

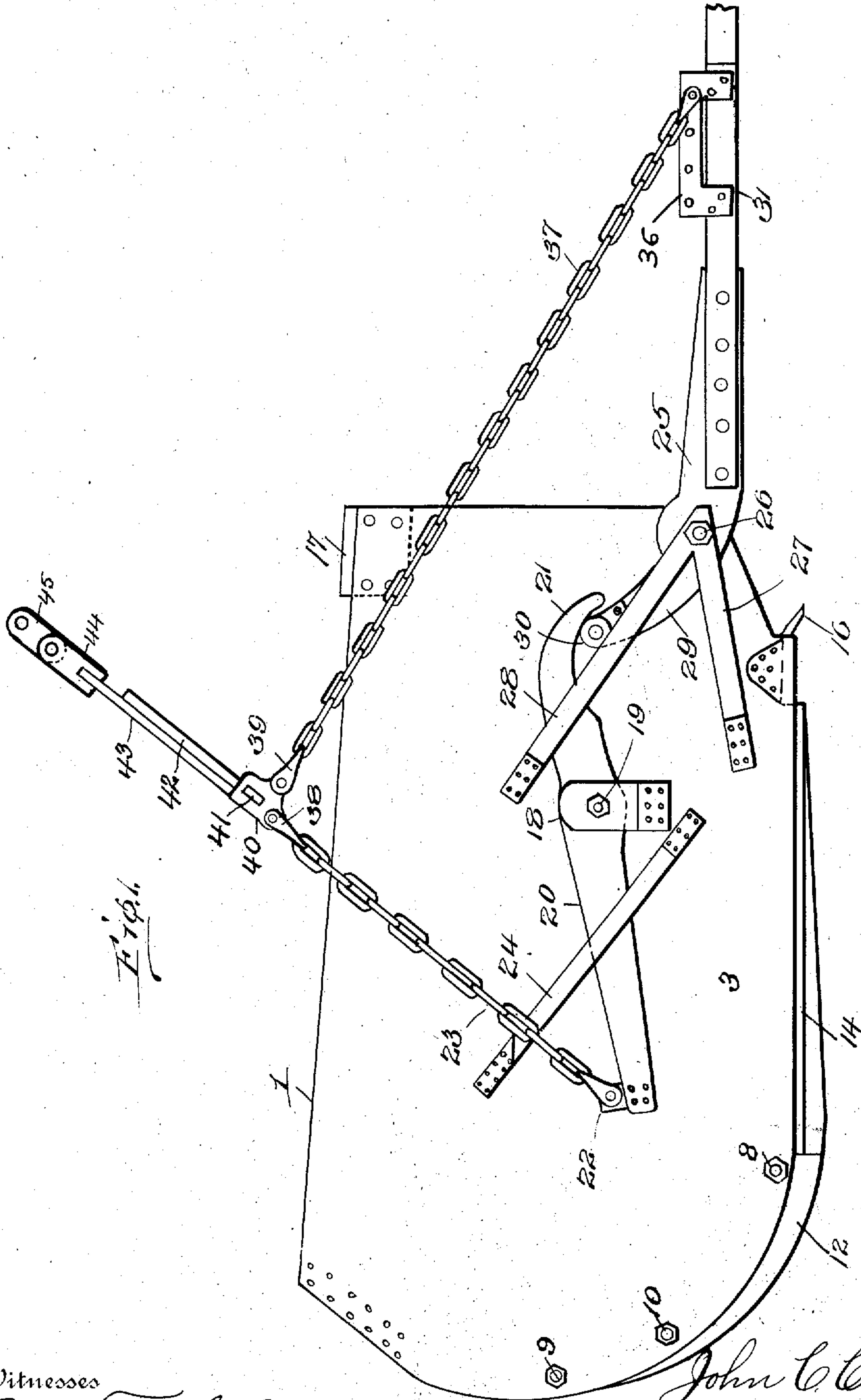
J. C. CRENSHAW.  
EXCAVATING BUCKET.

APPLICATION FILED JUNE 19, 1909.

954,936.

Patented Apr. 12, 1910.

