

No. 712,064.

Patented Oct. 28, 1902.

G. S. HEATH.  
PRINTING PRESS.

(Application filed Apr. 30, 1900.)

(No Model.)

Fig. 1

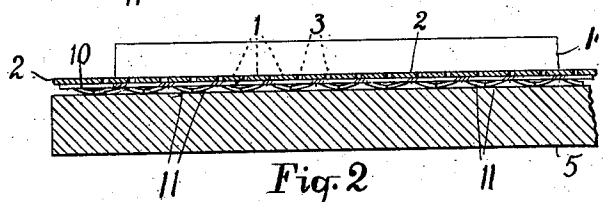
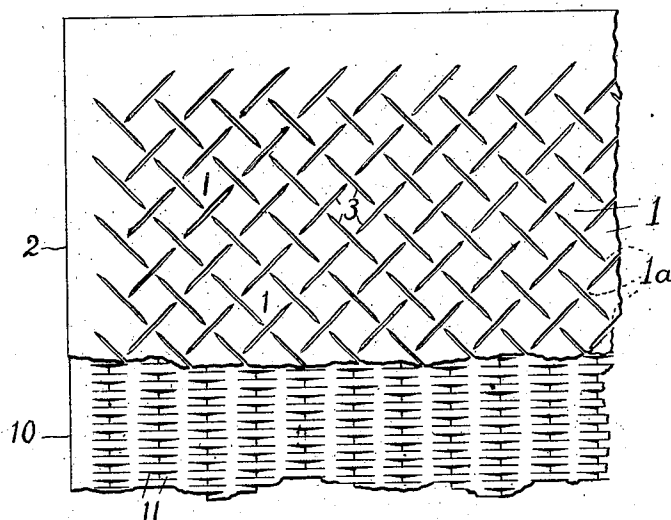


Fig. 2

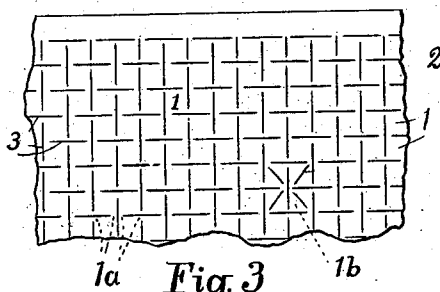


Fig. 3

Witnesses;

*John M. Smith*

*John O. Temple*

Inventor,

George S. Heath; by  
*A. B. Upham*  
*Kenny & Kenny*  
His Attorneys.

# UNITED STATES PATENT OFFICE.

GEORGE S. HEATH, OF REVERE, MASSACHUSETTS.

## PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 712,064, dated October 28, 1902.

Application filed April 30, 1900. Serial No. 14,933. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE S. HEATH, a citizen of the United States, residing at Revere, county of Suffolk, and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Printers' Blankets, of which the following is a full, clear, and exact description.

When employing a hard bridging-sheet upon a yielding impression-surface it is necessary that such sheet shall to a limited extent elongate in order to receive the more or less undulatory form imparted thereto by an uneven printing-surface, for it is evident that since a straight line is the shortest distance between two points any departure therefrom can only be by a slight elongation. A soft bridging-sheet will of necessity stretch sufficiently for the purpose; but when a hard and consequently unstretchable sheet is used I find it liable to crack and split.

To construct a hard bridging-sheet which shall at the same time be capable of superficial elongation in all directions is the object of this invention.

Referring to the drawings forming part of this specification, Figure 1 is a face view of a section of my complete printer's blanket. Fig. 2 is a sectional view of the same, and Fig. 3 is a face view of my bridging-sheet alone and slightly modified.

As shown most clearly in Fig. 1, the bridging-sheet 2 is cut by means of the short slots or slits 3 into a multiplicity of practically independent sections 1, the slits being so arranged as to give each section a slight juncture at its four corners with adjacent sections. This is done by having each slit or slot nearly double in length compared with the width of each section and having the said slits in two sets, one transverse to the other, as shown. These sets may traverse the sheet 2 at right angles to each other, as illustrated, or at any other angle; but ninety degrees is preferable. Each slit forms approximately a letter H with the adjacent slits of the other set; but no two slits actually cut into each other, slight necks or junctures 1<sup>a</sup> being thereby left and by which each section 1 is united to its neighbors.

In Fig. 1 I have represented the slits 3 as of an appreciable width in order to show them as slits or slots; but in practice said slits

should be made as narrow as possible. The showing in Fig. 3 is more nearly correct in this respect, although for the dimensions of the sections 1 Fig. 1 is about right.

The directions of the slits 3 are preferably oblique to the sides of the sheet 2 in order that the edges or faces of the sections 1 may not coincide with the prevailing printing-lines of the form. Fig. 3 shows said slits as parallel with the sheet's sides.

