

J. H. REEVES.
 KNOCKDOWN FORM FOR THE CONSTRUCTION OF CONCRETE BINS.
 APPLICATION FILED DEC. 11, 1907.

907,878.

Patented Dec. 29, 1908.

Fig. 1.

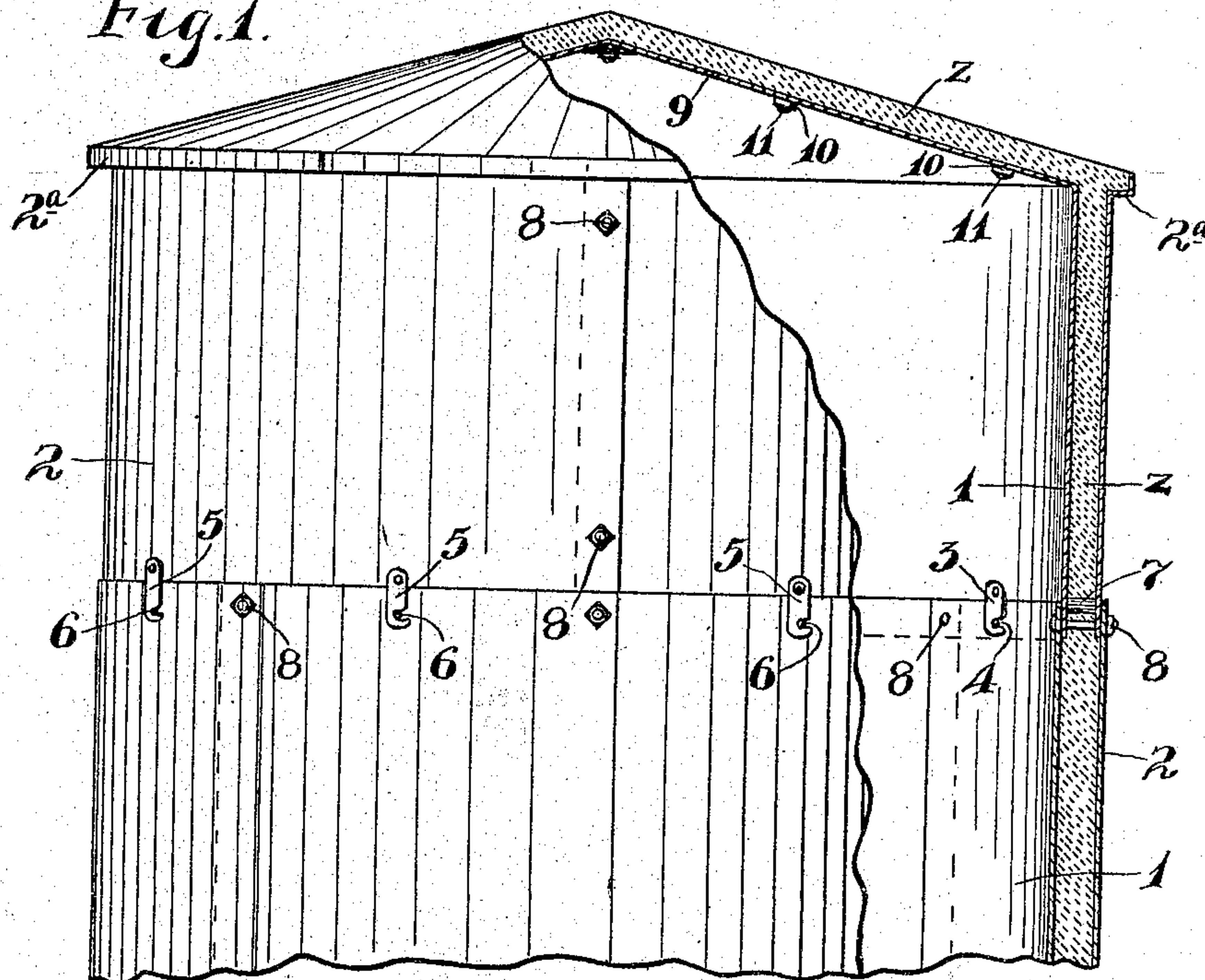
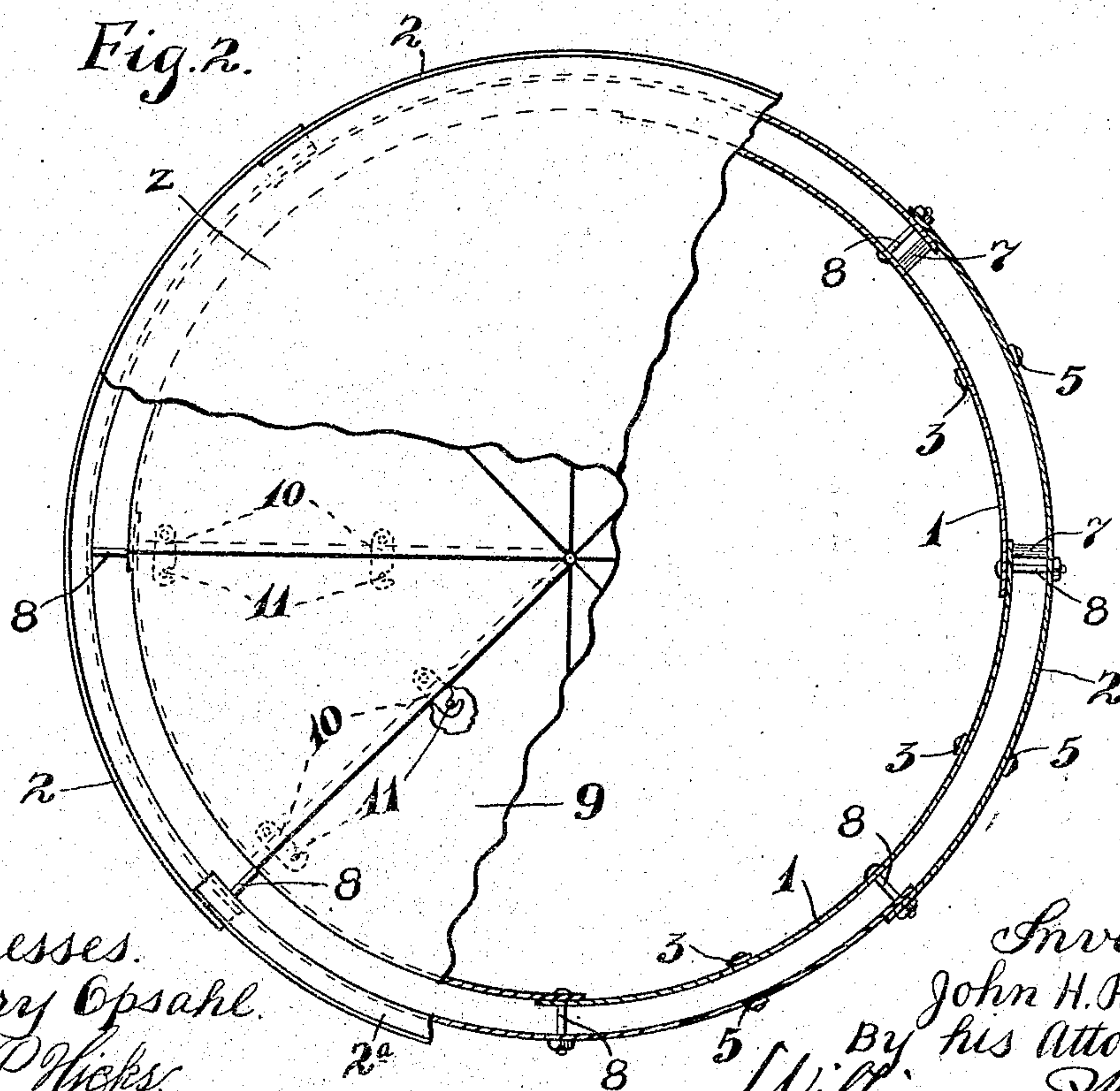


