No. 786,557. PATENTED APR. 4, 1905.

R. H. GOEDE.

FOLDING FEED BOX.

APPLICATION FILED MAY 31, 1904.

Fig. 1

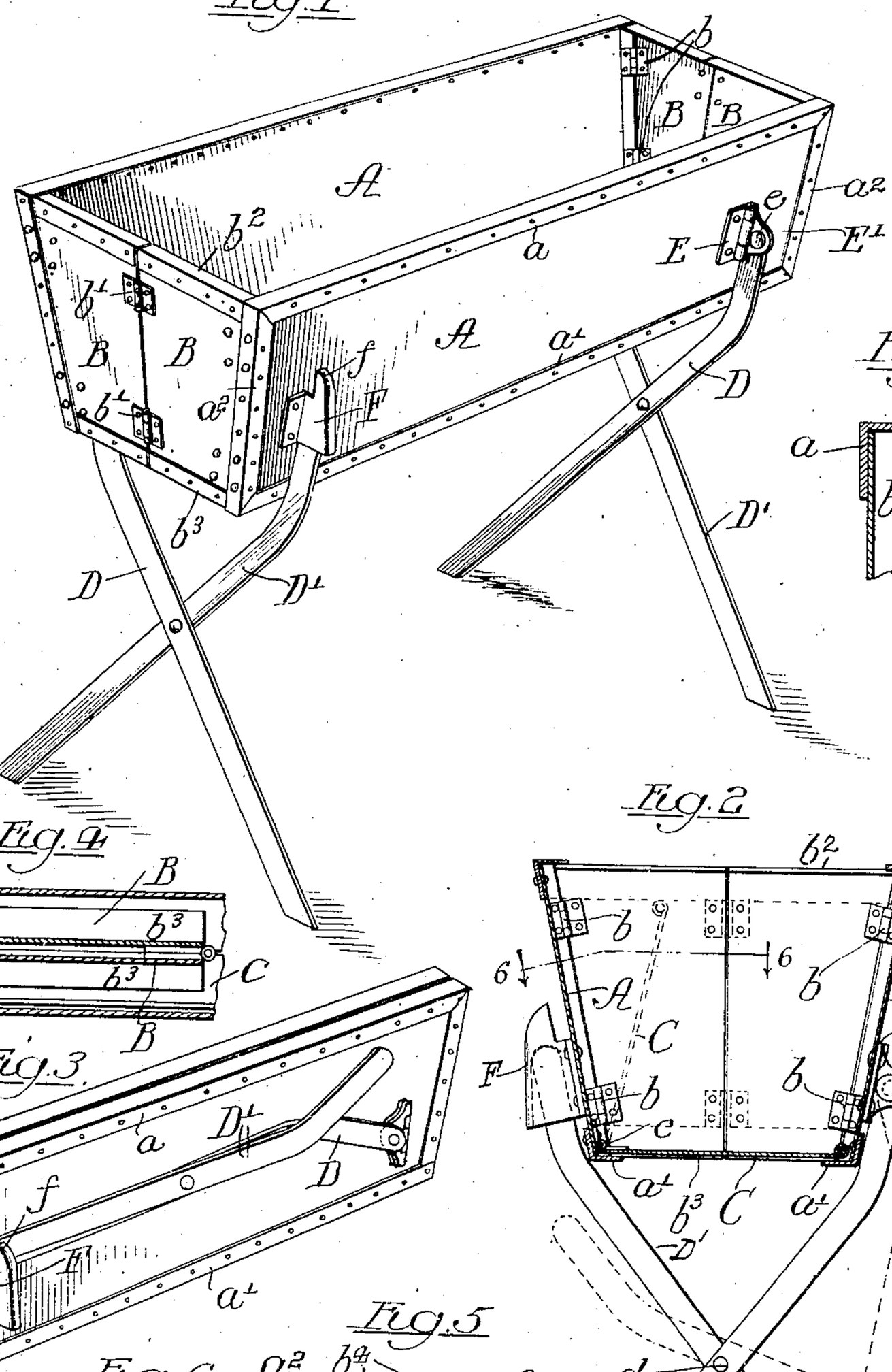


Fig. 7

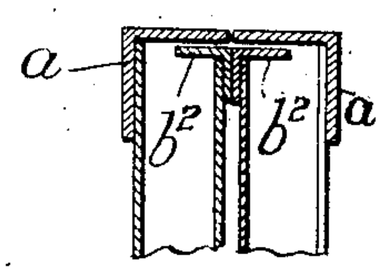


Fig. 4

Fig. 3

Fig. 2

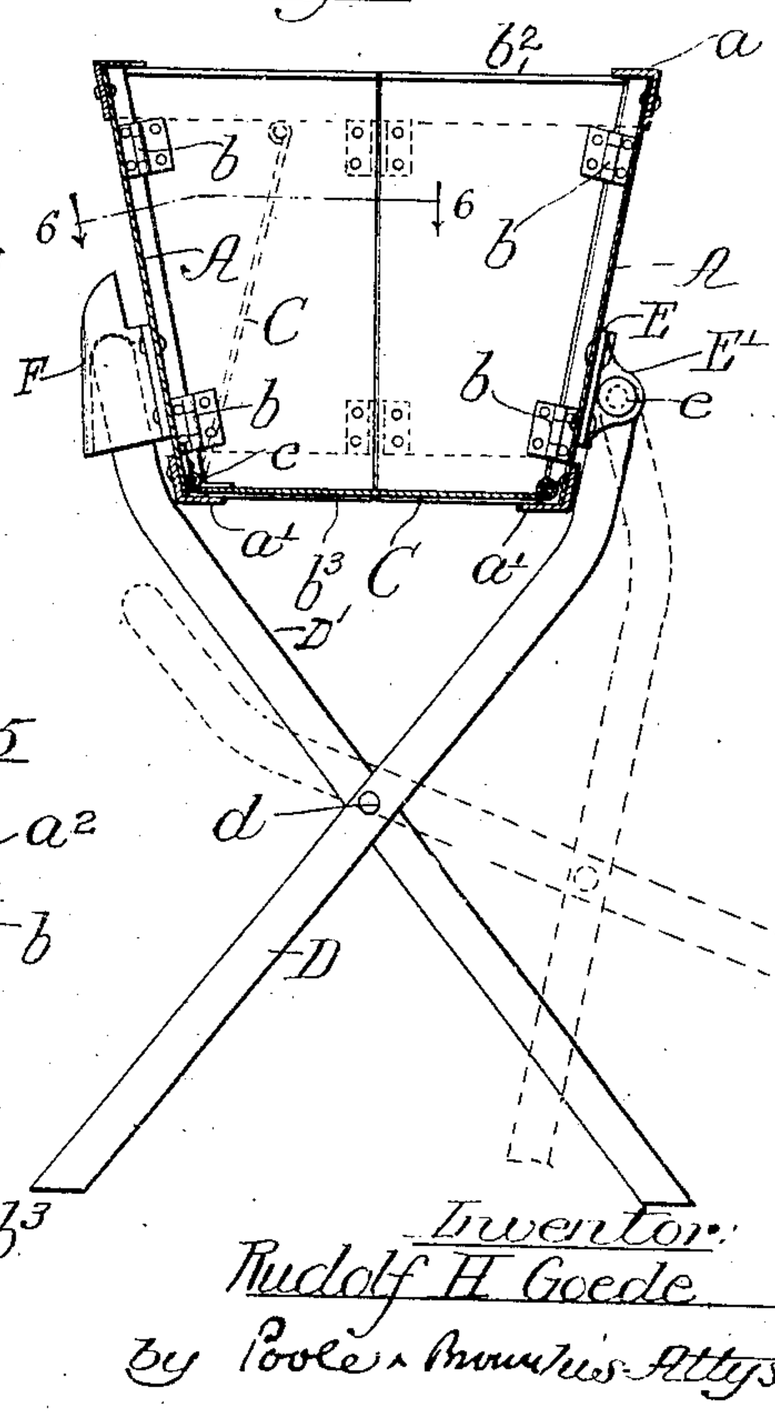


Fig. 5

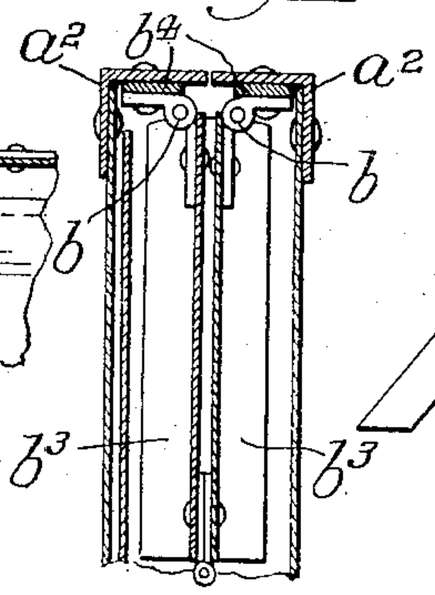
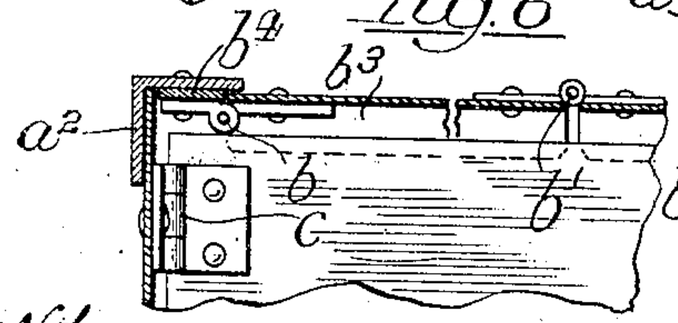


Fig. 6



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No. 786,557. Patented April 4, 1905.

UNITED STATES PATENT OFFICE.

RUDOLF H. GOEDE, OF CHICAGO, ILLINOIS.

FOLDING FEED-BOX.

SPECIFICATION forming part of Letters Patent No. 786,557, dated April 4, 1905.

Application filed May 31, 1904. Serial No. 210,481.

To all whom it may concern:

Be it known that I, RUDOLF H. GOEDE, 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 Folding Feed-Boxes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a folding or collapsible feed-box or portable receptacle designed to be carried on a vehicle and to contain grain or other feed for horses and which is provided with legs or supports by which the body of the feed-box or receptacle is sustained or supported from the ground at a height above the same convenient for the horse in feeding.

The invention consists in the matters hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a perspective view of a feed-box embodying the invention when set up in condition for use. Fig. 2 is a vertical cross-section of the feed-box when set up for use. Fig. 3 is a perspective view of the same in its folded condition. Fig. 4 is a plan