(No Model.) 3 Sheets—Sheet 1.

H. & T. TONKS.

PEARL BUTTON MACHINE.

No. 485,338. Patented Nov. 1, 1892.

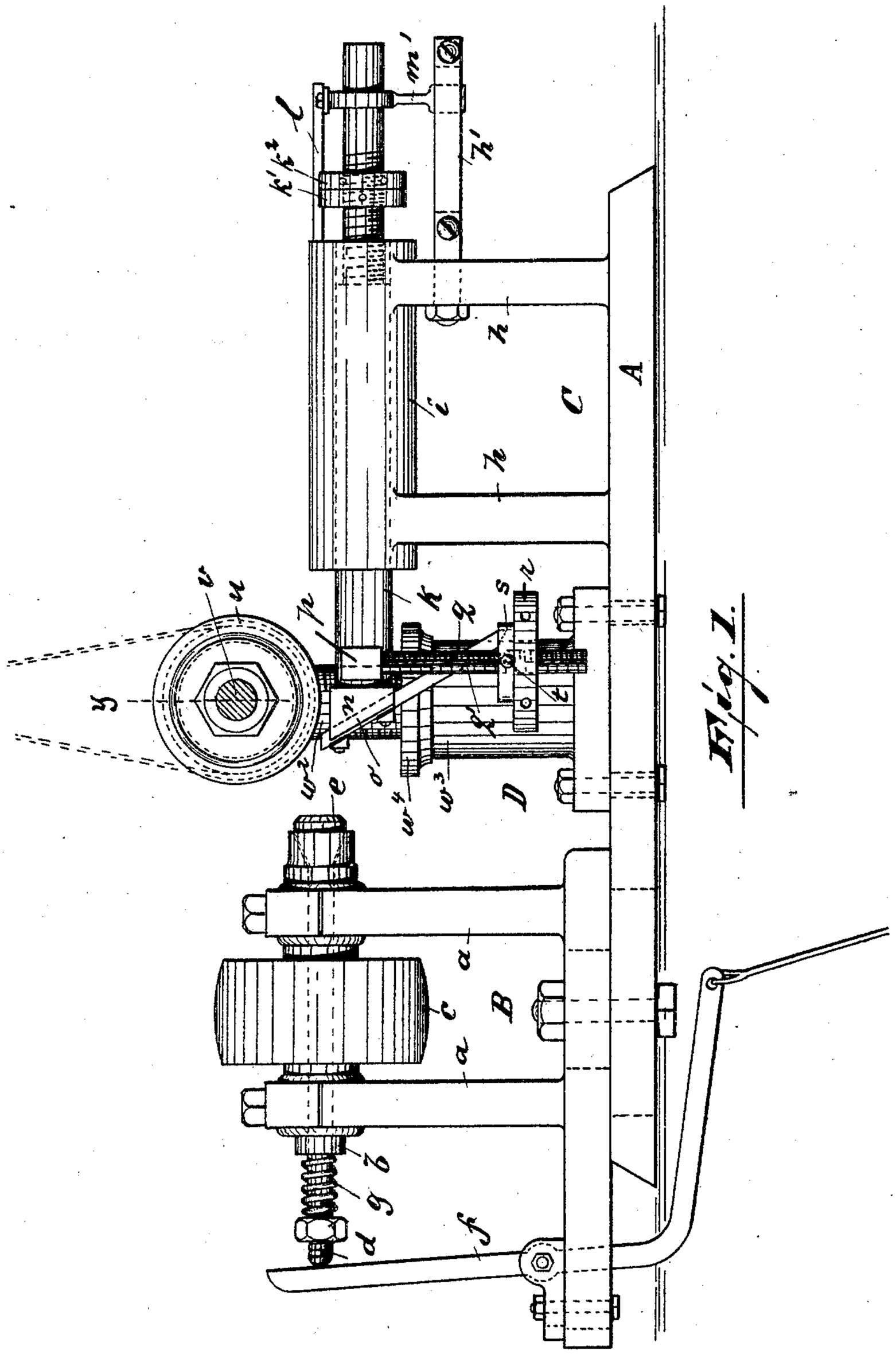

Fig. 1.

