(No Model.)

A. SHEPARD.

TINSMITH'S BEADING MACHINE.

No. 356,897. Patented Feb. 1, 1887.

Fig. 1.

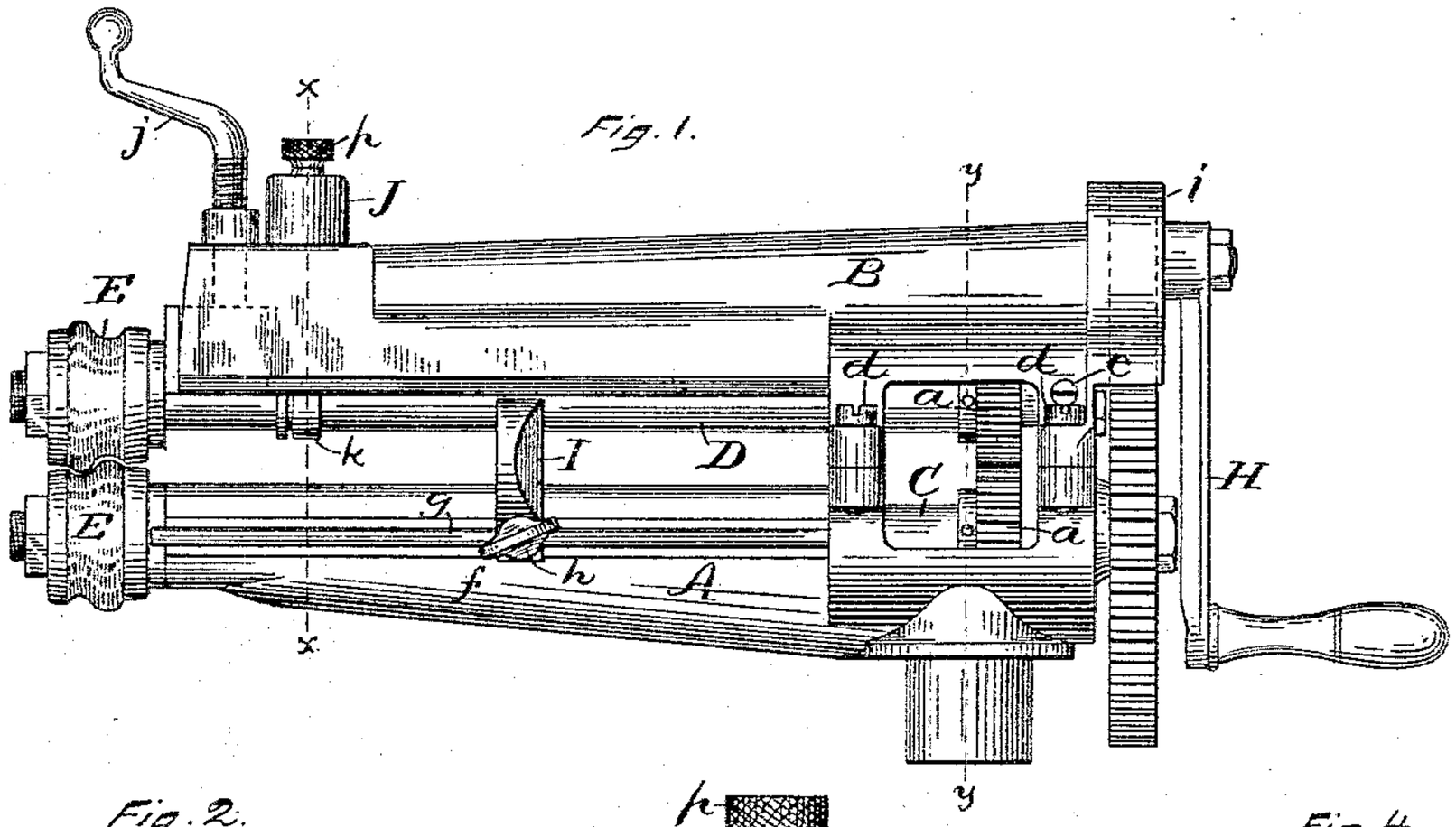


Fig. 2.

