

Nov. 13, 1934.

A. B. DAVIS

1,980,386

MEANS FOR MOUNTING PRINTING SURFACES

Filed Dec. 14, 1931

2 Sheets-Sheet 1

Fig. 1

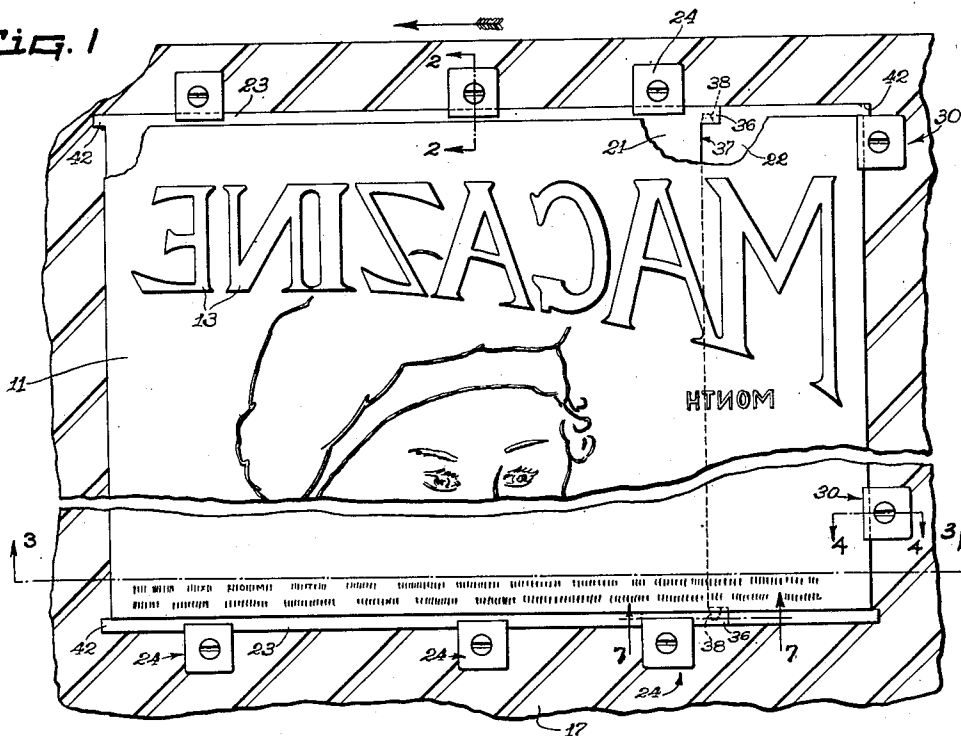


Fig. 2

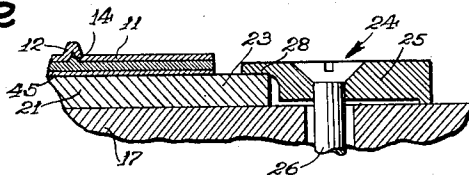


Fig. 3

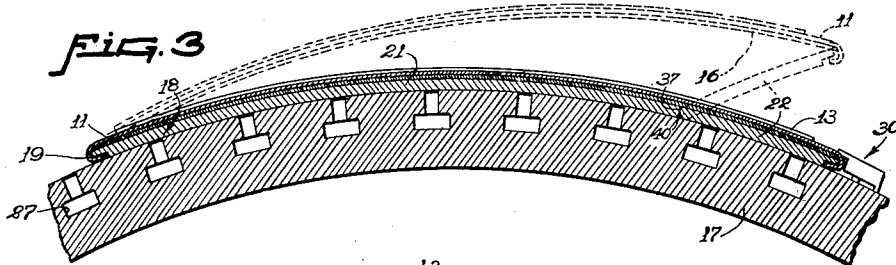
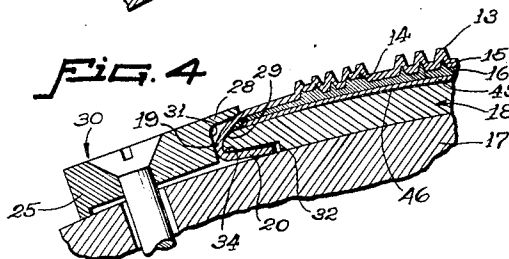


