

Aug. 7, 1928.

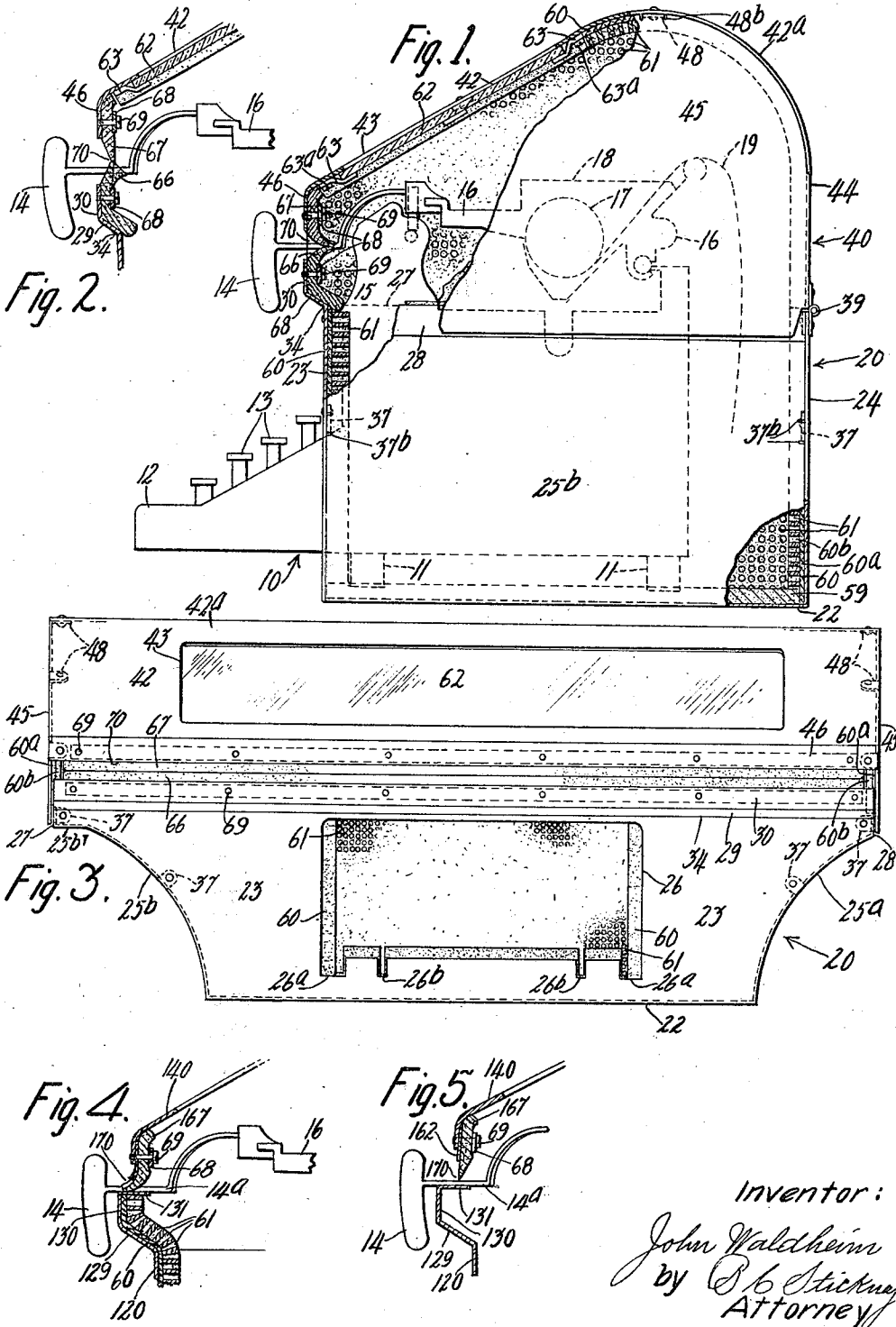
1,680,124

J. WALDHEIM

TYPEWRITING MACHINE

Filed June 13, 1925

2 Sheets-Sheet 1



Aug. 7, 1928.

