

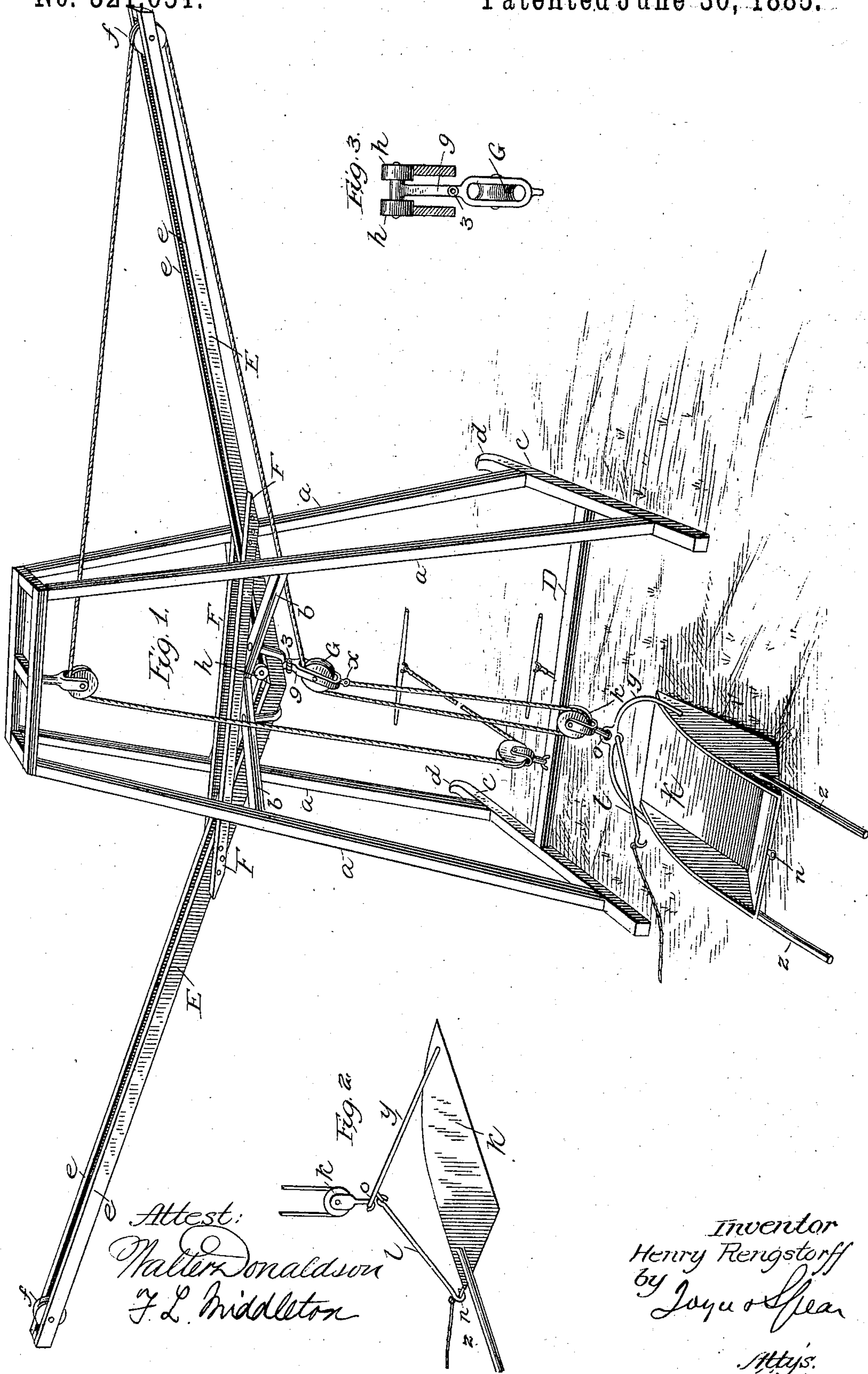
(No Model.)

H. RENGSTORFF.

EXCAVATOR.

No. 321,051.

Patented June 30, 1885.



N. PETERS, Photo-Lithographer, Washington, D. C.



# UNITED STATES PATENT OFFICE.

HENRY RENGSTORFF, OF MOUNTAIN VIEW, CALIFORNIA.

## EXCAVATOR.

SPECIFICATION forming part of Letters Patent No. 321,051, dated June 30, 1885.

Application filed January 20, 1885. (No model.).

