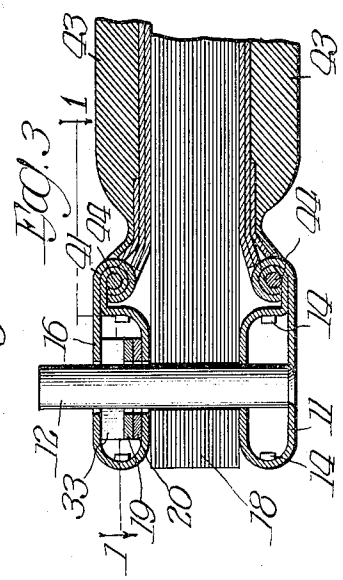
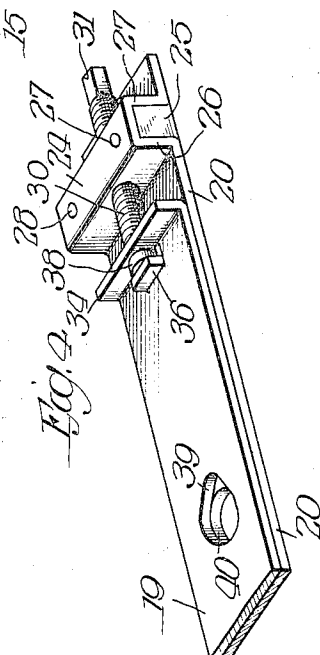
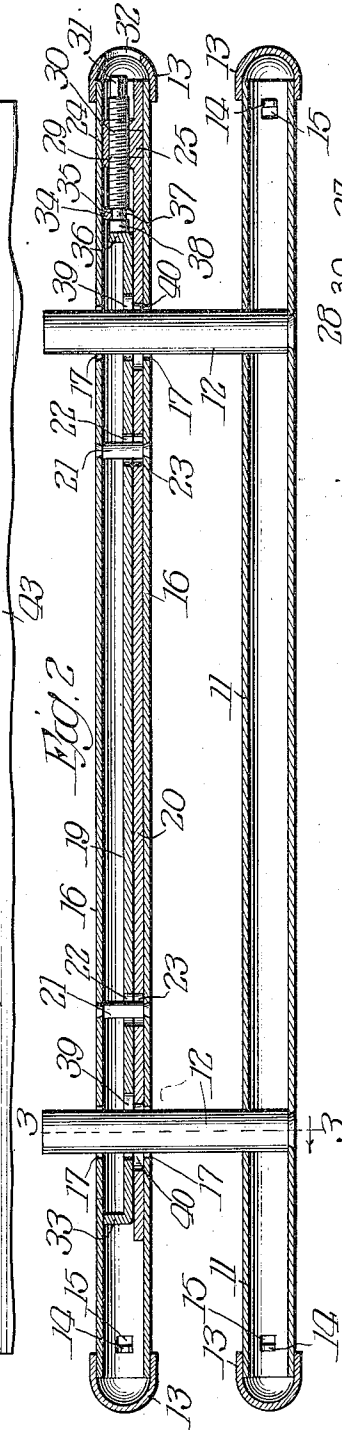
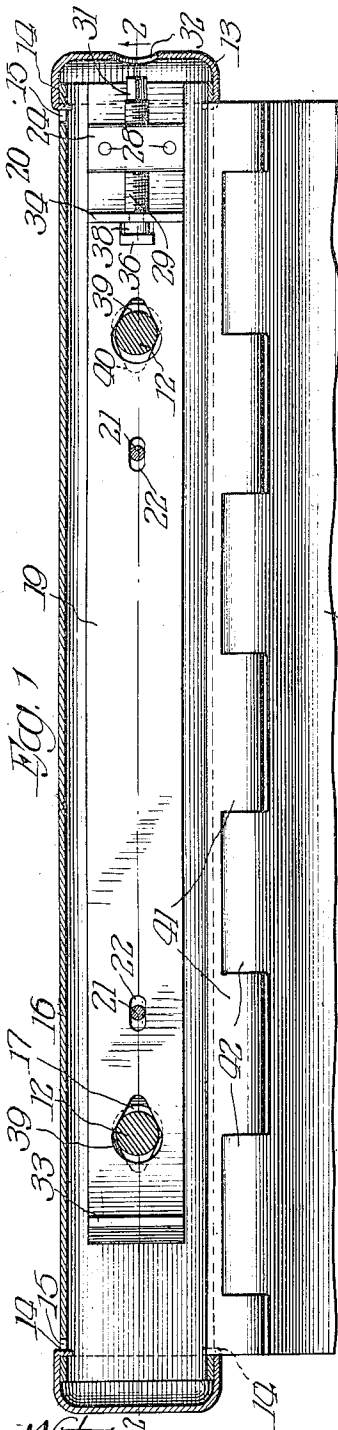


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 TEMPORARY BINDER.
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1,060,599.

