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D. A. SCHLICHTER.
SILO.

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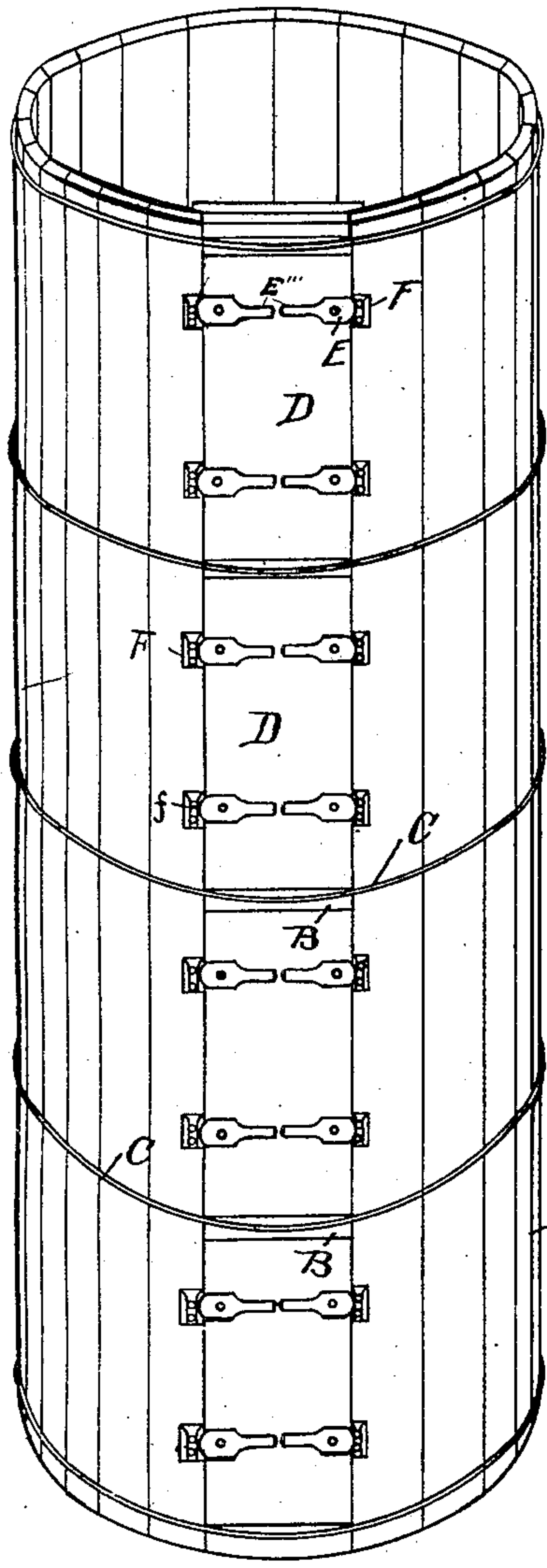