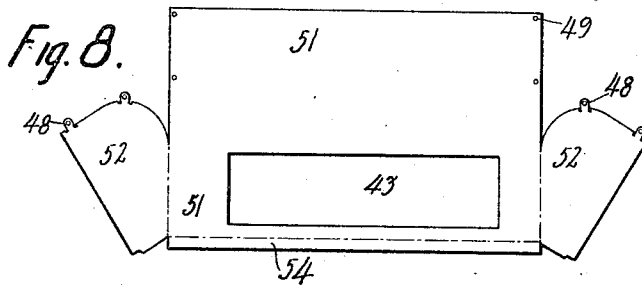
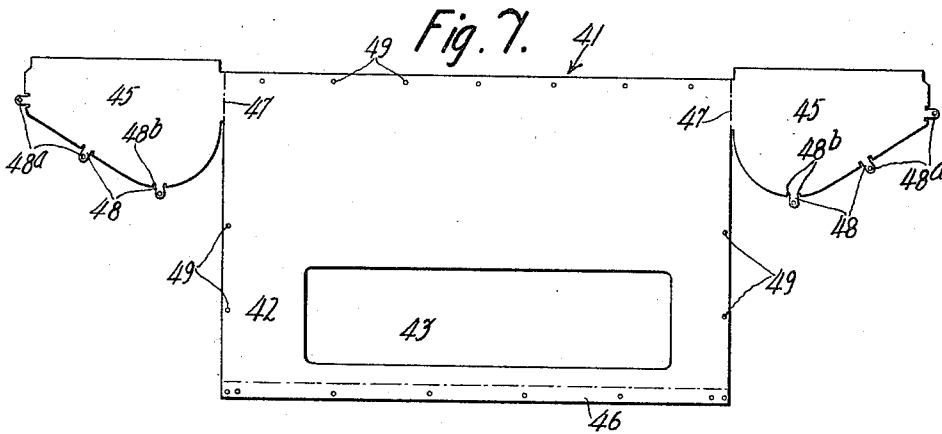
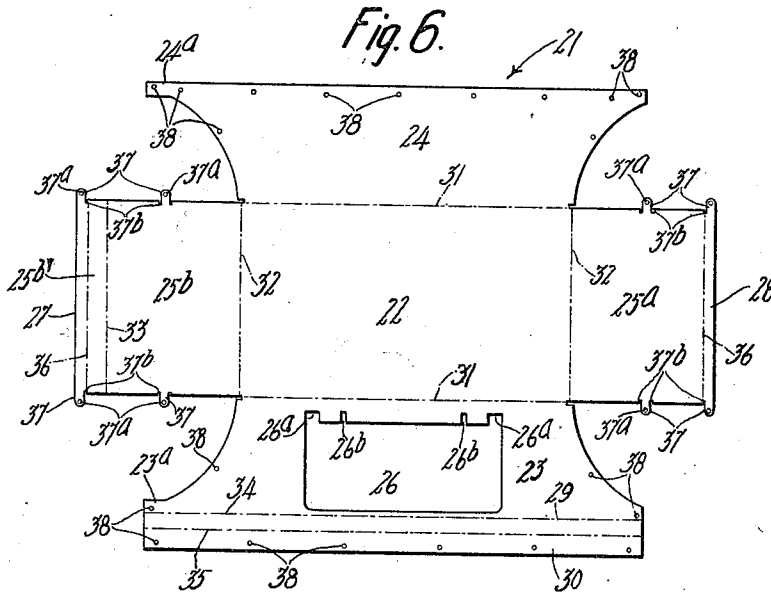
1,680,124

J. WALDHEIM

TYPEWRITING MACHINE

Filed June 13, 1925

2 Sheets-Sheet 2



Inventor:
John Waldheim
by E. B. Hickney
Attorney

UNITED STATES PATENT OFFICE.

JOHN WALDHEIM, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO UNDERWOOD ELLIOTT FISHER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPEWRITING MACHINE.

Application filed June 13, 1925. Serial No. 36,792.

This invention relates to sound-deadening cabinets for typewriting machines.

An object of the invention is the provision of a sound-deadening cabinet for a typewriting machine, which may be lighter, more durable and less expensive to manufacture than heretofore.

The outer casing or shell of the cabinet may comprise a lower body-part and a cover hinged thereto at the back, each made from a single blank of light sheet-metal. These parts may be quickly shaped, thereby providing a bottom, end walls and front and back walls for the body-part-casing, and a top, end walls and front and back walls for the cover-casing. Integral, transversely-bent flaps are provided on all end walls for fastening certain edges of the casings. Fewer assembly operations are required than usual.

One of the features is the provision of a light and inexpensive sound-deadening lining. The sound-deadening property of the cabinet resides mainly in the light, felt lining attached to the inner surfaces of the metal casing, the lining having small closely-spaced pits or cavities throughout its area impinged by sound-waves.