Patented May 6, 1913.



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TEMPORARY BINDER.

1,060,599.

Specification of Letters Patent.

Patented May 6, 1913.

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To all whom it may concern:

Be it known that I, JOSEPH D. HUGHES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Temporary Binders, of which the following is a specification.

My invention relates to expansible loose leaf or temporary binders of the type wherein two coacting shells or clamping members are employed, one having fixed posts arising therefrom and adapted for insertion through apertures of the sheets to be bound, and the other clamping member having apertures for the reception of the posts and provided with a locking device for gripping the posts to prevent their withdrawal and separation from the clamping members when adjusted on the inserted sheets. Ordinarily in binders of this type the walls of the aperture in the shell are relied upon to engage the posts on one side to provide a frictional lateral abutment for the posts coöperating with the pressure of the locking device upon the other side of the post. In such forms of construction it is important that the apertures in the clamping member shall be accurately formed and of a size to snugly receive the posts in order that the latter shall not be subjected to an undue lateral strain and deflection in order to press the same into engagement with one of the side walls of the aperture. Such accuracy of fit requires that the apertures shall be drilled rather than punched and that they shall be made subsequent to the formation of the shell rather than in the material previous to forming. Such accuracy and care in the manufacture and fitting of the parts adds materially to the other expense of manufacture, as will be readily understood by those skilled in the art of working sheet metal.

By my improvement I utilize a locking device which is complete in itself and which performs its function entirely independently of the walls of the apertured clamping member thus permitting the apertures to be made roughly of such size as to loosely receive the posts and enabling them to be punched in the material of which the shells are later formed by folding, perfect registration of the apertures in the upper and lower walls of the shells not being requisite.

In the accompanying drawings I have

shown a preferred embodiment of the invention and in the following detailed description I have set forth the construction and the manner of its use, it being understood that such drawing and description are to be taken as illustrative only and not in a limiting sense, the invention being susceptible of embodiment in other constructional forms without departing from the essence of the invention or sacrificing its material advantages.

In these drawings, Figure 1 is a fragmentary top plan view showing one of the clamping elements in horizontal section, said view being taken upon the line 1—1 of Fig. 3; Fig. 2 is a vertical longitudinal section taken on the line 2—2 of Fig. 1; Fig. 3 is a fragmentary transverse vertical section on the line 3—3 of Fig. 2; and Fig. 4 is an enlarged fragmentary view in perspective showing one end of the locking elements.

Having reference to the drawings, the numeral 11 designates the lower stationary clamping member which may be of known construction and formed as a shell provided with rigid posts 12, 12 arising therefrom, each of the ends of the shell being closed by a cap 13 having tongues 14, 14 inwardly bent into engagement with openings 15, 15 in the edge wall of the shell. The upper clamping member 16 is likewise formed of a shell with its ends similarly closed by caps. The shell 16, however, instead of being provided with upstanding posts has its upper and lower walls provided with registering openings 17, 17 arranged in alinement with and adapted to loosely receive the posts 12 carried by the member 11 whereby the member 16 is guided for movement toward and from the member 11 so as to accommodate between said members a larger or smaller number of inserted sheets 18, said sheets being provided with apertures for engagement with the posts 12 as is customary in this art.

In order to provide for locking the movable clamping member 16 in adjusted position upon the posts 12 so as to clamp the sheets between the two members I mount within the shell 16 the two locking elements 19 and 20 by means of rivets 21, 21 headed in upper and lower walls of the shell 16 and passing through slots 22 and 23 of the elements 19 and 20 respectively whereby the

two elements are permitted a limited longitudinal movement only relative to each other and to the shell.

The locking element 20 is provided near one end with a lateral fold, the metal being offset to an extent corresponding roughly to the inner vertical diameter of the shell so as to bear at 24 upon the upper wall of the shell, a filling block 25 being inserted between the opposed walls 26 and 27 of the fold and secured in place by the rivets 28, 28. The block 25 and the folds 26 and 27 of the metal are provided with a threaded aperture 29 for threaded engagement with the adjusting screw 30 having an angular stem 31, and one of the caps 13 which closes that end of the shell 16 is provided with a central opening 32 for the reception of a key by which the angular stem 31 may be operatively engaged.