FIG 1

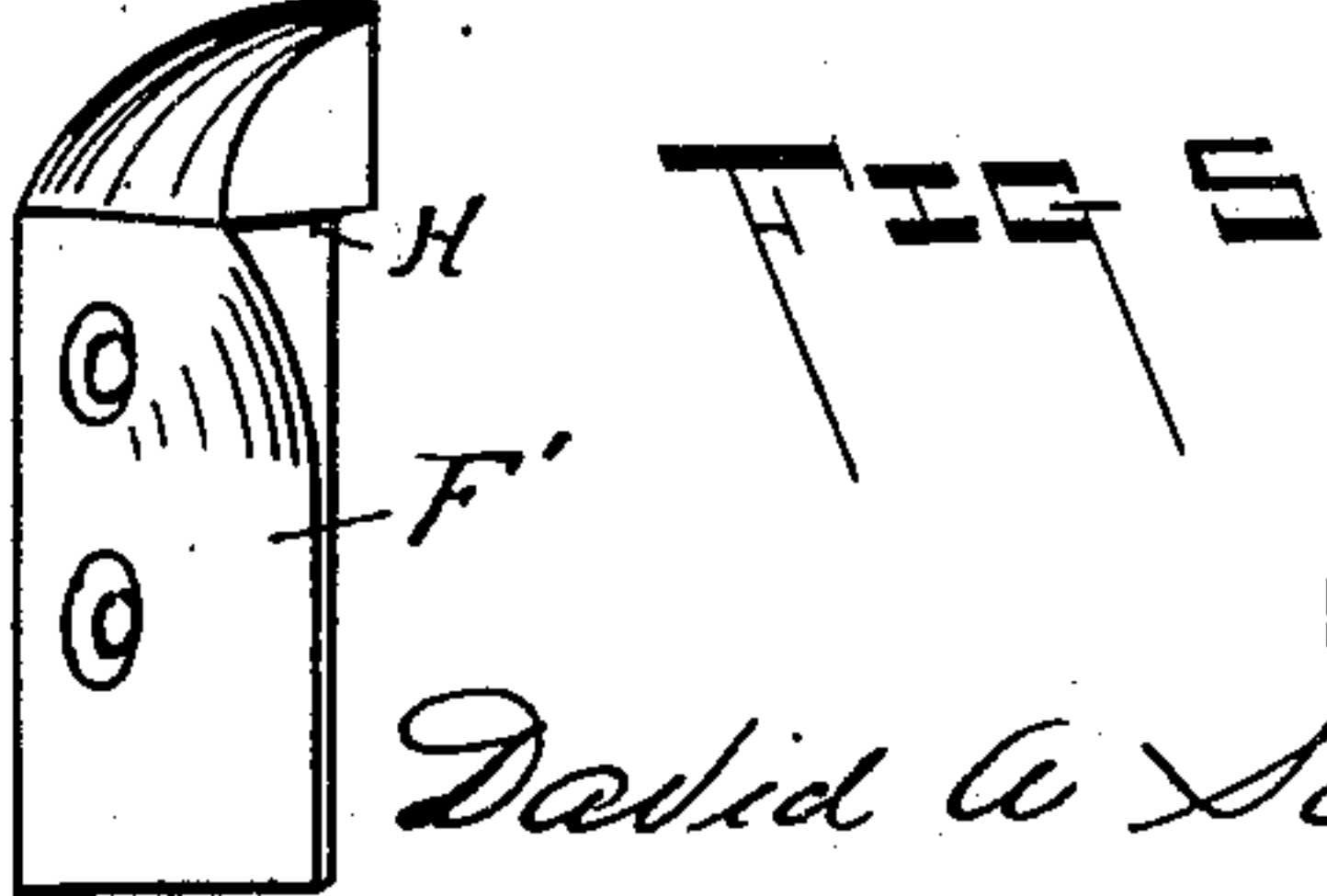
