

(No Model.)

2 Sheets--Sheet 1.

C. RAUHE.

MACHINE FOR BORING CARTRIDGE SHELLS.

No. 438,241.

Patented Oct. 14, 1890.

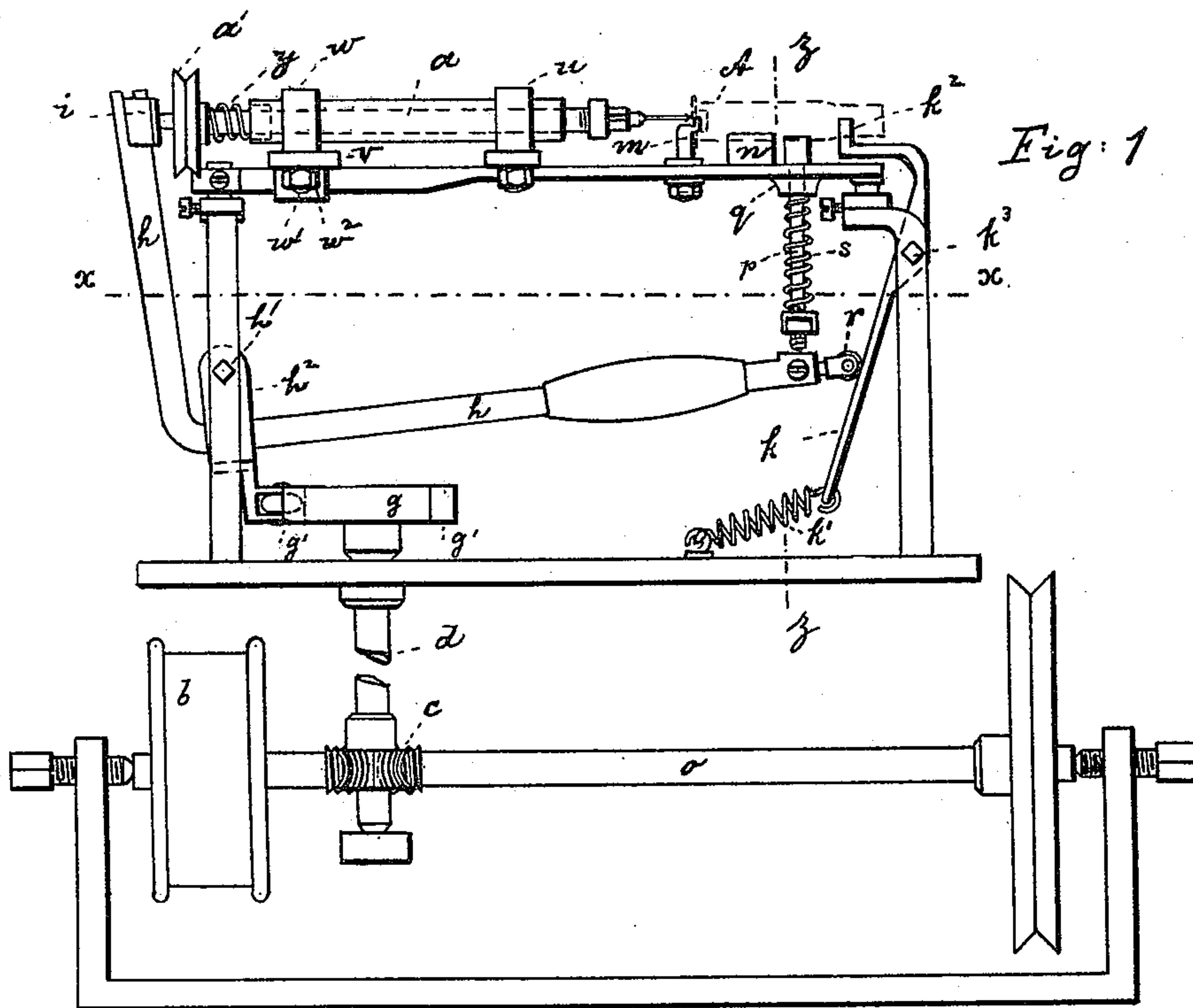


Fig: 1

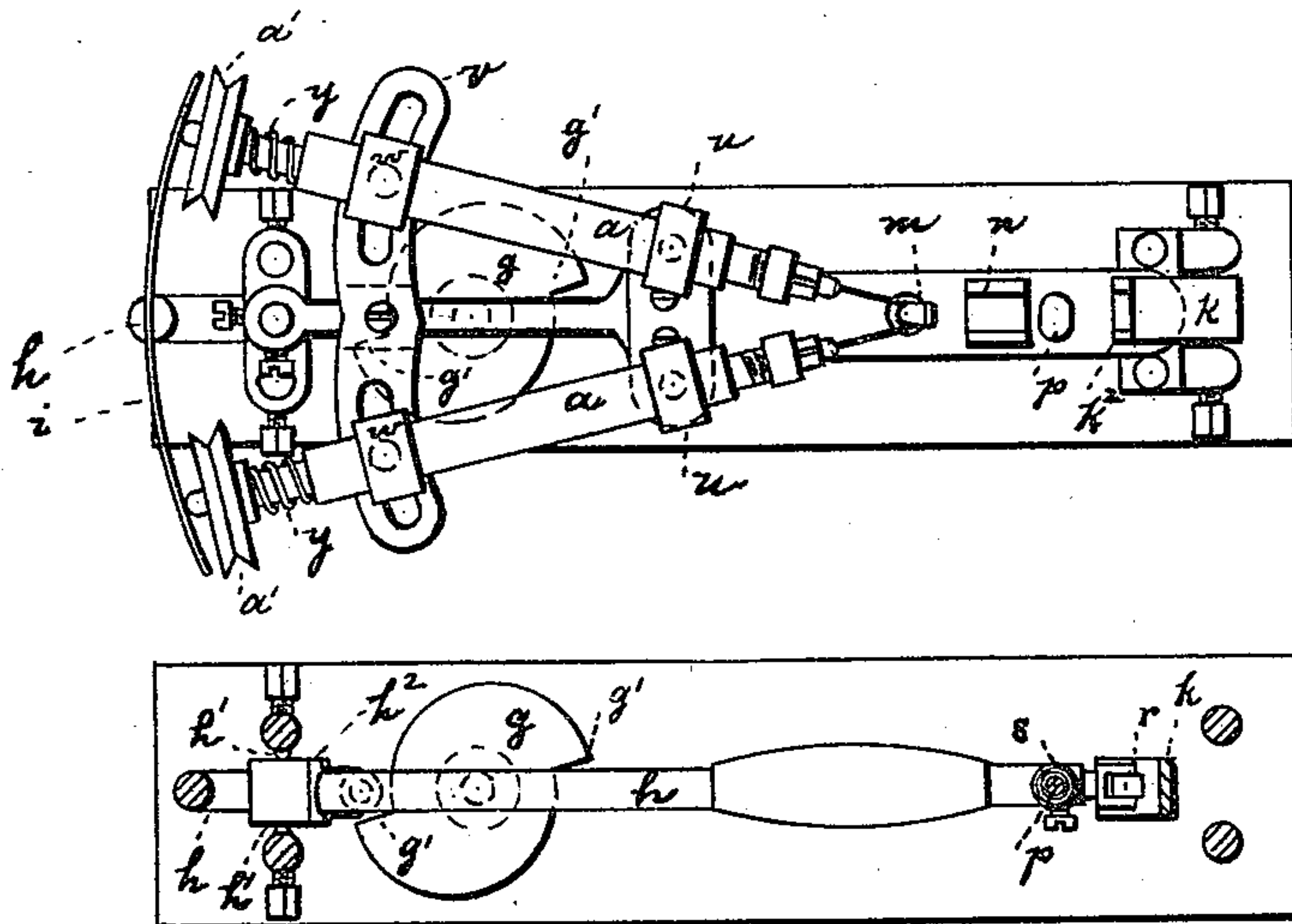