Fig. 4



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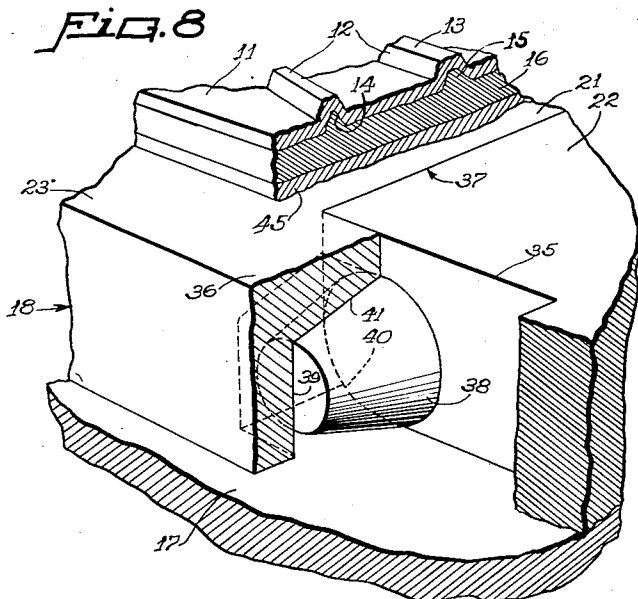
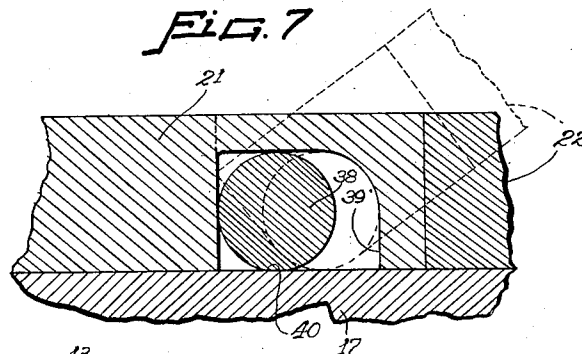
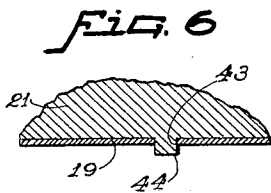
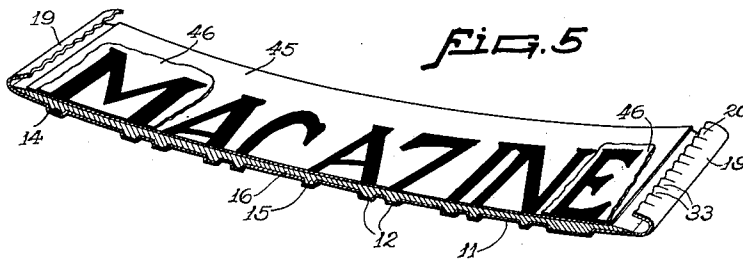
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

1,980,386

MEANS FOR MOUNTING PRINTING SURFACES

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Application December 14, 1931, Serial No. 580,887

19 Claims. (Cl. 101—415.1)

This invention relates to the mounting of printing surfaces in a printing press and more particularly to the mounting of printing surfaces which are formed on or carried by a thin sheet or shell.

The primary object of the invention is to provide a new and improved construction of a backing for the type-carrying sheet through the medium of which the sheet may be securely fastened to a support in a printing press.

Another object is to provide a novel backing plate construction which permits of convenient removal of the type-carrying sheet from the printing press and accurate replacement thereof without disturbing the position of the plate in the press.

Still another object is to provide means of novel character for facilitating the establishment of a definite positional relationship between the type-carrying sheet and backing plate.

Another aim of the invention is to mount the improved backing plate and type sheet assembly in the printing press in a manner such as to reduce to a minimum the number of clamping devices required in order to hold the shell in place.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which

Figure 1 is a fragmentary plan view of the cylinder of a printing press on which is mounted a printing plate assembly embodying the features of the present invention.

Figs. 2 and 3 are sectional views taken respectively along the lines 2—2 and 3—3 of Fig. 1.

Fig. 4 is an enlarged fragmentary sectional view taken along the line 4—4 of Fig. 1.

Fig. 5 is a fragmentary perspective view looking from the under side of a portion of a type-carrying sheet with which the present backing plate is adapted for use.

