

No. 705,526.

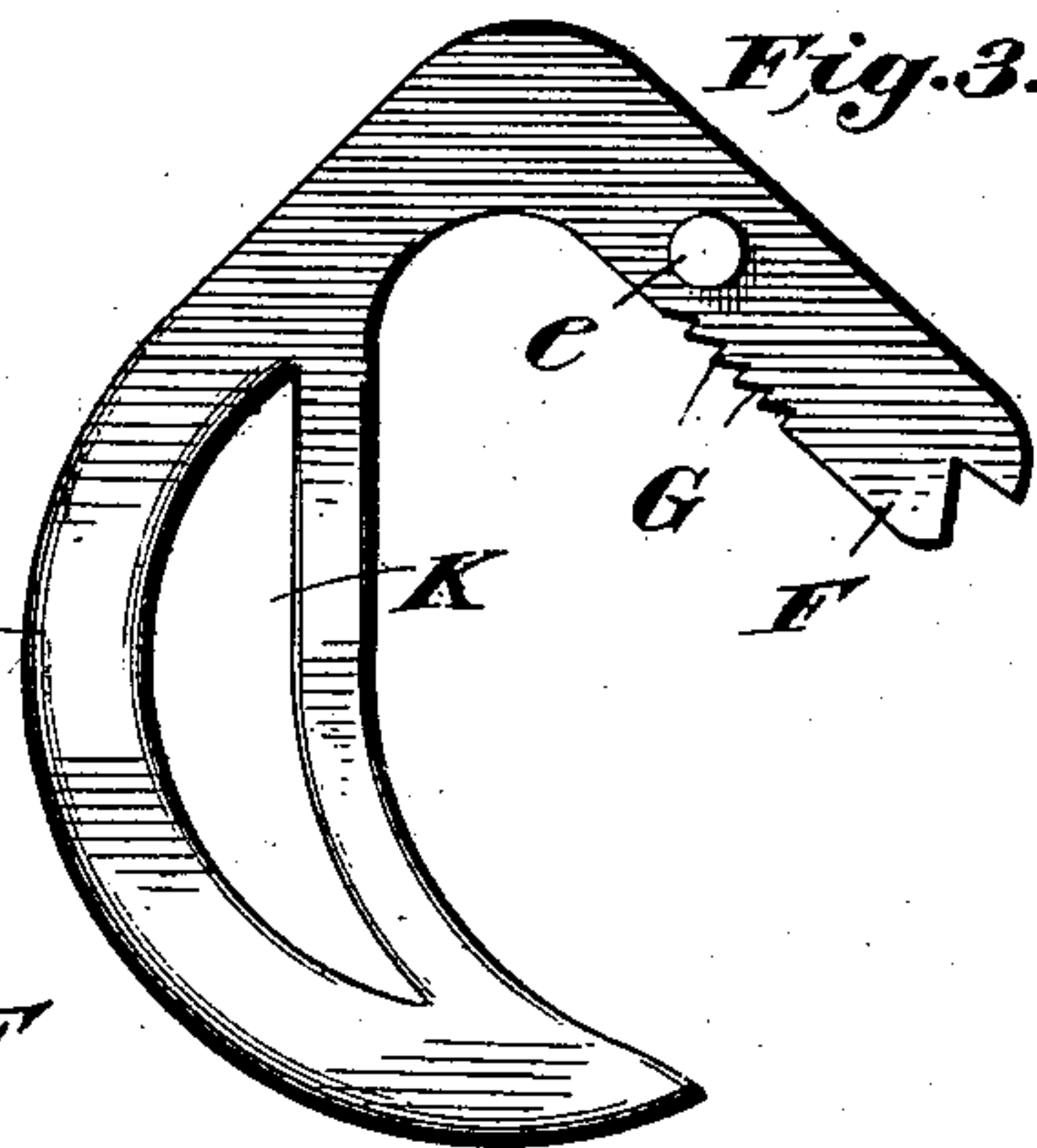
