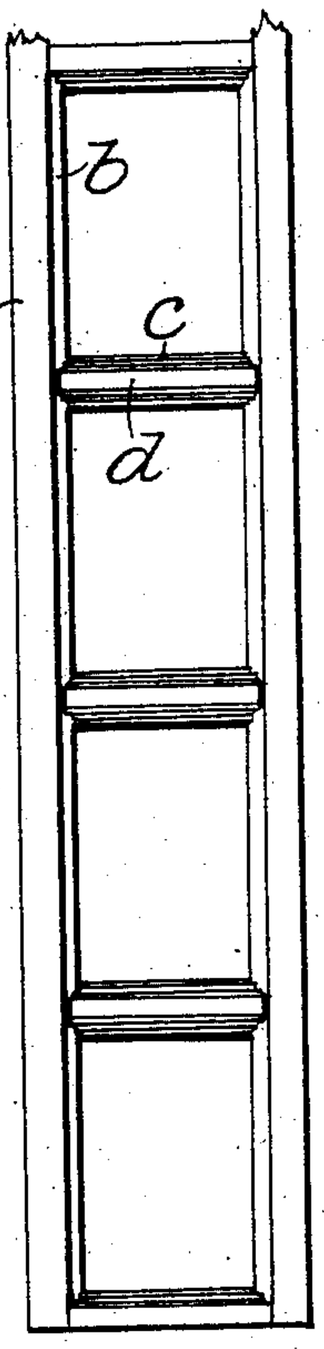
J. D. LA TIER & L. E. DIETEL.

KNOCKDOWN SILO.

APPLICATION FILED OCT. 28, 1910.

994,525. Patented June 6, 1911.

Fig. 1.



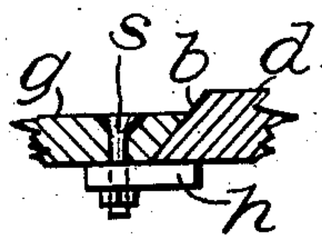
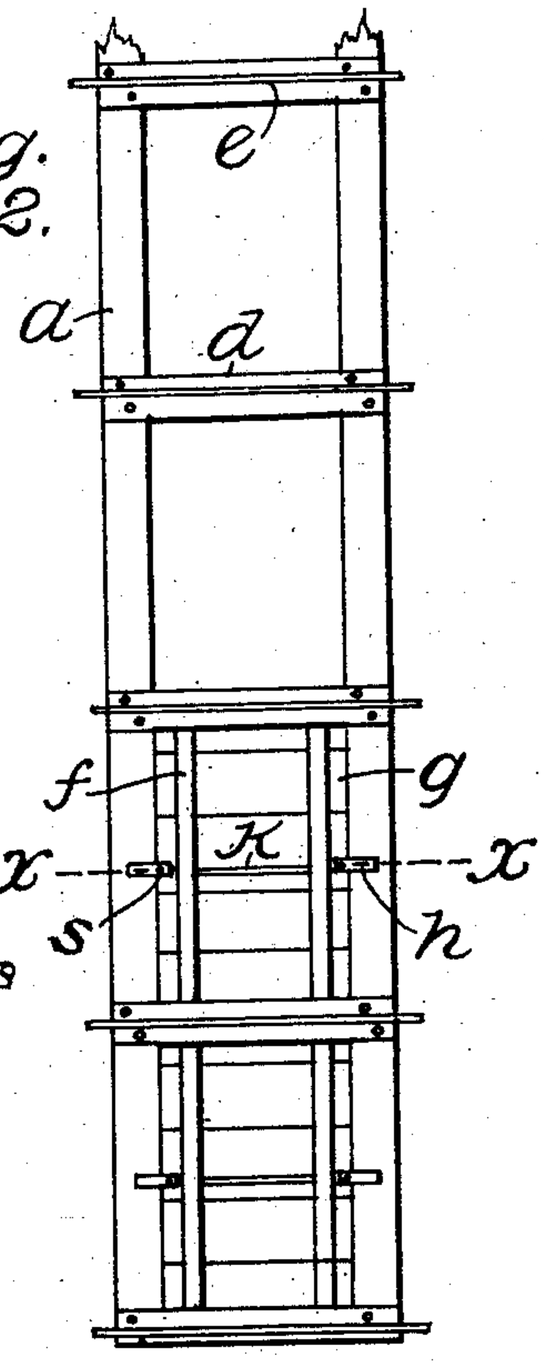


Fig. 5.

Fig. 2.