5 SHEETS—SHEET 1.



Witnesses  
J. M. Fowler  
A. L. Kitchen

By

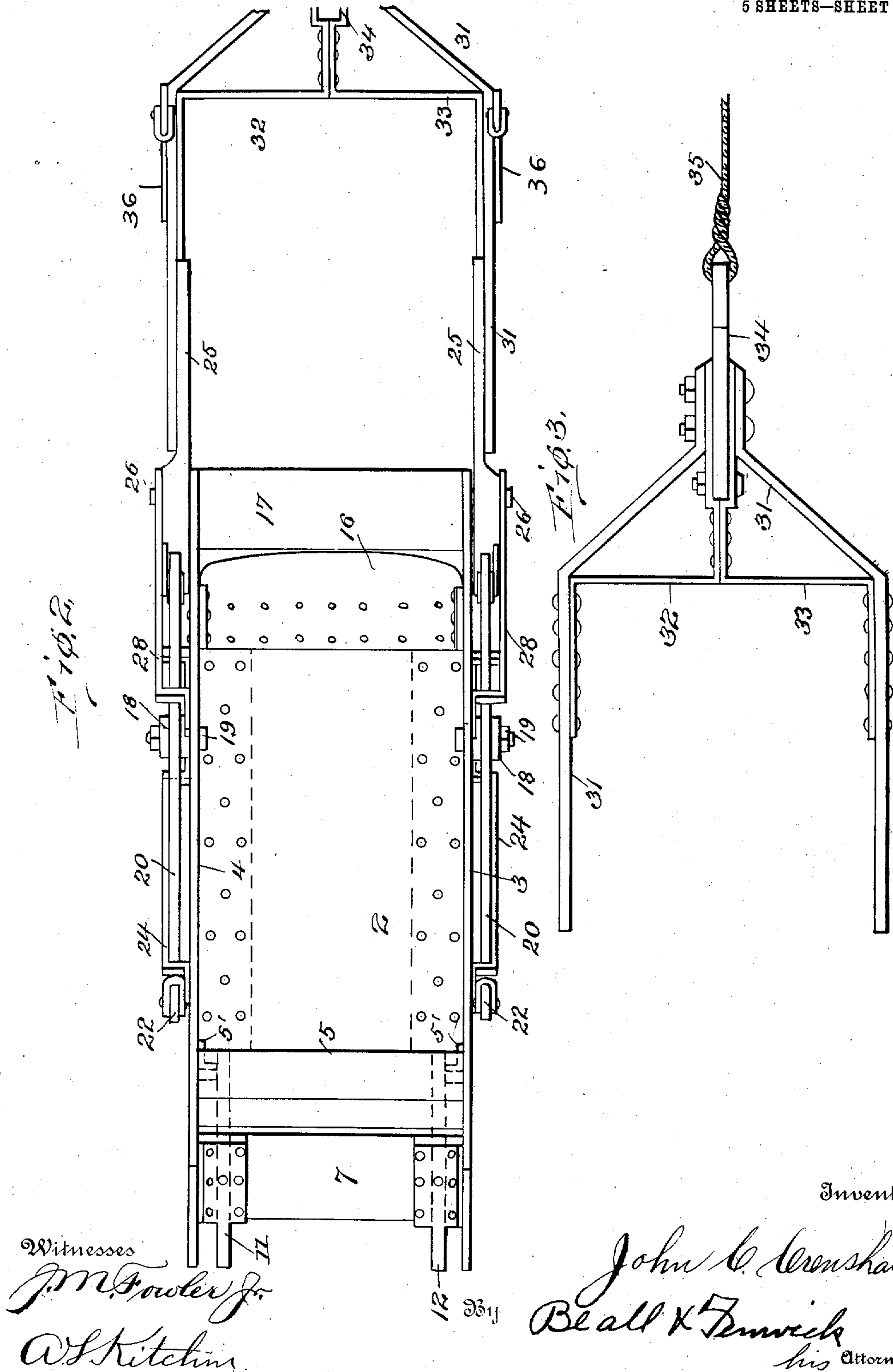
Inventor  