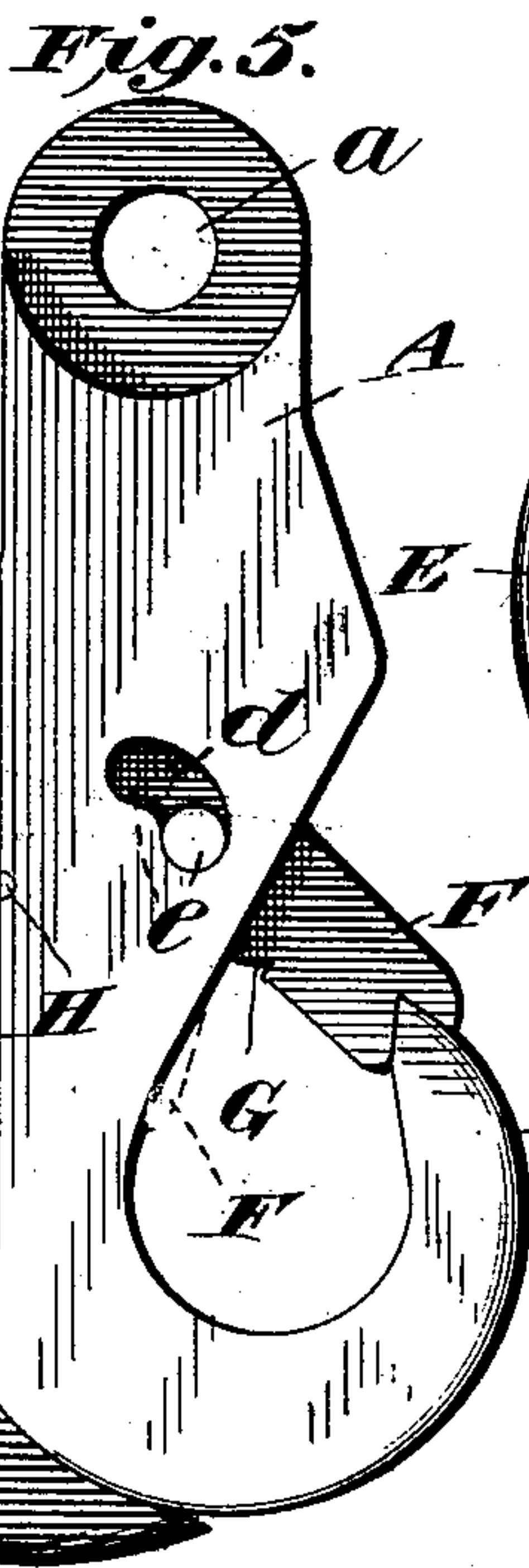
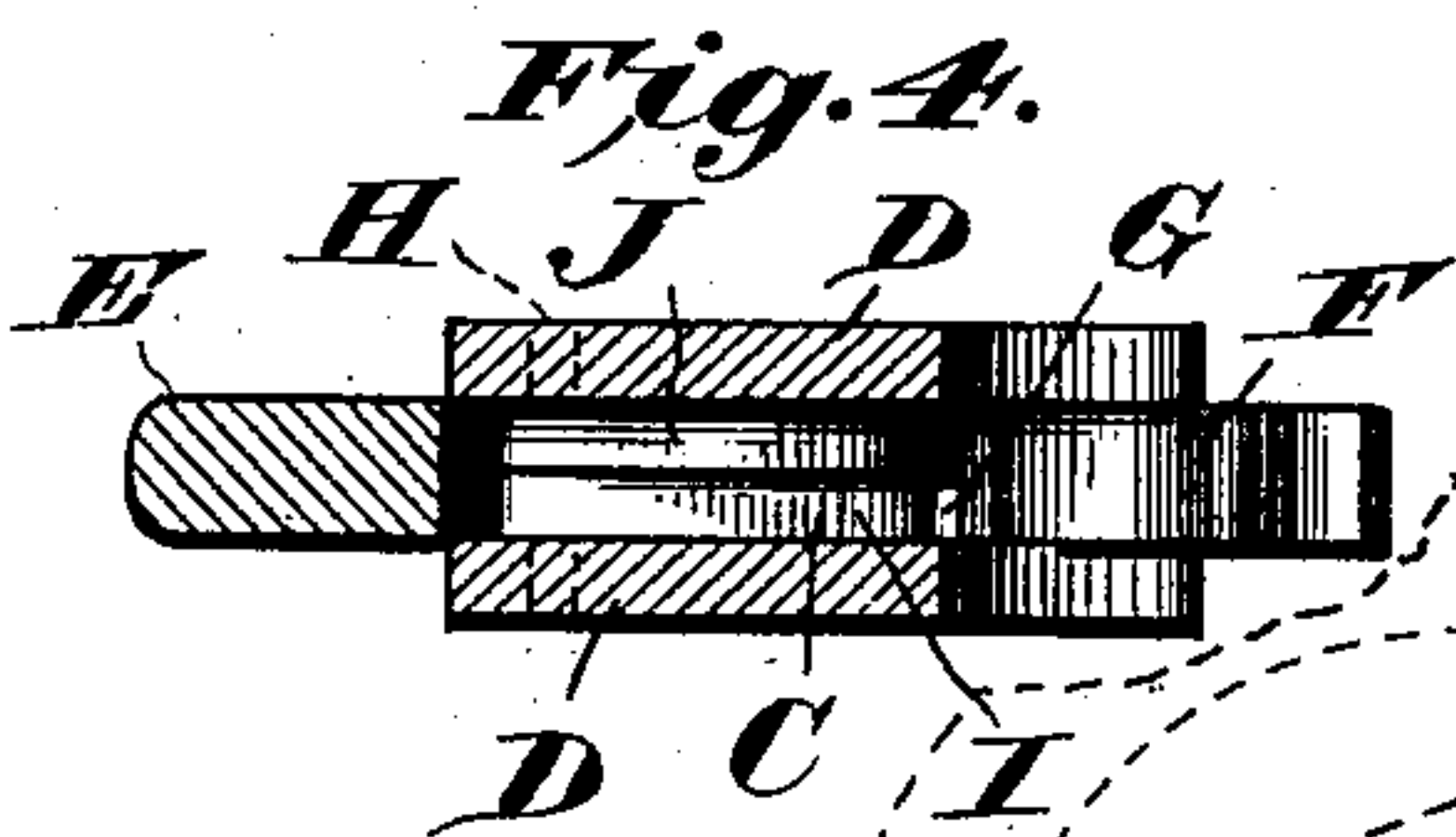
