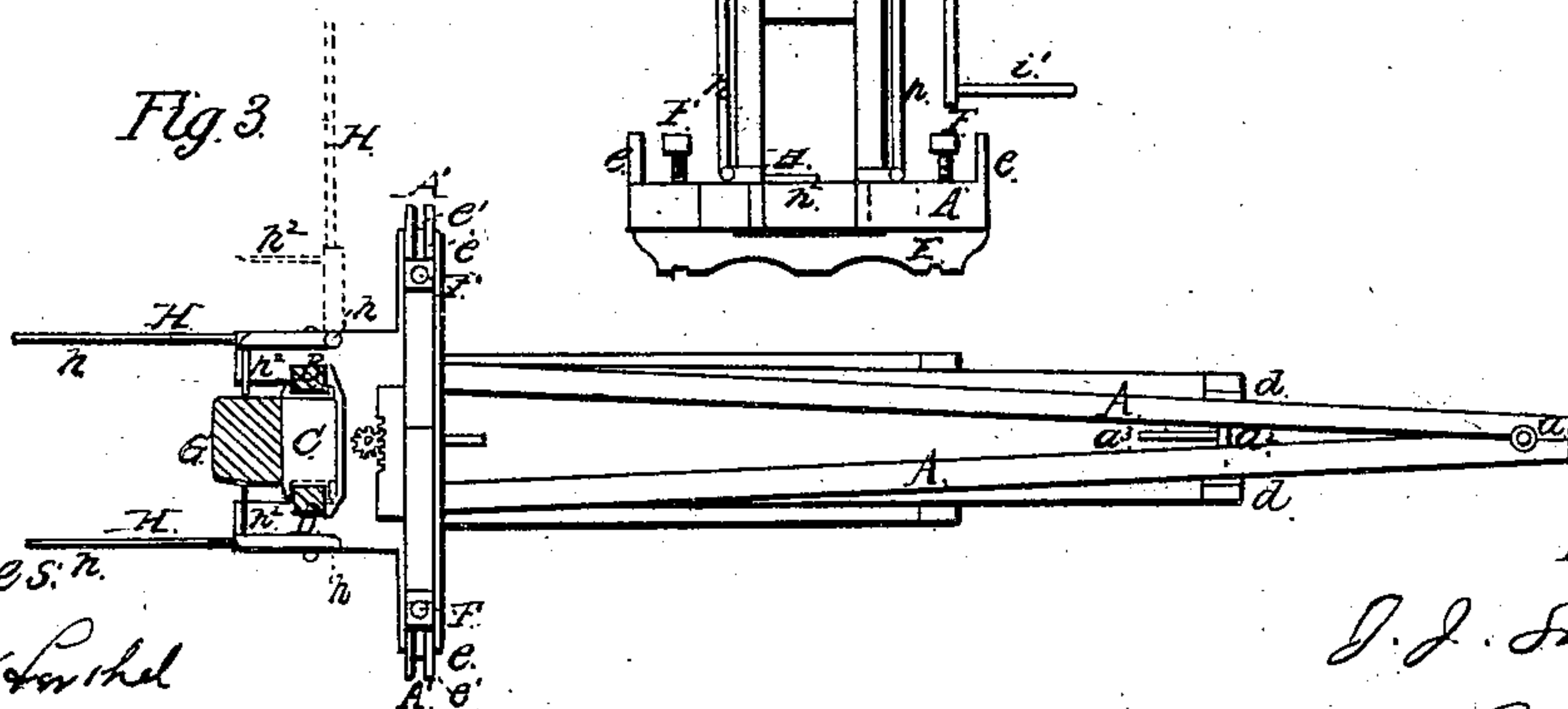
