J. W. GOODWIN.

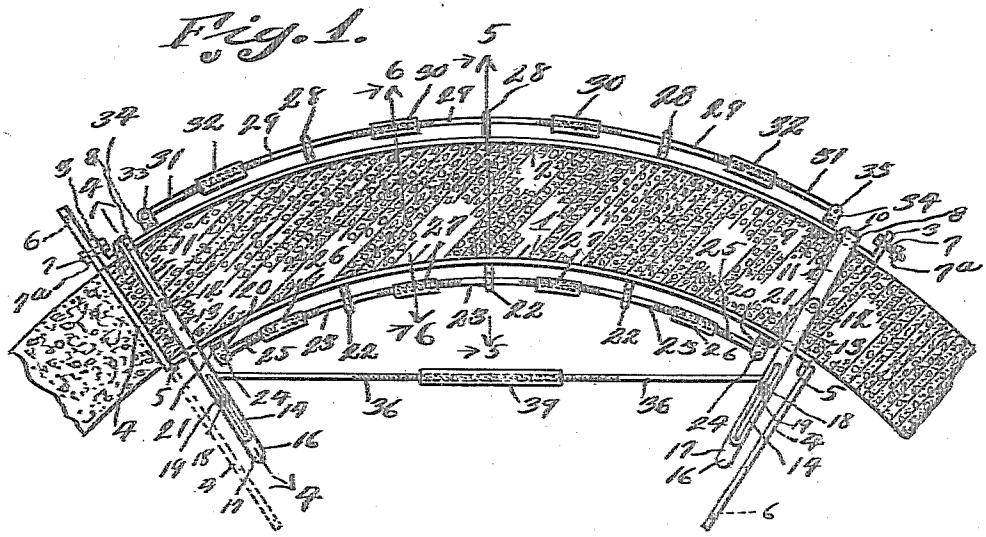
METAL FORM FOR CONSTRUCTING SILO AND OTHER CEMENT WALLS.

APPLICATION FILED DEC. 5, 1917.

1,269,807. Patented June 18, 1918.

2 SHEETS—SHEET 1.

Fig. 1.



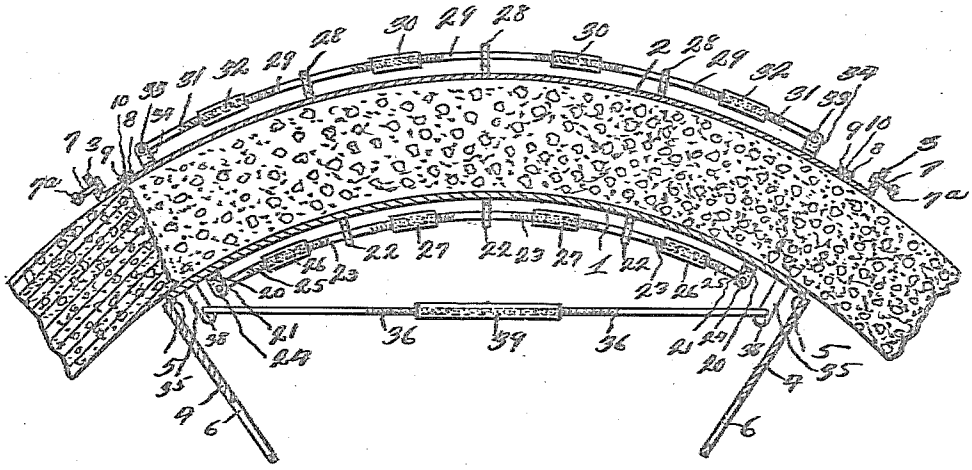


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 5.

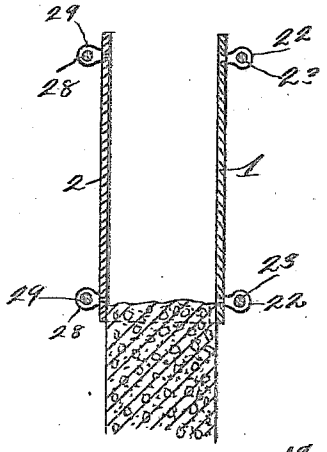


Fig. 6.