*To all whom it may concern:*

Be it known that I, HENRY RENGSTORFF, of Mountain View, in the county of Santa Clara and State of California, have invented  
5 a new and useful Improvement in Excavators; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is designed and used for hoisting and removing the earth from the bed of  
10 dry creeks. It is applicable to the work of forming ditches and drains or excavating of any sort not requiring great depth below the surface.

My object also has been in this invention to  
15 provide a simple and inexpensive structure, which may be made by a comparatively unskilled workman and ironed by an ordinary blacksmith, and which also may be used in part as an ordinary scraper.

20 It consists, mainly, of an improved derrick adapted to be used in connection with a scraper, and in combining with the derrick and the scraper-bail a supplemental bail or brace, whereby the scraper is made to serve  
25 as a dumping-bucket as well as a scraper.

In the accompanying drawings, Figure 1 represents the apparatus entire in perspective. Figs. 2 and 3 represent details of construction.

The frame or tower of the derrick consists  
30 of four posts, *a*, connected at the top, braced midway by studs *b b*, and supported on sills *c c*, preferably turned up at the ends, as shown at *d d*, and adapted to slide on the ground. These sills are connected and braced by a  
35 strong cross-bar, *D*. On this frame is supported a pair of derrick-arms, *E E*. These are composed each of two scantlings, *e e*, set on edge, with distance-pieces interposed between the scantlings for the passage of the arm of  
40 the scantling-block. The arms are connected to each other, preferably at their inner ends, and are further connected by a tie, *F*; but the means for connecting them to the frame and supporting them firmly thereon may be  
45 greatly varied. In the outer ends of the arms are sheaves *f f*. A fixed block depends from the upper cross-bars of the derrick, and another block is connected to the lower bar, *D*. The traveling block *G* is attached to an arm,  
50 *g*, which moves freely between the sides of the arms, and is supported on the axis of a

pair of wheels, *h h*, which run on the upper edges of the scantlings which form the sides. The arm *g* is provided with a hinge, as shown at 3, Figs. 1 and 3, whereby lateral swinging  
55 movement of the block is permitted while the scraper is being pulled from the side. The end of a rope is attached to the moving block at *x*, thence passes over the block *k*, which is hooked to the scraper, thence over the moving  
60 pulley *G* and over the sheaves in the end of the derrick-arm; thence it passes to the upper block and down to that attached to the cross-bar *D*, whence it is lead to the horses. The frame is arranged, when used to clear the bed of a  
65 creek or to form a ditch, with the sills *c c* parallel with the sides of the creek or ditch. The scraper *K* may be drawn out as far as desired in the said creek or ditch, and when the  
70 horses are started it is drawn along the surface till it reaches the proper position underneath the moving pulley *x*. During this time it acts as an ordinary scraper, being drawn by the bail *y* and held by the ordinary handles, *z z*. In order that it may be used as a  
75 dumping-bucket, I provide the bail *y* with a supplemental bail or rod, *l*, hinged to bail *y* and having a hook on its free end adapted to hook into a staple or eye, *n*, on the rear edge of the scraper. The rod is so proportioned  
80 that when hooked to the eye the scraper will be well balanced upon the eye *o*, into which the pulley is hooked. When, therefore, the team has drawn the scraper to the hoisting-point, it is stopped, and the attendant hooks  
85 the rod to its eye, the team is started, and the load hoisted out of the ditch. When swung clear, it is drawn along the derrick-arm, and when at the proper point the attendant pulls the rope *p* and jerks the hook of rod *l* from  
90 its eye, thus dumping the scraper, which is then allowed to run back for another load. When the earth has been removed from one part, the team may be hitched to the cross-bar  
95 *D* and move the machine onward.

I claim—

1. A machine for hoisting earth from ditches and the like and for excavating, consisting of a frame or tower adapted to be moved, fixed inclined arms extending laterally from  
100 the frame and meeting at their lowest point, and a traveling block and rope with suitable

pulleys combined with a scraper, all combined and operating substantially as described.

2. In combination, the frame, the fixed inclined derrick, arms extending laterally from the frame, composed of two scantlings placed  
5 side by side and separated by distance-pieces, the said arms meeting at their lowest point and braced to the frame, sheaves in the end of each of said arms, a moving block attached to  
10 an arm having wheels adapted to run on the

derrick-arms, and a hoisting-rope and pulleys, all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY RENGSTORFF.

Witnesses:

CALEB V. JONES,  
B. E. BURNS.