H. S. CRAVEN.

SELF-ACTING TRIPS FOR MINING BUCKETS.

No. 186,808. Patented Jan. 30, 1877.

Fig. 1.

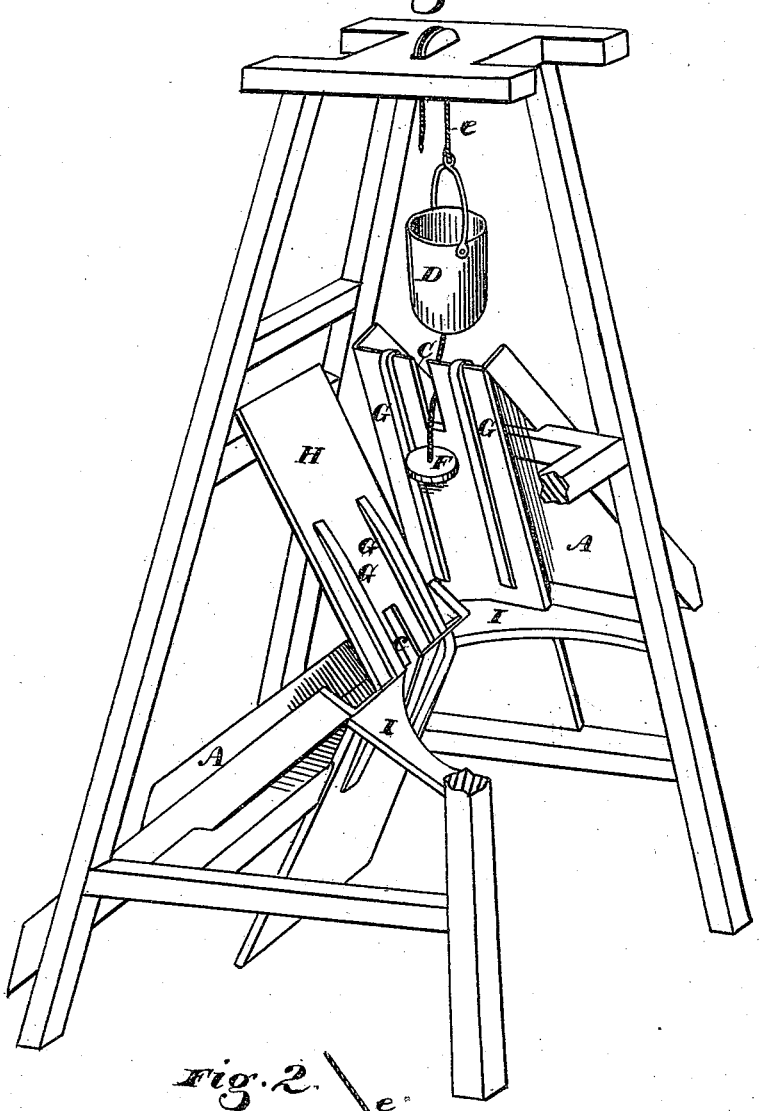
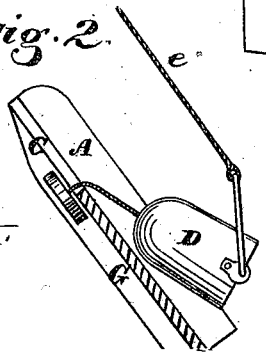


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

HENRY S. CRAVEN, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN SELF-ACTING TRIPS FOR MINING-BUCKETS.

Specification forming part of Letters Patent No. **186,808**, dated January 30, 1877; application filed July 28, 1876.

To all whom it may concern:

Be it known that I, HENRY SMITH CRAVEN, of San Francisco city and county, State of California, have invented a Self-Acting Trip for Mining-Buckets; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

My invention relates to a novel device for dumping and discharging buckets from mines or wells when they arrive at any level where it is desired to empty them; and it consists of an attachment for the bottom of the bucket, which will engage with a slot in the discharge-chute, and when the bucket is lowered over the chute will reverse and empty it.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my device. Fig. 2 is a section of the chute, showing how the buckets are held and emptied.

A A′ are discharge-chutes, situated at any points where it may be necessary to empty buckets. These chutes extend over the mouth of the well or shaft to such a point that their edges will stand just beyond the line of the hoisting-rope, and a slot, *c*, is made in this edge of the chute, so that the rope will move in this slot and not become chafed.

The bucket D is suspended from the rope *e*, and has depending from its bottom a weight, F, as shown. This weight or plate is larger than the slot *c*, so that after the bucket has been raised high enough to pass the edge of the chute the plate will remain below the edge, while the cord by which it is attached to the bucket lies in the slot *c*. The bucket is then lowered, and as its center of gravity lies within the edge of the chute, it will be overturned into the chute, the plate holding its bottom, so that it cannot slide down, and this causes the whole contents of the bucket to be emptied into the chute.

When the bucket is drawn up sufficiently to clear the edge of the chute, it will swing outward, and as it does so it may be lowered, so as to clear the edge and pass downward. When it comes up the inclined bottom of the chute forces it to one side until it will pass, after which it swings in, so as to be readily dropped into the chute, the weight or plate F remaining on the out or under side of the chute.

Tracks or rails G are fitted to the lower side of the chute to guide the bucket as it passes, and prevent it from turning.

When it is necessary to raise the bucket to the higher chute, a reverse incline, H, is fitted to rest upon the upper edge of the lower chute, and extend to the side of the shaft or opening. This incline forces the bucket outward, when it passes down from the upper chute, and in this manner any number of chutes at different levels may be passed, until the proper one is reached, without interfering with the proper working of the device.

The guiding-rails are continued upon the inclines H, where these are used for the purpose of steadying and guiding the bucket in its descent as well as its ascent.

The chutes are suitably braced, and the arms I curve outward on each side from the edge of the chute, so that if the rope is thrown to one side the arms will guide it back to the slot *c* again.

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

1. The automatic trip for buckets, consisting of the weight F, suspended from the bottom of the bucket, in combination with the discharge-chute A, extending beyond the line of travel of the rope, and slotted at *c*, substantially as herein described.

2. The device for allowing the bucket to pass up and down by a chute, the same consisting of the reverse incline H, extending upward from the edge of the chute A, substantially as herein described.

3. The guiding rails or tracks G upon the inclined surfaces A and H, to prevent the turning of the bucket, substantially as described.

4. The curved bracing-arms I, extending from the slot *c* outward, so as to return the rope *e* to the slot when it is displaced, substantially as herein described.

In witness whereof I have hereto set my hand and seal.

H. S. CRAVEN. [L. S.]

Witnesses:

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