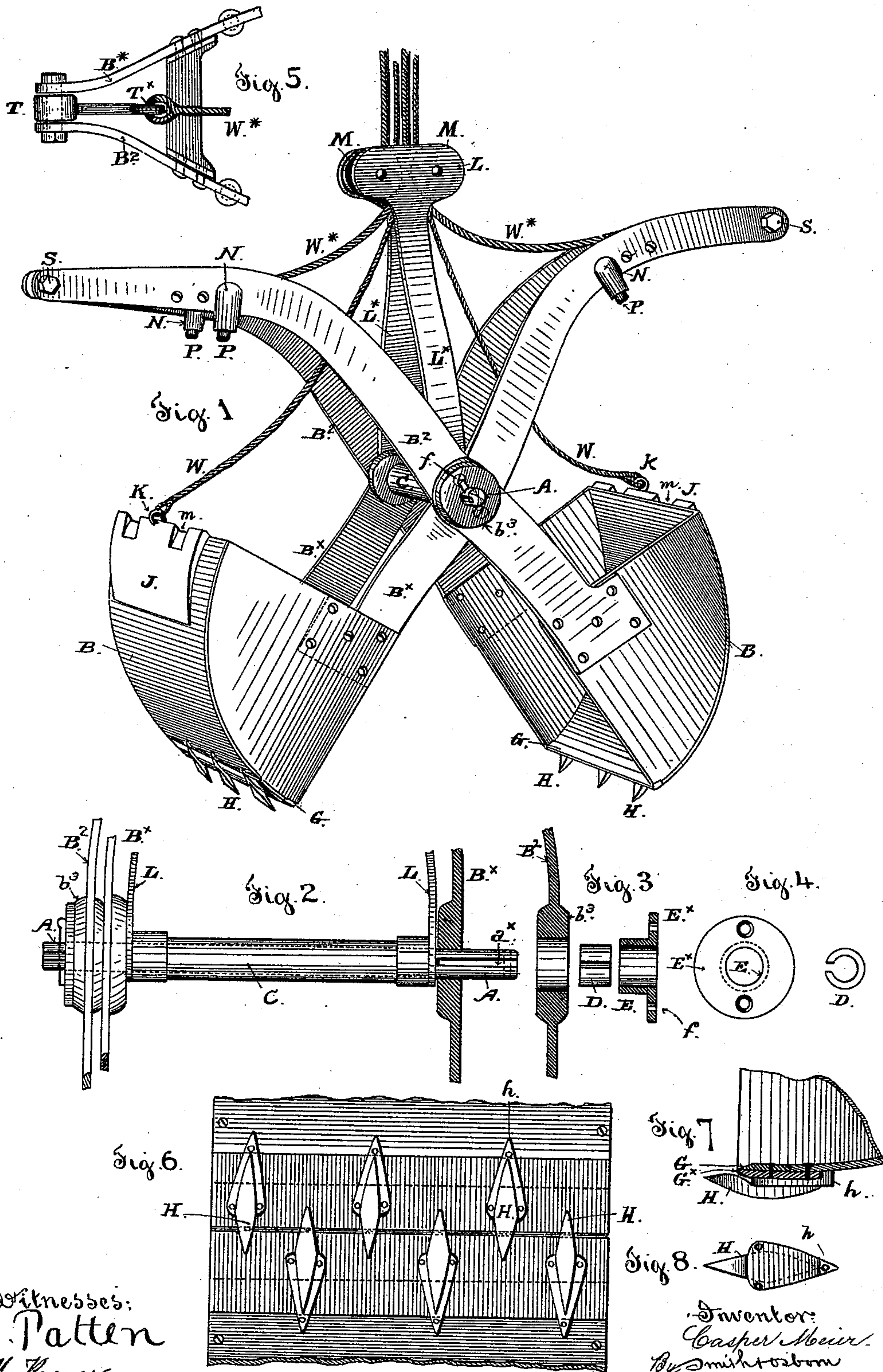


(No Model.)

C. MEIER.
DREDGING IMPLEMENT.

No. 528,375.

Patented Oct. 30, 1894.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

CASPAR MEIER, OF SAN FRANCISCO, CALIFORNIA.

DREDGING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 528,375, dated October 30, 1894.

Application filed October 19, 1893. Serial No. 488,626. (No model.)

To all whom it may concern:

Be it known that I, CASPAR MEIER, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Dredging Implements, of which the following is a specification.

