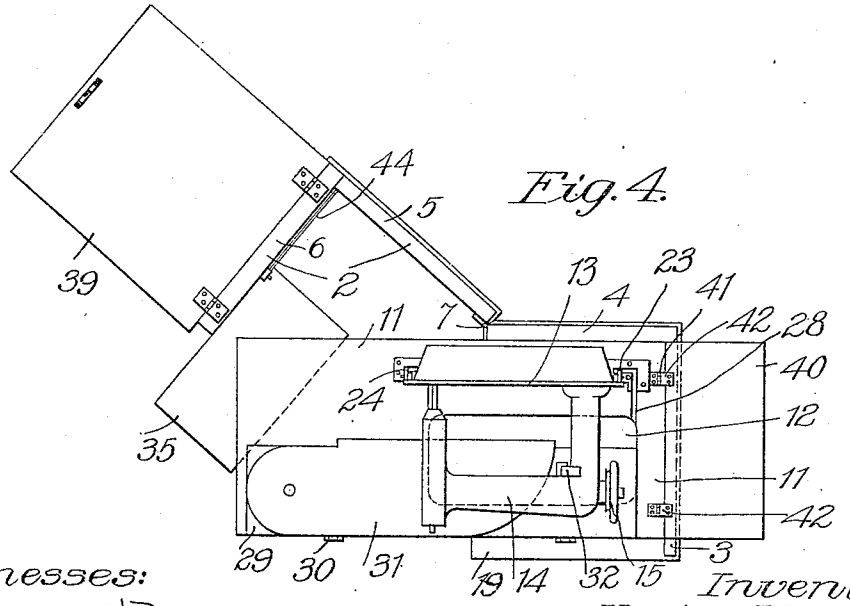


Fig. 4.



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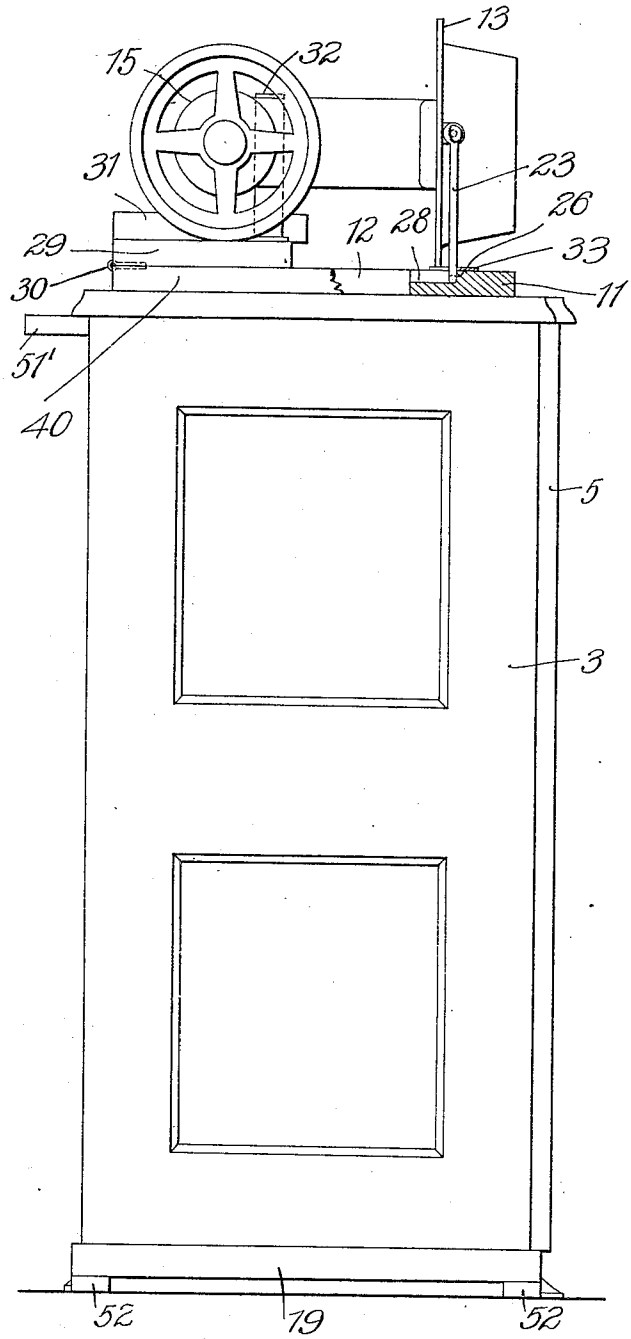
6 SHEETS—SHEET 3.