The locking element 19 has its two ends angularly upturned at 33 and 34 for a distance corresponding to that separating the upper face of the element 20 from the lower face of the shell wall said upturned ends serving to confine the elements 19 and 20 in the lower portion of the shell interior to prevent vertical movement of the members within the shell. The upturned end 34 of the element 19 is provided with a bearing aperture 35 in axial alinement with the threaded aperture 29 of the element 20 and the metal forming the lower wall of the aperture is broken away and upset to provide an abutment 36 in line with the apertures 29 and 35. The adjusting screw 30 has its inner end reduced at 37 between its threaded portion and its end 38, the reduced portion 37 lying within the bearing aperture 35 and its end 38 bearing on the one side against the upturned end 34 and upon the other side against the abutment 36 so as to form a swivel connection between said screw and the element 19. The screw is readily connected to and disconnected from the element 19 by withdrawing the screw end 38 through the opening left by the upsetting of the metal to form the abutment 36.

Each of the locking elements 19 and 20 is provided with a pair of ovate, that is to say tapering apertures separated by a distance corresponding roughly to the distance separating the openings 17 in the upper and lower walls of the shell and having transverse and longitudinal dimensions larger than the said openings. The apertures 39, 39 of the element 19 have their apexes reversely arranged from the apertures 40, 40 of the element 20 so that as the two locking elements are relatively moved longitudinally the inclined walls of the apertures 39 and 40 exert a double wedging action upon opposite sides of the posts, the slots 22 permitting the locking elements to adjust themselves relative to each other and to the posts so

that the gripping effect is uniformly applied upon opposite sides of each post without any tendency to strain or deflect the posts laterally. It will thus be seen that the gripping action of the locking device upon the posts is entirely independent of the shell itself and that the walls of the shell openings 17 have no gripping function to perform, wherefore accuracy of fit of the posts within said openings is not requisite it being only necessary that the opening 17 be sufficiently large to receive the post and that the apertures 39 and 40 be of such a size and contour that within the limits of longitudinal movement allowed by the slots 22 and 23 the walls of the apertures shall grip the posts. Having this wide permissible range as to size and shape it will be readily understood that the cost of manufacture is greatly reduced and the ease of assembling and facility of adjustment is largely enhanced.

The clamping members or shells 11 and 16 are advantageously provided with hinge knuckles 41 adapted to cooperate with similar knuckles 42 carried by cover plates 43, pintles 44 serving to connect said knuckles together to hinge the covers to the clamping members as indicated in Figs. 1 and 3.

What I claim is:

1. In an expansible binder, the combination with a stationary clamping member having posts arising therefrom, and a movable clamping member having transverse openings for the reception of the posts, of a locking device carried by the movable member and comprising elements bodily movable one with reference to the other and adapted to engage on opposite sides of each of the posts, and means to impart relative longitudinal movement to the locking elements, said means comprising a member mounted upon one of the elements and adjustably engaging the other element, substantially as described.

2. In an expansible binder, the combination with a stationary clamping member having posts arising therefrom, and a suitable clamping member having transverse openings for the reception of the posts, of a locking device carried by the movable member and comprising relatively movable elements having registering apertures of a cross section greater than that of the posts and adapted to be brought out of register and to engage the posts upon opposite sides thereof when shifted longitudinally relative to each other, and shifting means comprising a member mounted upon one of the elements and adjustably engaging the other element, substantially as described.

3. In an expansible binder, the combination with a stationary clamping member having a post arising therefrom, and a movable clamping member having a transverse

opening for the reception of the post, of a locking device carried by the movable member and comprising two superposed relatively movable elements provided with superposed reversely tapering apertures adapted to receive the post, and means to impart relative movement to the locking elements to cause them to grip the post upon opposite sides, substantially as described.

4. In an expansible binder, the combination, with a stationary clamping member having posts arising therefrom, and a movable clamping member having transverse openings for the reception of the posts, of a locking device carried by the movable member and comprising two relatively movable elements provided with pairs of superposed reversely ovate apertures spaced apart a distance corresponding to the distance separating the aforesaid openings and adapted to receive the posts, and means to impart relative movement to the locking elements to cause them to grip the posts upon opposite sides, substantially as described.

5. In an expansible binder, the combination, with a stationary clamping member having posts arising therefrom, and a movable clamping member having transverse openings for the reception of the posts, of a locking device carried by the movable member and comprising two relatively movable elements each provided with apertures spaced apart a distance corresponding to the distance separating the aforesaid openings and adapted to receive the posts, and means to impart relative movement to the locking elements to cause them to grip the posts upon opposite sides, said means comprising an adjusting screw swiveled in one of the elements and threaded into the other, substantially as described.