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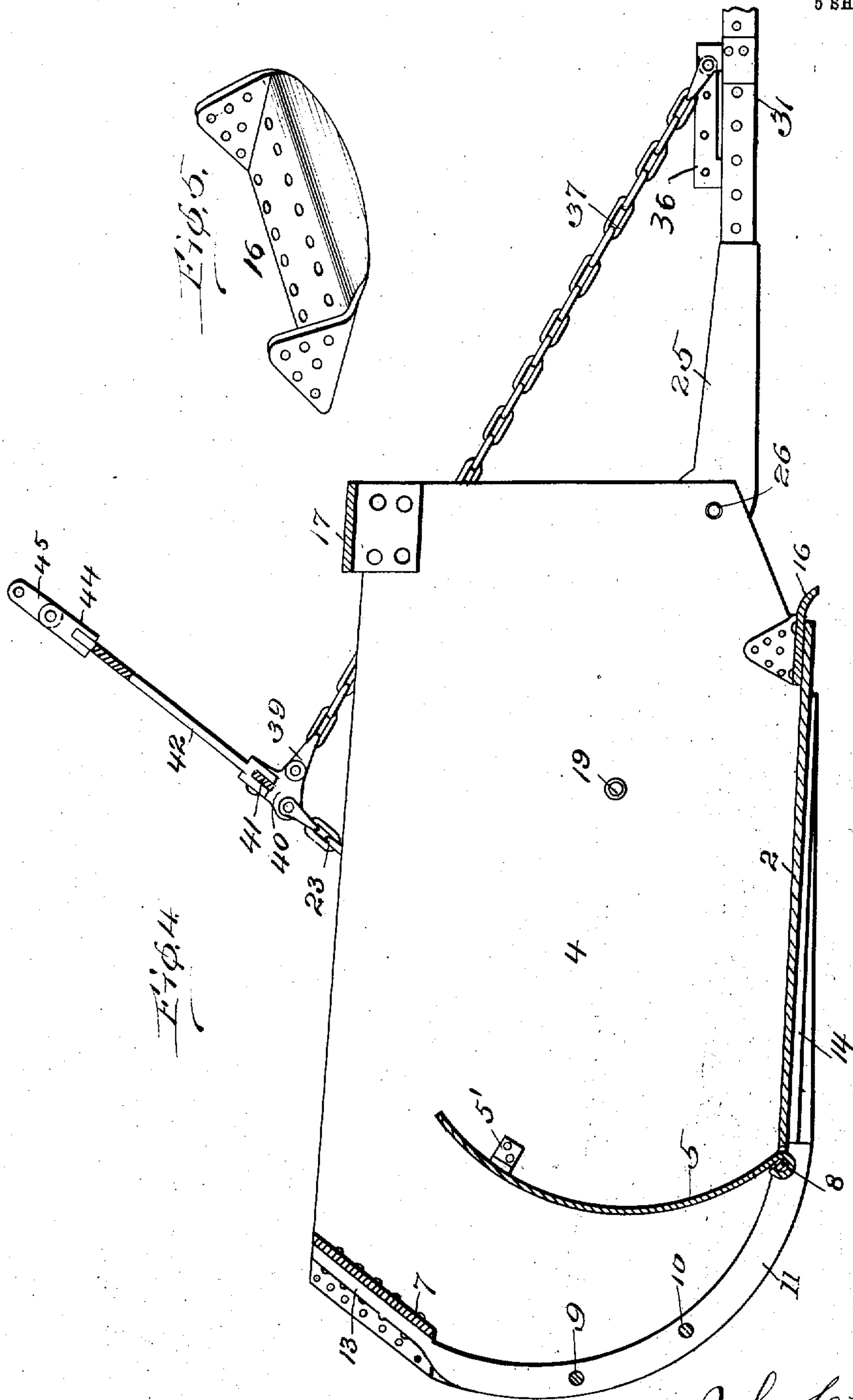
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5 SHEETS—SHEET 3.