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John Francis Cahill

INVENTORS:

Harry Tonks and Thomas Tonks

BY Gartner & Co

ATTORNEYS

(No Model.) 3 Sheets—Sheet 2.

H. & T. TONKS.

PEARL BUTTON MACHINE.

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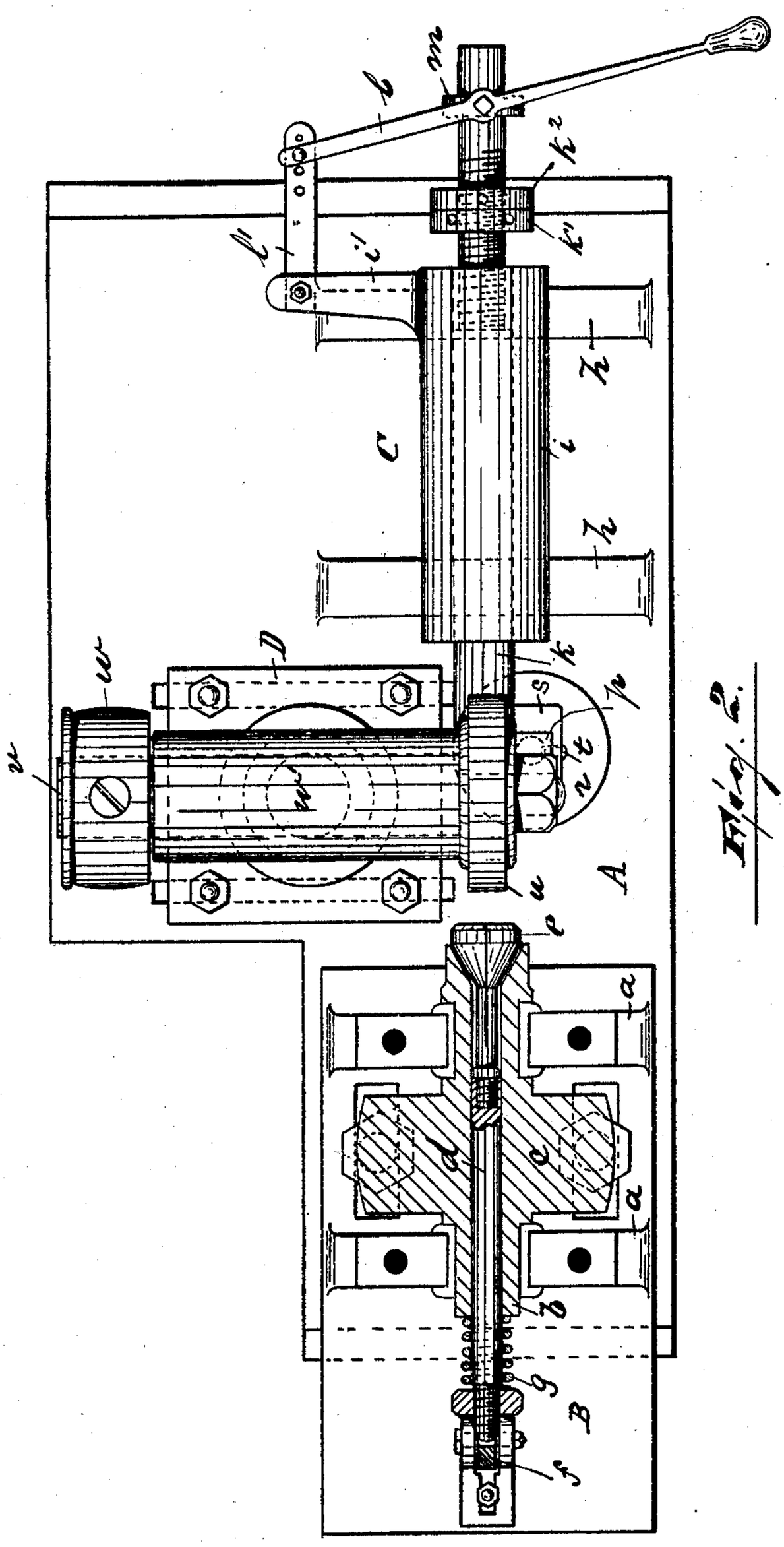

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

H. & T. TONKS.

PEARL BUTTON MACHINE.

