

H. O. MEEK & C. E. BRADBURN.
COLLAPSIBLE FORM.

APPLICATION FILED DEC. 1, 1910.

1,016,284.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

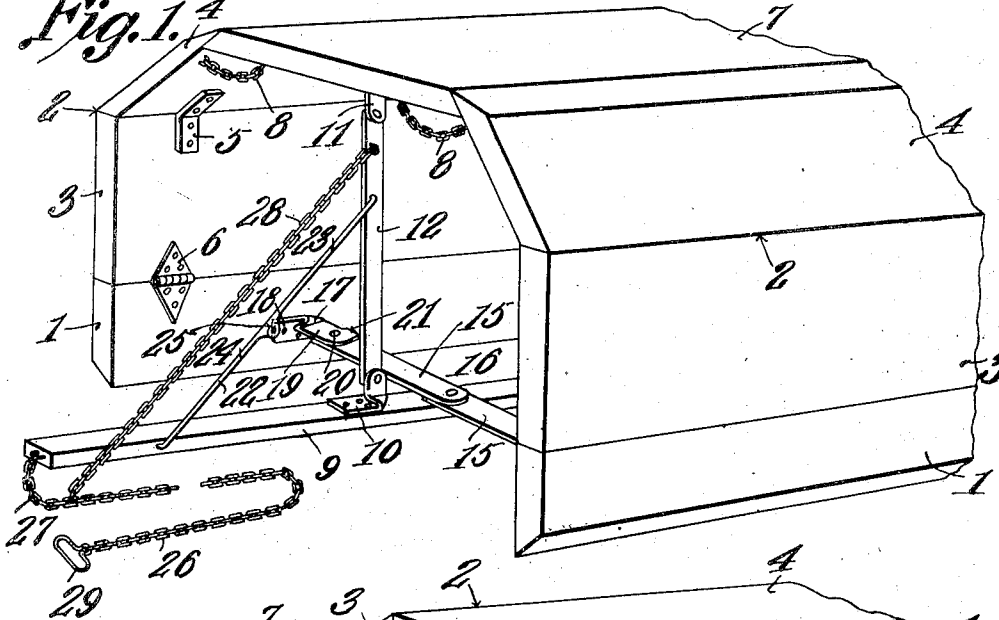


Fig. 2.

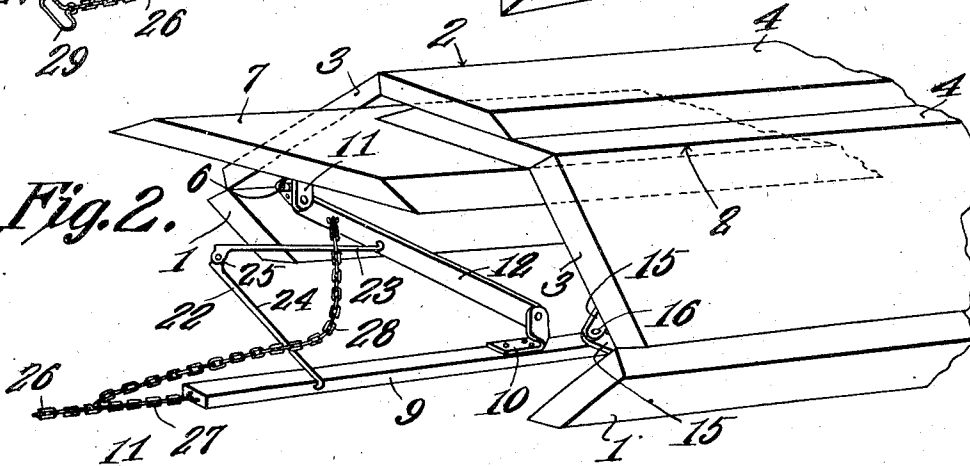
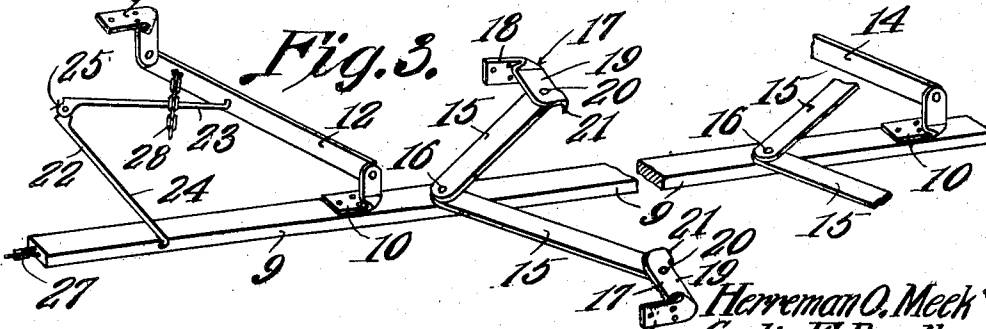