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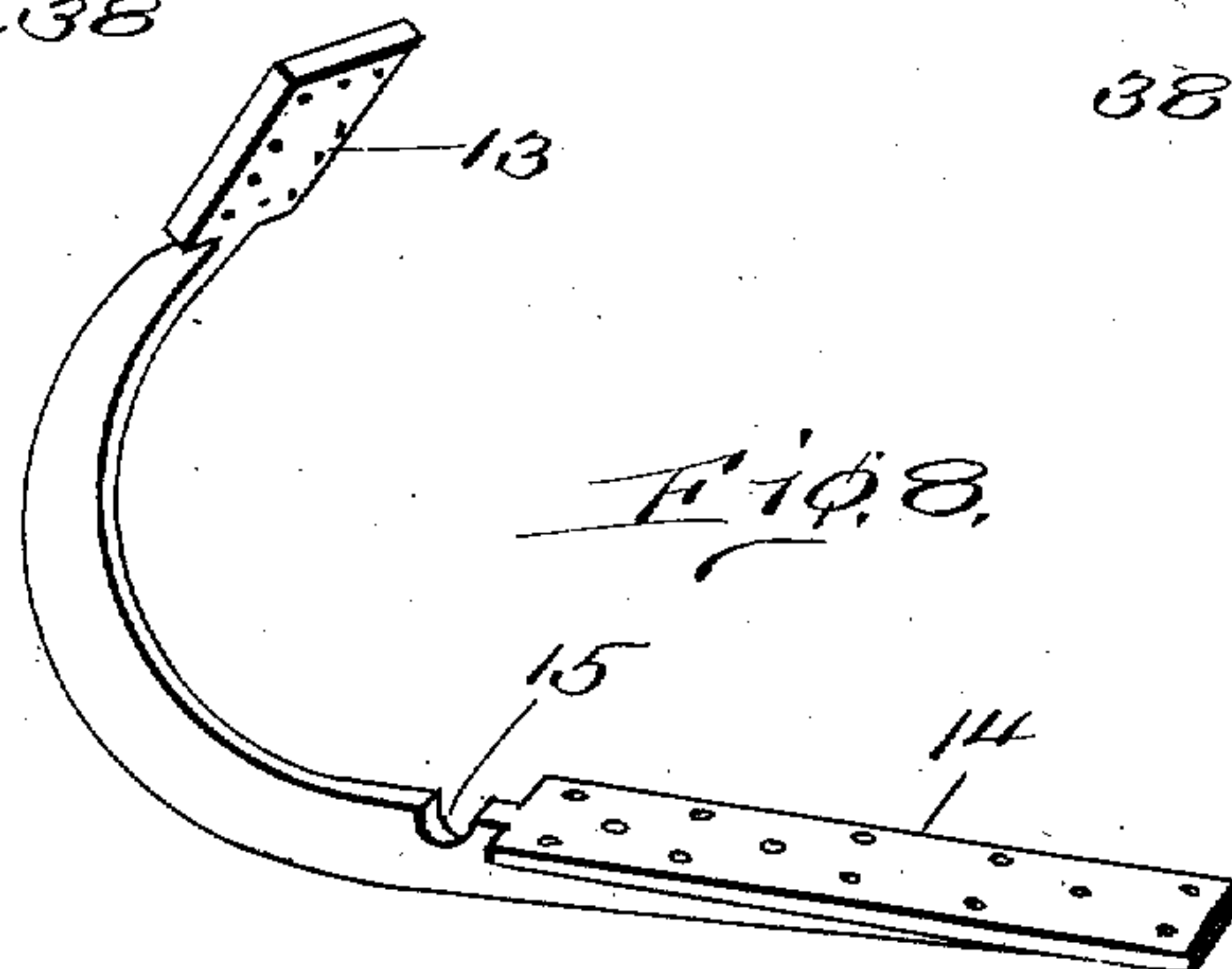
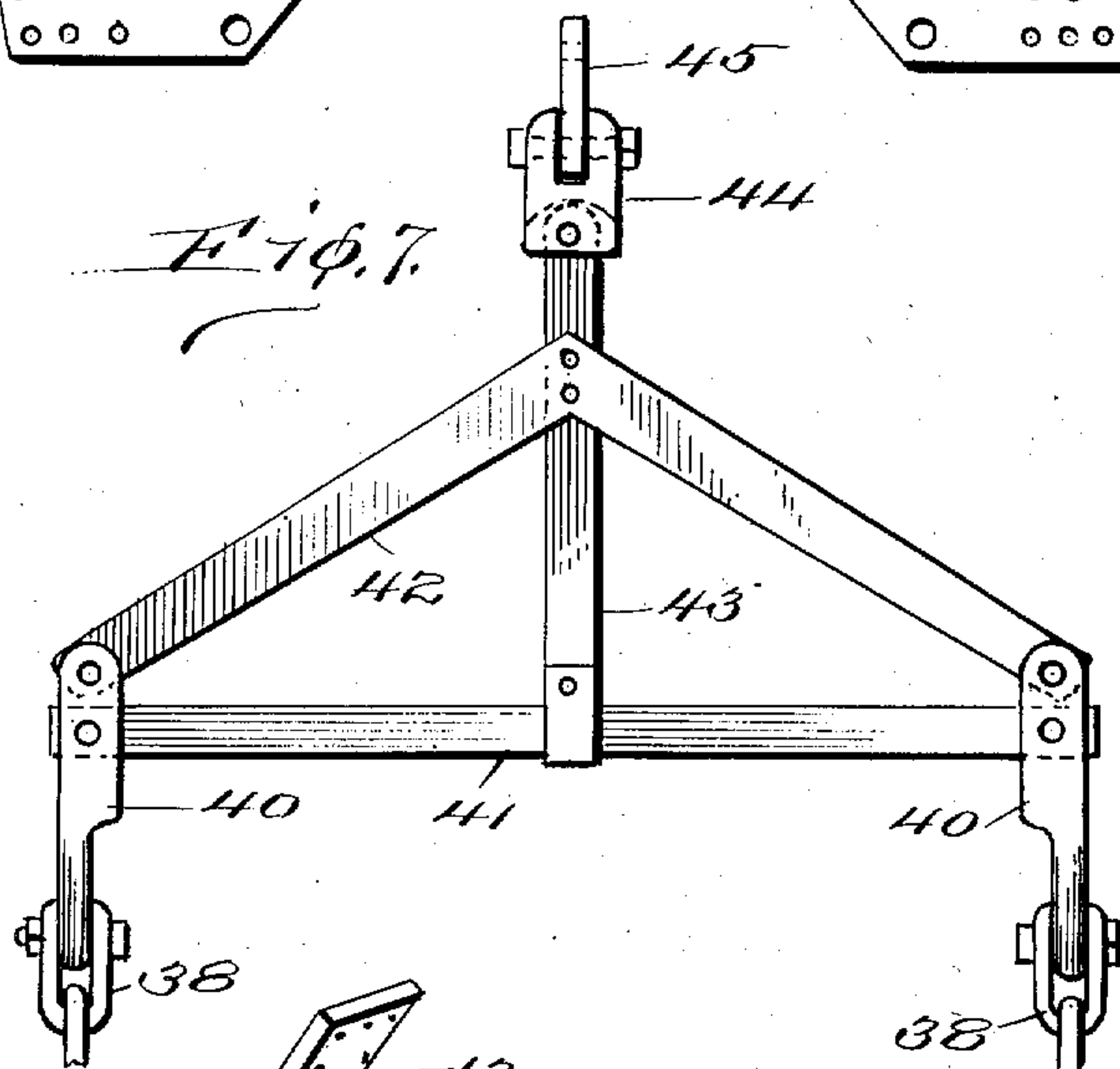