Fig. 2.



Witnesses.
 Harry Opsahl.
 R. P. Hicks.

Inventor.
 John H. Reeves.
 By his Attorneys
 Williamson Murdoch

UNITED STATES PATENT OFFICE.

JOHN H. REEVES, OF ORANGE, CALIFORNIA.

KNOCKDOWN FORM FOR THE CONSTRUCTION OF CONCRETE BINS.

No. 907,878.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed December 11, 1907. Serial No. 406,039.

To all whom it may concern:

Be it known that I, JOHN H. REEVES, a citizen of the United States, residing at Orange, in the county of Orange and State of California, have invented certain new and useful Improvements in Knockdown Forms for the Construction of Concrete Bins; 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.

My invention has for its object to provide a convenient knock-down or sectional form for use in the construction of barns, silos, storage bins and the like, in monolithic concrete, and to the above ends the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view, partly in side elevation and partly in vertical section, showing the improved knock-down form set up, some parts being broken away; and Fig. 2 is a view, partly in plan and partly in horizontal section, of the parts shown in Fig. 1, portions being broken away.

The main body portion of the knock-down form is made up of inside and outside sectional cylinder shells that are concentrically arranged. Each cylindrical shell is made up of several horizontal circumferentially extended series of cylinder sections, which cylinder sections have their joints lapped and are detachably secured together. Suitable means is provided for spacing apart the inner and outer cylindrical shells. Also the inner cylindrical shell is preferably provided, at its upper extremity, with a conical roof form made up of radially diverging sections detachably secured together.

The sections of the inner cylindrical shell are indicated by the numeral 1, and the sections of the outer cylindrical shell are indicated by the numeral 2. The sections 1 that make up a circumferential series have overlapped ends and, at their upper edges, they overlap the inside surfaces of similar sections 1 that are higher up. In a similar manner the sections 2 that make up a circumferential series in the outer cylindrical

shell overlap the outside surfaces of the lower extremities of upper cylinder sections 2. This brings the concentrically spaced horizontally aligned inner shell segment 1 and outer shell segment 2 of the several circumferential series successively closer and closer together toward the top of the bin, so that the thickness of the wall of the bin will be gradually decreased in a direction from the bottom toward the top of the bin. This, as is evident, is very desirable construction.

Near their lower edges the inner shell segments 1 are provided with pivoted hooks 3 that overlap the inner surfaces of the upper edges of lower sections 1 and interlock with studs or projections 4 on the latter. In a similar manner the outer shell segments 2 are provided, near their lower edges, with pivoted hooks 5 that overlap the outer surfaces of the upper edges of the lower sections 2 and interlock with studs or projections 6 on the latter. Preferably spacing blocks 7 are interposed at suitable intervals between the sections of the inner and outer shells, and nutted bolts 8 are passed through the overlapped edges of the sections of the inner and outer shells.

To provide a form upon which the roof of the silo or bin may be constructed, I provide the sectional conical roof form 9 which is made up of a multiplicity of radially projecting segments adapted, as shown, to be securely but detachably connected by hooks 10 on said sections that are engaged with studs or projections 11 on the adjacent sections, as shown in Fig. 2.

The margin of the conical form made up of the sections 9 is provided with a down-turned flange adapted to engage over the upper edges of the upper series of inner shell segments 1. At their upper edges the uppermost outside shell segments 2 are provided with outwardly offset and up-turned flanges 2^a that are adapted to form a projecting annular eave around the concrete top of the bin or silo.

In the use of the device above described, the circumferential series of inner and outer segmental shells 1 are preferably built up in succession, and the intervening space filled with concrete before the next upper series of inner and outer segmental shells are applied. Also the spacing blocks 7 are preferably removed when the concrete has been filled nearly up to the same. The bolts 8 should be removed after the concrete has set but be-

fore it becomes thoroughly hardened. As is evident, after the completed concrete bin, barn or silo has been formed, the inside and outside segmental shells and the sections of the conical roof form may be disconnected and removed, individually, from working positions.

It will, of course, be understood that the bin or silo will be provided with the usual or suitable passages or door openings which will enable material to be placed within and to be removed from the same. The sections of the interior shell, when removed from working position, may be removed from the silo through one or the other of said openings.

It will be noted that the hooks 3 and the lower edges of the inner sections 1 to which they are pivoted straddle the upper edges of the engaged lower sections 1 and thereby limit the downward movements of upper sections in respect to lower sections. The same statement is true in respect to the outer hooks 5 and sections 2 to which they are pivoted.

The character *z* indicates the concrete which forms the bin or silo.

It will be understood that the principles of construction involved in the knock-down form above described may be employed in rectangular and polygonal construction.

What I claim is:

1. A knock-down form for the construction of concrete bins, barns and silos, comprising interior and exterior shells in parallel arrangement; each made up of several cir-

cumferentially extended series of cylindrical segments, overlapped and detachably connected together, the sections of said interior and exterior shells being successively offset in a vertical direction and spaced closer and closer together in a direction from the bottom toward the top of the structure, substantially as described.

2. In a knock-down form for the construction of concrete bins, barns and silos, the combination with an inner shell made up of several circumferential series of overlapped cylindrical segments, the upper segmental sections having hooks 3 that engage projections 4 on the lower sections, of an outer shell made up of several horizontal series of overlapped segmental sections 2, the upper sections 2 having hooks 5 that engage projections 6 on the lower sections, the horizontally aligned sections 1 and 2 of the several horizontal series of the inner and outer shells being placed successively closer and closer together in parallel arrangement, and nutted bolts 8 passed through the overlapped edges of the inner and outer sections 1 and 2 and adapted to temporarily clamp the said sections against spacing blocks, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. REEVES.

Witnesses:

H. P. JONES,

CHAS. O. KILPATRICK.