The sheet 2 may be formed from celluloid or tough pressboard; but the slitting described enables me to use any suitably resilient metal, as sheet-brass or even thin sheet-steel.

A sheet thus slit, although of practically non-extensible metal, is found to be capable of superficial elongation in any direction, and hence perfectly accommodates itself to the inequality of surface of even the most uneven printing-surface. This extensible bridging-sheet can be used upon any form of cushion, as of soft rubber, wire fabric, &c.; but the cushion shown is made from resilient sheet metal so formed as to be incapable of deterioration, as is the soft rubber.

Referring to Figs. 1 and 2, the reference-numeral 10 indicates the resilient sheet, having a multiplicity of small projections or teeth punched down therefrom. Said projections are bent but slightly out of the plane of the sheet metal 10, so that when temporarily pressed back into the openings made by their formation such flexure shall be too little to permanently set the same. As shown in Fig. 2 each projection is made to oppose its lineal neighbors, and hence the depression of this cushion sheet or plate gives thereto not the slightest tendency to creep or crawl upon the support 5. In this form of cushion an inordinate pressure thereon simply serves to force the plate 10 down flat upon the support 5, after which it contains no further possibility of crushing, as it is then only a flat sheet of metal. When the pressure is removed, the resilience of the projections 11 raises the plate to its normal position, and, since, as before stated, the flexure of said projections is so slight as to be within the degree of set of the metal composing the same, the cushion is unimpaired by any such over pressure. This cushion is more fully set

forth and claimed in the application of M. L. Severy, filed simultaneously with this and designated as "Case B." This impression-surface being constituted by a multiplicity of yielding areas so united as to permit slight superficial elongation in any direction is especially adapted thereby for flat presses, since such qualification of elongation in every direction is particularly required therefor; but my blanket is also well adapted for cylinder-presses in which a capacity for elongation in but a single direction (that along the tread parallel with the axis) is the only necessity.

It is evident that the slots or slits in my blanket need not be arranged in the exact manner shown; but the two sets may extend one relative to the other at angles departing quite widely from ninety degrees, and the independent areas formed by slits may be changed to polysided figures of more or less than four sides. (See, for instance, 1<sup>b</sup> in Fig. 3.)

What I claim as my invention, and for which I desire Letters Patent, is as follows, to wit:

1. An impression-surface constituted by a multiplicity of hard, closely-disposed, yielding areas so united as to permit superficial elongation in any direction, the union of said areas being in the same plane with the impression-surface, substantially as described.

2. An impression-surface constituted by a multiplicity of substantially independent yielding areas so united as to permit superficial elongation in any direction, the union of said areas being in the same plane with the impression-surface, substantially as described.

3. An impression-surface constituted by a multiplicity of areas so united as to permit superficial elongation in any direction, the union of said areas being in the same plane with the impression-surface, and an underlying cushion therefor, substantially as described.

4. An impression-surface constituted by a multiplicity of hard, closely-disposed, substantially independent areas so united as to permit slight superficial elongation thereof, the union of said areas being in the same plane with the impression-surface, and an underlying cushion therefor, substantially as described.

5. An impression-surface constituted by a multiplicity of hard, closely-disposed, substantially independent, polysided areas so united as to permit slight superficial elongation thereof, and an underlying cushion therefor, substantially as described.

6. An impression-surface constituted by a multiplicity of hard, closely-disposed, substantially independent, four-sided areas so united as to permit slight superficial elongation, and an underlying cushion therefor, substantially as described.

7. An impression-surface constituted by a multiplicity of hard rectangular elements each united at its corners to its neighbors and permitting elongation of said surface in any direction, and an underlying cushion therefor, substantially as described.

8. In an impression-surface, a bridging-sheet cut into substantially independent elements so united as to permit slight elongation of the sheet in any direction, and an underlying cushion therefor, substantially as described.

9. In an impression-surface, a bridging-sheet cut into substantially independent polysided elements each united at its corners to its neighbors and permitting slight elongation of the sheet in any direction, and an underlying cushion therefor, substantially as described.

10. In an impression-surface, a hard bridging-sheet cut into rectangular elements each so united at its corners to its neighbors as to permit slight elongation of the sheet in any direction, substantially as described.

11. In a bridging-sheet, a sheet of metal having two sets of parallel slits or slots therein, one set being at right angles to the other and any slit or slot forming approximately a letter H with its terminally adjacent slots, and thereby rendering said sheet capable of elongation in any direction, substantially as described.

In testimony that I claim the foregoing invention I have hereunto set my hand this 24th day of April, 1900.

GEORGE S. HEATH.

Witnesses:

LEON M. ABBOTT,  
A. B. UPHAM.