Fig. 5.



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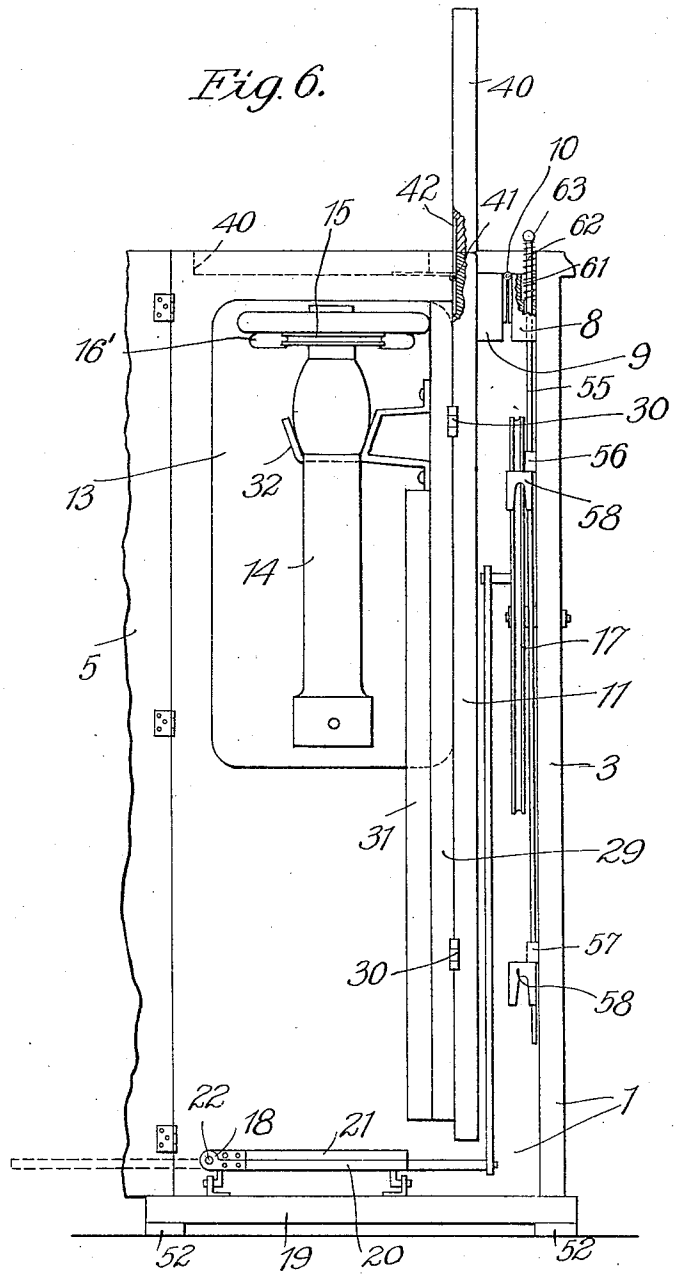
6 SHEETS—SHEET 4.

Fig. 6.



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6 SHEETS—SHEET 5.

