I. N. Felch,

Turning Regular Forms,

No. 31,161. Patented Jan. 22, 1861.

Fig: 1.

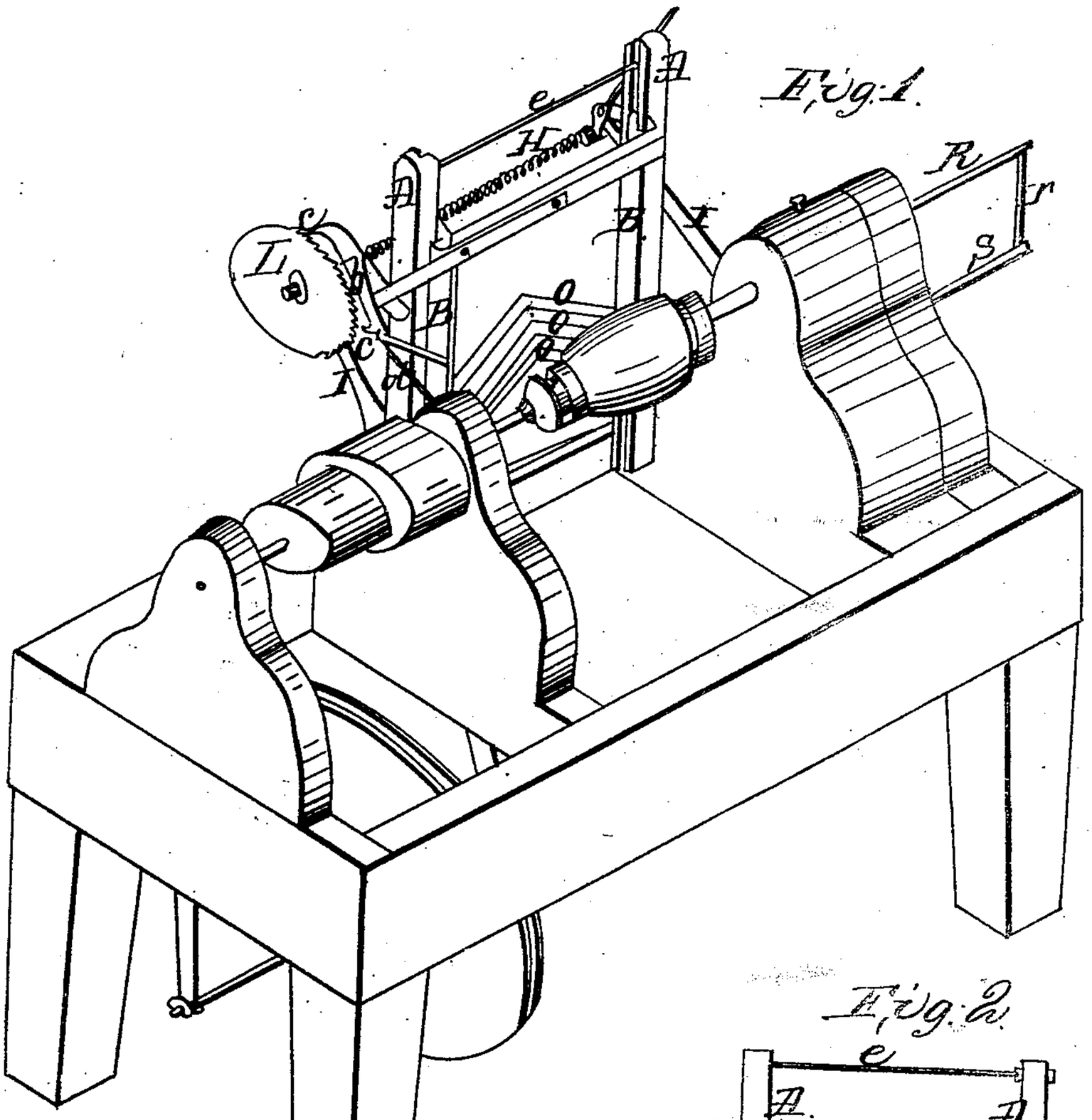
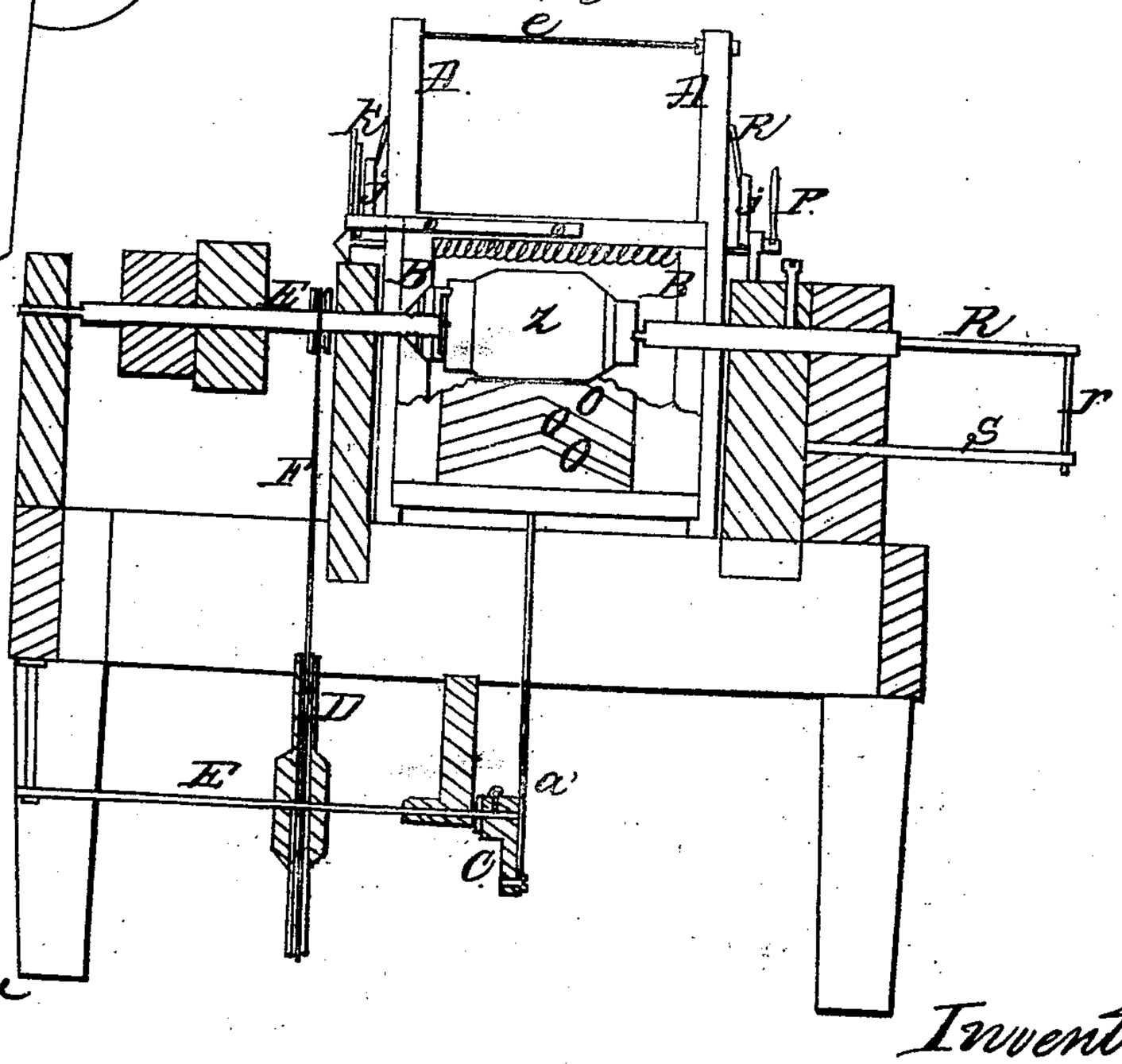


