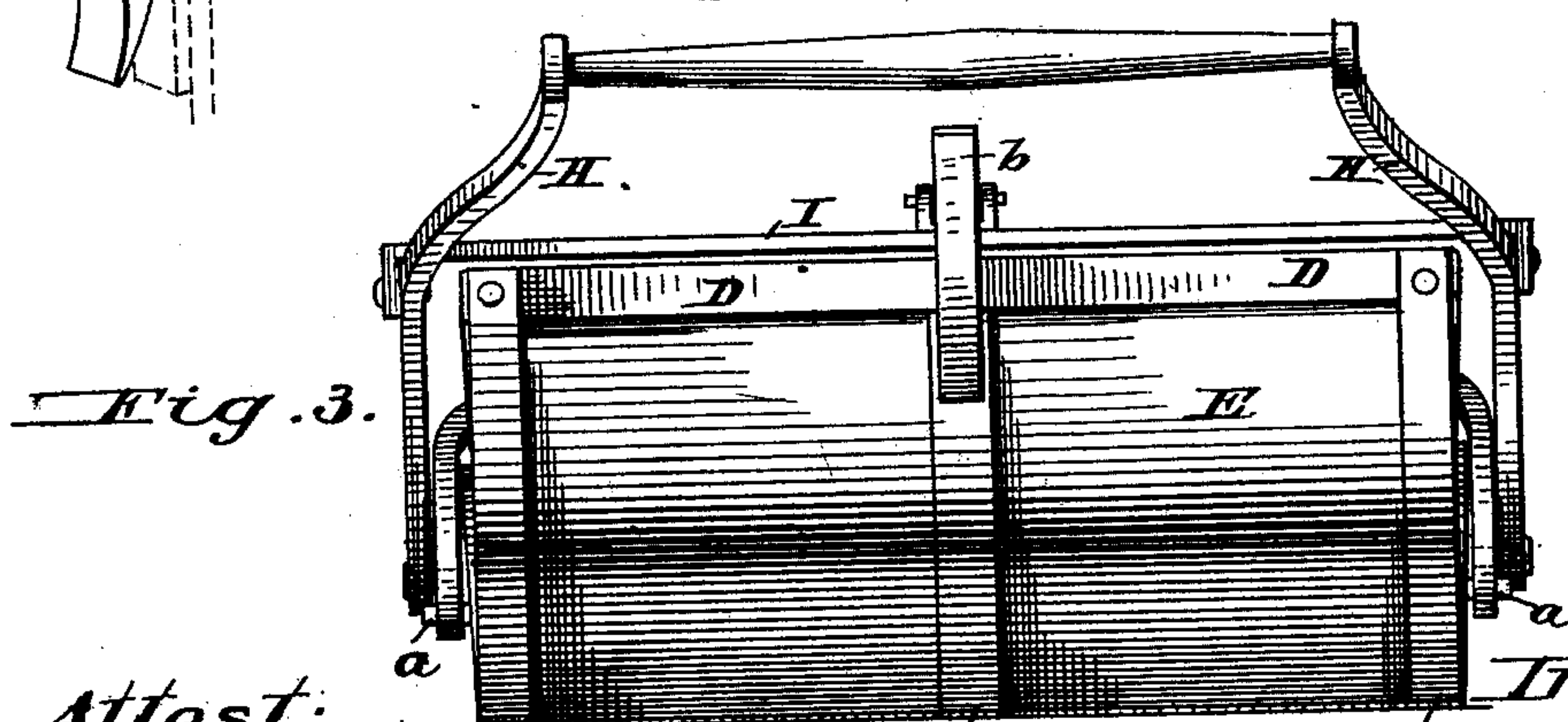