No. 485,338. Patented Nov. 1, 1892.

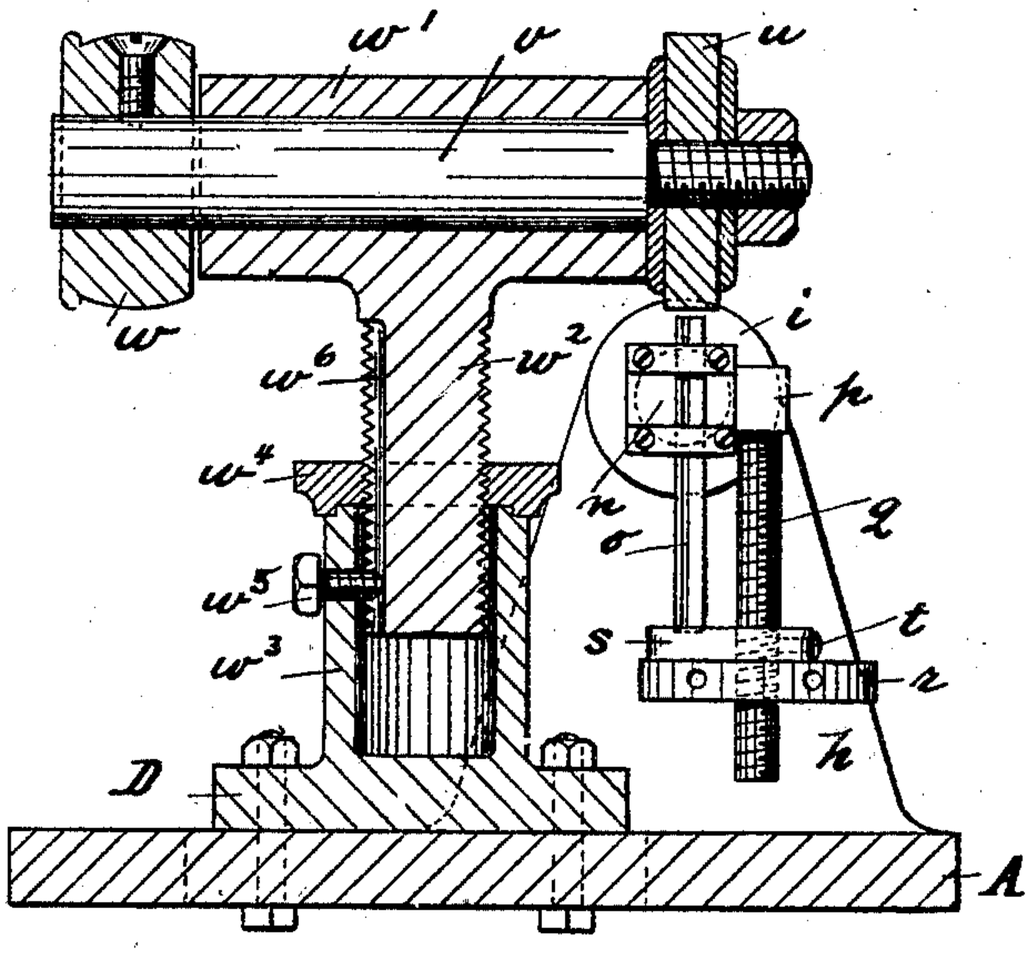

Fig. 3.