Fig. 3.



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2 SHEETS—SHEET 2.

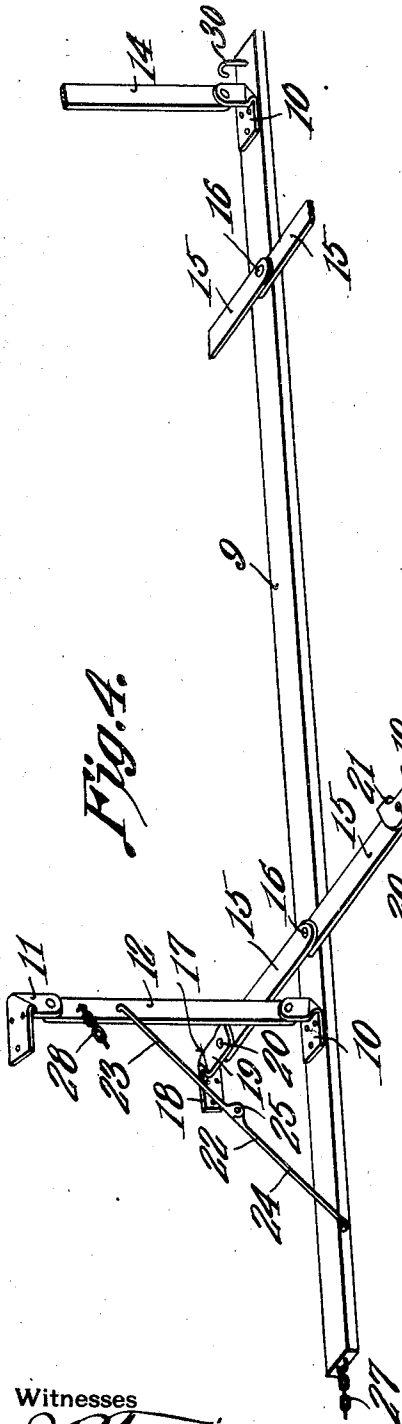


Fig. 4.

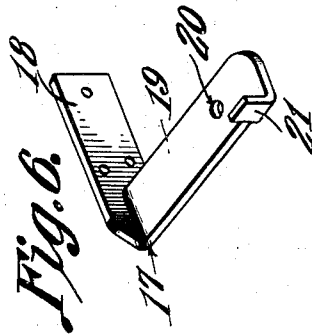


Fig. 6.

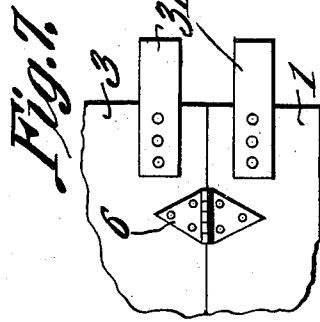


Fig. 7.

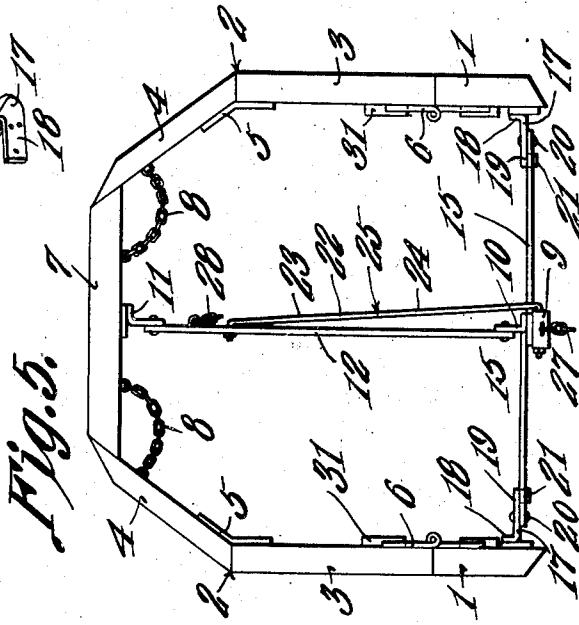


Fig. 5.

