

No. 705,012.

Patented July 22, 1902.

A. S. ALLEN.
BED FOR TYMPAN SURFACES.

(Application filed Jan. 19, 1899.)

(No Model.)

Fig. 1.

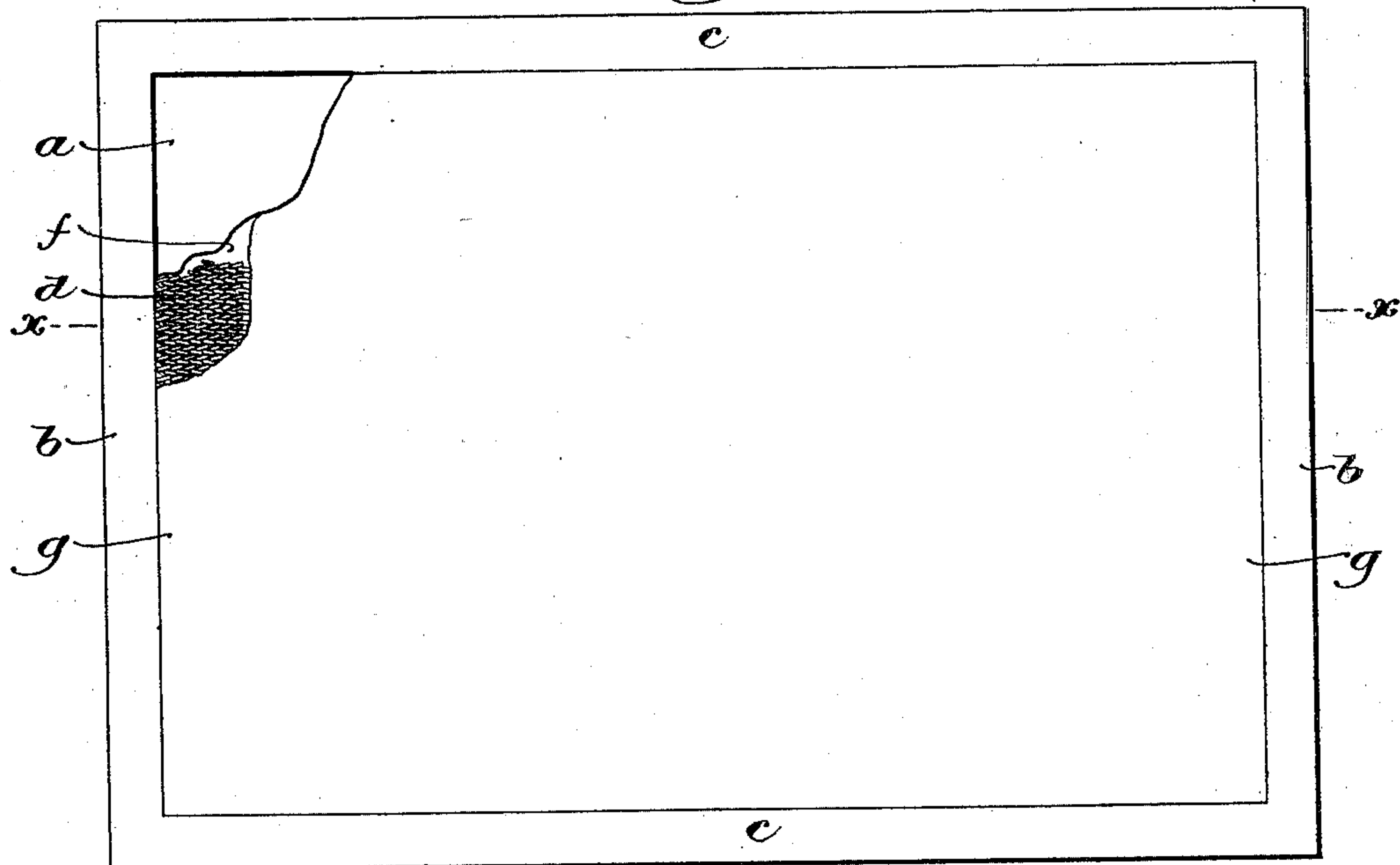
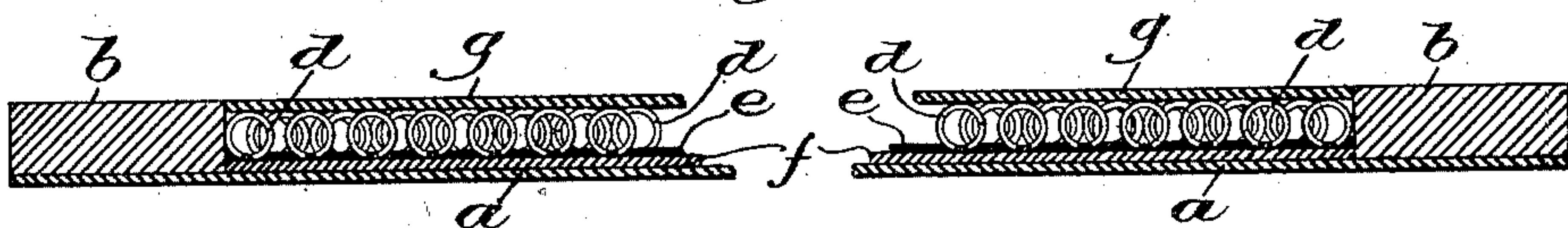


Fig. 2.



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UNITED STATES PATENT OFFICE.

ARTHUR S. ALLEN, OF BOSTON, MASSACHUSETTS.

BED FOR TYMPAN-SURFACES.

SPECIFICATION forming part of Letters Patent No. 705,012, dated July 22, 1902.