Fig: 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

ISAAC N. FELCH, OF HOLLIS, MAINE.

HUB-MACHINE.

Specification of Letters Patent No. 31,161, dated January 22, 1861.

To all whom it may concern:

Be it known that I, ISAAC N. FELCH, of Hollis, in the county of York and State of Maine, have invented a new and useful Lathe Combination for Turning and Boring Carriage-Hubs, and the following is a full and exact description.

In this invention or combination I use the frame A, A, Figure 1, attached to a common turning lathe by a round rod or shaft, passing through the lower part of said frame, upon which (rod) the frame is made to swing up toward or recede from the center of the block to be turned. Within this frame is a sash B, B, Fig. 2, on which are bars *o*, *o*, *o*, to receive the cutters which cut off the wood and shape the hub. This sash with the cutters thereon is made to slide up and down by crank C, being on the end of shaft E, motion being communicated to shaft E, by belt from pulley G, to pulley D.

H, Fig. 1, represents a rod surrounded by a spiral wire spring, supported in position just back of the frame A, A, by arms I, I, which are firmly attached to the lathe. To this rod H, are attached cranks *j*, *j*, with arms K, K, connecting with the upper part of frame A, A, Fig. 2. The ratchet wheel L, Fig. 1, is attached to one end of the rod H. The lever *b* has two catches at *c*, *c'*, which play into the teeth on ratchet wheel and it is held in position by spring *d*, preventing rod H, from turning and thereby holding the frame A, A, stationary. The spiral spring around rod H, is so attached as to throw the upper part of the frame forward toward the work by arms K, K, and cranks *j*, *j*, Fig. 2, attached to rod H.

P, is a lever attached to the end of rod H, so as to turn the rod back when the ratchet wheel is relieved from the catches, *c*, *c'* and thereby carrying the frame back from the work. To allow the frame A, A, to be thrown forward, bring down the handle of the lever *b* which throws out the catch on ratchet wheel L, Fig. 1, and the spiral spring on rod H, throws the frame forward till the lower tooth *c'* on lever takes, preventing the frame from advancing too far. Upon letting go the handle of the lever *c'* catch is relieved and the catch *c* is thrown into position by spring *d*, holding the frame stationary. While the frame is thus held by the lever, the lathe being set in motion the sash B, B, in frame A, A, passes up by the block or hub to be turned—the knives *o*, *o*, *o*, on the bars operating or cutting as they pass. When the sash moves the knives back below the block bring down the handle of the catch lever and the frame advances as before and the sash passes up by the work, the knives reducing the block as before; and so on till the block is reduced to the proper size and shape.

R, represents an auger, passing through the hollow spindle which forms the female center of the tail stock;—and *r'* is the auger handle which strikes rod *s*, and thus prevents the auger from turning. While the sash is passing up in the frame, block *z* turning rapidly, presses up the auger through the hollow spindle and the rotary motion of the hub will enable the auger to cut through the length of the hub in the center.

Claim:

Combination lathe attachment—the arrangement of the reciprocating knife frame and the vibrating swing feed frame in the manner and for the purposes set forth—and boring the hub, while it is being turned by pressing up the auger through the hollow spindle.

ISAAC N. FELCH.

Witnesses:
M. D. L. LANE,
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