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UNITED STATES PATENT OFFICE.

HERREMAN O. MEEK AND CURTIS E. BRADBURN, OF GARDEN CITY, KANSAS.

COLLAPSIBLE FORM.

1,016,284.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed December 1, 1910. Serial No. 595,076.

To all whom it may concern:

Be it known that we, HERREMAN O. MEEK and CURTIS E. BRADBURN, citizens of the United States, residing at Garden City, in the county of Finney, State of Kansas, have invented a new and useful Collapsible Form, of which the following is a specification.

It is the object of this invention to provide a collapsible form for the fashioning of arches, and to provide novel mechanism whereby the form may be rigidly upheld, and collapsed at the will of the operator.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made without departing from the spirit of the invention.

In the drawings,—Figure 1 is a perspective showing the collapsible form in distended position; Fig. 2 is a perspective showing the form in collapsed position; Fig. 3 is a perspective of the mechanism whereby the form is manipulated, parts being broken away; Fig. 4 is a perspective of the mechanism whereby the form is manipulated, the parts of the mechanism being in the positions which they will assume when the form is upheld; Fig. 5 is an end elevation of the form and its operating mechanism, the form being upheld; Fig. 6 is a detail perspective of one of the hinge members; and Fig. 7 is a fragmental elevation of one end of the collapsible form.

The form proper may be of any desired outline and will of course vary to conform to the intrados of the arch which is to be fashioned. In the present instance, the form is shown as comprising skew backs 1, shoulders 2 resting upon the skew backs 1, and a key board 7, disposed between the upper ends of the shoulders 2. The shoulders 2 may be of one piece construction, or, if desired, as shown, they may consist of lower plates 3, and upper plates 4, secured together by braces 5. Hinges 6 unite the lower plates 3 with the skew backs 1. The key board 7, when not sustained and upheld by mechanism to be described hereinafter, is movable freely, downwardly, between the upper plates 4, but, if desired, the downward movement of the key board 7

may be limited by flexible members 8, each of which is secured at one end to the key board 7, and at the other end to one of the upper plates 4.

The invention further includes a collapsing member 9, ordinarily taking the form of a rod, and disposed longitudinally of the collapsible form, in the interior thereof. Spaced hinge plates 10 are secured to the collapsing member 9, and similar hinge plates 11 are secured to the inner face of the board 7. Links 12 and 14 unite pivotally, the hinged plates 10 and 11.

It will be seen from the foregoing, that the key board 7 may be moved vertically with respect to the collapsing member 9, with which it is pivotally connected by means of links 12 and 14.

Horizontally disposed links 15 are pivoted as at 16 to the collapsing member 9. The outer ends of the links 15 are pivotally connected with hinge members, denoted generally by the numeral 17 in Fig. 1. The hinge members 17 each comprise a vertical arm 18 which is secured to the skew back 1, and a horizontal arm 19, to which the link 15 is immediately pivoted, as shown at 20. The horizontal arms 19 of the hinge members 17 are provided adjacent their ends, and beyond the pivot point 20, with outstanding fingers 21, adapted to engage the edges of the links 15.

From the foregoing it will be seen that the skew backs 1 and the shoulders 2 may be moved horizontally with respect to the collapsing member 9 with which they are pivotally connected by means of the links 15.

A variety of mechanisms may be provided for maintaining the links 12 and 14 in vertical positions, so as to sustain the key board. If desired, this mechanism may consist of a toggle, denoted generally by the numeral 22 in Fig. 1. This toggle 22 consists of a member 23 which is pivoted to the link 12, and a member 24 which is pivoted to the collapsing member 9, the members 23 and 24 pivoting and knuckling together at their adjacent ends, as shown at 25.