My invention relates to improvements made in dredging implements composed of a two-part hinged bucket, such as are employed in dredging operations at the present time; and the said improvements comprise certain novel construction and combination of blades or cutters and projecting fingers on the meeting edges of the scoops or halves of the bucket; also, a novel hinge or joint for the arms of the scoops; also, certain construction and combination of parts producing an improved dredging implement of this class all as hereinafter fully described.

Figure 1 is a perspective view of my improved dredge. Fig. 2 is a front view of the axle and the portions of the arms and the joints at the ends. Figs. 3 and 4 are details in section of the parts of the joint at either end of the axle. Fig. 5 is a top view of the upper ends of the arms or levers at one side of the dredge. Fig. 6 is a plan or bottom view of the cutting edges of the two jaws or buckets taken from the under side. Fig. 7 is a vertical longitudinal section through the cutting edge of one jaw. Fig. 8 shows a plan or top view of one of the cutting-teeth on the edge of the scoops.

The axle or shaft A forms the hinge-pin or center on which the two buckets B B of the dredge open and shut. This shaft is inclosed by a sleeve or collar C and on each end is set a bushing D which is held by a slot a^x and a feather.

The inner arms of the buckets are keyed to the shaft A by the feather that holds the split collar, but the outer arms are set to turn on the shaft. Between the collar D and the walls of the opening in the boss b^3 on each arm B^2 is set a sleeve E having a flange E^x on the outer end. Screws $f f$ through the flange hold the sleeve in place and at the same time allow the sleeve to be broken off when a new bushing is needed.

The cutting edges of the scoops composing the buckets are formed of the two oppositely

beveled blades $G G^x$. Both blades are removable, the inner blade G being of less width than the outer one. The two plates are united by rivets so that the inner blade can be removed when the edge becomes worn or broken down.

Upon the outer plate G^x the cutting teeth H H are riveted. These teeth are lozenge-shaped or pointed at both ends and are formed in one piece with a shoe or base-plate h for securing them to the plate G. These teeth are set in alternate order on the opposite scoops with the points on one edge setting in the spaces between the points on the opposite edge. They are fixed by bolts or rivets and when so applied they will be found of great value in working on the bottom of rivers or estuaries in clay or hard pan.

On the back of the scoops I fix the blocks J J to give added weight to the scoops. To these blocks are secured the clevises or dead eyes K K for the opening and closing chains W. The blocks are also recessed at $m m$ to let in the arms $B^x B^2$ and on the outer side of each arm a socket N to hold a rubber block P is provided in line with the edge of the scoop or the block so that the cushion will strike against the scoop when the dredge is opened.

The levers of each scoop are fixed together at the outer end by a bolt S with a spacing-block T between them having an eye T^x for the operating chain or rope W^x . Sheaves M M for the two sets of chains or ropes are fixed in the frame L. This part is formed of the sleeve C through which the shaft runs and the side bars L^x that extend upward and are united at the head in which the sheaves are journaled.

In operating this implement the two scoops are kept closed by the strain on the two chains $W^x W^x$ and are opened by letting off these cables and putting on the others W W.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a dredging-machine of the kind having hinged scoops, the combination, with the arms, of the transverse shaft having a journal-portion, a collar or bushing surrounding the journal-portion, the slot and key securing the collar to the shaft and the independent

sleeve having a flanged head on the outer end, substantially as hereinbefore described.

2. In a dredging-machine of the class herein described, the combination, with the scoops, 5 of the counter-weight blocks recessed for the arms, and the elastic stops or cushions on the arms, substantially as hereinbefore described.

3. In a dredging-machine of the class herein described, the combination, with the hinged 10 scoops, of the fixed bottom-plate on the leading edge of each scoop, the removable top-plate on the inner side of the scoop over the fixed bottom-plate, the edge whereof is beveled in the opposite direction to the corresponding 15 edge of the said bottom-plate, and the wedge-shape teeth or projections secured under the bottom-plate and extending for-

ward beyond the cutting edge formed by the beveled plates, the said teeth being recessed 20 for the bottom-plate and having a curved bottom face tapering from the heel upward to the point substantially as hereinbefore set forth.

4. The combination, with the scoop or 25 bucket of the removable plate having a beveled cutting-edge and the bottom-plate having a cutting edge beveled oppositely to the edge on the upper-plate substantially as hereinbefore set forth. 30

In testimony that I claim the foregoing I have hereunto set my hand and seal.

CASPAR MEIER. [L. S.]

Witnesses:

C. W. M. SMITH,
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