6. In an expansible binder, the combination, with a stationary clamping member having posts arising therefrom, and a movable clamping member having transverse openings for the reception of the posts, of a locking device comprising two elements joined together for limited longitudinal relative movement and each provided with ovate apertures spaced apart a distance corresponding to the distance separating the aforesaid openings, the apertures having a major diameter greater than the diameter of the openings, the corresponding apertures in the two locking elements having their apexes reversed, and means to impart relative movement to the locking elements to cause them to grip the posts upon opposite sides, substantially as described.

7. In an expansible binder, the combination, with a stationary clamping member having posts arising therefrom, and a movable clamping member having transverse openings for the reception of the posts, of a locking device comprising two elements

joined together for limited longitudinal relative movement and each provided with ovate apertures spaced apart a distance corresponding to the distance separating the aforesaid openings, the apertures having a major diameter greater than the diameter of the openings, the corresponding apertures in the two locking elements having their apexes reversed, and means to impart relative movement to the locking elements to cause them to grip the posts upon opposite sides, said means comprising an adjusting screw swiveled into one of the elements and threaded into the other, substantially as described.

8. In an expansible binder, the combination, with a stationary clamping member having posts arising therefrom, and a movable clamping member comprising a shell having transverse openings for the reception of the posts, of a locking device mounted within the movable member and comprising two elements joined together for limited longitudinal relative movement and each provided with apertures spaced apart a distance corresponding to the distance separating the aforesaid openings, and means to impart relative movement to the locking elements to cause them to grip the posts upon opposite sides, substantially as described.

9. In an expansible binder, the combination, with a stationary clamping member having posts arising therefrom, and a movable clamping member comprising a shell having transverse openings for the reception of the posts, of a locking device mounted within the movable member and comprising two elements joined together and to the shell for limited longitudinal relative movement, each element provided with a pair of ovate apertures spaced apart a distance corresponding to the distance separating the aforesaid openings and adapted to receive the posts, the major diameter of the apertures exceeding the diameter of the openings, and means to impart relative movement to the locking elements to cause them to grip the posts upon opposite sides, said means comprising an adjusting screw swiveled into one of the elements and threaded into the other, substantially as described.

10. In an expansible binder, the combination, with a stationary clamping member having posts arising therefrom, and a movable clamping member comprising a shell having transverse openings for the reception of the posts, of a locking device mounted within the movable member and comprising two elements joined together and to the shell for limited longitudinal relative movement, each element provided with a pair of ovate apertures spaced apart a distance corresponding to the distance separating the aforesaid openings and adapted to receive the posts, the major diameter of the aper-

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tures exceeding the diameter of the openings, the ovate apertures in the two locking elements having their apexes reversed with their major axes extending longitudinally of the locking elements, and means to impart relative movement to the locking elements to cause them to grip the posts upon opposite sides, substantially as described.

11. In an expansible binder, the combination, with a stationary clamping member having posts arising therefrom, and a movable clamping member comprising a shell having transverse openings for the reception of the posts, of a locking device mounted within the movable member and comprising two elements joined together and to the shell for limited longitudinal relative movement, each element provided with a pair of ovate apertures spaced apart a distance corresponding to the distance separating the aforesaid openings and adapted to receive the posts, the major diameter of the apertures exceeding the diameter of the openings, the elements having their adjacent ends upturned, one provided with a bearing aperture and the other with a threaded aperture, and an adjusting screw headed in the bearing aperture and engaging the threaded aperture whereby to impart relative movement to the locking elements to cause the same to grip the posts upon opposite sides thereof, substantially as described.

12. In an expansible binder, the combination, with a stationary clamping member

having posts arising therefrom, and a movable clamping member comprising a shell having transverse openings for the reception of the posts, of a locking device mounted within the movable member and comprising two elements joined together and to the shell for limited longitudinal relative movement, each element provided with a pair of ovate apertures spaced apart a distance corresponding to the distance separating the aforesaid openings and adapted to receive the posts, the major diameter of the apertures exceeding the diameter of the openings, the ovate apertures in the two locking elements having their apexes reversed and their major axes extending longitudinally of the locking elements, one of the elements having its two ends upturned and provided at one end with a bearing aperture, the second element having an upturned end provided with a threaded aperture in alinement with the bearing aperture, and an adjusting screw headed in the bearing aperture of the first element and threaded in the aperture of the second element whereby to impart longitudinal movement to the locking elements to cause the posts to be gripped upon opposite sides by the inclined walls of the ovate apertures, substantially as described.

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