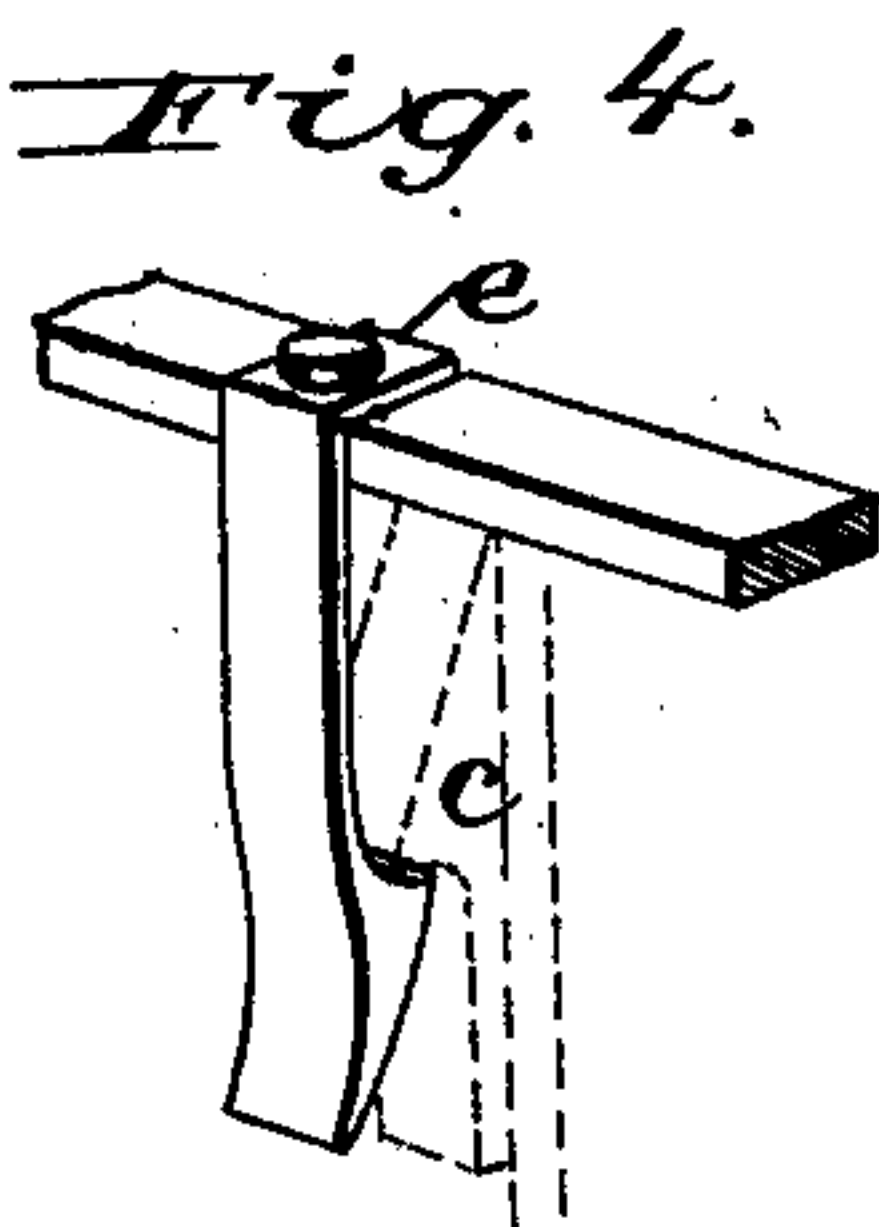
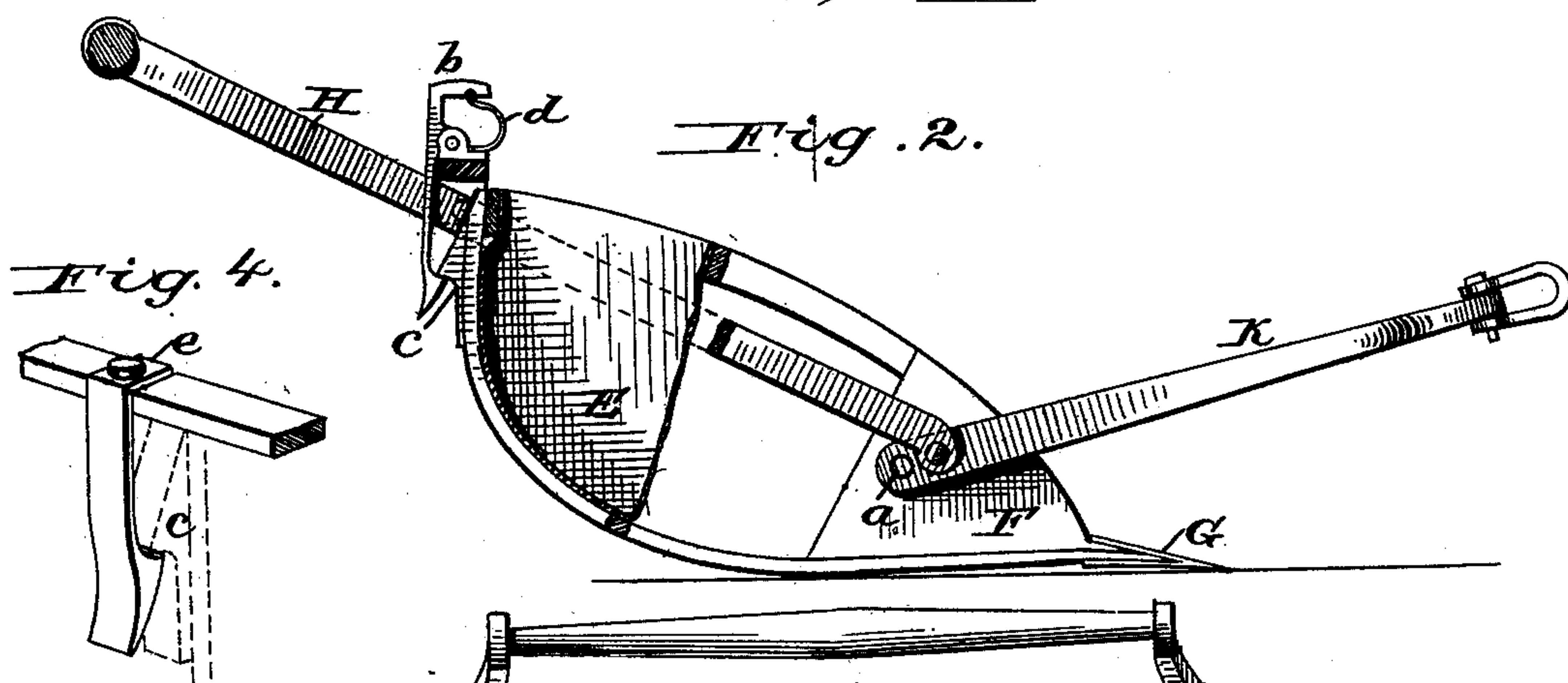