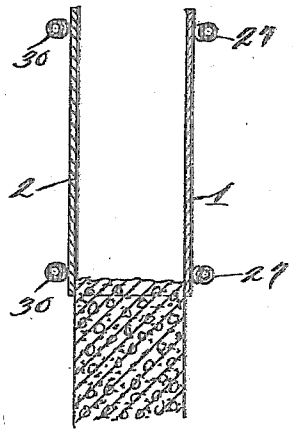
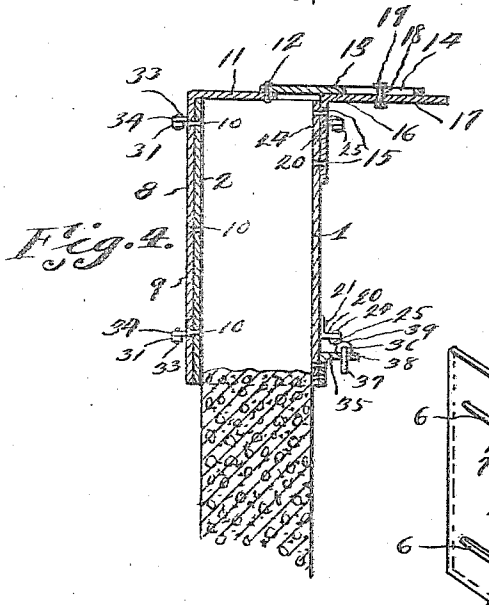


Fig. 4.



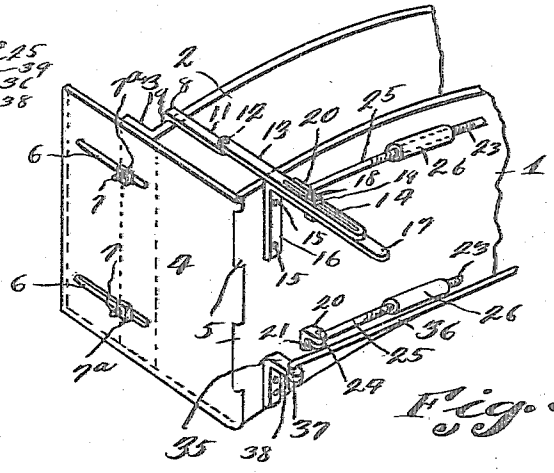


Fig. 3.

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UNITED STATES PATENT OFFICE.

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METAL FORM FOR CONSTRUCTING SILO AND OTHER CEMENT WALLS.

1,269,807. Specification of Letters Patent. Patented June 18, 1918.

Application filed December 5, 1917. Serial No. 205,645.

To all whom it may concern:

Be it known that I, JOHN W. GOODWIN, a citizen of the United States, residing at Neodesha, in the county of Wilson, State of Kansas, have invented a new and useful Metal Form for Constructing Silo and other Cement Walls; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved metal form for constructing silo and other cement walls, and one of the objects of the invention is to provide a simple, efficient and practical form of this kind comprising inner and outer sheet metal members, between which sections of a silo or other wall may be constructed, each section of the wall being constructed successively until the entire wall is constructed.

A further object of the invention is the provision of improved means for holding the inner and outer sheet metal members in spaced relations, one rigid with relation to the other, whereby the cement or other plastic material may be deposited therebetween to form the section of wall.

A further object of the invention is the provision of means for holding the inner and outer sheet metal members in adjusted spaced relation, whereby walls of different thicknesses may be constructed, or walls thicker at one end than at the other may be constructed.

A further object of the invention is the provision of improved means for bowing the inner and outer sheet metal spring members on different arcs, whereby walls of different diameters may be constructed.

In practical fields the details of construction may necessitate alterations falling within the scope of what is claimed.

The invention comprises further features and combinations of parts as hereinafter set forth, shown in the drawings and claimed.

In the drawings:—

Figure 1 is a plan view of the inner and outer sheet metal members, bowed so as to construct a curved wall, which may constitute a section of a silo wall.

Fig. 2 is a horizontal sectional view of said sheet metal form comprising said inner and outer sheet metal plates.

Fig. 3 is a detail perspective view of the inner and outer sheet metal spring plates or members, showing the means for holding them in different adjusted positions and spaced from each other and the hingedly end plates, whereby the end of the wall to be constructed may be formed, to constitute a part of a door jamb.

Fig. 4 is a sectional view on line 4—4 of Fig. 1.

Fig. 5 is a sectional view on line 5—5 of Fig. 1.

Fig. 6 is a sectional view on line 6—6 of Fig. 1.