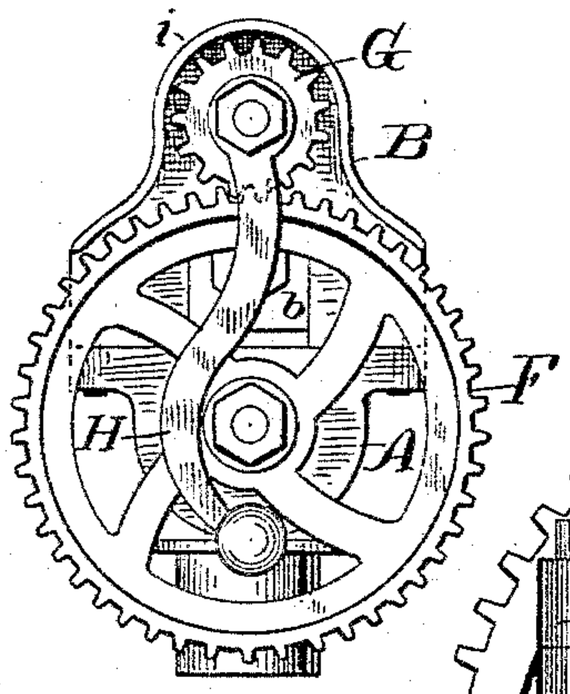


Fig. 3.