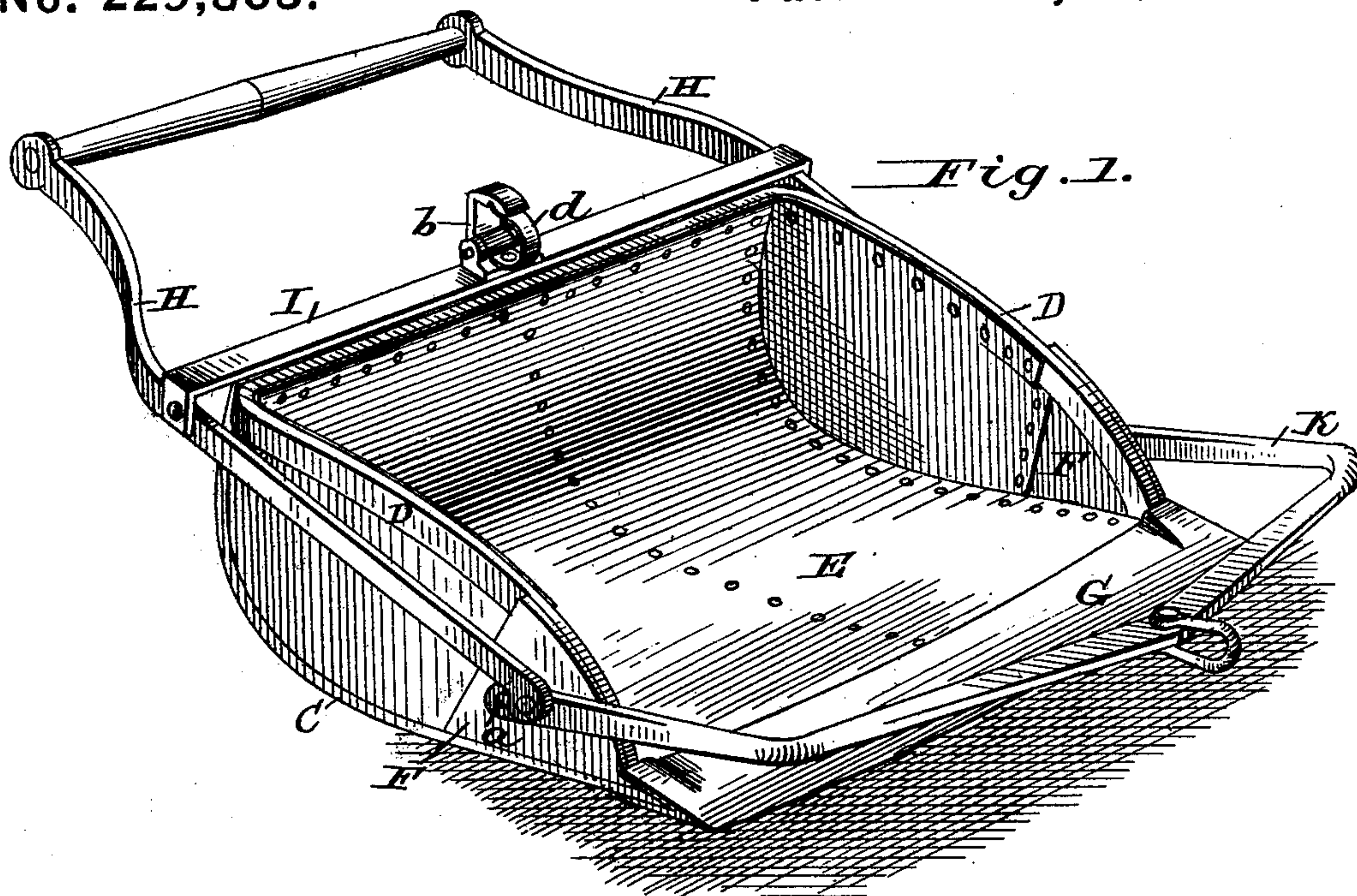