Fig. 6 is a fragmentary section view taken through the type-carrying sheet and backing plate and illustrating a modification of the means for establishing proper positional relation of the sheet and backing plate.

Fig. 7 is a sectional view taken along the line 7—7 of Fig. 1.

Fig. 8 is an enlarged fragmentary perspective view of a portion of the hinge joint of the backing plate.

While the invention is susceptible of various modifications and alternative constructions, I have shown in the drawings and will herein de-

scribe in detail the preferred embodiment, but it is to be understood that I do not thereby intend to limit the invention to the specific form disclosed, but intend to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

In the form of the invention shown in the drawings by way of illustration, the type, indicated by the numeral 12 and having faces 13 corresponding to the characters or other configurations of the page to be printed, are supported or carried by a thin metal sheet 11. When metal type are employed, as in the present instance, the type may be formed by electrodeposition and thus made integral with the sheet 11 of the same thickness on the sheet, which is usually from .015 to .020 of an inch thick. Cavities 14 corresponding to the type faces indent the back side of the so-called electrotpe sheet thus formed.

The type cavities are completely filled with material 15 which is sufficiently hard and strong to reinforce the type against collapse during printing, which will adhere well to the metal of the shell without the application of a degree of heat which would distort the type faces, and yet possesses a substantial degree of flexibility without danger of cracking. To facilitate the formation of a smooth back surface on the shell, additional material of the same or different composition is used to form a continuous layer 16 of a thickness, when finished, approximately equal to that of the shell. For a reason to appear later, two of the opposite edge portions of the shell are preferably left uncovered with the coating 16 tapering to such portions. The coating 16 may extend to the edges in the case of the other two edge portions of the shell.

A non-metallic composition known to the trade as "plastic wood" is well suited for use as a filling material. Preferably this material is applied as a thick paste formed by the addition of a volatile solvent such as acetone which will evaporate and allow the coating to set quickly. In applying the coating, it is desirable, particularly in the case of shells having large areas of solids, to bend the shell approximately to the curvature of the press support upon which the shell is to be used eventually. After the coating has set, it may, if desired, be machined off to form a smooth back surface. The shell thus reinforced is relatively flexible and may be bent to conform to the exact curvature of the backing surface on which it is to be used without injuring the filling or distorting the type face. Where the type are

composed of non-metallic material or otherwise formed separate from the supporting sheet 11, it will be apparent that no filling material would be required, the type being secured in any suitable manner to the supporting sheet.

The type-carrying sheet is adapted to be fastened securely and detachably to a cylinder 17 or a flat-bed printing press support through the medium of a separately formed backing for the sheet 11 arranged to engage the latter in interlocking relation and having a thickness such that the combined thickness of the type-carrying sheet and backing is substantially equal to that of lead-backed electrotype shells now in general use. The backing is in the form of a plate 18, the length of which, that is, the dimension measured in the direction of motion of the press support, is preferably slightly greater than the length of the coating 16 but less than the overall length of the shell so that the marginal edge portions of the latter extend beyond the edges of the plate. In order that the plate will lie flat against the supporting surface upon which the type carrying sheet 11 is to be mounted, the plate is preformed to the curvature of such surface.

To avoid wrinkling or other distortion of the electrotype under the severe lateral strains to which it is subjected during printing, all of the contacting parts of the filled shell and plate are drawn or forced together under pressure by applying, to the two opposite edges of the shell when the latter is assembled on the backing plate, oppositely directed forces acting in the direction of motion of the shell during printing and serving to place the shell under edgewise tension and thereby stretch the same tightly over the convex surface of the plate 8. In the present instance, these forces are applied to fastening elements 19 in the form of projections or elongated shoulders extending along opposite edges of the type-carrying sheet on the side opposite the type face having a width corresponding to the thickness of the backing plate 18 so as to be disposed wholly above the surface of the cylinder 17 or other support. The projections may comprise flanges 19 fashioned from the marginal edge portions of the shell by bending these portions backwardly around a suitable fixture plate (not shown) and then reversely and toward each other. The turned edge portions 20 thus formed cooperate with the under side of the shell to define two relatively deep opposed grooves generally conforming in shape to that of the corresponding edges of the backing plate 18 which are received in said grooves when the plate and shell are assembled.