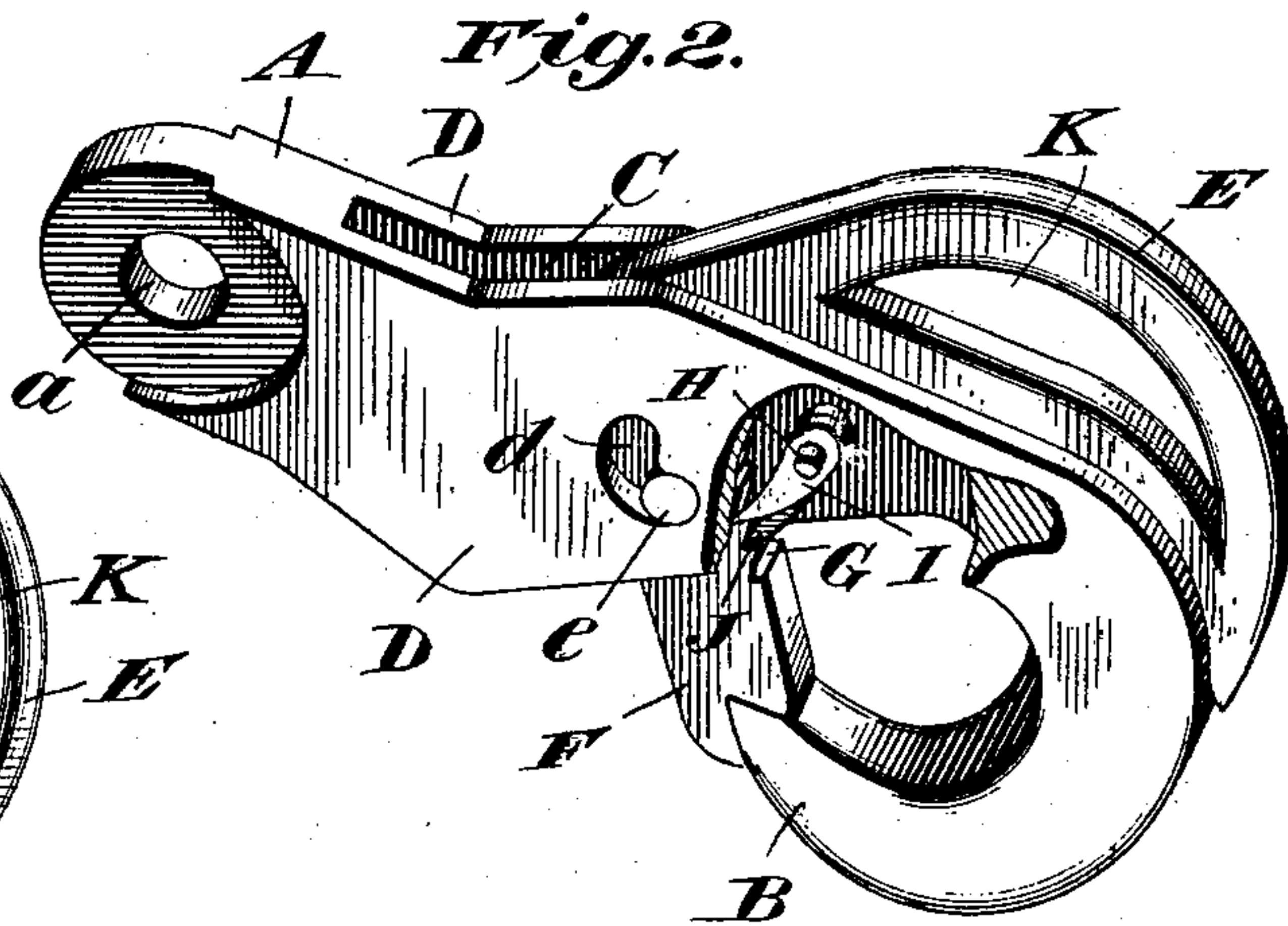