Application filed January 19, 1899. Serial No. 702,694. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR S. ALLEN, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Beds for Tympan-Surfaces, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention is an improvement upon the class of tympan-surface shown in United States Patent No. 613,217, dated October 25, 1898. That patent employs wire bent or formed to present areas of yielding supports, said supports being maintained in working position by or through a bracing material entering the convolutions or turns of the wire. In my experiments I have aimed to do away with the bracing and to hold one part or turn of the wire of whatever shape rigidly upon or with relation to a foundation, preferably of metal, and the holding means will preferably be a soft solder or a strong cement capable of maintaining the yielding areas substantially fixedly with relation to the plate. I have also discovered that it is of advantage to hold the tympan-surface in a case the bottom of which is of uniform thickness, and I have herein shown such a case.

I find in practice that when the tympan-surface is sent to printers to be applied to the platen or cylinder of any usual press the operator in some instances to increase the impression is apt to interpose between the platen or cylinder and the tympan-surface more or less paper, so that in practice the springs are forced into the paper, and consequently they do not yield, as is requisite for uniform printing; but by applying the tympan-surface to a case, substantially as herein described, ready to be applied to a platen or cylinder the case may be applied directly to the platen or cylinder and the operator may, if he desires, shim up underneath the case by paper or other means, and inasmuch as the bottom of the case is of a stiff, firm, and substantially unyielding material such shimming will not act injuriously. This tympan-surface will in practice preferably have applied to it a suitable leveling-sheet, and the whole may be covered, if desired, by any

usual tympan-surface, such as paper, cloth, or otherwise.

Figure 1 of the drawings represents a case provided with one of my improved tympan-surfaces, the leveling-sheet applied thereto being broken out to show the wire in the interior thereof, the wire and backing being also shown as broken away to represent the bottom of the case. Fig. 2 is a section of Fig. 1 in the line *x*, partially broken out.

The case will preferably be formed of a hard, firm, and substantially unyielding sheet *a*, either of a metal, india-rubber, celluloid, or other equivalent materials, and this plate will have applied to it ends and sides *b c*, the ends being preferably in one piece or suitably locked together to make a frame and leave a space between of suitable area to receive the tympan-surface to be described.

The tympan-surface is composed, essentially, of wire bent, turned, or twisted to present a series of connected projections, as *d*, to constitute yielding areas, the upper ends of said projections standing at substantially the same level. The wire, twisted, turned, bent, or shaped properly to be used in the formation of the tympan-surface, may and preferably will be laid upon a film or sheet of suitable solder *e*, it being laid upon, preferably, a metallic plate *f*, forming a backing, and by heat applied to the plate in any usual way; but preferably the heat will be generated by electricity, so that the solder will be melted and made to adhere to and confine the turns or twists of the wire fixedly in or with relation to one face of the plate *f*. I consider within the scope of my invention the use of any strong cement in place of the solder, said cement causing the adherence of the turns, coils, or projections of the wire upon a plate of any suitable material. Having applied the wire to the plate or backing and secured the same thereto fixedly, I apply the tympan-surface so formed in the space of the case, and thereafter apply, as I prefer, a leveling-sheet *g*, it preferably being of celluloid or other thin hard material capable of resisting great pressure in the direction of its thickness, said leveling-sheet preferably filling the space in the case and coming substantially to the level of

the upper sides of the parts *b c* of the frame. The parts so far described may further be covered with paper or cloth in one or more thicknesses to constitute the acting face of the tympan.

I prefer and for the best results shall use the wire in the form of coils laid side by side, the adjacent coils being crowded together, so that the various turns making up the coils may interlock each with the other, the turns of one coil passing within the turns of another coil substantially as represented in the drawings, as thereby the yielding areas are enabled to present a greater number of contacts arranged closer together to receive upon them the under side of the leveling-sheet. Instead, however, of making the wire in a regular symmetrical coil the wire may be bent, twisted, or turned into any of the shapes represented in other United States Letters Patents heretofore granted to me, and these wires, of whatever shape, will be made to assume a fixed position on or with relation to the plate or backing *f*, of whatever material, by or through a medium, as *e*, it constituting the binding material, which is capable of a change in its consistency due to heat and cold, so that by the application of heat to said binding material I may embed the turns or twists in the wire in the same and then by cooling the binding material cause the same to fix in place or hold substantially rigidly the wire used in the tympan-surface.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A tympan-surface for use in connection with printing-presses, said tympan-surface comprising a metallic backing and spring-wire united to said metallic backing by a suitable binder, substantially as described.

2. A tympan-surface for use in connection with printing-presses, the same consisting of a metallic backing, and wire united thereto by solder or equivalent material, substantially as described.

3. A tympan-surface for use in connection with printing-presses, the same consisting of a backing, wire applied to the backing, and a binder capable of being softened by heat, said binder receiving the wire and when cooled holding the wire substantially fixedly in position upon the backing, substantially as described.

4. A tympan-surface for use in connection with printing-presses, the same composed of a metallic backing, a series of spring-coils laid side by side, the turns of the spring-coils being interlocked or passed one within the area described by the other, and solder in which part of the coils are embedded to hold the spring-coils in their locked positions on or with relation to the said backing, substantially as described.

5. A tympan-surface for use in connection with printing-presses, the same being composed of a backing, and spring-wire having coils or turns held fixedly in place on said backing by a binder in which part of said coils are embedded, and a leveling-sheet applied to the portions of the wire which extend above the backing and the binder, substantially as described.

6. In combination, a tympan-surface to be used as a surface in printing, said tympan-surface being composed of spring material bent to present turns or coils, a case composed of flexible material and having a pocket or space for holding the tympan-surface, the projecting face of the tympan-surface formed from said spring material being located at or near the upper edge of the said case, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR S. ALLEN.

Witnesses:

GEO. W. GREGORY,
EDITH M. STODDARD.