The improved method of deriving the force for stretching the shell over the backing plate involves generally the formation of the plate in two rectangular sections 21 and 22 adapted to be swung relative to each other about a longitudinal axis which underlies the shell but is disposed above the periphery of the cylinder 17 or other supporting surface on which the type-carrying sheet and backing plate assembly is mounted. By swinging the plate sections in one direction, the distance between the opposite edges of the shell will be reduced and these edges will enter between the flanges 19 when the shell is placed upon the plate. Then by moving the pivotal axis of the plate sections toward the back of the shell so as to bring the supporting surfaces of the sections into edgewise alignment with both plate sections lying flat against the cylinder surface, the backing as a whole is expanded and the flanges spread apart by a toggle action of the plate sec-

tions thereby stretching tightly the shell over the plate. In the present embodiment, the dimension of the section 21 measured in the direction of motion in the press is substantially greater than the section 22 and the section 21 therefore backs up the major portion of the shell. Thus, the backing sections 21 and 22 will be referred to hereinafter as the long and short sections respectively.

Preferably the section 21 of the backing is mounted upon the cylinder 17 for adjustment in any direction along the surface thereof although, as will later appear, it preferably remains fixed thereto during removal and replacement of the shells. To thus secure the section in place, its dimension in the direction of the cylinder axis is, in the present instance, made greater than the shell so that its ends 23 project beyond the corresponding edges of the shell. These ends are engaged by clamping devices 24 each of which comprises generally a block 25 in which is seated the head of a screw 26 threading into an anchoring block in the groove 27 of the cylinder. When the screw is tightened down, an arm 28 overlying one of the ends 23 applies the clamping pressure in a direction radially of the cylinder so that there is no tendency for the clamps to shift the plate relative to the cylinder. Owing to the substantial size of the section 21, several clamps 24 are preferably employed along each of the ends 23. By loosening the clamps it will be apparent that the surface defined by the section 21 may be shifted relative to the cylinder as desired.

One edge of each of the plate sections 21 and 22 constitutes a fastening device which is engageable with one of the fastening elements 19 for the purpose of applying the stretching force to the type sheet. Herein the outer edge of each backing plate section is adapted to fit into and project to the roots of the grooves defined by the shell flanges 19 and preferably is rounded off along the upper surface as indicated at 29 in order that the tensile forces applied to the flanged edges of the shell will produce a maximum degree of tension therein with a minimum distortion of the metal forming the flanges. The upper edges of the shell and plate assembly are thus rounded slightly and may be clamped against the cylinder with clamps 30 of the same construction as the clamps 24 with the arm 28 overlying the bevelled edge portion of the shell and the shoulder 31 abutting against the extreme edge of the shell and plate assembly as shown in Fig. 4. The clamps 30 thus assist in preventing side slippage of the plate and shell assembly.

The turned portions 20 of the flanges 19 lie in grooves 32 on the underside of the backing plate which are made of sufficient depth as compared to the thickness of the shell portions 20 to permit removal or insertion of such portions while the plate section 21 is clamped to the cylinder as above described. Preferably the free edges of the portions 20 are corrugated by indentations 33 and thereby materially stiffened. When the shell and plate are assembled as above described, the relatively sharp edges 34 of the plate engage behind the indentations 33 so as to minimize the tendency of the shell flanges to straighten out under the tension to which they are subjected.

In the present instance, the hinge joint between the plate sections 21 and 22 is constructed not only to permit of ready removal of the shell and the desired toggle action above referred to

while the section 21 remains fixed on the cylinder but also to enable the section 21 to serve as a means for clamping the hinge edge of the section 22 against the cylinder thereby avoiding the necessity for employing clamps along the ends of this section. To this end, the dimension of the section 22 measured in the direction of motion is made considerably less than that of the section 21 and the hinged edge of the former is formed at opposite ends with squared notches 35 adapted to receive lugs or projections 36 on the section 21 when the two parts are fitted together as shown in Fig. 8. The hinge edge portion of the section 22 enters between the lugs 36 thereby holding the two sections accurately against relative shifting longitudinally of the hinge axis with the opposing edges of the sections abutting each other at a joint 37.