The invention further includes a crotch line, denoted generally by the numeral 26 in Fig. 1. One branch 27 of the crotch line 26 is united with the end of the collapsing member 9, the other branch 28 of the crotch line being united with the link 12. At its extremity, the crotch line 26 may be provided with an eye 29; the collapsing member

9 being provided at its other extremity, with an upstanding hook 30, over which the eye 29 of the crotch line 26 of the next adjacent section may be passed, it of course being understood that the collapsible form will ordinarily consist of a plurality of sections, placed end to end. To secure a proper alignment of the sections, the shoulders 2 and the skew backs 1 may carry outstanding cleats 31, upon their inner faces, the cleats 31 upon one section of the collapsible form, extending within the next section thereof.

Presupposing that the device is positioned as shown in Fig. 1, the operation of the same is as follows. After the arch has been fashioned over the collapsible form, the toggles 22 may be manipulated, to set the links 22 free, so that they may be tilted downwardly. If the crotch line 26 be drawn upon, the branch 27 of the crotch line will advance the collapsing member 9, disposing the links 15 in the angular relation seen in Fig. 3, and drawing the skew backs 1 and the shoulders 2 inwardly. The branch 28 of the crotch line will tilt the link 12, causing the key board 7 to descend, the shoulders 2 folding above the key board 7, as disclosed in Fig. 2. The form is thus collapsed, and may be withdrawn from the arch which has been formed thereon.

If desired, the crotch line 26 may be made of considerable length, the eye 29 in one crotch line being engaged over the hook 30 of the member 9 of the next section, so that one section after another may readily be withdrawn.

Obviously, in setting up the collapsible form, the toggle 22 serves to uphold the key board 7, the fingers 21, engaging the edges of the links 15, serving to maintain the links 15 in alignment, as shown in Fig. 4, thus maintaining the skew backs 1 and the shoulders 2 spaced apart properly, and in cooperation with the board 7 which is maintained in its uplifted position by means of the links 12 and 14.

It will be noted that the collapsing member 9 is adapted to rest upon a common support with the form. The collapsing member thus serves as a rigidly supported base, adapted to receive the thrust of the key board 7, the thrust being transmitted by means of the links 12 and 14. Obviously, the toggle member 22 constitutes a locking device, maintaining the links 12 and 14 in upright positions, thereby to support the key board 7 which constitutes the top of the collapsible form.

Having thus described the invention what is claimed is:—

1. In a device of the class described, a collapsible form; a collapsing member movable within and longitudinally of the form,

the collapsing member being adapted to rest upon a common support with the form; oppositely extended links pivotally uniting the collapsing member with the sides of the form; spaced links pivotally uniting the collapsing member with the top of the form; a locking device connecting one of the last named links with the collapsing member to uphold the top of the form; and a crotch line, one of the branches of which is connected with the collapsing member, the other branch thereof being connected with the link to which the locking device is applied.

2. In a device of the class described, a collapsible, open-bottomed form including shoulders; skew backs hinged to the lower edges of the shoulders; a key board disposed between the upper edges of the shoulders; a collapsing member movable within the form and adapted to rest upon a common support with the form; oppositely extended links pivoted at their adjacent ends to the collapsing member, and at their remote ends pivoted to the skew backs; spaced links pivoted to the collapsing member and to the key board; and flexible elements connecting the key board with the shoulders; the collapsing member being longitudinally movable, to fold the skew backs inwardly, and to move the key board downwardly, whereby the weight of the key board will fall upon the flexible members, thereby moving the upper portions of the shoulders into overlapping relation above the key board.

3. In a device of the class described, a collapsible form including shoulders; skew backs hinged to the shoulders; a key board disposed between the shoulders; flexible elements uniting the key board with the shoulders; a collapsing member movable within the form and adapted to rest upon a common support with the form; oppositely extending links pivoted at their adjacent ends to the collapsing member, and at their remote ends pivoted to the skew backs; spaced links pivoted to the collapsing member and to the key board; a locking device engaging one of the last named links to uphold the board; and a crotch line having one of its branches attached to the collapsing member, the other branch of the crotch line being secured to the link which is provided with the locking device.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

HERREMAN O. MEEK.
CURTIS E. BRADBURN.

Witnesses:
WM. EASTON HUTCHISON,
C. E. VANCE.