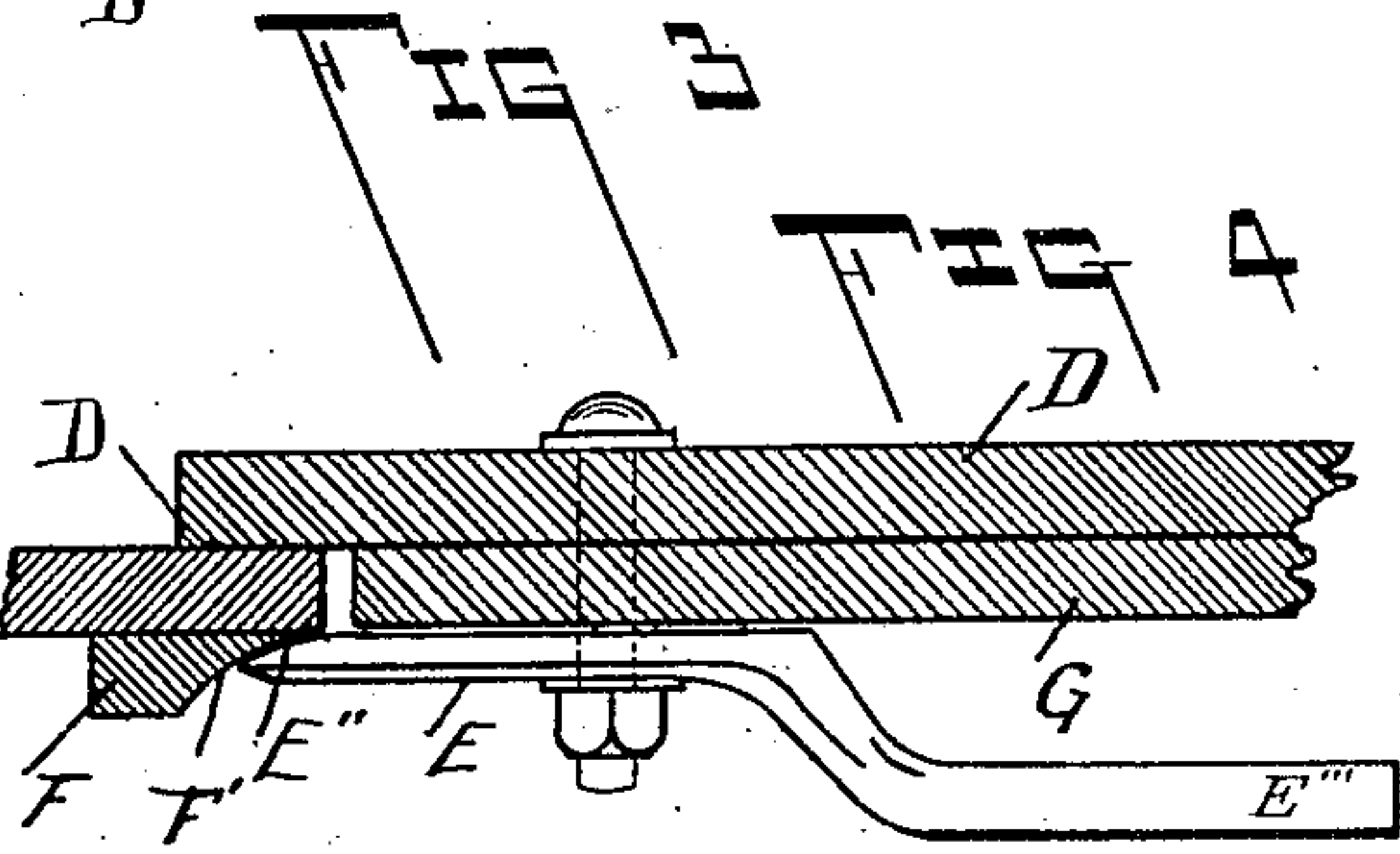
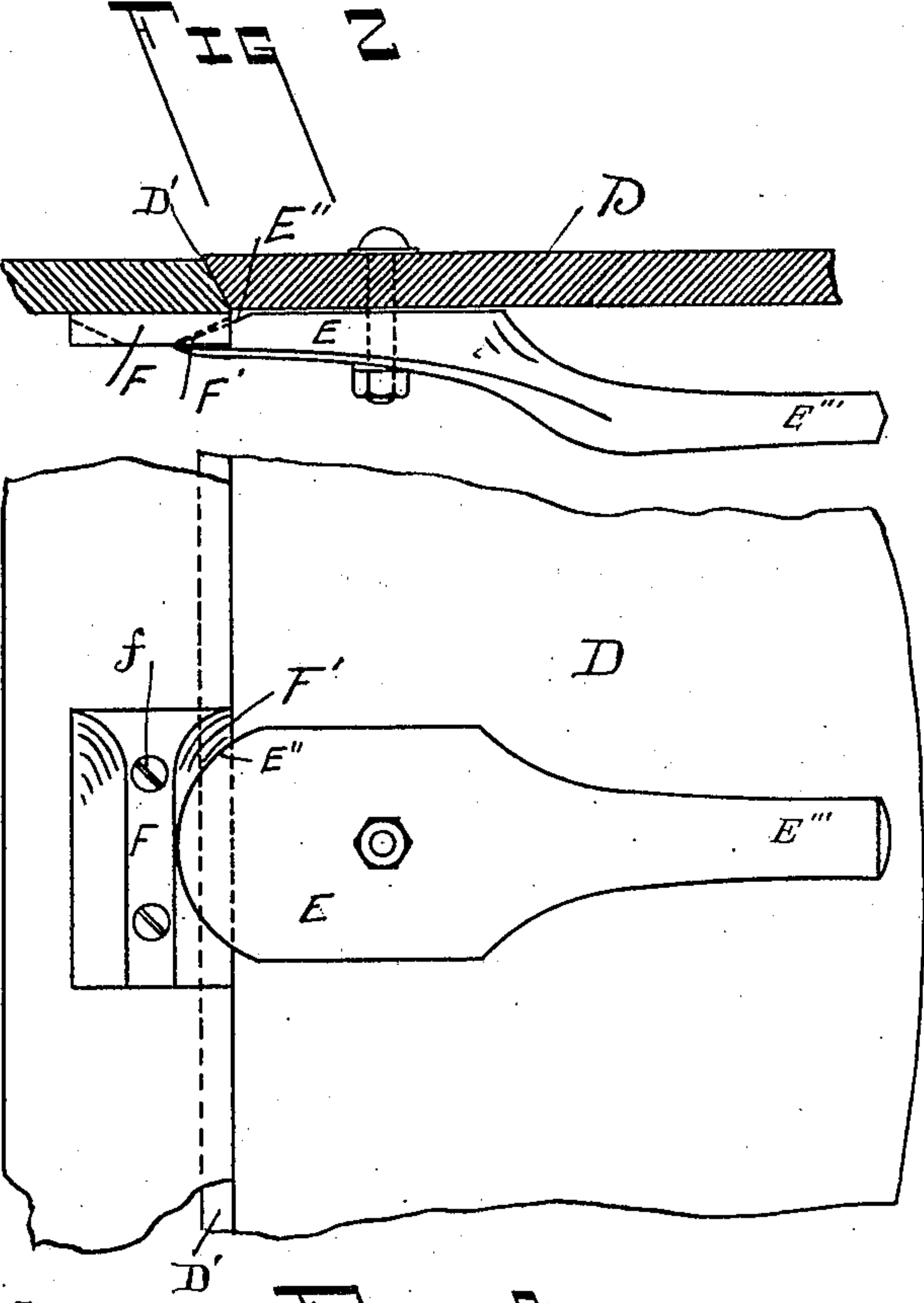