Projecting from the lower portions of the section 22 into the notches 35 are two short aligned pins 38 tapered for the sake of strength and rigidity and disposed in recesses 39 formed in the under sides of the lugs. As best shown in Fig. 7, these recesses extend transversely of the backing plate a distance greater than the diameter of the pins 38 so that the latter and the plate section 22 as a whole are free to shift away from the section 21 as the free edge of the section 22 is raised up as shown in dotted outline in Fig. 7. To permit of such movement without raising the axis of the pins 38 relative to the cylinder, the under side of the hinge edge of the section 22 is rounded off as indicated at 40, coinciding with the curvature of the pins at their greatest cross-section. Thus, during the pivotal action in the construction above described, the pins 38 ride along the inclined under surfaces 41 of the lugs 36 and the upper edge of the section 22 shifts along the vertical edge surface of the section 21. By providing for such bodily shifting of the section 22 during pivoting thereof, the upper portions of the two sections are brought together in abutting relation as the hinge section is swung downwardly into alignment with the section 21 leaving no area of the coated shell unsupported adjacent the joint 37.

When the two sections are assembled as above described and the section 21 securely clamped upon the press cylinder, it will be apparent that the hinge section is definitely located on the cylinder and locked against removal by reason of the inter-locking arrangement of lugs and notches while at the same time, the desired pivotal movement of the section 21 is provided for. Those portions of the lugs 36 which overlie the pins 38 effectually clamp the hinge edge of the section 22 against the cylinder.

To apply a shell to the backing plate thus mounted on the press cylinder, it is first necessary to swing the free edge of the section 22 upwardly as shown in dotted outline in Fig. 7, thereby reducing the distance between the opposite edges of the plate so that these edges will be received between the shell flanges 19 when the shell is placed thereon as shown in dotted outline in Fig. 3 with one of the flanges hooked over the shoulder defined by the grooved edge of the plate section 21. Downward pressure is next applied to the elevated edge of the shell and the resulting downward movement thereof straightens out the two plate sections causing the opposite edges of the plate to move into the flange grooves. As the pivotal axis between the plate sections approaches closer to the back sur-

face of the shell and the sections approach edge-wise alinement as shown in full lines in Fig. 3, the sections act as toggle links producing an expansive force which spreads the shell flanges apart and stretches the shell tightly over the backing surface. Finally, the clamps 30 are applied to hold the free edge of the hinge section 22 down against the cylinder and the shell assembly is then ready for printing.

The use of clamps overlying that edge of the shell which is secured to the plate section 21 is unnecessary with the present backing plate construction provided that the plate and shell assembly is mounted upon the press cylinder in a manner such that the shell moves in the direction indicated by the arrow in Fig. 1, that is to say, with the flanged edge of the shell which engages the plate section 21 constituting the leading edge. Thus, the force which is exerted upon the surface of the shell by the pressure cylinder during printing, acts in the direction of the hinge section 22, and inasmuch as the edge of the latter section must be clamped down in order to retain the stretched condition of the shell, the clamps 30 may be utilized to perform the additional function of holding the flanges 19 securely against the section 22. The number of clamps which must be loosened in order to remove the shell is thereby reduced to a minimum.

By deriving the tensile force for stretching the shell through pivotal movement of the section 22 relative to the section 21, it will be apparent that the shell is removably fastened upon the press cylinder without shifting the plate sections along the cylinder surface and without driving the clamping devices or other parts along the cylinder grooves. Inasmuch as the movement of the sections 21 and 22 relative to each other in a direction to expand the backing plate is limited positively by engagement of the section 22 and the press cylinder, the maximum degree of tensile stress under which the shell can be placed is limited and thus rendered independent of any action on the part of the workman. Each shell will therefore be stretched to substantially the same extent. In the event that the flanges 19 are formed on the shell too far apart to produce the desired degree of stretching, the shell may be removed and packing material such as paper strips placed in the roots of the flange grooves thereby decreasing the effective width of the shell.

When mounted as above described, the shell may be removed quickly and conveniently. For this purpose it is merely necessary to loosen the clamps 30 and raise the backing section 22 and thereby reduce the distance between the grooved edges of the backing so as to enable the shell flanges to be moved out of engagement with the edges and the shell thereby to be lifted from the backing. This may be done without disturbing the position of the plate sections relative to the press cylinder.