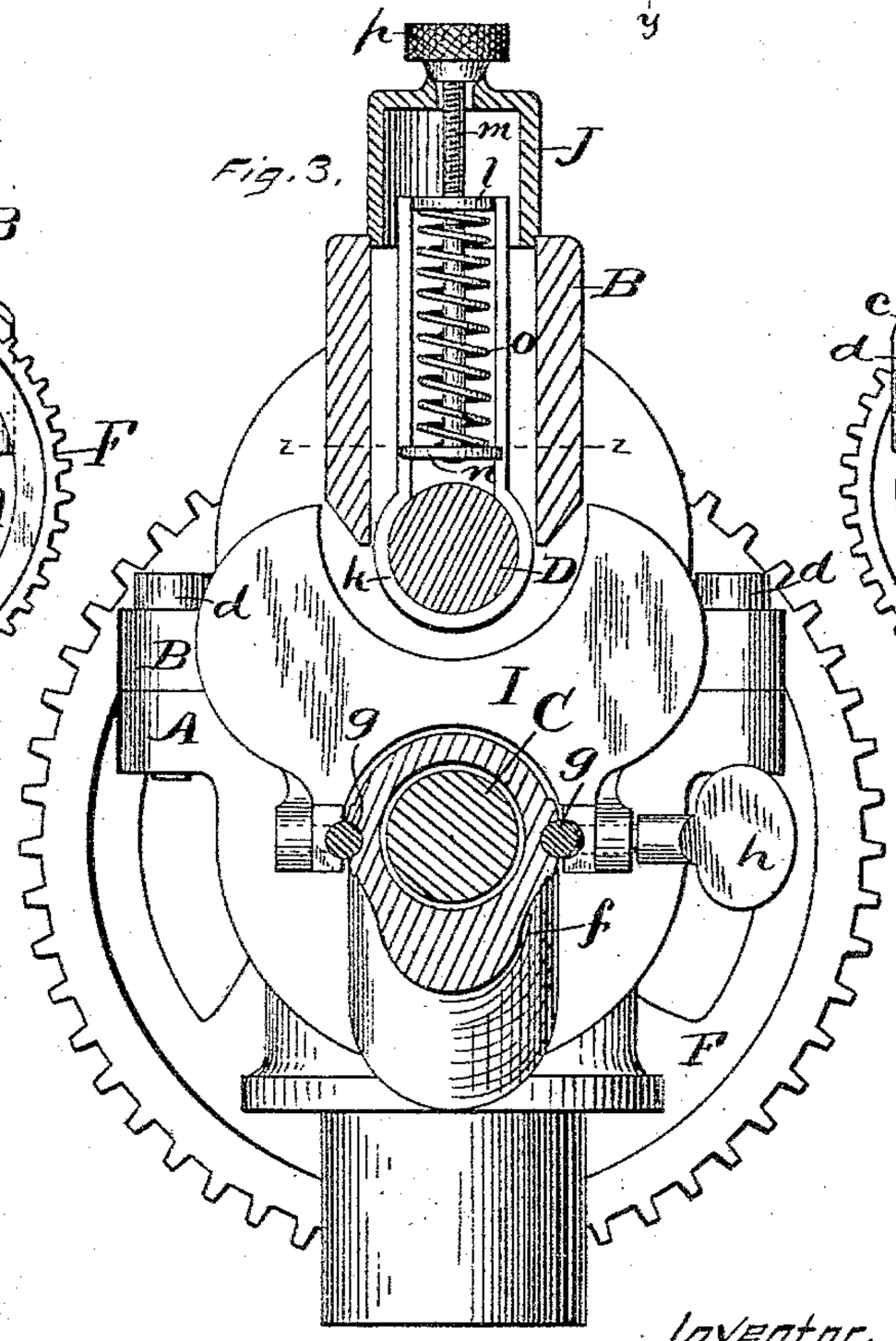


Fig. 4.

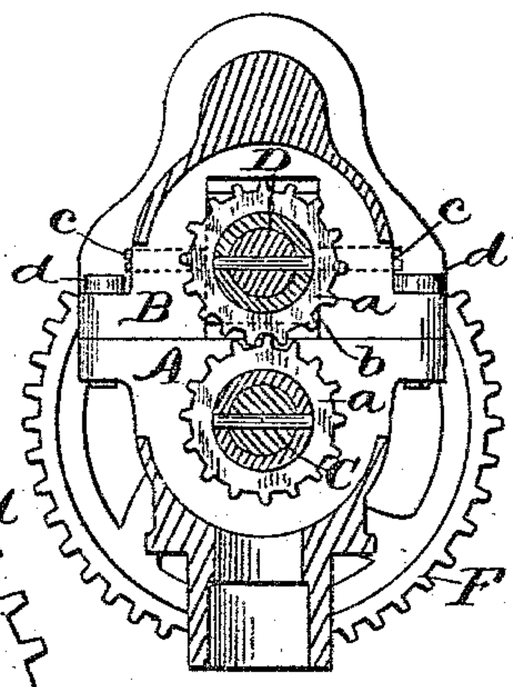


Fig. 5.

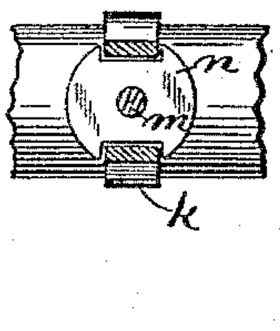
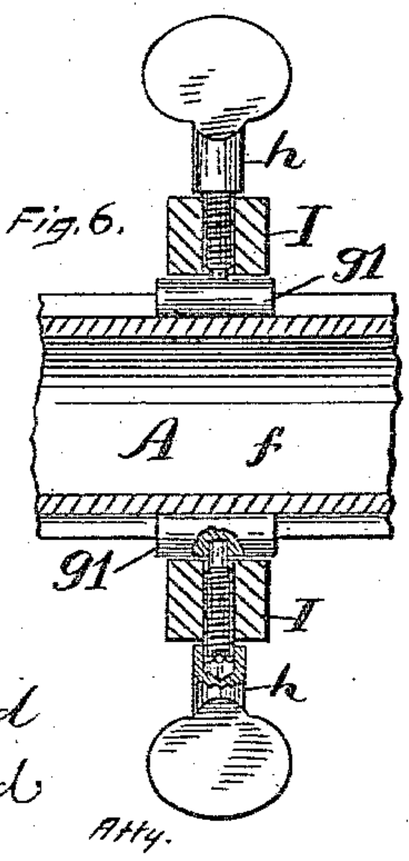


Fig. 6.