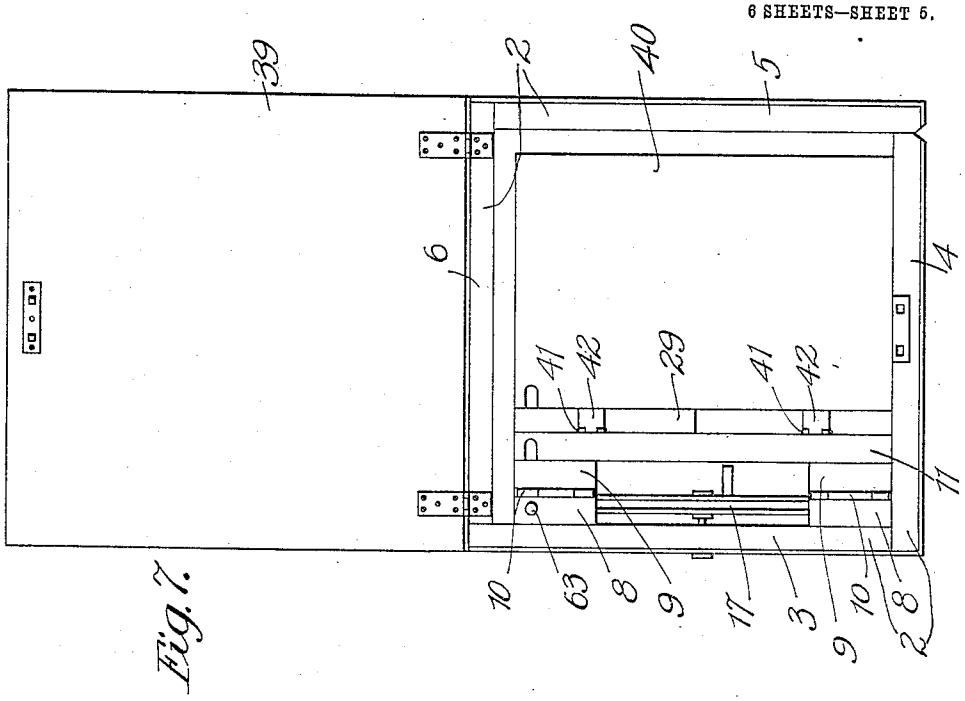

Fig. 7.

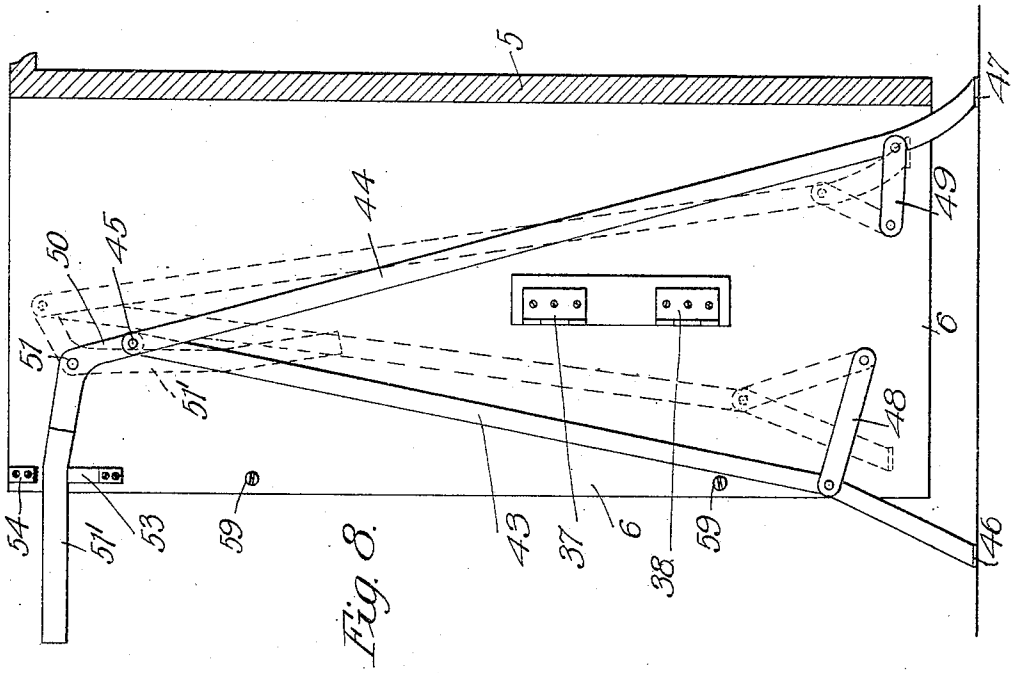

Fig. 8.

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6 SHEETS—SHEET 6.