Means is provided for facilitating the establishment of a definite positional relationship between the shell and the backing plate when assembled in the manner above described so that after the assembly has once been located properly in the press, the shell may be removed and then replaced quickly and conveniently in its exact original location. This may be accomplished by constructing the shell and backing plate with interengaging parts which may be fitted together in initially placing the shell upon the backing and which have cooperating edges

acting to hold the shell and backing plate against relative shifting longitudinally or circumferentially of the hinge axis while the shell is being stretched over the plate.

5 In the embodiment shown in Fig. 1, the means above referred to comprises projections 42 at the opposite ends of the side edges of the plate sections. The flanges 19 are made of such length that they will fit snugly in the recess defined between the lugs 42 when the plate and shell are assembled properly. In this way a definite relation between the shell and plate and therefore between the shell and cylinder will always be established when the shell is placed upon the cylinder in the manner above described and this relation will be maintained effectually without the use of clamps at the top and bottom edges of the shell. The same result may be obtained by forming apertures 43 (see Fig. 6) in the shell in positions to cooperate with lugs 44 on the plate sections when the shell and plate are assembled.

Owing to the thinness and inherent flexibility of the shell filling above described, the shell will respond effectually to a make-ready sheet 45 placed between the coating 16 and the backing plate. Preferably the sheet 45 is a proof taken from the type face of the shell and secured to the coating 16 with the different printed areas coinciding with the corresponding portions of the type face. This facilitates the location of the make-ready spots or patches 46 which are built up on the proof while the shell is separated from the backing plate.

It will readily be apparent that by mounting printing shells in the manner above set forth, a substantial saving in time and labor is effected both in initially locating new shells in a press and in removing and replacing the individual shells as may be required in order to build up make-ready details thereon.

The present application is subordinate to my prior application Serial No. 546,951, filed June 26, 1931, which contains claims generic to the present disclosure.

I claim as my invention:

1. The combination with a support in a printing press and a printing sheet having a type face and fastening elements along two of its opposite edges, of a plate separate from said support for backing a portion of said sheet conforming to the surface contour of said support and adapted to be secured adjustably to the support, said plate providing fastening means engageable with one of said elements, a second plate for backing the remaining portion of said sheet and having one edge adapted for engagement with the other of said elements, said last mentioned plate being arranged to swing toward and away from said support to stretch the sheet over the backing surfaces and release the tension thereon without disturbing the position of said first mentioned plate relative to the support.

2. For mounting a type-carrying sheet upon a support in a printing press, a rectangularly shaped backing member with two of its opposite edges adapted for engagement with the corresponding edges of said sheet, said member comprising a part adapted to be secured to said support by clamping means applied to the portions of the part not covered by said sheet, and a second part adapted by movement relative to the first part while the latter is fixed to said support to expand and contract the member and thereby

stretch the sheet over the backing member and release the sheet therefrom.

3. A backing member for mounting a type-carrying sheet upon a support in a printing press combining two plates hinged together at their adjacent edges, one having lugs formed at its opposite ends adjacent the hinge axis and defining recesses opening downwardly toward said support and projections on said other plate extending into said recesses and held against upward movement by said lugs when said plates are assembled on said support.

4. The combination of a printing sheet having a type face and fastening elements along two of its opposite edges on the side opposite said face, a backing plate for said sheet comprising long and short sections with the adjacent edges hinged together and fastening means at the remote edges adapted for engagement with said elements, said long section having portions of its other edges left uncovered when the sheet is placed thereon, a support for the sheet and plate assembly, clamping devices anchored in said support and located only along said uncovered portions and the free edge of said short plate section, and means on said long plate section overlying a part of said short plate section whereby said long section serves as a clamp for the hinged edge of said short section.

5. An expansible and contractible backing member for mounting a printing sheet combining plate sections pivotally connected at their adjacent edges and a pair of oppositely facing surfaces on each of said sections extending in directions transversely of the pivotal axis of the sections, said surfaces on the different sections being accurately and substantially equally spaced so as to interengage in snugly fitting relation and hold the sections against relative movement in either direction longitudinally of their pivotal axis while permitting relative pivoting about said axis.