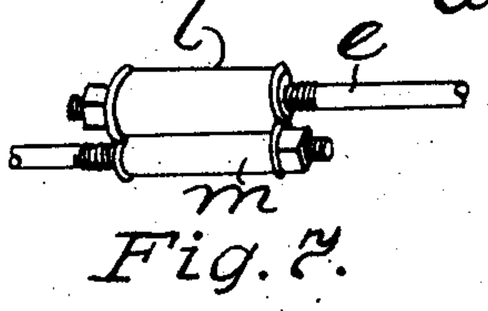


Fig. 2.

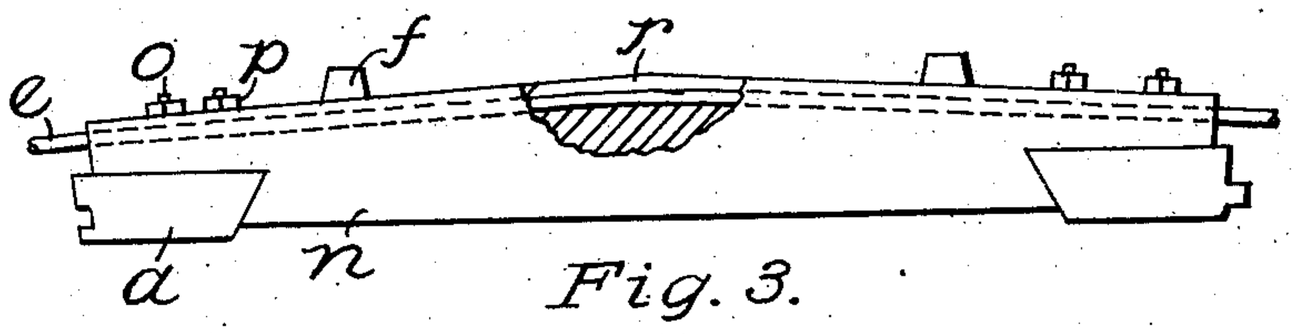
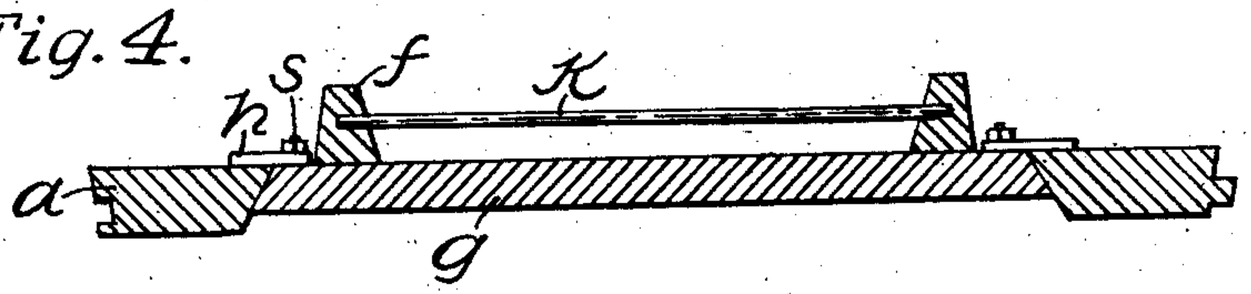


Fig. 3.

Fig. 4.



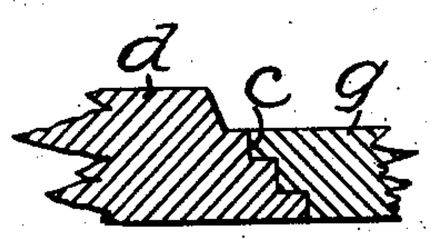


Fig. 6.

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UNITED STATES PATENT OFFICE.

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KNOCKDOWN SILO.

994,525. Specification of Letters Patent. **Patented June 6, 1911.**

Application filed October 28, 1910. Serial No. 589,612.

To all whom it may concern:

Be it known that we, JAMES D. LA TIER and LEWIS E. DIETEL, citizens of the United States of America, and residents of Waterloo, Blackhawk county, Iowa, have invented certain new and useful Improvements in Knockdown Silos, of which the following is a specification.

Our invention relates to improvements in knock-down silos, and the object of our improvements is to provide a silo body formed of detachable assembled parts, each part also being constructed in detachable sections, and such parts being conveniently formed for transportation and for ease in setting up. This object we have accomplished by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawings, in which:

Figure 1 is a broken elevation of one of the framing sections, seen from the inside. Fig. 2 is an elevation of the part shown in Fig. 1 taken from the outside, and showing some of the closures detachably secured in the openings thereof. Fig. 3 is an enlarged lower plan view of the lowermost cross-bar securing the two uprights of a framing-part together. Fig. 4 is an enlarged sectional view of one of the silo-sections taken on the line *x*—*x* of Fig. 2. Fig. 5 is a broken detail section, enlarged, taken horizontally across the beveled contacting parts of one of the closures and a section-upright. Fig. 6 is an enlarged broken sectional view, taken vertically across the stepped contacting edges of one of the closures and the adjacent section cross-bar. Fig. 7 is an enlarged broken detail of the adjustable connecting and securing means for the compression-rod used to hold the assembled sections in one hollow body.