view of one end of the feed-box when in its folded or collapsed position, parts of the upper frame members or sides of the box being broken away to show the inwardly-folded end portions of the end wall. Fig. 5 is a detail cross-section of one end of the feed-box when folded, taken on a plane parallel with the top of the box. Fig. 6 is a detail section, on an enlarged scale, taken upon line 6 6 of Fig. 2. Fig. 7 is a section, taken upon the line 7 7 of Fig. 4, showing the end-wall sections in their folded position.

The body of the feed-box shown in the accompanying drawings embraces two side walls A A, end walls consisting each of two centrally-separated sections B B, which are hinged to each other and to the ends of the side walls, and a bottom wall C, which is hinged at one of its sides to the lower margin of one of the side walls A. The sections B B, constituting each end wall, are joined to the adjacent ends of the side walls by means of hinges *b b*, so arranged that the sections B B may fold inwardly against the inner faces of said side walls A A, and said sections B B are joined to each other by means of hinges *b' b'*, so arranged that when the adjacent margins of the sections B B are folded inwardly their outer faces may come together or parallel with each other. The hinge connection of the end-wall sections B B with each other and with the side walls A A enables the latter when the end-wall sections are folded inwardly between the side walls to be brought together in parallel relation. The bottom wall C is adapted to fold upwardly into contact with one of the side walls A, with its end portions between the said side walls and the end-wall sections B B. It follows from the construction described that by folding upwardly the bottom wall into contact with its associated side wall and then folding the end-wall sections inwardly and bringing the side walls together the body of the receptacle is brought into a flat or compact form, so that it will occupy very little space and may be stored or placed in or on a wagon without occupying any material quantity of space.

Supports for the body of the feed-box are provided, consisting of two pairs of crossed legs, each pair of which is indicated by D D'. The legs D D' of each pair are pivotally connected with each other at points between their ends by means of pivots *d*, while the upper end of one leg of each pair is pivotally connected with one side wall of the feed-box and the other leg of each pair is adapted for detachable connection with the opposite side wall, so that when the said legs are in their open or crossed position their upper ends will serve as supports for the feed-box, while their lower ends will be widely separated and adapted to rest upon the ground. One leg, D, of each pair is connected with one of the side walls A of the feed-box in such manner that both legs may be folded flatwise against the said side wall, the construction employed for this purpose being made as follows: E E' are two plates which are pivotally joined together like the leaves of a hinge, and one of which,