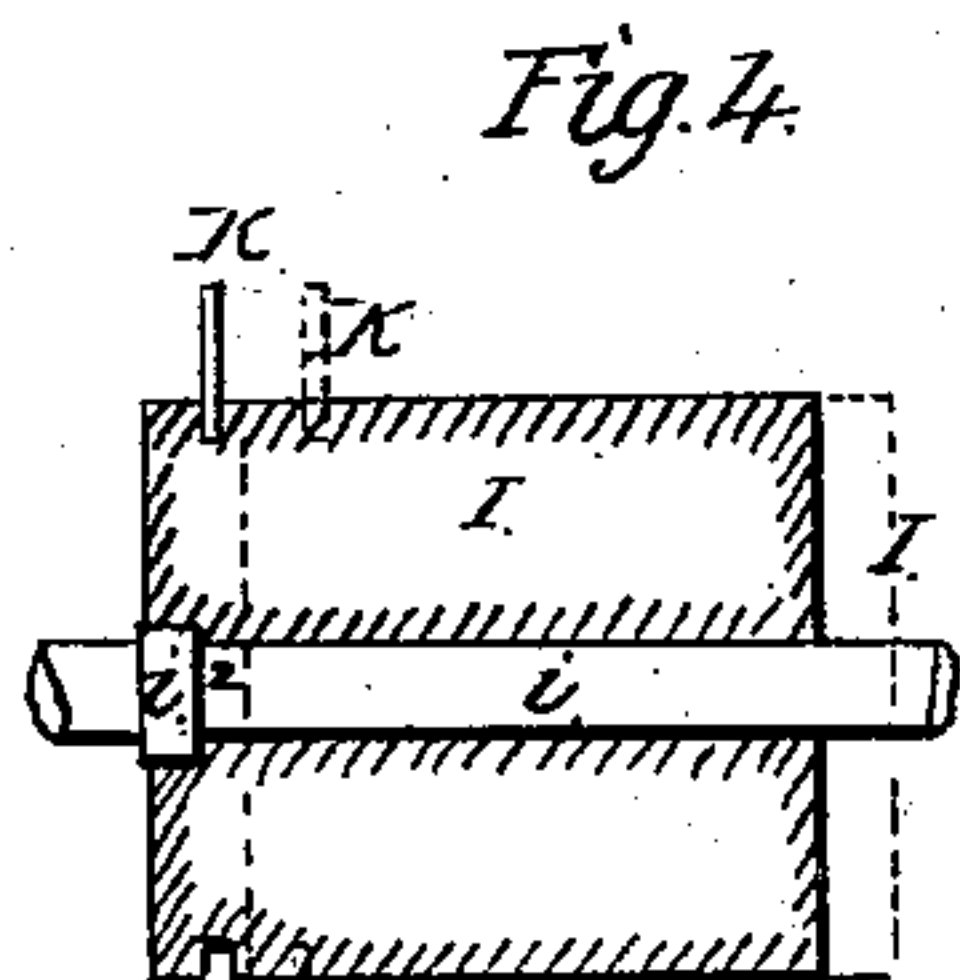
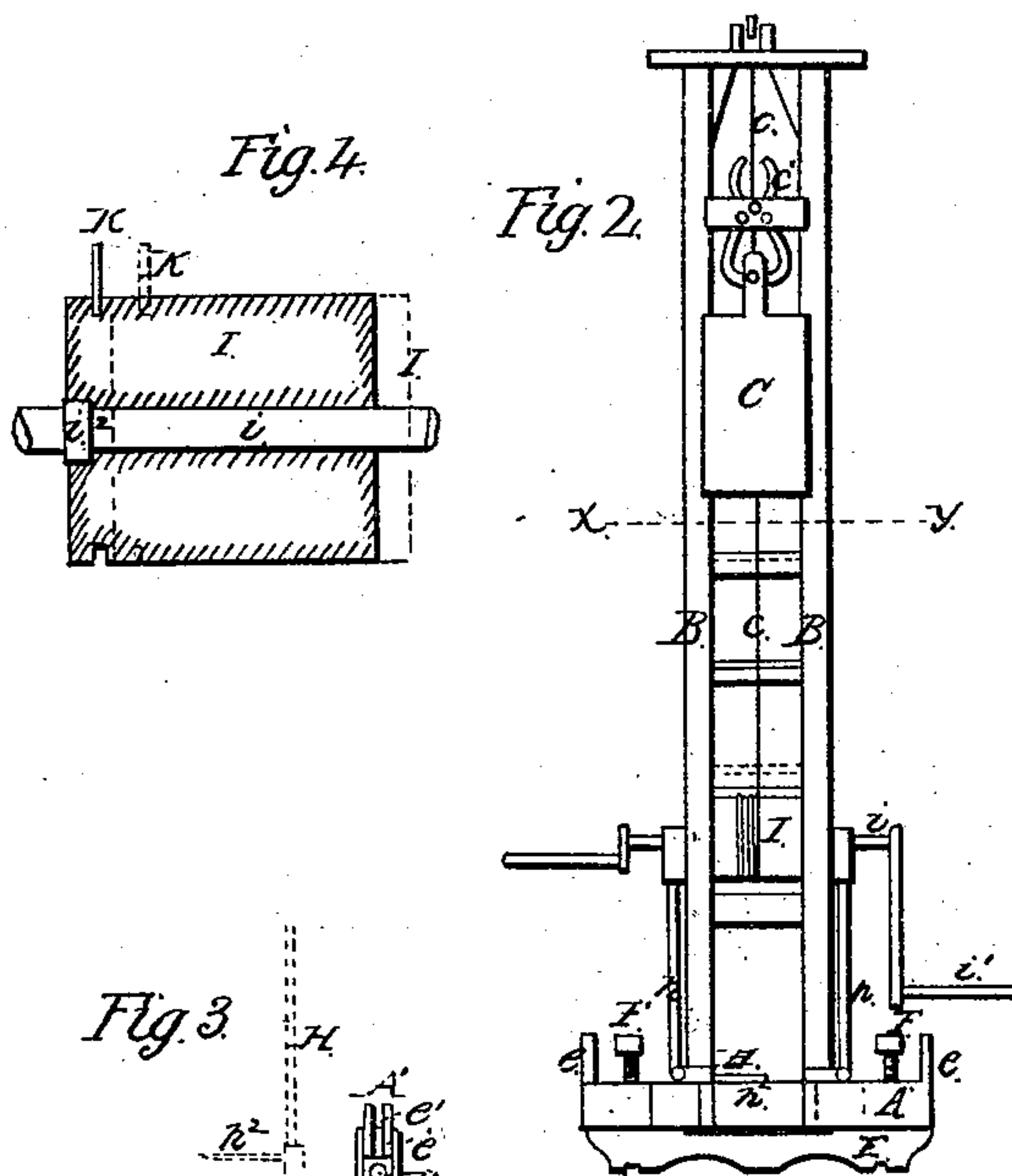