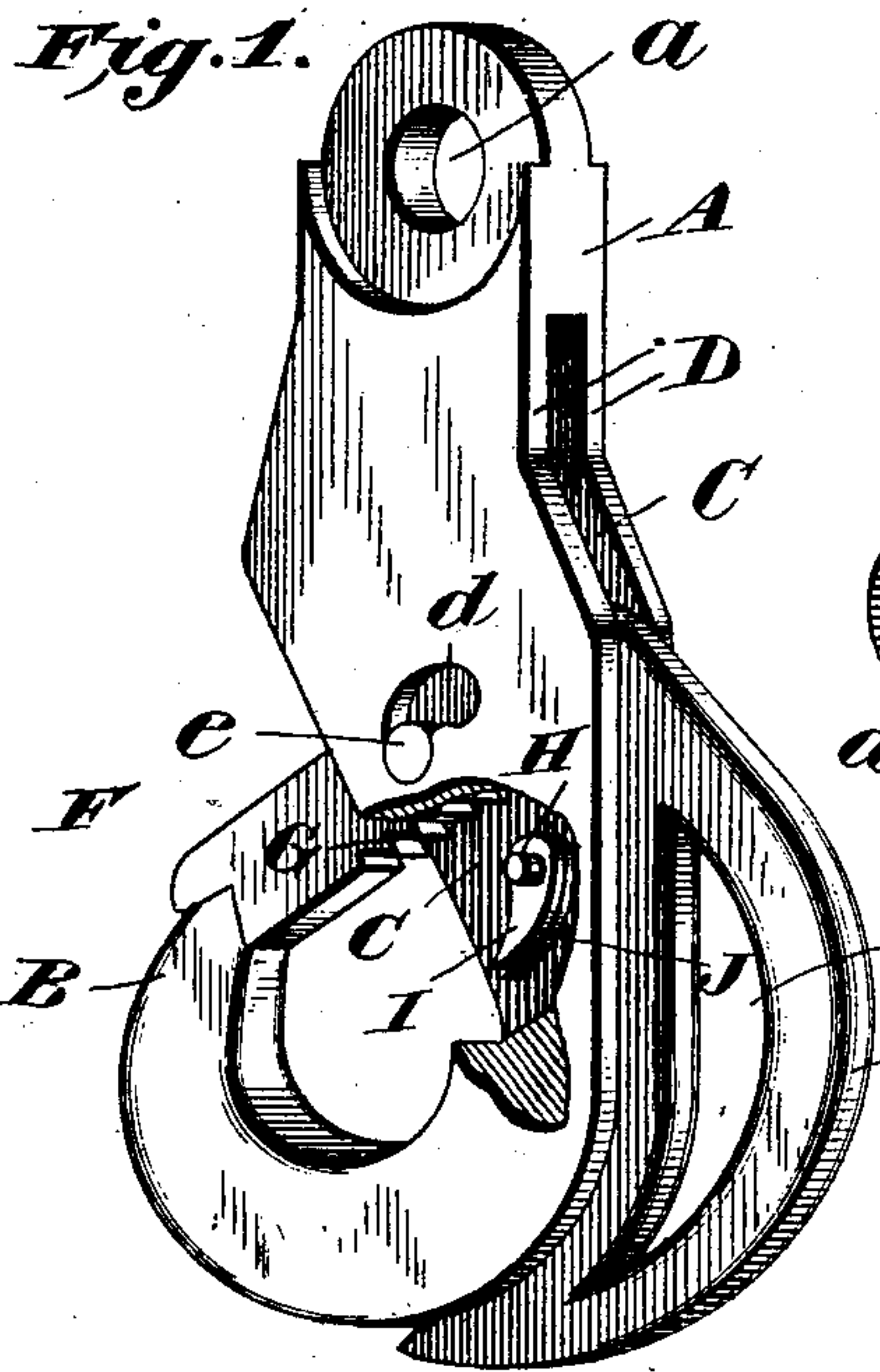
Patented July 22, 1902.