E, is rigidly secured to the outer side face of the side wall of the feed-box near one end of the same. To the other or swinging plate E′ the leg D is connected by means of a pivot *e*. When the legs D D′ are in use, the hinge-plate E′ stands in a vertical plane at right angles to the face of the side wall A, while the leg D, which is pivoted thereto, extends downwardly in an inclined position beneath the feed-box. The other leg, D′, at this time extends at its upper end along the outer face of the other side wall A, which latter is provided with a socket-plate F, having a downwardly-opening socket adapted to receive the upper end of the said leg D′. It follows that when the legs D D′ are in position to support the feed-box the upper ends of said legs will be rigidly held in position by engagement of the upper end of the leg D′ with the socket-plate F. When it is desired to fold the legs D D′ upwardly against the side of the feed-box to which the leg D is pivoted, the upper end of the leg D′ is drawn downwardly out of and released from the socket-plate F, and the legs D D′ are then brought or folded together in nearly parallel relation. The folded legs can then be swung on the pivot of the hinge-plate E′ until parallel with and in contact with the outer face of the side wall A or into the position shown in Fig. 3. Moreover, they may be locked in their position by having their ends placed behind a holding-prong *f*, attached to the side wall and extending upwardly parallel therewith at a distance therefrom necessary to admit the folded legs behind it. Said prong *f* is shown as having the form of an upward projection of the socket-plate F. The legs D D of the two pairs of legs are pivoted to opposite side walls A A, and the socket-plates F F are likewise attached to opposite side walls, so that each pair of legs is connected with and is adapted to be folded against one of the side walls.

Now referring to details of construction of the parts shown in the accompanying drawings, each side wall A is shown as consisting of a metal plate having a marginal frame formed by top and bottom angle-irons *a a′* and connecting end angle-irons a^2 a^2. The sheet-metal body of the side wall is riveted or otherwise attached at its edges to the web portions of the angle-irons *a*, *a′*, and a^2, the flange portions of said angle-irons extending inwardly. The end walls B B consist of flat pieces of sheet metal having attached to their upper and lower margins angle-irons b^2 b^3, the web portions of which are arranged vertically and secured to the plates B B, while the flange portions thereof extend inwardly. Said flange portions of the angle-irons b^2 b^3 are narrower than the flanges of the longitudinal angle-irons *a a′* of the side walls, and the parts are so arranged that when the end-wall sections B B are folded inwardly, as shown in Figs. 4, 5 and 7, said angle-irons b^2 b^3 will come inside of the flanges of the angle-irons *a a′*. The relation of the parts when folded is clearly shown in the detail view Fig. 7. The pivots of the hinges *b b* are, moreover, arranged nearer the side walls A than the margins of the flanges of the angle-irons a^2, so that when the box is in its open condition and the end-wall sections B B in line with each other the outer margins of said end-wall sections will extend beneath or have overlapping relation with the margins of the flanges of the angle-irons a^2, as clearly seen in Fig. 6, the parts of the hinges which are attached to the said angle-iron a^2 being held by means of spacing-plates b^4 at such distance from the flanges of the angle-irons a^2, to which they are attached, as to permit said end-wall sections B to come into such overlapping relation. Said spacing-plates b^4 are shown as made of approximately the same thickness as the plates constituting the end-wall sections B B, so that the parts or leaves of said hinges *b b* will be in line with each other when the box is unfolded, as clearly seen in Fig. 6.

The hinges *c c*, which connect the bottom wall C with the side wall A, are secured to the inner face of the side wall and the top surface of the bottom wall in such position that the bottom wall when the box is extended rests upon the inwardly-extending flanges of the angle-irons *a′* and b^2, as clearly seen in Fig. 2.

The particular arrangement of the details described enables the box to be folded in a very compact form with the flanges of the marginal angle-irons *a*, *a′*, and a^2 of the side walls in contact or approximately in contact with each other, the folded bottom wall C and end-wall sections B B being contained within the space afforded by the width of the flanges of the angle-irons *a a′* a^2, as clearly indicated in Figs. 4, 5, and 7.

The body of the feed-box made as described may be easily and quickly folded and unfolded, while the legs may be easily and quickly folded against the sides of the box and readily placed in position to support the box.

An important advantage is gained by making the body of the box of plates provided with marginal angle-irons, this construction affording a light and strong and at the same time a cheap construction in the parts.

I claim as my invention—

1. A folding feed-box comprising side walls, folding end-wall sections and a bottom wall, said side walls, end-wall sections and bottom wall being joined to each other by hinged connections, and two pairs of crossed legs, one at each end of the box, the upper ends of each pair of legs being connected with the side walls of the box in a manner to hold the box open when set up and adapted to be folded flat against the side walls of the box.