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UNITED STATES PATENT OFFICE.

AMOS SHEPARD, OF PLANTSVILLE, CONNECTICUT.

TINSMITH'S BEADING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 356,897, dated February 1, 1887.

Application filed October 13, 1886. Serial No. 216,096. (No model.)

To all whom it may concern:

Be it known that I, AMOS SHEPARD, a citizen of the United States, residing at Plantsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Tinsmiths' Beading-Machines, of which the following is a specification.

My invention relates to improvements in tinsmiths' beading-machines; and the objects of my invention are to improve the efficiency of the machine and to improve its general construction, whereby the parts are conveniently assembled in a neat, substantial, and compact form.

In the accompanying drawings, Figure 1 is a side elevation of my beading-machine. Fig. 2 is a front elevation thereof, showing the end upon which the driving-gear is placed. Fig. 3 is a transverse section thereof on line *x x* of Fig. 1, partly in elevation, said figure showing that part of the machine which is on the right of said line. Fig. 4 is a like section on line *y y* of Fig. 1. Fig. 5 is a horizontal section of a portion thereof on line *z z* of Fig. 3; and Fig. 6 is a horizontal section, partly in elevation, of a portion of my machine, the same illustrating a modification of the devices for securing the gage. Figs. 3, 5, and 6 are on a scale twice that of the other figures.

I form the frame in two parts, in which A designates the lower part or main frame, and B the upper part or cap.

Machines have been heretofore constructed with a two part frame containing the long shafts C D, with attachable and detachable beader-rollers E E, and pinions *a a* at the opposite ends of said shafts, the upper shaft being hung in a pivotal box in the lower part of the frame, while the lower shaft was provided with a driving-gear, F, and pinion G, which was driven by a crank, H, and therefore, in a certain sense, the general features of my machine may be said to be old. I have, however, made many changes in construction and in the arrangement of the parts, the most important of which I will now describe.

Instead of extending the lower part of the frame upward at the crank end of the machine far enough to receive the bearings for both shafts at that end, I divide the two parts of the frame on a horizontal plane which extends longitudinally between said shafts, and I place the pivotal bearing or swinging box *b* for the upper shaft within the upper part or cap, B, of the frame. One of the pivotal screws, *c*, for said box is shown in Fig. 1, while their position in passing through the cap into the box is indicated by broken lines in Fig. 4. Both parts of the frame, near the pinions *a a*, are hollowed out in the form of a concave shell or case, so as to partially incase said pinions, while at the same time the hollow shell constitutes a framing of the machine of suitable strength, whereby, with the frame divided between the shafts, I am enabled to make the whole frame of a less height than heretofore, accomplishing the double object of incasing the pinions and bringing the frame into a more compact form. The parts A and B are secured together by screws or bolts *d d*, as shown.

That portion of the lower part, A, of the frame which extends toward the rollers E E is in the form of a rounded arm, *f*, cored out for the reception of the shaft C, while near its outer end it is bored out to form the outer bearing for said shaft. This hollow arm *f* has longitudinal grooves upon two opposite sides, within which grooves the gage-rods *g g* are received, the inner ends of said rods being secured to the frame to hold the rods within the grooves. These rods project from the arm *f* for about half of their diameter, thereby forming upon each side of the arm *f* rounded ways, parallel to each other, upon which the gage I may slide and be held in place by a set-screw when adjusted. As in other beading-machines, this gage is flat upon one side and rounded upon the other, and occupies a position between the two shafts.