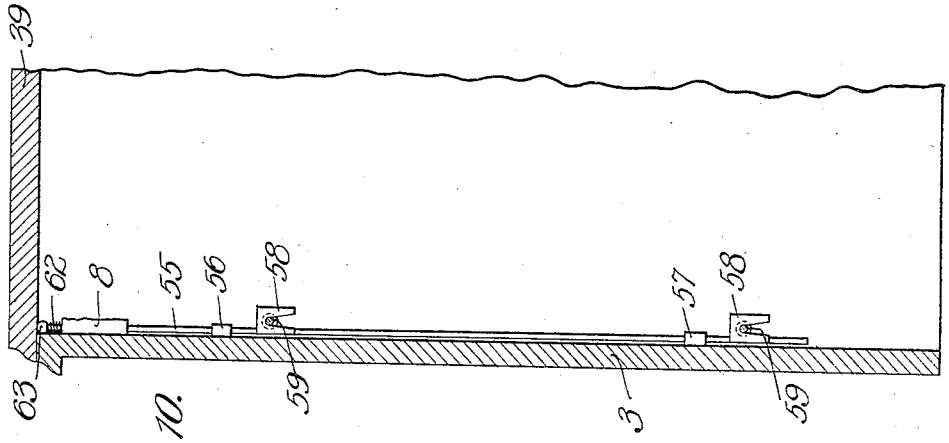

Fig. 10.

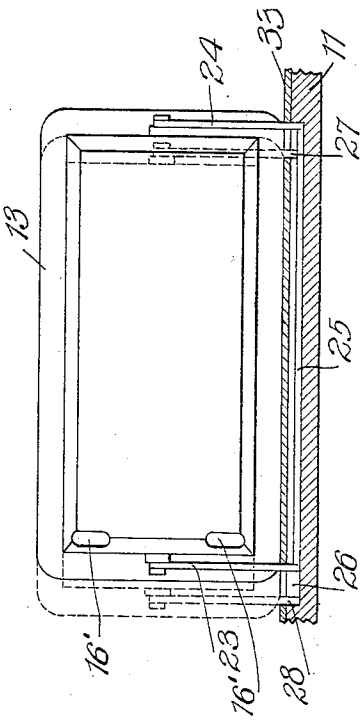

Fig. 9.

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UNITED STATES PATENT OFFICE.

VICTOR BLOOM, OF CHICAGO, ILLINOIS.

SEWING-MACHINE STRUCTURE.

943,623. Specification of Letters Patent. Patented Dec. 14, 1909.

Continuation of application Serial No. 383,809, filed July 15, 1907. This application filed January 11, 1909. Serial No. 471,583.

To all whom it may concern:

Be it known that I, VICTOR BLOOM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Sewing-Machine Structures, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to sewing machine structures and has for its object improved arrangement for permitting the machine parts to be folded together, and the supporting parts to be folded together to form a compact and neat looking cabinet for containing the folded machine parts, the cabinet requiring only a fraction of the space taken up by the machine structure when unfolded into operative position.

The apparatus described in this application was originally described in my application filed July 15, 1907, Serial No. 383,809.

In the accompanying drawings which clearly illustrate my invention Figure 1 is a front elevation of the unfolded structure in position for use; Fig. 2 is a plan view of Fig. 1; Fig. 3 is a plan view showing the head in horizontal position; Fig. 4 is a plan view showing the main supporting frame part swung to a position to enable other parts to be folded; Fig. 5 is an enlarged end view taken from the right of Fig. 3; Fig. 6 is an enlarged front elevation view of the right half of the structure showing the machine head in its folded position; Fig. 7 is a top view of the folded structure with the cover open; Fig. 8 is an enlarged sectional view taken on plane 8, 8, of Fig. 1; Fig. 9 is a sectional view showing the base of the machine head and its attachment to the machine table; Fig. 10 is a sectional view showing principally the locking arrangement between the supporting sections of the structure; and Fig. 11 is a perspective view of the folded cabinet structure.