6. The combination with a type-carrying sheet having a type face and fastening elements along two of its opposite edges, of a backing for said sheet combining two members movable relative to each other to spread said elements apart and thereby stretch said sheet over said surfaces, means providing two shoulders on each edge of said backing which engages said elements, and two edges on each of the first mentioned edges of said sheet positioned to fit against said shoulders when said sheet is placed upon said backing and thereby locate said sheet in a predetermined position with respect to said backing.

7. The combination with a sheet having a type face and fastening means along two of its opposite edges, of a backing for said sheet combining two members swingable relative to each other to spread said fastening means apart and thereby stretch the sheet over the surfaces of the members, means providing a shoulder on said backing, and an edge on said sheet cooperating with said shoulder to establish a predetermined longitudinal relationship between the sheet and backing when the two are assembled.

8. The combination of a movable printing press support of a sheet having a type face, a backing for said sheet adapted to be secured to said support and comprising two plate sections hinged together and adapted to be swung relative to each other into edgewise alinement to stretch said sheet over the sections, and means on said sheet and backing cooperating, when the sheet is loosely supported thereon with said sections out

of alignment to lock the sheet positively in a predetermined position against movement in either direction longitudinally of the hinge axis.

9. The combination of a printing sheet having
5 a type face and fastening means formed along two of its opposite edges on the side thereof opposite said face, a rectangularly shaped backing plate for said sheet having long and short sections connected at a hinge joint extending longitudinally
10 of said edges and adapted by relative angular movement to engage said fastening means and spread said edges apart and thereby stretch the sheet over the plate, a support for the assembled plate and sheet, clamps anchored in said support
15 and overlying portions of said long plate section left uncovered at the other edges of the sheet, and clamping means anchored in said support and overlying the fastened edge of said sheet engaged by the free edge of said short plate section,
20 said support being movable in a direction such that the fastened edge of the sheet engaged by said long plate section constitutes the leading edge of the sheet and plate assembly whereby to permit the omission of clamping devices along
25 the latter edge.

10. The combination of a sheet having a type face and fastening elements along two of its opposite edges on the side opposite said face, a backing member having opposite edges adapted for engagement with said elements and composed of
30 relatively long and short sections pivotally connected at their adjacent edges to enable the backing to be expanded against said elements, means supporting the assembled sheet and backing for
35 movement transversely of the pivotal axis between the sections and in a direction such that the free edge of said short section constitutes the trailing edge of the assembly, and detachable means overlying said sheet at the free edge of said
40 short section with the sheet stretched thereover and clamping the latter section against said supporting means.

11. The combination with a support in a printing press of a printing sheet having a type face
45 and flanges formed along two opposite side edges on the side of the sheet opposite said face, an expansible backing member mounted on said support with two of its opposite edges adapted to engage said flanges and stretch the sheet over
50 the member when the latter is expanded, and a clamping device anchored in said support and overlying a marginal edge portion of said sheet and plate assembly, said device having a shoulder abutting against the flanged edge of the sheet
55 and serving to hold the sheet flange against said plate.

12. Means for supporting a sheet having a type face on one side thereof on a printing press support comprising a backing member adapted
60 to lie against the side of said sheet opposite said face and comprising two plates abutting each other at their adjacent edges with no substantial gap between their backing surfaces when the plates are in edgewise alinement, and a projection
65 on one of said sections overlapping a projection on the other section whereby the first mentioned section serves as a clamp for the other section, the abutting edge of said last mentioned section being shaped on its underside so as to permit
70 pivoting of the latter section while the other section remains fixed to said support.

13. The combination, with a printing press support having a cylindrical external surface, of
75 means secured against said surface for bodily adjustment longitudinally and transversely there-

of and providing an elongated shoulder disposed above said surface and extending generally parallel to the axis thereof, a type-carrying sheet having fastening elements along two opposite
80 edges, one of said elements being adapted to engage with said shoulder, and a plate underlying a portion of said sheet and pivoted at one side edge to swing about an axis parallel to the shoulder and disposed above said surface, the opposite
85 side edge of the plate engaging said other fastening element and acting, as the plate is swung down against said surface, to apply a tensile force to the latter fastening element and thereby stretch said sheet tightly over the upper surface of the plate.