(No Model.)

A. R. BYRKETT.  
Earth Scraper.

No. 229,863.

Patented July 13, 1880.



Attest:  
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Atty



# UNITED STATES PATENT OFFICE.

AHIJAH R. BYRKETT, OF TROY, OHIO.

## EARTH-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 229,863, dated July 13, 1880.

Application filed May 31, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, AHIJAH R. BYRKETT, a citizen of the United States, residing at Troy, in the county of Miami and State of Ohio, have  
5 invented certain new and useful Improvements in Earth-Scrapers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable  
10 others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This is an improvement in that class of  
15 earth-scrappers which are arranged to revolve for the purpose of dumping the load, and while being filled are locked in position.

The improvement consists in constructing the frame-work of stout bars of metal and the  
20 body or lining of some light material, such as sheet metal or wood, the bars supporting and strengthening said lining at its bottom edges, its center, and also along its top edge.

The improvement further consists in strength-  
25 ening the front portion of the scoop by the application to each side thereof of cheek-plates, which are rigidly secured to the side and top bars of the frame-work; in a cutter or scraper having its rear edge split to receive the front  
30 edge of the scoop-lining, the front ends of the cheek-plates, and the front ends of the bars sustaining the bottom of the scoop, the split portion of the cutter, and the front ends of the cheek-plates, the scoop and the bands being  
35 firmly bolted or otherwise secured together, thereby forming an exceptionally strong cutter or scraper, capable of resisting a great strain.

The improvement further consists in the  
40 pivoting to rigid studs projecting from the cheek-plates of the bail, and in the pivoting to the bail-arms, slightly in advance of their pivotal connection to the cheek-plates, of the forward ends of the handles, which are slightly  
45 bent to conform to the shape of the scoop, and in combining therewith a cross-bar secured to the handles, which cross-bar shall rest directly upon the top of the rear end of the scoop-body and extend along its entire  
50 width, for the purpose of holding it firmly in position, and a spring-hook secured to said

cross-bar on its top face, for engagement with a catch secured to the rear of the scoop beneath.

In the drawings, Figure 1 is a perspective  
view of my improved scraper. Fig. 2 is a side  
view, partly in section, of the same. Fig. 3 is a  
rear view of the machine, and Fig. 4 shows a  
modified form of spring-hook for engagement  
with the catch on the scoop.

The frame-work of the scoop consists of stout  
metal bands A B C D, to which is attached, by  
bolts or other suitable means, a lining or body,  
E, of some suitable light material, such as  
thin plate metal or wood.

The bands A B C extend from the front to  
the rear of the scoop at each side edge of the  
bottom proper, and also at the center, thereby  
affording a firm support to the body and sus-  
taining it against the pressure of the load of  
earth or other material therein.

The band D extends all around the top edge  
of the scoop body or lining, and is secured  
firmly thereto, so as to strengthen it at that  
part. The strain upon the body or lining is  
very slight compared to the strain upon the  
front or scraping portion, and it is found in  
practice that a great saving of material, and  
consequently a lessening of the expense in  
constructing machines of this character, is se-  
cured by forming the lining of light and cheap  
material, with exterior bands of stout metal to  
support it, while such construction is, at the  
same time, quite as effective as in those in-  
stances where the scoop body or lining is made  
of stout and more expensive material. More-  
over, should a scoop constructed entirely in  
one piece become damaged, it might be neces-  
sary to replace it entire, while in my construc-  
tion the scoop-lining or any other portion can  
be readily replaced, should occasion require,  
without necessitating the renewing of the other  
parts of the device.