2. A folding feed-box comprising side walls,

end-wall sections hinged to each other and to the ends of the side walls, and a bottom wall hinged to the lower edge of one of the side walls, said side walls having angle-irons at the top and bottom margins thereof, and having inwardly-extending flanges, and the bottom wall and end-wall sections being hinged to the side walls in such manner as to be folded within the spaces afforded by the said inwardly-extending flanges of said side walls.

3. A folding feed-box comprising side walls, end-wall sections hinged to each other and to the ends of the side walls, and a bottom wall hinged to the lower edge of one of the side walls, said side walls having angle-irons at the top, bottom and end margins thereof, and the end-wall sections having angle-irons secured to the upper and lower margins thereof, said angle-irons having their flanges extending inwardly.

4. A folding feed-box comprising side walls, end-wall sections hinged to each other and to the ends of the side walls, and a bottom wall hinged to the lower edge of one of the side walls, said side walls having angle-irons at the top and bottom margins thereof, and said end-wall sections having angle-irons secured to the top and bottom margins thereof, the said end-wall sections being adapted to be folded within the inwardly-extending flanges of the top and bottom angle-irons of said side walls.

5. A folding feed-box comprising side walls, end-wall sections hinged to each other and to the ends of the side walls, and a bottom wall hinged to the lower edge of one of the side walls, said side walls having angle-irons at the end margins thereof and having inwardly-extending flanges, and the hinges which join the outer margins of the end-wall sections with the ends of the side walls being secured to the inner faces of the flanges of the said angle-irons.

6. A folding feed-box comprising side walls, end-wall sections hinged to each other and to the ends of the side walls, and a bottom wall hinged to the lower edge of one of the side walls, said side walls having angle-irons at the end margins thereof, and having inwardly-extending flanges, the outer margins of the end-wall sections being so arranged as to come in overlapping relation to said flanges when the box is in its unfolded or open condition.

7. A folding feed-box comprising side walls, end-wall sections hinged to each other and to the ends of the side walls, and a bottom wall hinged to the lower edge of one of the side walls, said side walls having angle-irons at the end margins thereof, and having inwardly-extending flanges, and the hinges which join the outer margins of the end-wall sections with the end of the side walls being secured to the inner faces of said flanges of the side angle-irons, and spacing-plates interposed between the said hinges and the said flanges.

8. A folding feed-box comprising side walls, end-wall sections hinged to each other and to the ends of the side walls, and a bottom wall hinged to the lower edge of one of the side walls, said side walls having angle-irons at their lower margins and having inwardly-extending flanges, and said bottom wall being adapted to rest upon said flanges, when the box is in its unfolded or open condition.

9. The combination with a folding feed-box consisting of side walls, end-wall sections, and a bottom wall, hinged to the side walls, of supporting-legs pivoted to each other between their ends, plates hinged to the side walls, to which one leg of each pair of legs is pivoted, and socket-plates attached to the side walls and adapted to receive the upper end of the other leg of each pair of legs.

10. The combination with a folding feed-box consisting of side walls and end-wall sections, and a bottom wall hinged to the side walls, of two pairs of pivotally-connected supporting-legs, plates having hinged connection with the side walls, to each of which one leg of each pair of legs is pivoted, socket-plates attached to said side walls and adapted to receive the upper ends of the other leg of each pair, and holding-prongs on the side walls adapted to engage and hold in its place the ends of said legs when the latter are folded against said side walls.

11. The combination with a folding feed-box consisting of side walls, end-wall sections, and a bottom wall, which are hinged to the said side walls, of two pairs of pivotally-connected supporting-legs, plates hinged to one of the side walls to which one leg of each pair of legs is pivoted, and socket-plates attached to the side walls and adapted to receive the upper end of the other leg of each pair of legs, said socket-plates being provided with upwardly-extending lugs behind which the ends of said legs may be placed when folded against the side walls of the receptacle.

12. A folding feed-box comprising side walls, end-wall sections and a bottom wall, said side walls, end-wall sections and bottom wall being joined to each other by hinged connections, and two pairs of crossed legs, one at each end of the box, one of the legs of each pair being hinged at its upper end to the side wall of the box, the opposite side of the box being provided with a socket adapted to receive the upper end of the other leg of said pair.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 27th day of May, A. D. 1904.

RUDOLF H. GOEDE.

Witnesses:
C. CLARENCE POOLE,
GEORGE R. WILKINS.