The cabinet may have a glass-covered view-opening of the usual kind, and a slot sealed by novel thick felt lips through which may project extended carriage finger-pieces. These resilient lips may be used without reinforcing rubber strip.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is an end elevation, partly in section, of an Underwood typewriting machine enclosed in a sound-deadening cabinet embodying the present invention.

Figure 2 is a fragmentary sectional view of the cabinet, embodying the present invention, showing the front part of the cover of the cabinet partly raised from the lower body-part.

Figure 3 is a front elevational view of the cabinet, embodying the present invention.

Figure 4 is a fragmentary sectional view of a cabinet, embodying the present invention provided with one lip for sealing the slot through which finger-pieces extend.

Figure 5 is a similar view, the cover being shown in partly raised position.

Figure 6 is a diagram on a reduced scale of a sheet-metal blank from which the casing of the lower body-part of the sound-deadening cabinet embodying the present invention may be made.

Figure 7 is a diagram on a reduced scale of a sheet-metal blank from which the casing of the cover of the sound-deadening cabinet embodying the present invention may be made.

Figure 8 is a diagram on a reduced scale of another form of a sheet-metal blank from which the casing of the cover of the sound-deadening cabinet of the present invention may be made.

An Underwood typewriting machine may be supported on feet 11 and have a frame-extension 12 in which are arranged banks of keys 13. A finger-piece 14, arranged for manipulating the carriage 16, may extend outside the sound-deadening cabinet of the present invention through a slot 70 at the front, sealed by yielding felt lips 66 and 67. A platen 17 may be mounted in side frames 18 on the carriage 16 in the usual way.

The cabinet may have a lower body-part provided with a casing or shell made from a single blank 21 of thin sheet-metal. The casing-blank 21 may have a bottom portion 22 and plane front and back wall-portions 23 and 24, and partly concave end wall-portions 25^a and 25^b bent upwardly about fold-lines 31 and 32, respectively. The right and left ends of the front and back walls 23 and 24 may be concave and arranged to join closely with the concave end portions of the walls 25^a and 25^b. The front wall 23 may have an outwardly-extending offset to provide room for the lips 66 and 67 between the front wall and the frame-member 15 of the machine 10. This offset may be made by bending a first front wall-extension 29 outwardly and upwardly about the fold-line 34, and then bending a second extension 30 vertically. Horizontal extensions 23^a, 24^a and 25^b are provided at the left of the front and back wall-portions 23 and 24 and the end wall-portion 25^b to provide room for travel of the carriage 16 which is greater to

the left than to the right. The concave end wall-portions of the lower body-part have vertical extensions 27 and 28 terminating level or flush with the top of the back wall 24. An opening 26 in the front wall 23 is provided for the frame-extension 12 and the banks of keys 13 to project through. The opening 26 may have notches 26^a and 26^b at its bottom for engaging closely around the usual right and left hand ribs of the typewriter-frame-extension 12, and the usual spacer-key-levers (not shown).

To fasten the bent end wall-portions 25^a and 25^b of the casing 21 to the bent front and back wall-portions 23 and 24, holes 38 may be provided in the latter positioned adjacent their edges at suitable intervals for registering with holes 37^a in flaps 37, integral with the concave end wall-portions 25^a and 25^b, and which may be bent transversely thereto to engage against the inner surfaces of said front and back walls 23 and 24 of the casing. The outer surfaces of said concave end wall-portions 25^a and 25^b are arranged to fit neatly flush with the concave edges of said front and back wall-portions 23 and 24. To permit the flaps 37 to be bent so that they may be riveted flat against the inner surfaces of the front and back walls 23 and 24 of the casing without twisting adjacent portions of the end walls, or otherwise marring the appearance of the finished cabinet, short slits 37^b are cut in the metal of the end walls on one or both sides of each flap. The above-described construction provides a light, inexpensive casing with neat, smooth edges and close joints where the end walls join the back and front walls.