F represents cheek-plates secured to the out-  
side of each side of the scoop at its forward  
end. These plates are preferably of stout  
metal, and are secured to the frame-work by  
bolts or otherwise. They serve the purpose of  
greatly strengthening that portion of the ma-  
chine subject to the most strain—viz., that part  
in direct contact with the earth being scraped—  
and they also afford a firm bearing for the at-



attachment of the bail and handles, as hereinafter described, so that the whole strain shall be upon the portion of the scoop best adapted to receive it by reason of its re-enforced condition.

G represents the knife or scraper, which is split at its rear edge to receive the forward ends of the bands A B C, the front edge of the scoop body or lining, and the front ends of the cheek-plates F. The split edges of the scraper and the therein-inclosed ends of the lining, bands, and cheeks are then firmly bolted or otherwise secured together, and, with the side-embracing cheek-plates, result in the formation of an exceptionally strong scraping and strain sustaining portion, which, as the various parts may be arranged to be capable of easy removal, may be renewed without difficulty whenever required without disturbing the whole of the machine.

Projecting outwardly from each cheek-plate F are rigid pins *a*, to which the ends of the bail K are pivoted. The forward ends of the handles H (which are slightly bent to adapt them to the shape of the scoop) are, in turn, pivoted to the bail-arms in advance of the pivotal connection of said bail-arms to the cheek-plates. This arrangement materially aids in the dumping of the scoop at the proper moment, as, on the rear portion of the handles being raised to, say, an angle of about sixty-five degrees, the ends of the bail-arms will press the front ends of the handles back, and thereby force the rear ends up and release the cross-bar from the rear of the scoop, while at the same time the scoop turns over, releasing itself automatically from a spring-hook on the cross-bar. The bail has capacity for rising free of obstructions without affecting the handles sufficiently to release the cross-bar.

The cross-bar I is secured to the handles H. While the handles are in their normal position this cross-bar will rest upon the top of the rear portion of the scoop-body and along its entire width and hold it firmly down.

Secured to the upper face of the cross-bar I is a downwardly-depending hook, *b*, which is held in position to engage with a catch, *c*, on the rear of the scoop by means of a spring, *d*, also secured to the upper face of the cross-bar, and engaging at its free end in a notch in the rear of said hook. Both the hook *b* and the catch *c* are beveled on their faces to facilitate engagement with each other.

In lieu of the hook *b* and the plate-spring *d* to hold the same in position, I may use a hook of spring-steel, such as is shown in Fig. 4 of the drawings. This hook has a lip, *e*, at its upper end, by means of which it is attached to the cross-bar, the hooked portion depending downward for engagement with the catch on the rear of the scoop, as in the before-described arrangement.

The operation of the devices for the revolution of the scoop is as follows: The handles H being in a position of rest, with the spring-hook engaging the catch upon the back of the scoop, by raising the handles sufficiently to enable the scoop to fill, the cross-bar on the handles is caused to press heavily upon the rear end of the scoop, and thereby hold it in a perfectly rigid position. Continuing the elevation of the handles to an angle of about sixty-five degrees to the bail, the handles are forced back so that the cross-bar is pushed off the rear end of the scoop, and the scoop thereby permitted to pass clear of the cross-bar and deposit its load. It is then brought into position again by the combined movement of the horses forward and the pulling back of the workman upon the handles.

It will be observed that this device is simple in construction, with no complicated parts to get out of gear or become clogged in use, with no projecting portions liable to be broken off, and the machine thereby deranged, and that it further possesses the advantages of being light in construction while very strong at the parts requiring strength, capacity of easy replacement of parts requiring renewing, and facility and reliability of operation.

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

1. A scoop consisting of the frame-work A B C D, of stout metal bands, and the lining or body E, of light material, substantially as described.

2. The cheek-plates F, secured at each side of the forward end of the scoop to the bands C D, as and for the purpose set forth.

3. The combination, with a scoop consisting of the frame-work A B C D, lining E, and cheek-plates F, of the split knife or scraper G, substantially as and for the purpose set forth.

4. The combination of bail K, pivoted to the cheek-plates F, handles H, pivoted to said bail in advance of the pivotal connection of the bail to the cheek-plates, the cross-bar I, secured to said handles so as to rest directly upon the top edge of the back part of the scoop, the catch *b*, and the spring-hook *c d*, secured to the cross-bar, as and for the purpose set forth.

5. The combination of the catch *b*, secured to the rear of the scoop, the hook *c*, secured to the cross-bar I, and the plate-spring *d*, secured to the cross-bar, for engaging with the upper end of said hook and insuring the engagement of said hook and catch, as described.

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

AHIJAH R. BYRKETT.

Witnesses:

CHAS. J. GOOCH,  
GEO. F. GRAHAM.