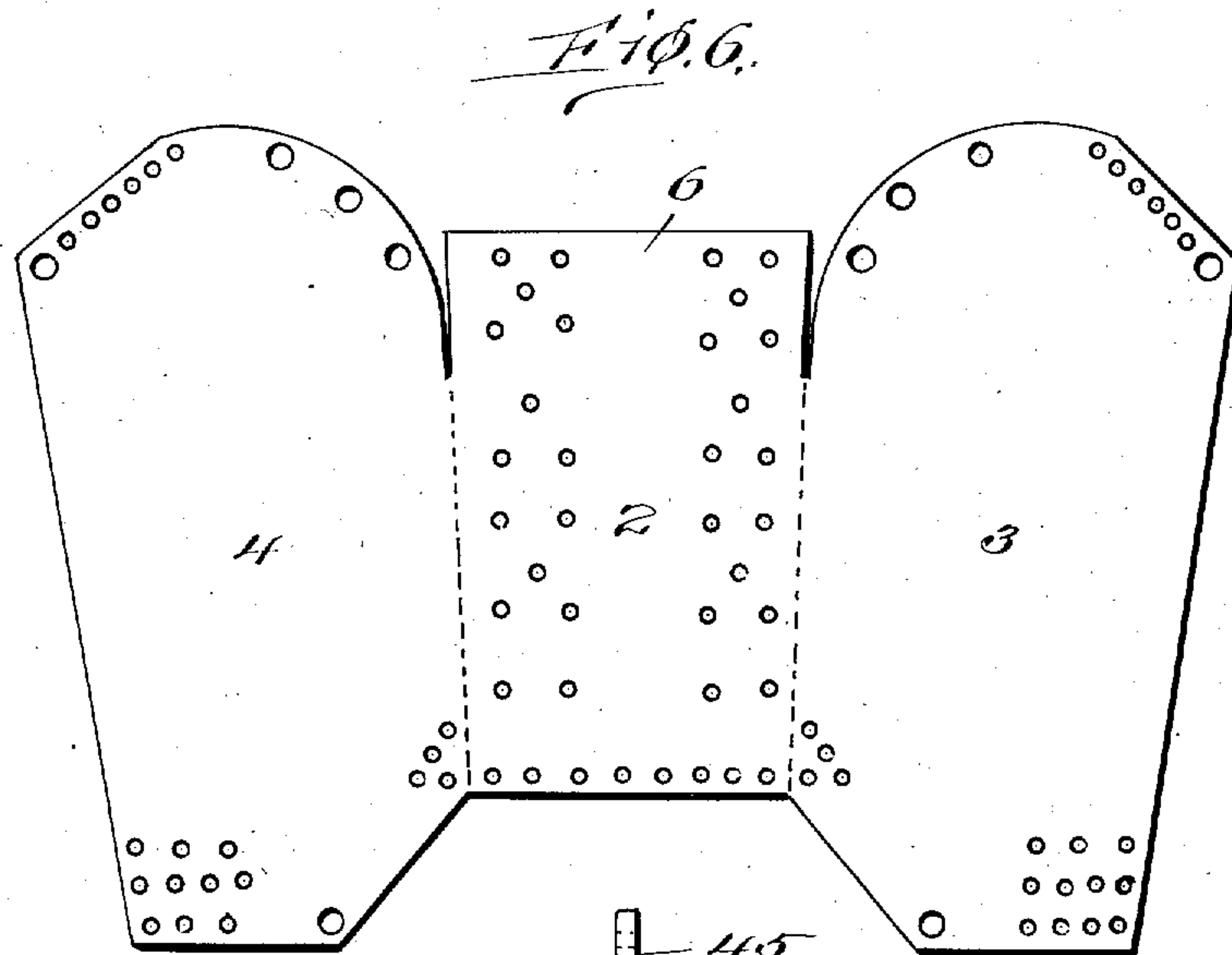
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5 SHEETS—SHEET 4.