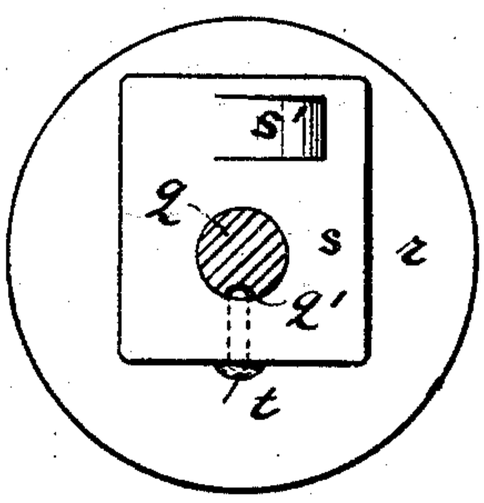

Fig. 4.

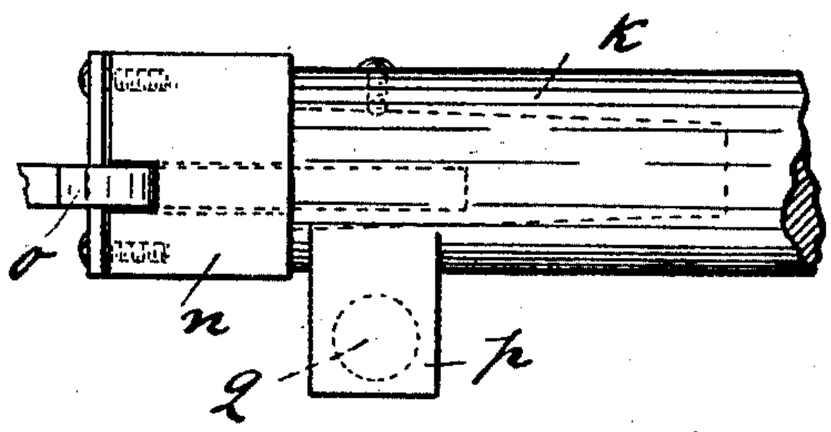

Fig. 5.

WITNESSES:

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INVENTORS.

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ATTORNEYS

UNITED STATES PATENT OFFICE.

HARRY TONKS AND THOMAS TONKS, OF NEWARK, NEW JERSEY.

PEARL-BUTTON MACHINE.

SPECIFICATION forming part of Letters Patent No. 485,338, dated November 1, 1892.

Application filed January 6, 1892. Serial No. 417,149. (No model.)

To all whom it may concern:

Be it known that we, HARRY TONKS and THOMAS TONKS, citizens of the United States, residing at Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Pearl-Button Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable 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 of reference marked thereon, which form a part of this specification.

The object of this invention is to provide an apparatus for cutting pearl buttons, simple in construction, durable, and easily handled, and also to provide means for sharpening the cutting-tool without removing it from its holder or interfering with the work.

The invention consists in the improved pearl-button-cutting machine and the sharpening device and the arrangement and combinations of the various parts, substantially as will be hereinafter more fully described, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a front elevation of our improved pearl-button-cutting machine. Fig. 2 is a top plan view thereof with part of it shown in section. Fig. 3 is a sectional view on line *y*, Fig. 1; and Figs. 4 and 5 are enlarged detail views of the cutting device.

In said drawings, A represents the bed-plate, to which are secured in any desired manner the button-blank-holding device B, the cutting mechanism C, and the sharpening device D.

The button-blank-holding device consists of the frame *a*, in which is arranged a hollow shaft *b*, adapted to be revolved by pulley *c*. In said shaft operates a spindle *d*, carrying the chuck-jaws *e*. This spindle and also the chuck-jaws are controlled by the lever *f*, operated by a treadle or in any desired manner and by the spiral spring *g*. The button-blank is introduced into the chuck-jaws in the ordinary manner.

The cutting mechanism, which is arranged on the bed-plate opposite to the above-described holding device, consists of the frame *h*, carrying the guide *i*. In said guide the cutter-carrier *k* is operated to and fro by hand-lever *l*, pivotally secured at its outer end to lever *l'*, which again is pivotally secured to an extension-arm *i'* and on or near its center to a collar or washer *m*. This collar or washer *m* is secured by a screw or in any desired manner to the cutter-carrier rod *k* and is guided in extension *h'* of frame *h* by its downwardly-extending arm *m'*. The rod or spindle *k* is limited in its motion by adjustable nuts *k' k²*, arranged on the threaded portion of said rod, as will be clearly seen in Figs. 1 and 2 of the drawings.