Fig: 2

Fig: 3

Witnesses:
Wm Wagner
George Mans

Inventor:
C. Raabe
by his attorneys
Roeder & Briesen

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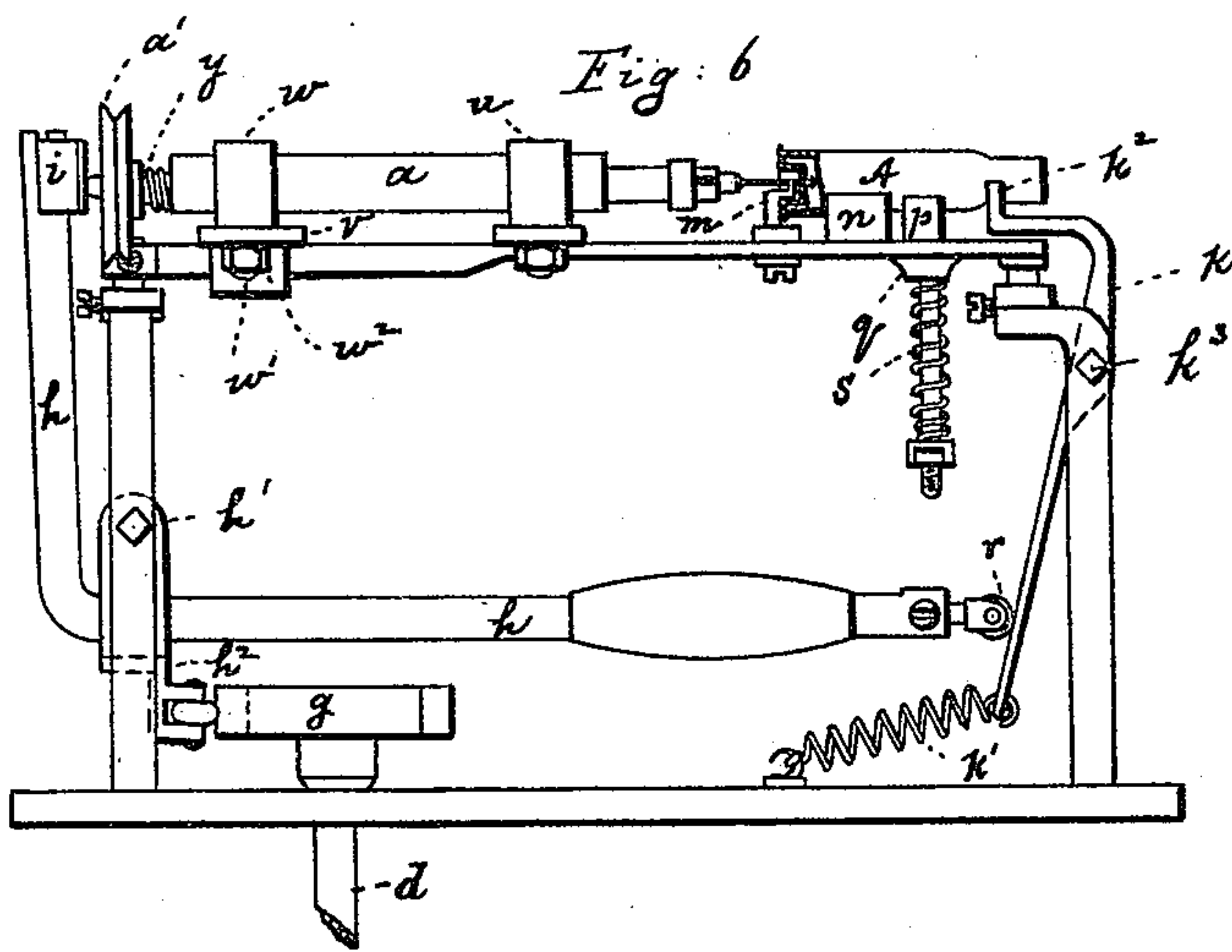
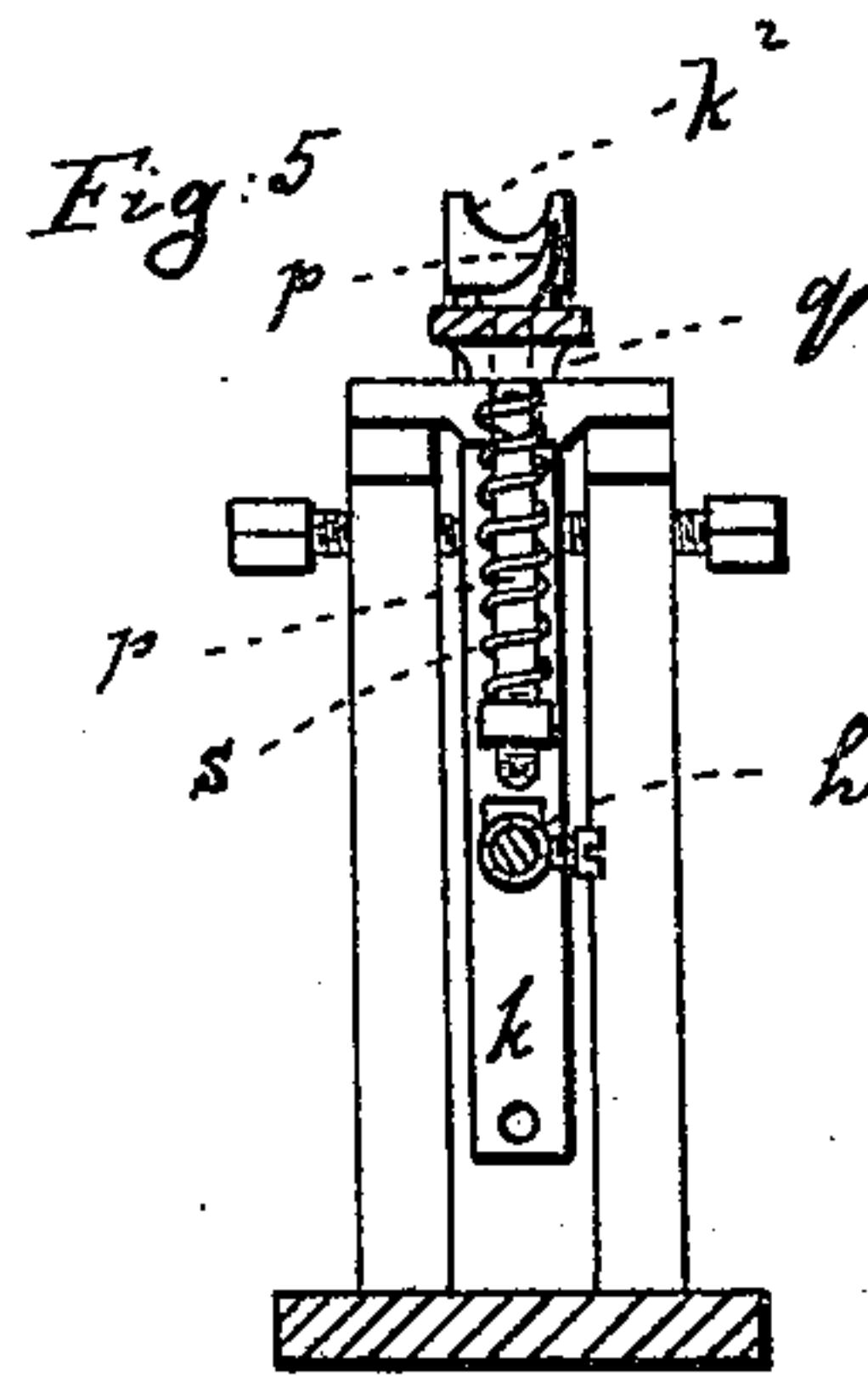