The main supporting frame comprises the sections 1 and 2, the section 1 comprising the walls 3 and 4 at right angles with each other, and the section 2 comprising the walls 5 and 6 at right angles to each other, the sections being rotatable by virtue of hinges 7 connecting the walls 4 and 5, so that the sections may be unfolded to form a rectangular open compartment, as shown in Fig. 1, or a rectangular closed compartment, as shown in Fig. 7. In the open position, as shown in Fig. 1, the walls 4 and 5 are parallel and form the rear wall of the operative machine supporting structure, while the walls 3 and 4 form the side inclosures of this structure. Extending transversely across the top of the wall 3 is a strip 8, to which is hinged a strip 9 by means of hinges 10, this strip 9 being secured to the under side and near the right end of the machine shelf or table 11, the left end of this table resting on top of the wall 6 when the structure is in its open operative position, as shown in Fig. 1.

As best shown in Figs. 3 and 4, the machine shelf has the opening 12, which in the operative condition of the structure is closed by the base 13 supporting the machine head 14, which may be of any well known construction. The machine parts within the head are driven by the belt wheel 15 pivoted to the machine head, the belt 16 passing over said wheel and through openings 16′ in the base and about the crank wheel 17, which is connected with the pedal frame 18 pivoted to the base 19, secured to the lower ends of the walls 3 and 4 forming the section 1.

As shown in Fig. 1, the pedal frame when in operative position extends into the section 2, but I construct the pedal frame of a stationary right half 20 and the left half 21 pivoted at 22 to the section 20 to be folded against the top of said section to lie wholly within the section 1 and out of the way of other parts during the folding operation.

Referring particularly to Fig. 9, the machine base 13 at its under side is pivoted at its ends to the limbs 23, 24 of a U-shaped frame whose base 25 pivots in a slot 26 cut in the machine table to the rear of the opening 12. When the head is in operative position, as shown in Figs. 1 and 2, the U-frame is in horizontal position with its limbs lying in slots 27 and 28 cut in the machine table 11. When the structure is to be folded into its compact form, the machine head will assume a horizontal position with reference to the table. In this operation the machine head is lifted and swung to the rear with the U-frame, until said frame assumes a

vertical position, and the head is then turned over to its horizontal position, as shown in Figs. 3, 4 and 9. Pivoted to the front edge of the machine table 11 is a shelf 29, adapted by means of hinges 30 to be swung upwardly and rearwardly to lie against the table 11. Pivoted to the left end of and below the shelf 29 is the extension 31. Also carried by the shelf 29 is a hook frame 32 for supporting the machine head when the table is folded into a final vertical position. When the structure is to be folded the extension 31 is first swung in a counter-clockwise direction into position underneath the shelf 29. The machine head is then raised, as before explained, and the shelf with the extension swung over against the table and the hook structure 32 into operative position above the shelf. The machine head is then swung down to its horizontal position adjacent the hook 32. The slot 26 is slightly longer than the U-frame, so that after the head has been moved to horizontal position, it can be slid to the left and into the hook frame 32. As shown, an escutcheon plate 33 covers the slot 26. After such folding of the parts supported from the table 11, the frame section 2 is swung rearwardly away from the left end of the table, which can then be dropped into vertical position into the section 1, as shown in Fig. 6.

The section 2 accommodates the receptacles 35 and 36, hinged at their edges 37 and 38 to the wall 6. During the folding operation these receptacles are swung forwardly against the wall 6 to enable the machine shelf 11 to be swung downwardly to its vertical position. After the shelf has been folded to its vertical position, the receptacles are again restored to their original position so that the section 2 can be swung to its folded position to form the containing cabinet shown in Fig. 11. After the sections have been thus folded together, the cover 39 is closed, this cover being hinged to the top edge of wall 6, as best shown in Fig. 4, to form a shelf extension to the table when the parts are in operative position. A shelf 40 can also be provided and pivoted to the right end of table 11. Referring to Fig. 6, this shelf assumes a vertical position when the machine table is swung to its vertical position, and is then swung downwardly into horizontal position, as shown by the dotted lines. The pivots 41 of the hinges 42, connecting the shelf to the table, are a sufficient distance within the edge of the table so that the shelf 40 will lie below the top edges of the sections 1 and 2, so that the cover 39, when closed, engages these edges.