14. The combination, with a printing press support having a surface upon which printing plates are to be mounted, of a rectangularly-shaped plate conforming to the contour of said surface and normally clamped against the surface but adapted for adjustment along the surface, one
95 edge of said plate providing a fastening device upstanding from said surface, a type-carrying sheet adapted to lie against and be backed by said plate and having fastening elements at opposite edges thereof, one of said elements being engageable with said device, and a second rectangularly-shaped plate underlying the remainder
100 of said sheet and having one edge pivoted to swing about an axis disposed adjacent the edge of said first plate opposite said shoulder, the opposite edge of the second plate engaging the other of said elements on said sheet and applying a force
105 thereto for stretching the sheet over the two plates when the second plate is swung downwardly against said surface.

15. The combination, with a printing press support having a surface upon which a printing plate is to be mounted during printing, of a separately formed plate having two sections conforming to
115 the contour of said surface and hinged together at adjacent edges, means for clamping at least one of said sections detachably against said surface and permitting bodily shifting of the plate along said surface, and a type-carrying sheet corresponding to the shape of said plate and having
120 fastening means at opposite edges engageable with cooperating fastening means at corresponding edges of said plate and adapted to be spread apart by swinging one of said sections into edgewise alinement with the other section.

16. The combination, with a printing press support having a surface upon which a type-carrying plate is to be mounted, of means formed separate from and adapted to lie against said
130 support and providing an elongated shoulder extending along said surface, a type-carrying sheet having fastening elements along two opposite edges, one of the latter elements being adapted to engage said shoulder, a plate underlying a portion of said sheet and pivoted at one side edge to swing about an axis substantially parallel to said
135 shoulder, the opposite edge of said plate having means engageable with the other element on said sheet and acting, as the plate is swung toward and away from said surface respectively to stretch the sheet over the plate and release the sheet from the plate and permit removal therefrom, and means accessible for actuation when said
140 sheet is stretched over said plate and operable to secure said first mentioned means to said support, said last mentioned means being arranged to retain said first mentioned shoulder in fixed position on said support when said sheet is detached therefrom and to release the shoulder and
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permit bodily shifting of the shoulder, said sheet and said plate along said surface.

17. The combination, with a printing press support having a surface upon which a type-carrying plate is to be mounted, of a member detachably secured to said support for adjustment in any direction along the surface thereof providing an elongated fastening device, a type-carrying sheet having fastening elements near opposite side edges one of which elements is engageable with said device, a member hinged about an axis substantially parallel to said device and engageable with said other element, said hinged member, upon being swung toward said support, stretching said sheet whereby to secure the same to said members, a pair of oppositely facing edges on one of said members extending in a direction generally transversely of said axis, and cooperating edges on said sheet spaced accurately according to the spacing of said first mentioned edges and engaging in snugly fitting relation therewith before stretching of said sheet whereby to establish a fixed positional relation between the member and the sheet and prevent shifting of said sheet in either direction longitudinally of said axis while the sheet is being stretched.

18. The combination, with a movable printing press support having a surface upon which a type-carrying plate is to be mounted, of a member detachably secured to said support for adjustment along the surface thereof providing an elongated shoulder, a type-carrying sheet having spaced parallel fastening elements one of which is adapted to engage said shoulder, a member hav-

ing a shoulder for engagement with said other element and mounted on said support for movement relative thereto in the direction of motion thereof to vary the spacing of said shoulders whereby to stretch said sheet and secure the same to said support or to release the sheet for removal from the support, and devices on said members and said sheet interengaging in snugly fitting relation when said sheet is placed upon said members preparatory to stretching whereby to permit detachment of the sheet from said support and replacement thereon in the same accurately defined position.

19. The combination with a movable printing press support having a surface upon which a type-carrying plate is to be mounted, of a member detachably secured to said support for adjustment along the surface thereof providing an elongated shoulder, a type-carrying sheet having spaced fastening elements at opposite edges, one being adapted to engage said shoulder, a member hinged about an axis substantially parallel to said shoulder and engageable with said other element, said hinged member, upon being swung toward said support, stretching said sheet whereby to secure the same to said shoulder and the last mentioned member, and accurately located devices on said support and member respectively interengaging with each other in snugly fitting relation to prevent movement of said member in either direction longitudinally of said axis while permitting free swinging thereof.

ARTHUR B. DAVIS.

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