No. 700,325. Patented May 20, 1902.

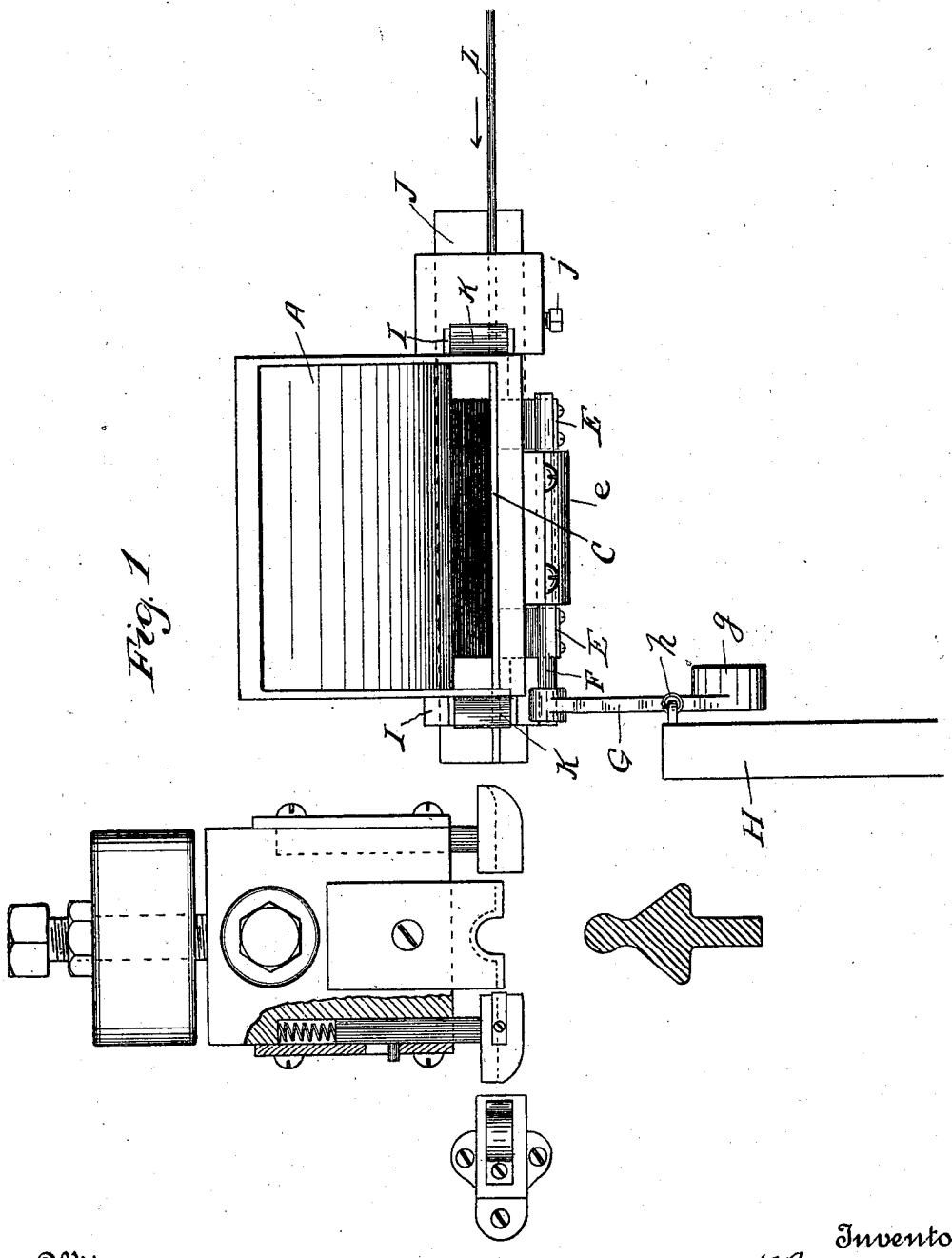
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FEEDING DEVICE FOR METAL WORKING MACHINES.

(Application filed May 14, 1901.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.