Referring more especially to the drawings 1 and 2 designate the inner and outer sheet metal spring plates or members, between which cement or other plastic material is designed to be deposited to form a section of a silo or other wall. Each end of the outer plate 2 is provided with an outwardly turned radially disposed flange 3. To the ends of the inner sheet metal plate 1 plates or members 4 are connected by the hinges 5. The plates 4 are provided with elongated slots 6. In order to form either end surface (which may constitute a door jamb or the like) of the wall as shown in Fig. 1, one or the other of said plates 4, is arranged to overlie the flange 3, there being bolts 7 passing through the flanges 3 and through the slots 6, to receive the nuts 7^a to assist in holding the inner and outer plates in different adjusted spaced relations.

Carried by the outer plate 2 near its ends, and riveted thereto are the angular strips 8. The arms 9 of these strips or straps extend the full height of said outer plate 2 and are riveted thereto as shown at 10, while the arms 11 overlie the upper edge of the plate 2. Pivoted to the arms 11 as shown at 12 are the links 13, which are provided with slots 14. Riveted at 15 to the inner plate 1 are the angular brackets 16 and extending through the slots 14 and through the arms 17 of said brackets 16 are the bolts 18 having nuts 19. By this construction the inner and outer plates 1 and 2 may be held in different adjusted spaced relations according to the thickness of wall to be constructed. By means of the long arms 9 of the angular straps or strips (which are rigid with relation to the arms 11 and at right angle thereto) the entire height of the outer plate 2 is held in parallelism with the inner plate 1. The inner plate adjacent its ends and near the upper and lower edges angular brackets 20 are riveted as shown at 21. The

inner plate 1 near its upper and lower edges is provided with eyes 22 through which the rod sections 23 extend. Pivoted to the brackets 20 as shown at 24 are rod sections 25, which are in turn connected to the end rod sections 23 by means of turn buckle sleeves 26. The end rod sections 23 are in turn connected to the central rod section 23 by the threaded turn buckles 27, and it is to be observed that by adjusting the turn buckles 26 and 27 in one direction, the rod sections 23 may be moved axially toward each other, whereby the inner plate 1 may be curved on different arcs. By means of the eyes 22 the rod sections are held, so that the plate 1 may assume a curved shape concentric with the rod sections, and whereby a cement wall may be constructed having the desired curvature. The outer face of the outer plate 2 is also provided with eyes 28 through which the rod sections 29 pass, there being turn buckle sleeves 30 threaded to and connecting the rod sections 29. Additional rod sections 31 are connected to the end rod sections 29 by the turn buckle sleeves 32. Said rod sections 31 (which are adjacent the upper and lower edges of the outer plate 2) are pivoted at 33 to the angular brackets 34. It is to be noted that by adjusting the turn buckle sleeves 30 and 32 in the desired direction, the rod sections 29 and 31 may be axially extended, thereby giving the outer plate 2 the desired curvature, to conform concentrically with the curvature of the inner plate. The inner plate 1 at its ends near its lower edge is provided with angular brackets 35, to which the rods 36 are connected, by passing their angular end 37 through the openings 38. The adjacent ends of the rods 36 are threads, and connecting these threaded ends is a turn buckle sleeve 39. By adjusting the turn buckle sleeve 39 in the desired direction, thereby moving the rods 36 axially away from each other, the inner plate 1 may be reinforced, and its opposite ends near its lower edge may be held in parallelism with the outer plate 2, and thereby preventing displacement of the plate. In constructing a silo wall substantially as shown in Figs. 1 and 2, starting from one jamb of a door opening of a silo, the plates 1 and 2 (which are constructed of spring sheet steel) are arranged with relation to each other as shown and curved so as to receive cement or other plastic material between them. In order to form an end (which may constitute a jamb of a door opening), the plate 4 on the left is arranged as shown in Figs. 1 and 3, and by means of the bolts 7 the plates 1 and 2 are prevented from becoming displaced, in fact prevented from spreading. After one section of the wall is constructed said plates 1 and 2 may be moved to another position to form another segment of wall. This is continued, forming the various sections successively annularly, and one tier of sections on the other, until a complete silo may be constructed.

The invention having been set forth what is claimed as new and useful is:—

In a metal form for molding cement segment wall sections, inner and outer sheet metal spring plates, means carried by the outer faces of both plates for giving said plates concentric curvature, angular brackets on the inner plate near its ends and adjacent its upper edge, angular straps on the outer plate near its ends, one arm of each strap extending the full height of the plate, and adjustable connections between said angular brackets and the angular straps for adjusting the inner and outer plates in spaced relation to each other, a transverse plate hingedly connected to each end of the inner plate and provided with adjustable connections with the corresponding end of the outer plate, whereby the end of the segment wall may be formed.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN W. GOODWIN.

Witnesses:
J. H. MANNING,
ED. MAHONEY.