H. B. GRAY.

SAFETY HOISTING HOOK FOR ORE BUCKETS, &c.

(Application filed Feb. 28, 1902.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

HIRAM B. GRAY, OF CONNEAUT, OHIO, ASSIGNOR OF ONE-HALF TO V. J. CRAYTOR, OF CONNEAUT, OHIO.

## SAFETY HOISTING-HOOK FOR ORE-BUCKETS, &c.

SPECIFICATION forming part of Letters Patent No. 705,526, dated July 22, 1902.

Application filed February 28, 1902. Serial No. 96,170. (No model.)

*To all whom it may concern:*

Be it known that I, HIRAM B. GRAY, a citizen of the United States, residing at Conneaut, in the county of Ashtabula and State of Ohio, have invented certain new and useful Improvements in Safety Hoisting-Hooks for Ore-Buckets and other Articles; 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 relates to hooks for hoisting buckets and other articles; and its chief object is to prevent the hook and the handle from catching against projecting parts of buildings.

To this end my invention consists in the construction and combination of parts hereinafter more particularly set forth and claimed.

In the accompanying drawings, Figure 1 represents a perspective view of a safety-hook embodying my invention slightly broken away to show the pawls in their normal position disengaged from the ratchet. Fig. 2 represents a similar view, the shank of the hook being thrust forward and the pawls engaged. Fig. 3 represents a detail view of the piece constituting the safety-guard ratchet and handle. Fig. 4 represents a horizontal cross-section just above the plane of the said pawls; and Fig. 5 represents a detail view of the shank and hook proper from the side opposite to that exhibited in Fig. 1, the opened position of the guard and handle appearing in dotted lines.