Witnesses

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*A. S. Kitchen*

Inventor

By

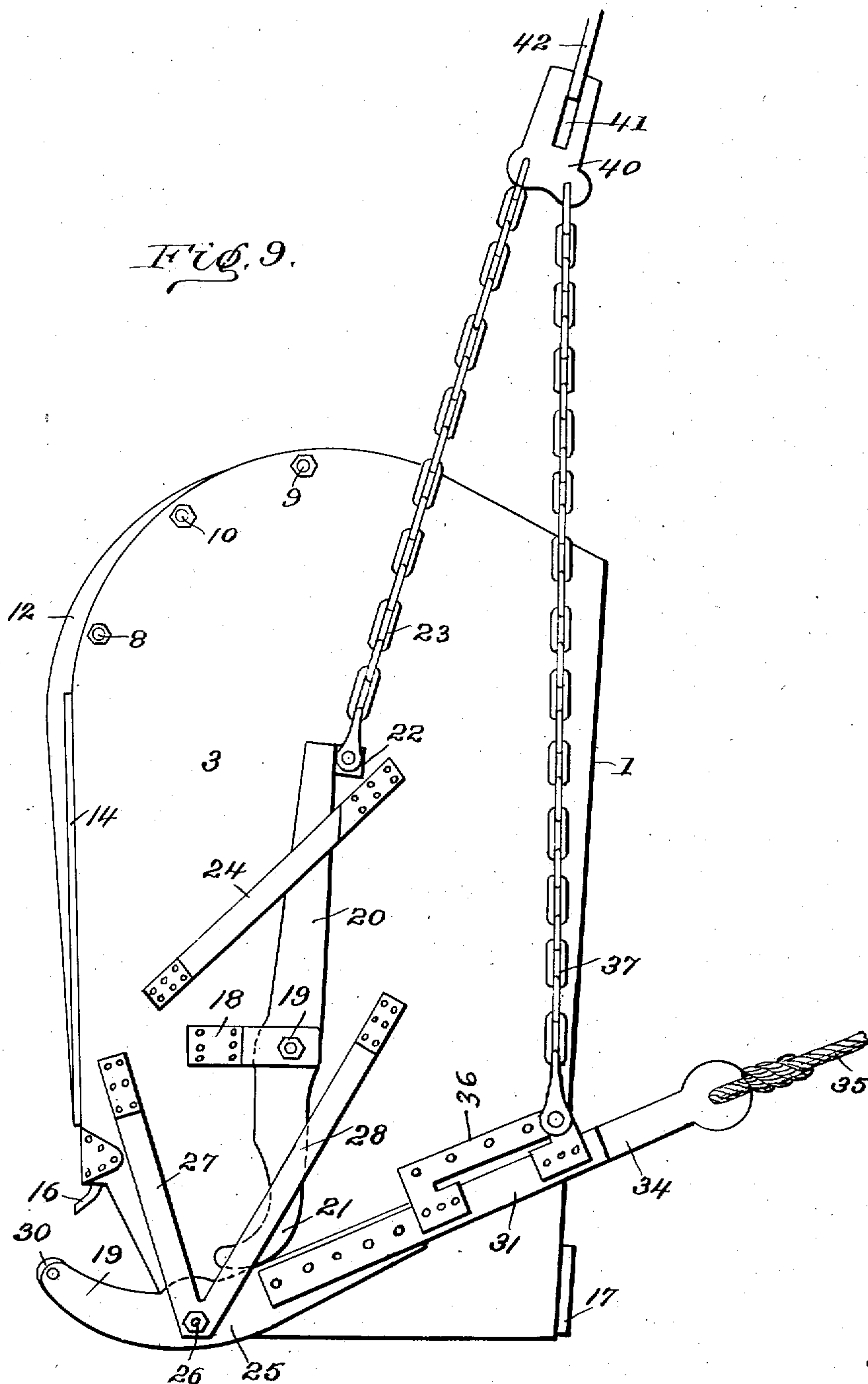
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5 SHEETS—SHEET 5.