A cover 40 may be pivoted to the body-part 20 at the back thereof by hinges 39. The outer casing or shell of the cover 40 may be made from a single blank 41 of thin sheet-metal. The casing 41 may have an upwardly-inclined flat top portion 42 provided with a work-sheet view or inspection opening 43 of the usual kind arranged to be closed with a glass plate 62 fastened to the cover by clips 63 and screws 63^a. The cover-casing 41 may have a rounded top portion 42^a, a back wall-portion 44, end wall-portions 45 and a low front wall-portion 46. Each of the end walls 45 may have a curved edge arranged for close engagement with the curved top-portion 42^a, and straight edges arranged for fitting with the inclined top portion 42 and the front wall 46, and a straight bottom edge. The end walls 45 may be integrally joined to the back wall 44 along the fold-lines 47, and may be fastened to the top and front wall-portions of the cover-casing 41 at suitable intervals by riveting to the same transversely-bent integral flaps 48 which have holes 48^a arranged to register with holes 49 adjacent

the edges of the top and the front wall-portions. The end wall-flaps 48 may be arranged with slits 48^b for being neatly riveted in the same way as described above for riveting the flaps 37.

It can be readily seen that the above-described casing for the sound-deadening cabinet of the present invention may be light in weight, strongly and inexpensively made, and be used with any kind of lining. It will also have much stronger joints and a smaller amount of them than usual casings of sound-deadening cabinets which are made of several different parts. Such construction is desirable, since joints may, through rough handling or after long use, open up and form cracks in a cabinet through which sound vibrations may escape.

An interior sound-deadening lining is provided for the cabinet of the present invention which includes two different kinds of lining. On the bottom of the cabinet may be cemented a smooth layer 59 of felt, as is usually employed. To the top, end walls and back and front walls, except as hereinafter noted, a lining 60 may be attached, preferably by cementing, which may have its inner surface, which is impinged by the sound-waves of the typewriter 10, roughened or pitted for diffusing and refracting the impinging sound-waves. Small closely-spaced cavities or pits 61 extend partly through the lining 60. By closely spacing the pits 61, the sound-waves are diffused and refracted, and thereby weakened, and also a very large per cent of the volume of the lining is occupied by the pits.

A preferred method in the present invention for making the pitted lining 60 for use in sound-deadening cabinets is to make the lining of two felt layers, which may be cemented together. An outer layer 60^a which comes next to the outer casing of the cabinet may be a smooth layer of felt. An inner layer 60^b may be thicker than the outer layer 60^a and have small, closely-spaced holes or perforations 61 extending entirely through it, which are made before the layers 60^a and 60^b are cemented together. The holes 61 may be made by punching a large number at one time. The many little disks cut out of a layer of felt will have a salvage value, since they can be used in making other materials, such as building paper. The net cost of the pitted, two-layer-felt, sound-resisting lining of the present invention may thereby be smaller than the cost of the usual smooth felt of the same thickness. It is obvious that it will be lighter. Reduction in the weight of the cover of a sound-deadening cabinet for a typewriting machine makes it easier for the operative to swing the cover open. A pitted or roughened lining of felt has better sound-retarding properties than a lining made of

an outer layer of felt and an inner perforated layer of metal or hard material. The portions of felt between the pits will offer more resistance to sound-vibrations than similar portions of harder material. Also, the sides of small pits and cavities in felt are rougher than the sides of small holes through a metal plate, and thereby offer more resistance to the passing of sound-waves in air through the small pits or holes to the bottom thereof.

To allow the extended finger-piece 14 to project outside the sound-deadening cabinet of the present invention, the front-wall extension 30 of the body-part 20, and the front wall 46 of the cover 40 do not meet. The slot 70 caused thereby in the cabinet is arranged to be sealed by two thick lips 66 and 67, made of closely-woven, resilient felt held to said front wall-extension 30 and said front wall 46 by metal plates 68 and screws 69. As shown in Figure 2, the rear sides of the lips 66 and 67 will lie in substantially the same vertical plane when the lips first touch each other as the cover 40 is being closed or opened. The front sides of the lips may be tapered inwardly, giving the adjoining extremities of the lips a substantially wedge-shaped cross-section. The arrangement of these wedge-shaped sections causes the lips 66 and 67 to be bent inwardly, as shown in Figure 1, when the cover is closed. By making the felt lips 66 and 67 sufficiently thick as regards the width of the slot 70 (approximately $\frac{1}{4}$ of an inch in the usual cabinets), they may have sufficient resiliency in themselves to seal the slot 70 and close around the finger-piece 14 without requiring additional reinforcing layers of resilient material, like rubber, as would be necessary were the lips thin. It will be noted that the lips 66 and 67 have extensions reaching downwardly and upwardly to the adjacent extremities of the lining 60, thereby serving to prevent any sound-waves from reaching the casing-wall portions 29, 30 and 46.