Similar characters of reference designate corresponding parts throughout the several views.

Our improved silo body is formed of a plurality of detachably-connected sections, each section being formed of two parallel spaced-apart uprights *a* connected by means of cross-bars *d*. The inner edges of the uprights are beveled inwardly at the sides only at *b*, and the inner edges of the cross-bars *d* are stepped inwardly at *c*, above and below. Closures *g* are formed to fit and close the openings between said uprights and cross-bars, the side edges of the closures being beveled and their upper and lower edges similarly stepped to fit the uprights and cross-bars, the stepped parts being useful to keep the closures from slipping down through gravity, while the beveled edges furnish a tight contact and prevent the closures from being pushed out, while being firmly held on their seats by the weight of the silo contents pressing outwardly upon them. These closures are detachably secured in place by means of turn-catches *h* pivoted on bolts *s*, the latter passed through the closures, and the catches engaging the outer faces of the uprights *a*.

Vertical spaced-apart bars *f* are secured to the outer faces of the closures *g*, and cross-rods *k* are supported between each pair, such cross-rods serving as ladder-rounds when the sections are fully assembled.

The cross-bars *d* as well as the bottom cross-beam *n* are secured to the uprights *a* by means of bolts *o* and *p*, detachably. The uprights *a* are tongued and grooved on their outer edges to fit the abutting uprights of adjacent sections. The cross-beams *d* and *n* are grooved at *r* on their outer faces to provide seats for the compression-rods *e*, which hold the assembled sections together to form the hollow silo. The rods *e* have their adjacent ends adjustably seated in the connected interiorly-threaded sleeves *l* and *m*, as shown in Fig. 7, with lock-nuts, whereby their tension may be adjusted.

It will be seen that the sections of the silo are adapted to be easily assembled, as well as taken apart, and the closures may be added in turn as the silo is filled, such closures being securely fitted in place when seated, but easily removed.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is:

1. A knock-down silo, comprising a plurality of detachably connected sections, each section containing a plurality of inwardly beveled edged openings, and beveled edged closures removably fitted to and secured in said openings.

2. A knock-down silo, comprising a plurality of detachably connected sections, each section containing a plurality of openings whose edges are beveled inwardly along

their vertical sides, and whose lower edges are stepped, and removable closures adapted to fit and close said openings.

3. A knock-down silo, comprising a plurality of detachably connected sections, each section being formed of vertical uprights connected by cross-bars, the inner edges of said uprights being beveled inwardly, and the upper edges of those cross-bars which coöperate with the uprights to form openings in said sections being stepped inwardly, and closures removably fitted to close the openings thus formed, with edges registering with the contacting uprights and cross-bars.

4. A knock-down silo, comprising a plurality of detachably connected sections, each section containing a plurality of openings, closures adapted to removably fit and close said openings on their inner sides facing the center of the silo, and a ladder-round secured to the outer face of each of said closures.

5. A knock-down silo, comprising a plurality of detachably connected sections, each section containing a plurality of openings, closures removably fitted to the inner sides of said sections to close said openings, and suitable catches detachably securing said closures over said openings.

6. A knock-down silo, comprising a plurality of detachably connected sections, means for detachably securing said sections together to form a hollow body, each section containing a plurality of vertically-alined openings with their side edges beveled inwardly and their other edges stepped inwardly, closures having edges formed to removably fit the said beveled and stepped edges of said openings to close the same, and means for detachably securing said closures on the inner faces of said sections closing said openings.

7. A knock-down silo, comprising a plurality of detachably connected sections, each section being composed of separated vertical uprights connected by cross-bars to form openings therebetween, the inner edges of said openings being partly beveled and partly offset inwardly, closures fitted removably to the inner sides of said sections with edges registering with the said beveled and stepped edges of said openings, means for securing said closures to said uprights, a ladder-round supported on the outer face of each closure, and a plurality of detachably connected compression-rods seated about said assembled sections, adjustably, and adapted to form the whole into a braced hollow containing body.

Signed at Waterloo, Iowa, this 10th day of Oct. 1910.

JAMES D. LA TIER.
LEWIS E. DIETEL.

Witnesses:
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