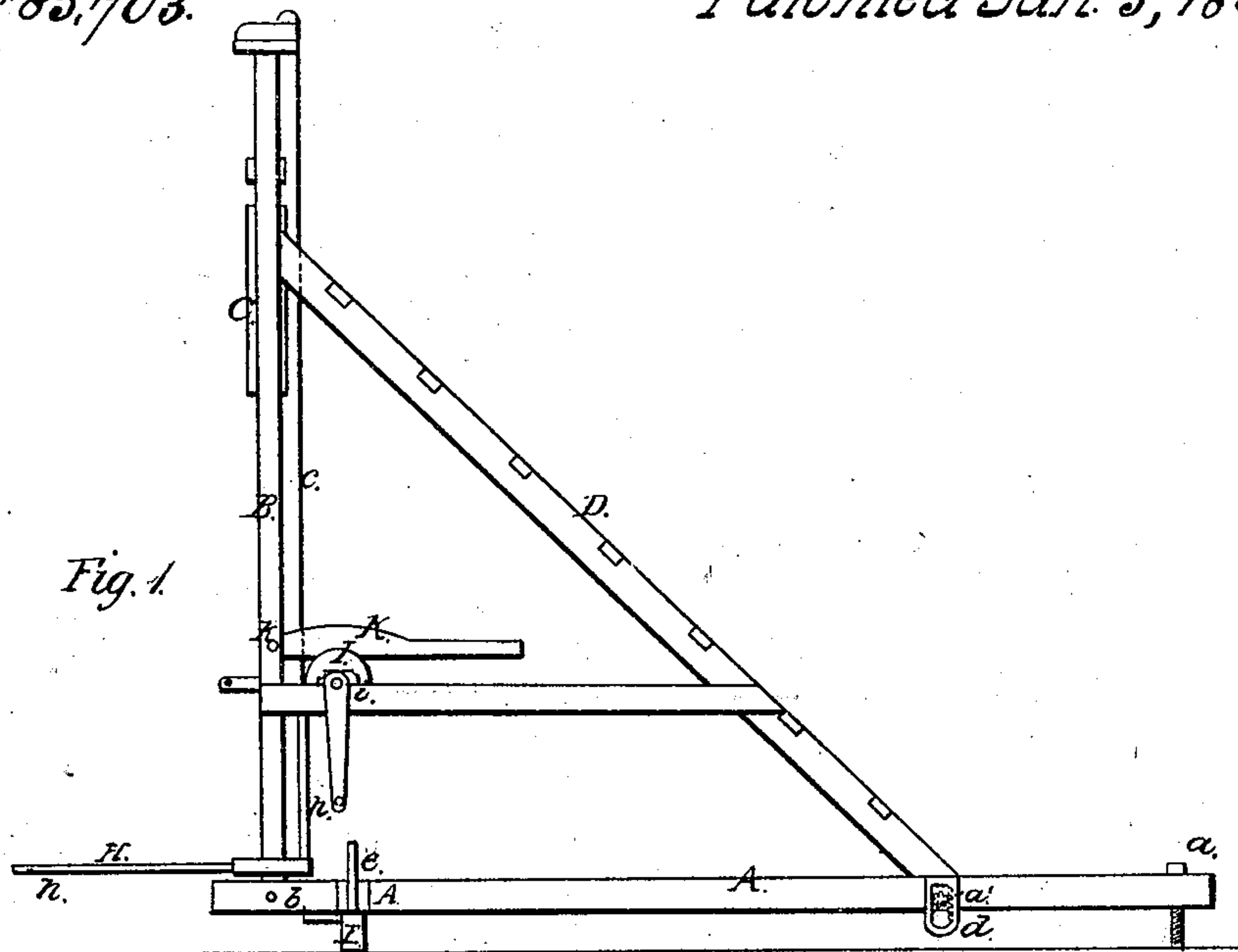