To the forward end of bar *k* is secured or made integral therewith the cutter-head *n*, in which is arranged the cutter *o*, extending downward and at an oblique angle to bar *k*. At one side of the bar *k* and near the cutter-head is arranged an extension *p*, to which is secured a downwardly-extending screw *q*, provided with an adjusting or elevating wheel *r*, on which rests a disk or plate *s*, provided with a recess *s'*, in which rests the lower end of the cutter *o*. This disk *s* is prevented from rotating by the screw *t*, sliding in groove *q'* of screw *q*, as shown in Figs. 1 and 4.

The sharpening device is arranged at right angles to the cutting device, and so that when the cutter is moved backward it will come in direct contact with the emery or sharpening wheel. This sharpening device consists of the emery-wheel *u*, secured to spindle *v*, adapted to be revolved by pulley *w* in bearing *w'*. To this bearing *w'* is secured or made integral therewith a threaded rod *w²*, adapted to be raised or lowered in hollow post *w³* by means of internally-threaded hand-wheel *w⁴*, and is also adapted to be guided by screw *w⁵*, sliding in groove *w⁶* of rod *w²*. This screw *w⁵* also serves as a set or tightening screw after the sharpening device has been adjusted to the required height.

In operation the button-blank is inserted in the chuck after the jaws have been opened by means of lever *f*, operated by a treadle, and the cutting-tool, which has previously been adjusted to the required height, is then pressed against the button-blank by means of hand-lever *l*, and as the blank revolves it is

turned to the desired form. Then the cutter is moved back to its normal position, which brings it in contact with the emery-wheel, and is thereby sharpened and again ready for use. After the cutter *o* has been worn or ground down the hand-wheel *r* is turned to the right, and thereby raises the cutter to its proper position.

It can be clearly seen and understood that by the forward motion of the cutter the button-blank is turned the desired shape and by the backward motion the cutter is resharpened when necessary.

We do not intend to limit ourselves to the exact construction shown and described, as various changes can be made without changing the scope of our invention.

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

1. In a pearl-button machine, the combination, with the chuck and its carrier, of a lever operating said chuck, a cutting-tool arranged opposite said chuck and adapted to be moved to and from said chuck, a lever operating said cutting-tool, means for raising and lowering said cutting-tool, a sharpening-wheel arranged at right angles to the cutting-tool, a spindle carrying said sharpening-wheel, a threaded rod provided at its top with a bearing for said spindle, and means for raising or lowering said rod, all said parts being arranged and adapted to operate substantially as described, and for the purposes set forth.

2. In a pearl-button machine, the combination, with the chuck and its carrier, of a guide arranged opposite said chuck, a rod *k* in said guide and provided at its forward end with a cutter-head, a cutter arranged at an oblique angle to and in said cutter-head, a screw extending downward from said rod *k* and behind the cutter-head, an internally-threaded wheel arranged on said screw, a disk arranged upon said wheel and provided with a recess and adapted to receive the lower end of the cutter, nuts *k'* *k²*, adjustably secured to the rod *k* and adapted to limit said rod in its forward motion, and a hand-lever for operating said rod and cutter, all said parts being arranged and adapted to operate substantially as described, and for the purposes set forth.

3. In a pearl-button machine, a sharpening device combining therein a spindle, a sharpening or emery wheel secured to said spindle, a threaded rod provided with a top, adapted to form the bearing for said spindle, an internally-threaded hand-wheel arranged on and adapted to operate said threaded rod, a groove arranged in said threaded rod, and a hollow post receiving said rod and provided with a screw, said screw being adapted to serve as a guiding and tightening device for said threaded rod, all said parts being arranged and adapted to operate substantially as described, and for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 23d day of December, 1891.

HARRY TONKS.
THOMAS TONKS.

Witnesses:
WM. D. BELL,
WALTER THOMPSON.