A designates the shank of the hook, having a pivot-hole *a* near its top for connection to the suspending devices (not shown) and integral with the upwardly-turned hook proper, B. The middle part of this shank has a large opening C through it, leaving a plate D on each side, with a bent slot D through it. The two slots *d* correspond in form and location and receive the gudgeons *e* of a piece which comprises both the handle E and the safety-guard F, the latter having a V-shaped notch in its end to fit on the tip of the hook proper when the said gudgeons are in the lower and forward part of the slots. When the said piece is lifted by a pull on the handle to free

the bucket, the said gudgeons ride into the upper rear end of the slots, and a gap is left between the safety-guard and point of the hook, through which the bucket-bail may be lifted. While the safety-guard is in the first position above stated the tip of the hook is effectually covered by it. The handle E has its inner face of such curvature as to fit close against the back of the shank end of the hook proper when the parts are thus engaged. Consequently it is only necessary to hold them so to keep both point and handle from catching on anything. For this purpose I provide the inner face of the safety-guard with a series of teeth or steps G, constituting a ratchet adapted to be engaged when the upper end of the shank tips forward by a pawl pivoted on a transverse pin H within the shank. As shown, there are two of these pawls I and J, the latter engaging the tooth of the said ratchet next below that engaged by the former; but either of these pawls may be dispensed with. When the hook-shank is vertical, the pawl or pawls will hang down, as shown, without effect. In this position of the hook neither its point nor handle are very likely to catch against the side of the vessel, and the weight of the handle and safety-guard will hold the parts as in Fig. 1, affording all the protection that is needed; but in lifting the hook the upper end of the shank will sometimes tip forward, and the gudgeons *e* may be jostled into the upper rear part of the slots *d*, leaving the point of the hook uncovered and liable to catch and the point of the handle thrown out with similar liability if no means be employed to lock the parts in the position of Fig. 1. It is therefore important that the pawl and ratchet should engage with each other in such circumstances, holding the safety-guard against the point or tip of the hook, and this is automatically effected by gravity, tilting the pawl or pawls into position to thus engage. The said handle is provided with a slot or opening K for convenience of grasping by hand or attaching a cord to lift the safety-guard from the hook-point when such action is desirable. The rear of the said handle is curved to reduce the risk of engagement or entanglement.

Having thus described my invention, what



I claim as new, and desire to secure by Letters Patent, is—

1. A hook for hoisting buckets and other articles, provided with a safety-guard, adapted to move to and from the point of the hook, and a pawl and ratchet, arranged to lock the said safety-guard in contact with the said hook substantially as set forth.

2. A hook for hoisting buckets and other articles, provided with a safety-guard, having a V-shaped notch in its end and adapted to move to and from the point of the hook, and a pawl and ratchet, arranged to lock the said safety-guard in contact with the said hook, the said notch receiving the point of the latter substantially as set forth.

3. In a hook for hoisting buckets and other articles, the shank having a middle opening, and having two corresponding curved slots in its sides and the hook proper integral with it, in combination with a safety-guard adapted to fit on the said point and provided with a ratchet and gudgeons, and a pawl pivoted within the said opening and arranged to engage the said ratchet when the shank of the hook tilts forward, for the purpose of holding the safety-guard on the hook-point substantially as set forth.

4. In combination with a hook, a pivoted safety-guard ratchet and handle in one piece and a pawl adapted to automatically engage

the said ratchet thereby locking the safety-guard on the hook-point and the handle against the back of the hook substantially as set forth.

5. In combination with a hook and a handle movable with respect thereto, but curved to fit close against the back of the hook in its closed position, means for automatically locking the said handle in such position, when the top of the shank tilts forward substantially as set forth.

6. In combination with a slotted hook, a movable piece provided with gudgeons adapted to slide in said slots and a pawl arranged to engage a ratchet on said piece for locking it in closed position, the said piece comprising a safety-guard adapted to fit on the point of the hook and a handle curved to fit against the back of the hook substantially as set forth.

7. A hook having a pair of pawls pivoted in its shank, in combination with a safety-guard having successive teeth engaged respectively by said pawls, to lock the said guard on the point of the hook substantially as set forth.

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

HIRAM B. GRAY.

Witnesses:

S. C. ANDREWS,  
C. F. RODGERS.