J. J. Simons.

Pile Driver.

N^o 85,703.

Patented Jan. 5, 1869.



Witnesses:

*Wm. H. Litchell
Robert Burns*

Inventor.

*J. J. Simons by his
Atty Randolph M. Smith*

United States Patent Office.

J. J. SIMONS, OF EAST ST. LOUIS, ILLINOIS.

Letters Patent No. 85,703, dated January 5, 1869.

IMPROVED PILE-DRIVER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, J. J. SIMONS, of East St. Louis, in the county of St. Clair, and State of Illinois, have made certain new and useful Improvements in Pile-Drivers; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates more especially to portable pile-drivers, such as are usually sustained upon wheels, and frequently are set upon ordinary wagons; and the nature thereof is in the arrangement of the parts in such wise that the pile-driver frame may be easily placed in the proper position, (be the same vertical or inclined.) Said nature is further in certain devices for holding and guiding the pile or post in driving, and in certain other detail features, hereinafter fully explained.

To enable those skilled herein to make and use my invention, I will proceed to describe the same more fully, referring to—

- Figure 1 as a side elevation; to
- Figure 2 as an end elevation;
- Figure 3 as a plan and section at the line $x y$.
- Figure 4 is a detail view, showing the hoisting-drum and its brake.

I support my said pile-driver upon any frame-work, which may have ordinary wagon-wheels, as in the application of said machine for driving fence-posts.

The lower frame-piece, A, of the machine is ordinarily connected, by means of a screw, a , at the rear end, on the sub-frame, the said screw being used to elevate or depress the rear end of the frame, as may be necessary.

To the frame A, I attach the vertical guide-frame pieces B, between which the ram or weight C slides, and is operated in the usual manner.

The inclined braces D connect the upper part of the frame B with the rear end of A, and, in order that the angle of the frames B and A may be variable, I arrange the slotted racks d at the ends of the braces D, engaging with said racks the cog-wheels a^1 , which are on the shaft a^2 , secured to the frame A.

A crank or lever, a^3 , is used to operate the cog-wheels a^1 , and thereby raise or lower the braces D, and thus adjust the angle of the frames B and A.

In order that the frame B may follow the motion imparted through the braces D, as aforesaid, I connect said frame B, by pivot-bolts b , with the forward end of the frame A.

The forward ends of the frame-pieces A are connected by a transverse bar, A'. This rests on a sub-frame, (usually the support of a wagon-box or bed,) E.

The uprights e pass up through slots e' in A', and there is sufficient room for lateral movement of the frame A.

In order to adjust the front end of the frame A as to height, I arrange the screws F in the bar A', acting similarly to the screw a at the rear end of A.

The screws F, by impinging on the upper surface of E, will secure the entire frame-work against lateral vibration.

The pile or post G is placed, in the ordinary manner, between the standards B.

In order to sustain and guide the pile, when propelled into the soil under action of the ram, I arrange the sliding T-shaped clutches H. These are hinged to the bars h , allowing them to move up, to clutch the pile near its upper end. The handles h^1 being turned forward, the clutch-prongs h^2 of said clutches H are driven (by a mallet) into the body of the pile, and the said clutches then slide down on the bars h , always holding and guiding the pile.

When the pile is driven, the operator grasps the handles h^1 , and draws back the clutch, it moving in a horizontal circular arc.

The ram C is raised by a rope, c , attaching to the ordinary clutch c' .

Said rope c passes down to the drum I on the shaft i , operated by crank i^1 .

In order that the rope may be lowered quickly, so that the clutch c' may engage the ram C, (after its fall,) I use the lever-brake K (which is hinged to the frame B at k) to move the drum I laterally on said shaft i , until the interior mortise of the drum is released from the square or octagonal shoulder i^2 of said shaft, as indicated in fig. 4. The drum then turns loosely and freely on the round part of said shaft i , and the clutch c' draws down the rope.

To check the motion of the drum, the operator presses down the lever-brace K upon the drum, and thus, by the friction, checks its motion.

Having thus fully described my invention,

What I claim, is—

1. The frame A, its screws a and F, the transverse bar A', and sub-frame E, standard e , and slots e' , substantially as set forth.

2. The sliding clutches H, and their bars h , when acting substantially as and for the purposes set forth.

In testimony of which invention, I hereunto set my hand, in presence of—

J. J. SIMONS.

Witnesses:

GEO. P. HERTHEL, Jr.,

M. RANDOLPH.