FIG 5

WITNESSES:
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SILO.

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Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed December 31, 1904. Serial No. 239,268.

To all whom it may concern:

Be it known that I, DAVID A. SCHLICHTER, a citizen of the United States, residing at Brown City, in the county of Sanilac and State of Michigan, have invented certain new and useful Improvements in Silos; 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 is an improvement in silos, and relates more particularly to means for fastening silo-doors in place and for keeping them air-tight:

The object of the invention is to provide at the sides of the silo-door a locking or clamping device adapted not only to quickly lock the door and clamp it tightly against the door-frame, but also to serve as a ladder up the side of the silo, the device being so arranged that the weight of a person ascending the ladder will operate to more firmly clamp the doors in place.

With this object in view my invention consists in the devices illustrated in the accompanying drawings and the equivalents thereof.

Figure 1 is a perspective view of a silo with my improved door-locking device attached. Fig. 2 is a part horizontal section of a silo-door and the locking device. Fig. 3 is a front view of the same. Fig. 4 is a part horizontal section showing a modified adaptation of the device, and Fig. 5 is a modified form of the catch that is secured to the side of the silo-opening.

As is clearly shown in the drawings, the device consists in a catch F, secured to the side of the silo-opening by means of screws f, bolts, or other suitable fastenings. The face F' of the catch F is beveled toward the silo-opening and is thicker near the top than at the bottom.

Pivottally mounted on the door of the silo near its edge is a latch E, having its outer end curved and beveled, as at E'' in Figs. 2 and 3. The opposite end of the latch E is provided with a lever or handle E''', parallel with the silo-door and offset from it a suitable distance to enable the handle E''' to be used as a round of a ladder.

As will be clearly seen from Figs. 2 and 3, downward movement of the handle E''' forces the beveled face E'' of the latch E into contact with the tapered face F' of the catch F, the catch F acting as a wedge to draw the door D out tight against the staves of the silo.

In Figs. 2 and 3 the edge of the door D is beveled, as at D', to fit the beveled edge of the silo-stave. In Fig. 4 the edge D'' of the door D overlaps the stave of the silo. In either case the action of the latch and catch is the same.

In the construction shown in Fig. 4 G is a cleat fastened to the outside of the door D to support the latch E.

In Fig. 3 the catch F is shown with two beveled faces, thus avoiding the necessity of making right and left hand patterns from which to cast these pieces.

Fig. 5 shows a modified form of catch, the form illustrated being the left-hand member of a pair. This catch also has a shoulder H to prevent the arm E''' dropping below the horizontal.

In practice I prefer to space the latches E in pairs, as shown in Fig. 1, the distance between successive pairs being such as to make them available for convenient use as a ladder. The right-hand and left-hand latches of each pair nearly meet in the center of the silo-opening.

The doors may be of any suitable construction; but I prefer to divide the vertical opening at the various hoop-lines by means of cross-braces B, around which the hoops extend. Between each pair of cross-braces B, I insert a door D, as shown.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. The combination with a silo provided with a series of doors, of a ladder for said silo, the ladder comprising a series of levers pivottally secured intermediate their ends to the doors, each door carrying at least two levers, the handles of which normally lie in alignment with and project toward each other, the adjacent ends of the levers nearly engaging one another, the opposite ends of the levers being convexed, and catches for the levers, said catches stationarily mounted on the walls of the silo adjacent the levers, opposing concave faces on each catch inclined away from the wall of the silo and terminating at their upper ends in a shoulder to prevent the levers from passing beyond the horizontal in one direction, the convex ends of the levers engaging the concave faces of the catches, whereby the rounds of the ladder are removably locked in position and also serve to hold the doors in place, the rounds being secured more firmly by the ascent or descent thereof.

2. The combination in a silo having an opening therein and doors for closing the opening, of a pair of oppositely-located levers pivotally mounted on each door and catches carried by the silo and engaged by the outer ends of the levers, the inner ends of the levers when in locked position projecting horizontally toward each other to form the rounds of a ladder, the levers being locked by the ascent of a person.

3. The combination in a silo having an opening therein and doors for closing the opening, of a pair of oppositely-located levers pivotally mounted on each door and catches carried by the silo and engaged by the outer

ends of the levers, the inner ends of the levers when in locked position projecting horizontally toward each other to form the rounds of a ladder, means on the catches engaged by the outer ends of the levers to prevent the inner ends from moving downward out of horizontal position, the levers being locked by the ascent of a person.

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

DAVID A. SCHLICHTER.

Witnesses:

A. A. EASTERLY,
W. I. CATHCART.