Inventor

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# UNITED STATES PATENT OFFICE.

JOHN CRITY CRENSHAW, OF RIVERTON, ALABAMA.

## EXCAVATING-BUCKET.

954,936.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed June 19, 1909. Serial No. 503,210.

*To all whom it may concern:*

Be it known that I, JOHN CRITY CRENSHAW, a citizen of the United States, residing at Riverton, in the county of Colbert and State of Alabama, have invented certain new and useful Improvements in Excavating-Buckets, of which the following is a specification.

This invention relates to improvements in excavating buckets, and particularly to automatic dumping buckets, and has for an object the arrangement of means by which the bucket may be dumped upon being elevated at any desired time.

Another object of the invention is the provision of a housing and a plurality of levers coacting with each other, whereby the housing of the bucket may be drawn along and filled, and then raised and dumped at any desired place by the releasing of the drawing means.

A further object of the invention is the arrangement in an excavating bucket of a housing formed of a bottom and sides of a single sheet of material, a pivotally mounted back, and means for drawing the bucket along for filling the same, and means connected with the bucket and the drawing means adapted to raise the bucket and transport the same to any desired place for dumping.

Another object of the invention is the arrangement in an excavating bucket, of a plurality of pivotally mounted levers, one of which acts as a draft lever and the other as a dumping lever, and means connecting said levers and acting as means by which the bucket may be elevated and transported.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is a side elevation of an embodiment of the invention. Fig. 2 is a top plan view of the structure shown in Fig. 1. Fig. 3 is a detail fragmentary top plan view of the drafting and loading bail. Fig. 4 is a longitudinal vertical section through the structure shown in Fig. 1. Fig. 5 is a detail perspective view of a bit. Fig. 6 is a plan view of the blank on a reduced scale. Fig. 7 is a plan view of the hoisting bail. Fig. 8 is a detail perspective view on a slightly reduced scale of one of the runners. Fig. 9 is a side elevation of

the complete bucket shown in a dumped position.

Referring to the drawing by numerals, 1 indicates the housing or body, composed of a bottom 2 and side members or plates 3 and 4. In forming the body the same is preferably stamped or cut out of a single piece of sheet metal, as shown in the blank in Fig. 6, and the sides bent upward as shown in Fig. 2. The rear end of bottom 2 is also bent upward on the arc of a circle for forming part of the back. A pivotally mounted back 5 extends from the rear end of bottom 2 and reaches to a cross brace 7. By this means a complete back is provided from the bottom 2 to the top of the body. The pivotally mounted back 5 is mounted upon a cross bar or bolt 8 and is designed to rest loosely against cross bars or bolts 9 and 10 when the bucket has been filled. Cross bars 9 and 10, and also cross bar or bolt 8 pass through runners 11 and 12 each of which are flattened at 13 and 14. The flattened portions 13 are riveted to brace 7, while the flattened portions 14 are riveted to the bottom 2. Each of the runners is formed with a notch 15 for accommodating bolt 8 and the lower end of pivotally mounted back 5, and are also formed with suitable apertures for accommodating bolts 9 and 10. By providing the flattened out portions 14 on each of the runners 11 and 12 the bottom 2 is firmly braced and reinforced and held rigidly to its work.

In order that the front end of the bottom 2 may not be worn away a bit 16 is riveted to the bottom, and is formed with its cutting or engaging surface bent slightly below the bottom 2. This will effectually protect the front end of bottom 2, and whenever a bit has been worn so as to expose the end of bottom 2, a new one may be easily substituted.

In connection with the sides 3 and 4 brace 7 is riveted thereto for not only forming part of the back, but also for properly spacing the sides apart and holding the same correctly in position. A front spacing member 17 is also provided for rigidly bracing the front end of the side plates.

Rigidly secured to each of the side plates 3 and 4 are brackets 18—18. Bolts 19—19 are passed through the uprights or brackets 18—18 and through the side plates 3 and 4 for forming journal members for dumping levers 20—20. Each of the dumping levers



20—20 is formed with a hooked shaped end 21—21 and with projections 22—22 for holding the securing means for chains 23—23. The rear end of levers 20—20 are adapted to engage the upper end of guiding braces 24—24 when the bucket is being dumped, as clearly shown in Fig. 9. Associated with the dumping levers 20—20 are loading levers 25—25 which are pivotally mounted upon shafts 26—26 and passed through brackets 27—27, and also through the side plates 3 and 4 respectively. The brackets 27—27 are provided with arms 28—28 which inclose the front ends of levers 20—20 for guiding the same, and also act as guides for the rear ends 29—29 of levers 25—25. The rear ends 29—29 are formed preferably curved, and are provided with rollers 30—30 which engage the hooked ends 21—21 of levers 20—20. The loading levers 25—25 are rigidly connected with a loading or draft bail 31, which is more clearly shown in Fig. 3. The loading or draft bail 31 is formed with bracing members 32 and 33 which are bolted to a draft bar 34. The draft bar 34 is also secured to the bail 31 so that when a rope or cable as 35 is secured to the draft bar and power is applied thereto the bucket may be dragged along for excavating.