In Figs. 1 and 8 I have shown mechanism for supporting the section 2 when swung to operative position. Two rods 43 and 44 are pivoted together at their upper ends at 45, the rods spreading and their lower ends 46 and 47 being expanded to form supporting feet. A link 48 is pivoted at one end near the lower end of the rod 43 and its other end is pivoted to the wall 6. A link 49 is pivoted to the rod 44 near its lower end and its other end is also pivoted to the wall 6. The upper ends of the rods 43 and 44 are pivoted to the arm 50 of a bell crank lever pivoted at its elbow 51 to the wall 6. When the structure is to be folded, the other arm 51′ of the bell crank lever is swung inwardly and thereby raises the arm 50 and with it the rods 43 and 44, and by virtue of the links 48 and 49 the rods 43 and 44 during their upward movement are also moved toward each other, the result being that the rods are moved entirely within the edges of the wall 6, as shown by dotted lines in Fig. 8. When the structure is unfolded to its open, operative position, the arm 51′ is raised to a horizontal position, as shown in Fig. 8, and the rods 43, 44 move downwardly and separate so that their foot ends 46 and 47 will be on a level with the foot blocks 52 secured to the under side of base 19 of section 1. To hold the arm 51′ in its horizontal position, a shelf 53 is secured near the front and upper edge of the wall 6, the arm 51 being slid about and to the top of said shelf and held in position thereon by a spring 54, as best shown in Fig. 1. During the folding operation the arm 51′ is moved slightly to the right to clear the shelf 53 and is then swung down to the dotted position shown.

In Figs. 1 and 6 are shown locking means for locking the frame parts together after folding. Rod 55 slides in guides 56, 57 extending from the wall 3 and this rod carries slotted locking plates 58 for engaging with screws 59 extending from the inner face of wall 6. The rod 55 at its upper end passes through the block 8, having spring pocket 61 containing a spring 62, which encircles the rod and abuts against the rounded head 63 thereof and this spring tending to hold the rod in an up position to hold the locking plates 58 out of locking position. When the cover 39 is closed it strikes the head 63, and the rod 55 is pushed downwardly and the plates 58 hooked over the screws 59 to lock the sections 1 and 2 together. The lifting of the cover then automatically causes unlocking of these sections. The various walls, which when folded form the inclosing cabinet, can of course be suitably paneled and ornamented, the cabinet being of very neat appearance and requiring very little space. When it is desired to use the machine parts, the various elements can be quickly unfolded to assume their operative positions and can as readily be refolded.

Having thus described my invention, I desire to secure the following claims by Letters Patent:

1. In a structure of the class described, the combination of two angular sections hinged together, a base member for one of said sections, said sections being adapted to be swung to open position to form an open compartment and to be swung to a closed position to form a closed compartment with said base member, a machine table hinged to one of said sections, shelf members pivoted to the front edge of said table, a machine head supported by the table and adapted to be swung from a vertical to a reclining position, said table being adapted to be swung downwardly into vertical position before the sections are folded together, a hook member carried by one of the shelf members, said hook member serving to receive and to support the machine head when the table has been swung into vertical position, and a cover hinged to one of the sections for closing the compartment formed by the folded together sections.

2. In a structure of the class described, the combination of two frame sections hinged together to be swung to an open position and to a closed position, a base member for one of said sections, said sections when in open position forming an open compartment, and said sections when in closed position forming a cabinet with said base, a machine table hinged to a top edge of one of said sections and adapted when in horizontal operative position to rest on a top edge of the other section, a machine head on said table, a U-shaped frame pivoted at its ends to the machine head and at its base being pivoted in a slot formed in the machine table, said machine head being adapted to be swung with said pivot frame from a vertical position to a position parallel to the table, a shelf member extending forwardly from the front edge of the table, said table being adapted to be swung downwardly into one of said sections to assume a vertical position therein, and a hook carried by the shelf member for receiving and supporting the head when the table is swung to a vertical position.

3. In a structure of the class described, the combination of a vertical supporting frame, a machine table pivoted at one end to the supporting frame and adapted to be swung downwardly into said frame to assume a vertical position, a machine head on said frame, a shelf member extending from the front edge of said table and a hook on said shelf member for receiving and supporting the machine head when the table is swung into vertical position.