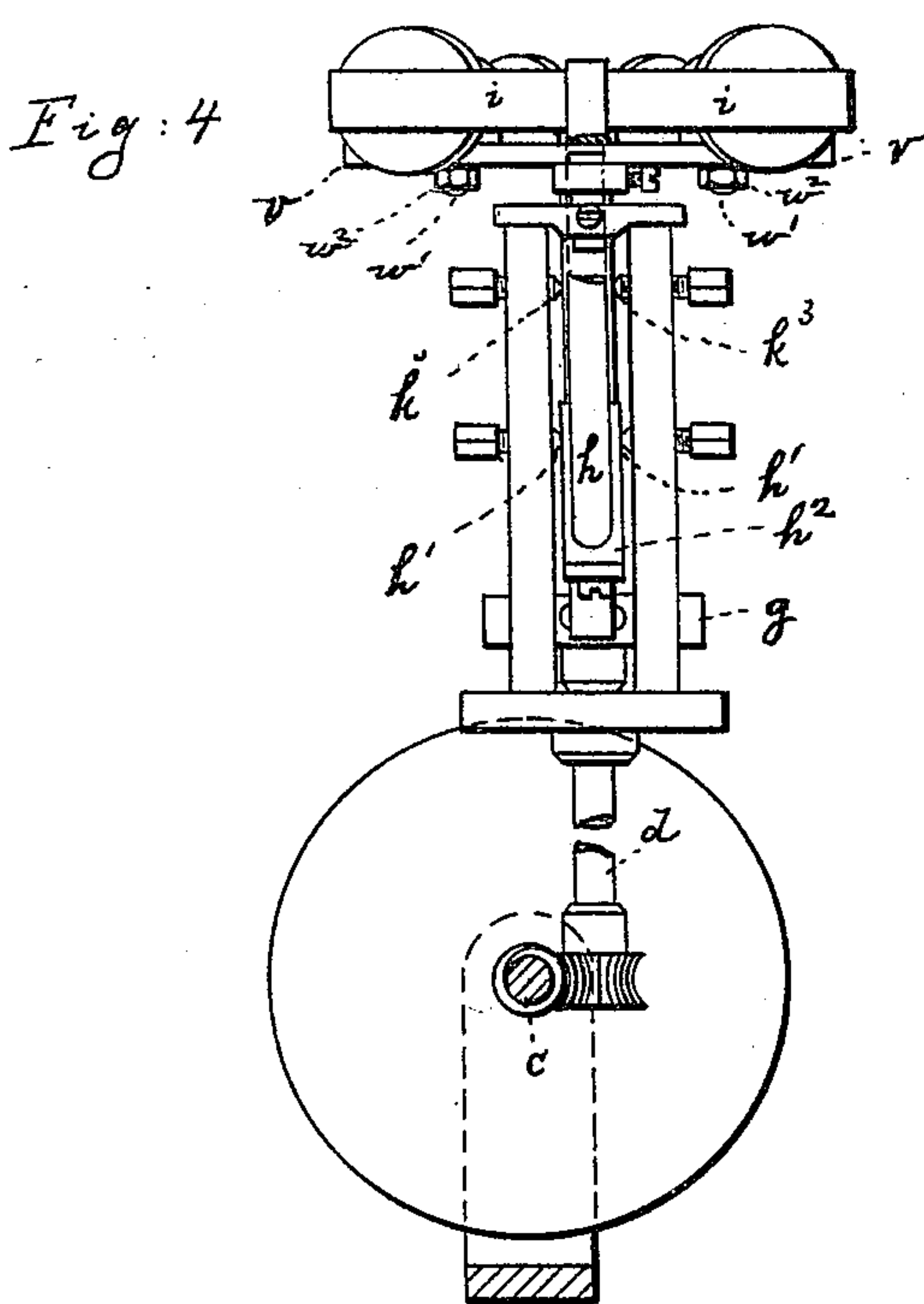
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