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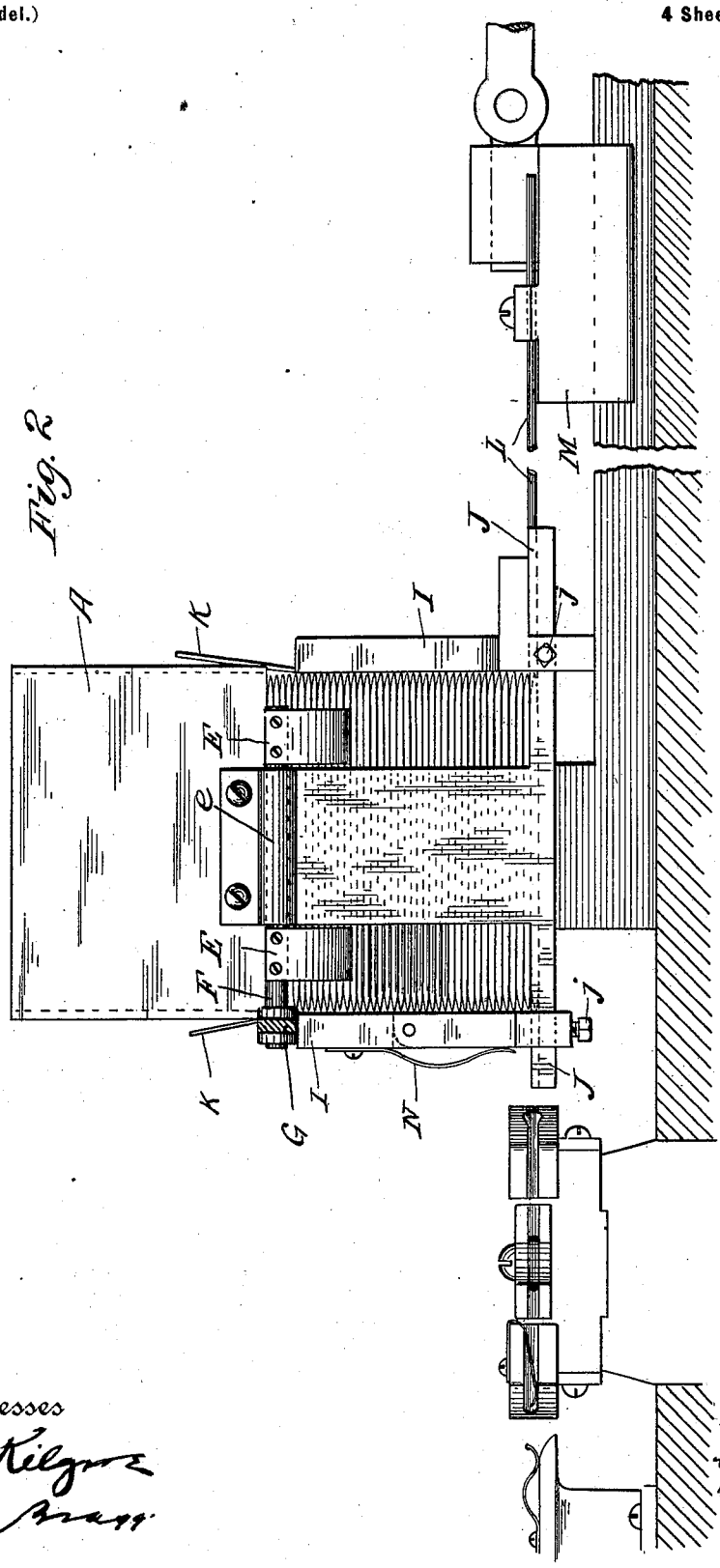
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Fig. 2