4. In a structure of the class described, the combination of a vertical supporting frame, a machine table pivoted at one end to the upper edge of said supporting frame and adapted thereby to assume a horizontal operative position or a vertical position within the supporting frame, a machine head supported by the table when in its horizontal position, a shelf member pivoted to the front edge of said table, a hook member carried by the shelf member, said shelf member being adapted to be swung against the table to carry the hook member into position adjacent the machine head, said head being received and supported by the hook when the table is swung to its vertical position.

5. In a structure of the class described, the combination of a vertical supporting frame, a machine table pivoted at one end to the upper edge of said supporting frame and adapted thereby to assume a horizontal operative position or a vertical position within the supporting frame, a machine head supported by the table when in its horizontal position, a shelf member pivoted to the front edge of said table, a hook member carried by the shelf member, said shelf member being adapted to be swung against the table to carry the hook member into position adjacent the machine head, said head being received and supported by the hook when the table is swung to its vertical position, and an additional framework for coöperating with the supporting framework to form an inclosing cabinet for the machine table and head.

6. In a structure of the class described, the combination of a supporting and inclosing frame, a machine table hinged at one end to the top edge of said supporting frame and adapted thereby to assume a horizontal operative position and a vertical position within the frame, a machine head, a U-shaped frame pivoted at its ends to the machine head and having its base pivoted in a slot formed in the machine table, said U-frame enabling the head to be readily moved from a vertical operative position to an inclined position with respect to the table, and a hook member for receiving and supporting the head when the table is swung to assume a vertical position within the supporting frame.

7. In a structure of the class described, the combination of a supporting and inclosing frame, a machine table hinged at one end to an upper edge of said frame and adapted thereby to be swung into horizontal operative position or into a vertical position within the frame, a machine head on the table, a U-shaped frame pivoted at its ends to the machine head and having its base pivoted in a slot formed in the machine table, said U-frame enabling said head to be readily raised and swung to an inclined position with respect to the machine table, said slot being longer than the U-base for allowing longitudinal movement of the U-frame and the head pivoted thereto, and a hook member for receiving and supporting

the head when moved longitudinally and when said table is swung from horizontal into vertical position.

8. In a structure of the class described, the combination of a supporting and inclosing frame, a machine table hinged at one end to an upper edge of said frame and adapted thereby to be swung into horizontal operative position or into a vertical position within the frame, a machine head on the table, a U-shaped frame pivoted at its ends to the machine head and having its base pivoted in a slot formed in the machine table said U-frame enabling said head to be readily raised and swung to an inclined position with respect to the machine table, said slot being longer than the U-base for allowing longitudinal movement of the U-frame and the head pivoted thereto, a shelf pivoted to the front edge of said table, a hook extending from said shelf, said shelf being adapted to be swung against the face of the table to carry the hook into position to receive and to support the head when said head is moved longitudinally and said table swung into vertical position within the supporting frame.

9. In a structure of the class described, the combination of a supporting and inclosing frame, a machine table hinged at one end to an upper edge of said frame and adapted thereby to be swung into horizontal operative position or into a vertical position within the frame, a machine head on the table, a U-shaped frame pivoted at its ends to the machine head and having its base pivoted in a slot formed in the machine table, said U-frame enabling said head to be readily raised and swung to an inclined position with respect to the machine table, said slot being longer than the U-base for allowing longitudinal movement of the U-frame and the head pivoted thereto, a hook member for receiving and supporting the head when moved longitudinally and when said table is swung from horizontal into vertical position, and additional supporting framework adapted to support the other end of the table when in its horizontal position and adapted when said table has been swung into vertical position to form an inclosing cabinet with the supporting frame.

10. In a structure of the class described, the combination of a supporting frame, a machine table hinged at one end to an upper edge of said supporting frame and adapted thereby to assume a horizontal operative position and a vertical position within the frame, the other end of said table when in horizontal position being adapted to rest on another edge of the supporting frame, a machine head supported in vertical position on said table when said table is in horizontal position, said head being adapted to be swung over on its side against the table, and a hook for receiving and supporting the machine head when said head is turned over on its side and when said table is swung into vertical position within the frame, said framework being in sections hinged together and adapted to form an inclosing cabinet for the machine table and parts when said table has been swung into vertical position.

In witness whereof, I hereunto subscribe my name this 4th day of January, A. D. 1909.

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