CARL RAUHE, OF DÜSSELDORF, GERMANY.

MACHINE FOR BORING CARTRIDGE-SHELLS.

SPECIFICATION forming part of Letters Patent No. 438,241, dated October 14, 1890.

Application filed April 7, 1890. Serial No. 346,864. (No model.)

To all whom it may concern:

Be it known that I, CARL RAUHE, of Düsseldorf, Germany, have invented an Improved Machine for Boring Cartridge-Shells, of which the following is a specification.

This invention relates to a machine for boring a cartridge-shell so as to establish the communication between the fulminate-cavity and the powder-chamber. The machine comprises mechanism for advancing the boring-tools uniformly, for clamping the shell, and for discharging it.

The invention consists in the various features of improvement more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved machine. Fig. 2 is a top view thereof. Fig. 3 is a horizontal section on line $x x$, Fig. 1. Fig. 4 is an end view of the machine; Fig. 5, a vertical cross-section on line $z z$, Fig. 1, with spring k' omitted; and Fig. 6, a sectional side elevation of the upper portion of the machine, showing the parts in a different position from Fig. 1.

$a a$ are the sliding boring-tools revolved from suitable pulleys a' , the power being received from any suitable motor; or the tools may be operated by hand. Beneath the boring-tools there is a shaft o , revolved from pulley b or by hand and imparting rotary motion by worm c and gear-wheel to an upright shaft d . To this shaft is keyed a cam g , having two noses g' . The cam rocks a lever h^2 , pivoted at h' , and to which there is secured a bent rod h . The upright arm of rod h carries a push-piece i , which, when the arm is vibrated toward tools a , will feed the tools toward the work A against the action of springs y . The work A is placed upon a support n , with a hook m projecting into its cavity.

The horizontal arm of rod h will, when the arm is oscillated, bear down by friction-roller r upon a lever k , and turn the same on pivot k^3 against the action of a spring k' . The upper end k^2 of this lever is preferably forked to embrace the shell and to crowd it against

the hook, so as to hold it in place; but, if desired, the lever k may simply bear against the end of the shell. Thus it will be seen that while the tools a engage the work the latter is positively held against such tools. After the boring operation has been completed and the cam g has released lever h^2 the tools a will be thrown backward by the springs y . The horizontal arm of rod h will be thrown upward and against a pin p , passing through tubular bearing q and surrounded by spring s . The pin p constitutes the discharging device, and its upper end is located directly beneath the shell. The upward motion of pin p will throw the shell from its seat and out of the machine. Preferably the upper edge of pin p is beveled to throw the shells always in the same direction.

The tools a are supported in revolving bearings u in front and in sliding bearings w in the rear. These bearings are provided with screw-bolts w' , having nuts w^2 , and engaging a slotted plate v . In this way the tools a may be adjusted at any desired angle.

What I claim is—

1. In a machine for boring cartridge-shells, the combination of oscillating rod h with sliding tool a , engaged by said rod, and with a clamping-lever k , one end of which engages the work, and which is operated by rod h , substantially as specified.

2. The combination of oscillating rod h with sliding tool a , push-pin p , and clamping-lever k , which are operated by said rod, substantially as specified.

3. The combination of cam g with lever h^2 , rod h , connected therewith and with sliding tool a , push-pin p , and clamping-lever k , operated by said rod, substantially as specified.

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

C. RAUHE.

Witnesses:

D. J. PARTELLO,
F. H. THOMAS.