When power has been applied to cable 35 and the bucket moved along over the ground for excavating and the housing 1 has been filled, the matter placed therein will press against the pivotally mounted back 5 until the same moves from against stop 5' back against the bracing bolts or rods 8 and 9.

Secured to each side of the bail 31 is a bracket or strap 36 provided with a plurality of apertures therein for accommodating chains 37—37. By this arrangement the point at which chains 37—37 may be applied may be varied as desired. Chains 37—37 and 23—23 are pivotally secured to a hoisting bail more clearly shown in Fig. 7, by means of clevises 38—38 and 39—39. The clevises 38—38 and 39—39 are pivotally secured to blocks 40—40, which in turn are secured to a transverse bracing member 41, and a bracing and draft member 42. An elevating draft member 43 is secured to the transverse bracing member 42, and carries a pivotally mounted block 44 at its outer end, to which is secured a link 45. Link 45 is pivotally mounted, and may freely move in one plane, and block 44 is pivotally mounted and may move in a transverse plane, so that a substantially universal joint is provided to which the lifting power may be applied.

In operation when it is desired to fill the bucket and then dump the same at any desired point, power is applied to cable 35 and the bucket caused to engage the earth or other matter being excavated, and is moved until the bucket has been filled, after

which the drafting force is kept from operation, but cable 35 is not given any slack. Elevating power is then applied and the bucket is raised and transported to any desired place, the cable 35 being kept taut, though paid out as the bucket is moved to the desired place for dumping. After the bucket has reached the place for dumping the cable 35 is given ample slack. This will cause the weight of the matter in the bucket to act on levers 20—20, and also upon chains 35—35 for drawing the bail 31 to the position shown in Fig. 9, and the levers 20—20 to the position shown in Fig. 9. This of course will cause the open or front end of the bucket to point downward and permit the matter therein to be freely dumped. Also it will be observed that chains 37—37 will cause levers 25—25 to engage the upper surface of the hooked members 21—21 for holding the rear end of levers 20—20 in contact with the upper end of brackets 24—24. This will positively prevent the bucket from assuming a horizontal position until either the lifting power has been removed or until power has been applied to cable 35 for drawing the bucket forward.

What I claim is:

1. In an excavating bucket, a body, a pair of pivotally mounted levers connected with said bucket on each side thereof, a hoisting bail connected with each of said levers, a dumping lever pivotally connected with said bucket and loosely contacting with said first mentioned levers, a draft bail connected with said dumping levers, and means connecting said draft bail with said hoisting bail.

2. In an excavating bucket, a body, a plurality of means for bracing the body, a pivotally mounted hoisting lever arranged on each side of the bucket, a hoisting bail, means connecting said hoisting bail with one end of each of said levers, dumping levers adapted to engage the opposite end of said levers, a draft bail connected to said dumping levers, and means connecting said draft bail with said hoisting bail.

3. In a device of the class described, side walls and a bottom, a removable blade secured at the forward end of the bottom between the sides, a curved rear wall hinged to the rear of the bottom, and a stop carried by the side wall positioned to limit the movement of the hinged wall.

4. In a device of the class described, side walls and a bottom, a cutter carried at the forward end of the bottom, a rear wall comprising one portion rigidly secured between the side walls adjacent their upper edges, and a portion hinged to the rear of the bottom, and a stop carried by a side wall adapted to limit the forward movement of the hinged portion of the rear wall.

5. In a device of the class described, a

bucket body, pivot trunnions secured upon the sides of the body, levers fulcrumed upon the trunnions and so proportioned that when one lever is extended it retains the other lever extended, and lifting means applied to the extremities of the levers.

6. In a device of the class described, a bucket body, pivot trunnions secured to the side walls of the bucket, levers pivoted upon the trunnions and so proportioned that when one lever is extended it holds the other le-

ver extended, draft means applied to the first-mentioned lever in position to hold such lever extended, and lifting means applied to the extremities of both levers.

15

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

JOHN CRITY CRENSHAW.

Witnesses:

W. M. BUCHANAN, Jr.,

J. S. SLOAN.