In Figures 4 and 5 are shown means of sealing with one felt lip 167, a slot 170 in the front of a sound-deadening casing embodying certain features of the present invention. The felt lip 167 and a resilient rubber, reinforcing strip next to the cover 140, are held on the cover by the plate 68 and screws 69. The front wall-extension 130 of the body-part 120 may have a level inwardly-projecting flange 131 arranged for engagement with the lip 167. A level straight portion 14^a of the finger-piece 14 may be arranged to slide along on top of the flange 131. The lower extremity of the lip 167 may have a front side which is substantially vertical when the cover 140 begins to raise from the body-part 120, and its rear side may be inclined downwardly and outwardly to form a substantially wedge-shaped sec-

tion with the front side. The lip 167 is bent outwardly on the flange 131 when the cover 140 is closed, thereby sealing the slot 170, and closing around the finger-piece portion 14^a, and allowing it to be freely moved sideways.

In Figure 8 is shown a diagram of another form of sheet-metal blank from which the casing of the cover of the sound-deadening cabinet of the present invention may be made. It may have its various portions, namely, the end walls 52, the top and back 51 and the front wall 54 bent to shape and fastened together in a similar manner to that described above for the cover-plate blank shown in Figure 7.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. The combination with a typewriting machine having an extended carriage finger-piece, of a sound-deadening cabinet having an outer casing of sheet-metal and an inner felt lining with an interior, pitted surface, said casing having a lower body-part arranged for receiving said machine and a cover, said body-part and said cover being hinged together at the back and arranged with a slot between them at the front through which said finger-piece projects, and two resilient felt lips arranged for sealing said slot.

2. The combination with a typewriting machine, of a sound-deadening cabinet having a sound-retarding lining made of two closely held layers of felt, the outer layer being of uniform thickness with smooth surfaces, and the inner layer having small, closely spaced holes or perforations through it.

3. An article of manufacture consisting of a lower body-part of a sound-proof cabinet for receiving a typewriting machine provided with a keyboard in such a manner as to expose the keyboard as a projection through an opening therein, said cabinet-body including a casing made from a sheet-metal blank having a plurality of members bent to relatively form a bottom, a vertically-disposed-plane front wall having an opening for said keyboard, a pair of opposite, concave end walls diverging outwardly at the top, and outwardly extending offset wall-member above said opening, also a vertically-disposed-plane rear wall having concave end portions diverging outwardly at the top, and two partly concave end walls having relatively plane portions extended vertically upward from the concave portions thereof.

4. An article of manufacture consisting of an upper cover-part of a sound-proof cabinet for a typewriting machine, including a casing made from a sheet-metal blank bent

to relatively form an upwardly inclined top curving downwardly and terminating in a vertically-disposed-plane rear wall, a front wall parallel therewith, and a pair of vertically-disposed-plane end walls provided with bent tongues secured to the adjacent interior walls of the cover.

5. An article of manufacture consisting of a sound-retarding felt lining for a sound-deadening cabinet for a typewriting machine, said lining having small, closely spaced, inwardly-opening pits or cavities arranged for diffusing and refracting impinging sound waves and reducing the weight of said lining.

6. A sheet-metal blank for forming the outer casing of a lower body-part of a sound-deadening cabinet of a typewriting machine, said blank including a central rectangular element for the bottom of said casing, a rectangular element at the right-hand and left-hand ends or short sides of said central element, arranged for forming end walls of said casing, which end walls may be partly concave and partly vertical, the rear element having partly-concave and partly-straight side edges arranged for forming a vertical back wall of said casing with integral overhanging end portions, said rear element having a narrow rectangular lateral extension at its left side adjacent its outer edge, and a forwardly-positioned element having a portion of the same shape and size as said rear element disposed next to said central element, on the opposite side of said rear element, for forming a lower section of the front wall of said casing, said forwardly-disposed element having also a narrow rectangular strip joining said lower portion at its outer edge, and a second rectangular strip on the outer edge of said first-named strip, said first-named strip to be bent outwardly and upwardly from the lower vertical portion of said front wall, said second-named strip to be bent vertically upward, said forwardly-disposed element having a substantially rectangular hole through it, whereby the keyboard of said machine may project through said casing, said right and left hand elements having small forwardly and rearwardly projecting flaps with perforations therethrough, said perforations being disposed for registering with perforations provided in said forward and rear elements adjacent the concave edges thereof, upon bending all of said elements to their final position in said casing and upon bending said flaps to lie against the under side of the front and rear walls of said casing.