My gage is provided with downwardly-projecting lugs which are recessed upon one side to embrace the rods *g g*, and which lugs are bored and threaded to receive the set-screw *h* for binding the gage upon said rods. Both of said lugs may, if desired, be provided with a set-screw; but only one is necessary, as a single screw may be placed in whichever of the lugs comes to the front, according as the gage may be set with its flat or rounded side toward the rollers.

The upper part or cap, B, of the frame is

carried upward at the crank end sufficiently to receive the pivotal stud for a pinion, G, and it is also provided with a laterally-projecting flange, *i*, for covering the edge of said pinion and the main portion of the upper edge of the gear-wheel F.

The roller end of the cap B is provided with the ordinary crank-screw, *j*. I hold the shaft up against this crank-screw by a peculiar mechanism. The yoke *k* surrounds the upper shaft and extends upward through a hole in the cap. The upper part of this yoke *k* consists of two parallel bars connected at their upper ends by a perforated cross-piece, *l*. I cover the hole in the cap of the frame by means of a tubular cap, J, having a beveled hole at its upper end. Through this hole and that in the cross-piece *l*, I arrange a screw rod or stem, *m*, having at its lower end a notched head or follower, *n*, the same being notched to embrace the parallel bars of the yoke *k*, as shown most clearly in Fig. 5. A spiral spring, *o*, surrounds this stem, with one end resting on the head or follower, and the other end against the cross-piece at the upper end of the yoke. A nut, *p*, is screwed upon the upper end of the screw rod or stem *m*, so that the spring may be compressed more or less, as may be desired. The lower side or bottom of this nut is rounded or beveled off and lies in the beveled or rounded portion of the hole through the tubular cap, so that the nut may move slightly with a rocking motion as the screw rod or stem changes its position while the upper shaft is being raised or lowered. In raising and lowering said shaft the nut and the screw-stem both remain stationary, aside from the rocking motion before mentioned, while the yoke *k* rises and falls with the shaft, the spring *o* being strong enough to lift said yoke and shaft. The crank-screw is used for forcing the shaft downward against the power of the spring.

While I prefer to make the gage-rods extend the whole length of the grooves in the arm *f*, and to slide the gage thereon, the same result may be attained in substantially the same way by the use of shorter rods in the same form of grooves by merely making the ends of the set-screws enter a socket in such short rods *g'*, as shown in Fig. 6, so that said rods serve as a shoe for the end of the set-screw, the rods in this instance sliding through the grooves with the gage, while the arm *f*, with the grooves and the gage I, are of the construction first described.

In order to prevent the set-screw *h* from projecting so as to be in the way, it may be made in two parts, the outer end being in the form of an attachable and detachable key, as shown most clearly at the lower part of Fig. 6.

In addition to the advantages before named, my improved construction enables the parts to be correctly and conveniently formed by machinery. The upper shaft is raised and lowered by a smooth and easy movement, without any chafing or binding of the parts.

I claim as my invention—

1. In a tinsmith's machine, the combination of the upper and lower shafts, the pivotal box or bearing for the upper one of said shafts, and the two-part frame divided in a plane which extends longitudinally between said shafts, and with the pivotal box for the upper shaft secured to the upper or cap part of the frame, substantially as described, and for the purpose specified.

2. In a tinsmith's machine, the combination of the upper and lower shafts, and the two-part frame divided in a plane which extends longitudinally between said shafts, and having the parts above and below the pinions hollowed out in the form of two confronting concave shells, substantially as described, and for the purpose specified.

3. In a tinsmith's machine, the frame having the arm *f*, grooved on opposite sides, in combination with rods fitted to said grooves, the gage I, having notched lugs for embracing said rods, and a set-screw for binding the gage in place, substantially as described, and for the purpose specified.

4. In a tinsmith's machine, the combination of the pivoted shaft D, the yoke *k*, having parallel bars, and cross-piece *l*, the threaded rod or stem *m*, having follower *n*, notched to fit said bars, the spring *o*, adjusting-nut *p*, and means for forcing said shaft downward against the force of said spring, substantially as described, and for the purpose specified.

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