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Fig. 3

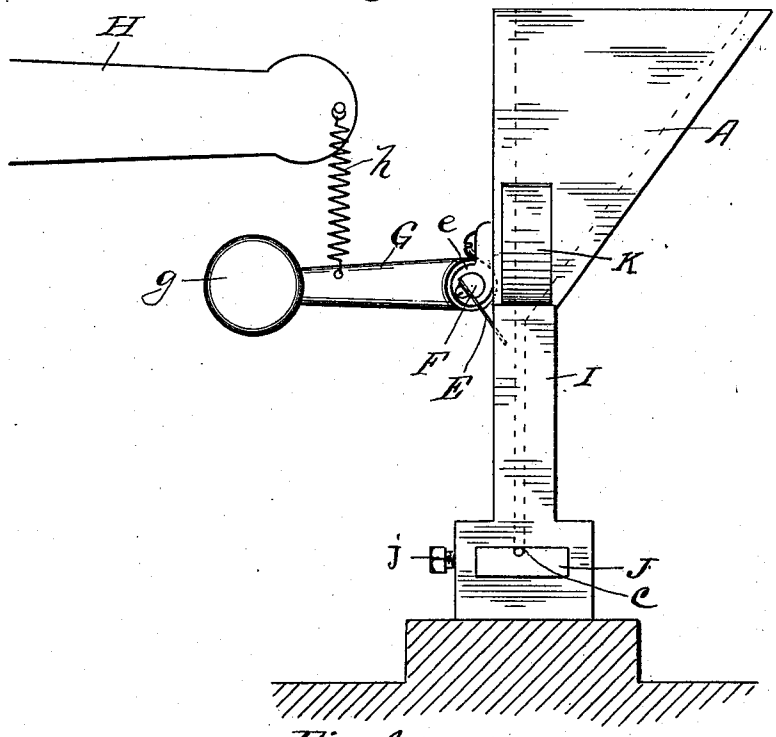
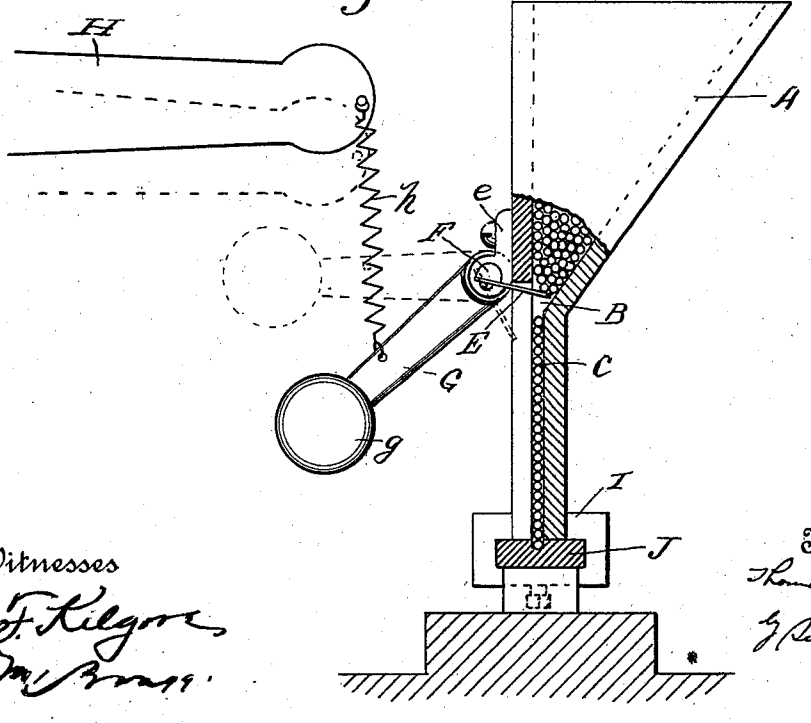


Fig. 4



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No. 700,325. Patented May 20, 1902.

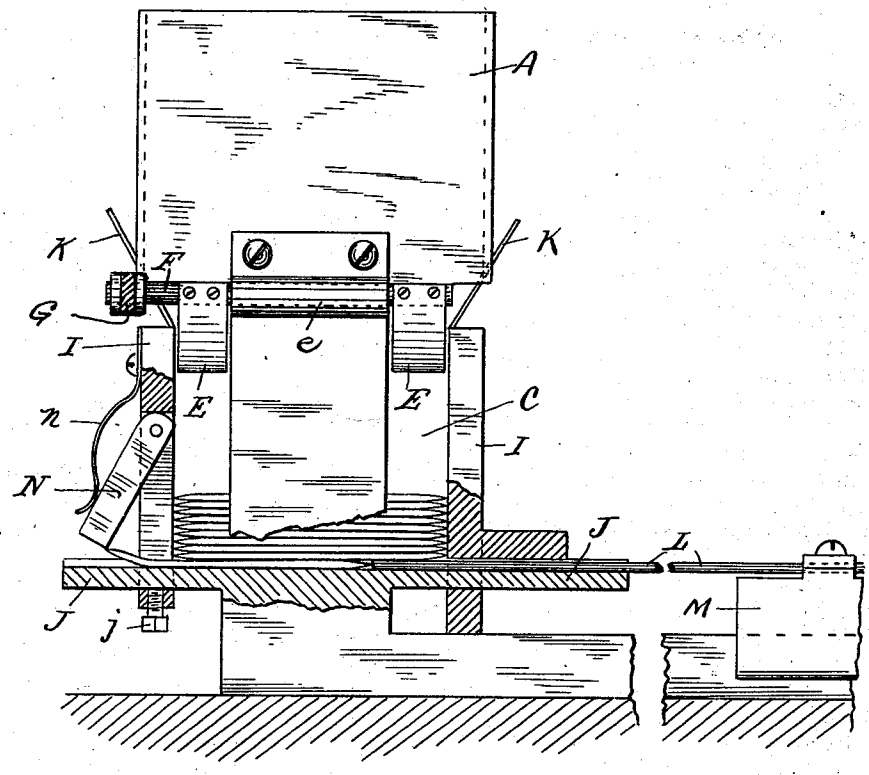
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FEEDING DEVICE FOR METAL WORKING MACHINES.