7. A sheet-metal blank for forming the outer casing of a cover of a sound-deadening cabinet of a typewriting machine, including a rectangular central element arranged for forming a lower front wall, a partly-plane and partly-curved top, and a rear wall of

said cover-casing, said rectangular element having a rectangular view-opening through it adjacent said front wall-portion, and wing-elements at the right and left sides of said central element for forming the vertical end walls of said cover-casing, said wing-elements being joined with said central element at the rear wall-portion thereof, and having front edges arranged to fit closely against the partly-curved and partly-plane top of said casing when said wing-elements are bent at right angles to the rear wall-portion of said central element after the latter is bent to form said top, front wall and rear wall, said wings having small flaps with perforations, the latter being disposed for registering with perforations in said central element adjacent the right and left side edges thereof upon bending said central element and said wing-elements to their final position in said cover-casing and upon bending said flaps to lie against the under side of the top and the front wall of said cover.

8. A sound-proof cabinet for a typewriting machine having a composite wall including an imperforate, relatively thin extended body and a perforate inner lining therefor of fibrous material so disposed as to expose the perforations thereof to the interior chamber of said cabinet.

9. A sound-proof cabinet for a typewriting machine having a composite wall including a sheet-metal outer wall, an intermediate continuous body of fibrous material, and an inner perforate lining of fibrous material so relatively disposed as to expose the perforations thereof to the interior chamber of said cabinet and likewise expose said intermediate body thereto through said perforations.

10. A sound-proof cabinet for a typewriting machine having a composite wall including an outer continuous and relatively smooth wall, an intermediate, continuous fibrous body secured within the same, and a perforate inner lining secured to said intermediate body in such a manner as to expose the same through the perforations and said perforations to the interior chamber of said cabinet.

11. In a sound-proof cabinet for a typewriting machine having an outer enclosing wall, an inner continuous lining of sound-absorbent, fibrous material, and means for greatly increasing the sound-absorbing surface thereof including a second perforate lining of fibrous material cemented to the continuous lining to form a double lining therewith in such a manner as to expose the continuous lining through the perforations and said perforations to the interior chamber of said cabinet.

12. An article of manufacture consisting of a lower body-part of a sound-proof cabinet for receiving a typewriting machine pro-

vided with a keyboard, said cabinet-body including a casing made from a sheet-metal blank having a plurality of members bent to relatively form a bottom wall, a vertically-disposed-plane front wall having an opening for said keyboard, an outwardly extending offset wall-member above said opening, integral, concave end portions on the front wall, a vertically-disposed-plane back wall having corresponding integral, concave end portions, a right-hand end wall curving outwardly from the bottom upward, surmounted by a vertically disposed portion, and a left end wall curved in opposite outward direction from the bottom upward and terminating in a level portion surmounted by a vertically disposed end wall-member.

13. The combination with a typewriting machine having an extended carriage-finger-piece, of a sound-deadening cabinet, said cabinet having a slot at its front through which said finger-piece projects, and a sound-retarding seal for said slot, said seal consisting of two oppositely-disposed strips of resilient felt arranged in vertical alignment, providing one strip on each side of the slot, and an exteriorly beveled edge on each strip providing together in initial raised position a concave felt seal exteriorly and a relatively plane felt seal within the cabinet.

14. The combination with a typewriting machine having an extended carriage-finger-piece, of a sound-deadening cabinet having a

lower body-part and a cover, said cover and said body-part having a hinged connection at the back and a slot at the front through which said finger-piece projects, said slot having a sound-retarding seal consisting of two oppositely disposed and aligned strips of closely-woven felt to provide one strip on each side of said slot, and an exteriorly beveled edge on each strip providing together upon one side a felt trough and on the other a relatively plane felt seal in initial opening and closing positions, and in closed position an inwardly projecting double felt seal in such relative disposition that the beveled edges meet with the extreme portions of the bevels conformably in contact.

15. The combination with a typewriting machine having an extended carriage-finger-piece, of a sound-deadening cabinet having a lower body-part and a cover, said cover and said body-part having a hinged connection at the back and a slot at the front through which said finger-piece projects, said slot having a sound-retarding seal including upon one edge a plane felt strip arranged in alignment with the arc of movement of the cover having one plane side, and a beveled edge upon the other side of said strip conditioned upon closure of the cover to be turned in curved manner transversely to the normal plane of the unbeveled portion and plane sides of said felt strip.

JOHN WALDHEIM.