(Application filed May 14, 1901.)

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Fig. 5



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UNITED STATES PATENT OFFICE.

THOMAS S. HALEY, OF NEW HAVEN, CONNECTICUT.

FEEDING DEVICE FOR METAL-WORKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 700,325, dated May 20, 1902.

Application filed May 14, 1901. Serial No. 60,230. (No model.)

To all whom it may concern:

Be it known that I, THOMAS S. HALEY, a citizen of the United States, and a resident of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Feeding Devices for Metal-Working Machines, of which the following is a specification.

My invention has for its object to produce mechanism of the class described having points of novelty and advantage.

In the drawings I have shown my invention adapted for use for feeding wires to a buckle-forming machine, this being one of the many connections in which it may be used.

Referring to the drawings, Figure 1 is a top view of my invention arranged in operative relation to a set of dies for forming a buckle-tooth. Fig. 2 is a front view of the device embodying my invention. Fig. 3 is a side view of the same, showing the operating mechanism for the agitator. Fig. 4 is a view similar to Fig. 3, but with parts broken away, showing the different positions of the operating mechanism for the agitator. Fig. 5 is a front view of the same, showing details of construction.

In buckle-making machinery it is a common practice to cut the wire from which the buckle is made into proper lengths, and these pieces are then fed to the operating-dies. My invention relates particularly to this feeding operation.

I provide a hopper A, narrowed at the bottom, as at B, at which point it opens into the substantially vertical chute C. The wires are placed in the hopper and dropped by gravity into the bottom of the chute C. The first set of dies is arranged in line with the bottom of the chute C at one side of the device and at the opposite side is arranged a reciprocating-head M, carrying a plunger L, which is adapted to push the wire from the chute into the die. In the ordinary operation of the device the chute C and the hopper are kept full, and as fast as one wire is removed from the chute at the bottom another drops into the chute at the top, keeping it continually filled. It has been found, however, in practice that the wires become jammed at the narrow outlet at the bottom of the hopper, so that they do not drop into the chute, and the practically continuous operation of the machine is thus interfered with. To obviate this difficulty, I provide an agitator to keep the wires in the hopper in motion, so that there is no danger of their becoming jammed, and the uninterrupted operation of the machine is insured so far as it is governed by this part of the apparatus. The form of agitator which I have illustrated consists of one or more fingers E, projecting into the chute through openings in one of its walls, and said fingers are secured to a shaft F, journaled, as at *e*, on the exterior. This shaft is kept in practically continuous vibration, and the fingers moving with the shaft come in contact with the wires at the bottom of the hopper. Every time the fingers strike the wires they move them and prevent them from jamming at the small outlet from the hopper into the chute C, thus insuring a continual feed from the hopper to the slot. A simple form of mechanism for vibrating the shaft F is shown in the drawings. It consists of a lever G, secured to the shaft and weighted at its free end *g*. This lever is connected, as by a spring *h*, with the intermittently-moving arm H. This device has been found in practice to keep the lever G and the shaft F in practically continuous vibration and to operate in a very satisfactory manner. Figs. 3 and 4 of the drawings show clearly the operation of this agitator. I also provide means for varying the length of the chute C, which consists of the ends I, adjustably secured to the base J, as by means of the bolts *j*. Secured to the top of the ends of the chute are the plates K for guiding the wires into the chute. The end of the chute next to the operating-dies, through which the wires are pushed by the reciprocating plunger M, is provided with a pivoted guard-plate N, normally held in the position shown in Fig. 2 by the spring *n*. When a bent wire gets into the chute C, as sometimes happens, this guard-plate permits it to be pushed out by the plunger L, as illustrated in Fig. 5.

I claim as my invention—

1. In a device of the class specified, the hopper narrowed at the bottom, a substantially vertical chute forming a continuation of the hopper-mouth, a shaft journaled on the hopper, a weighted arm for causing said shaft to

turn normally in one direction, means for intermittently raising said arm, and fingers secured to said shaft and adapted to normally interrupt the opening from the hopper into the chute.

2. In a device of the class specified, the combination with the hopper, a shaft journaled thereon, and fingers secured to said shaft and adapted to be brought into contact with the contents of the hopper, of means for causing said shaft to oscillate comprising a weighted lever secured to said shaft and a spring connection between said lever and a superimposed intermittently-moving member.

3. In a device of the class specified, the hopper narrowed at the bottom and opening into a substantially vertical chute, means for periodically interrupting the opening from the hopper to the chute, a plunger adapted to move lengthwise of the chute at the bottom thereof, and a spring-actuated guard-plate normally closing the end of the chute opposite the plunger, substantially as described.

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