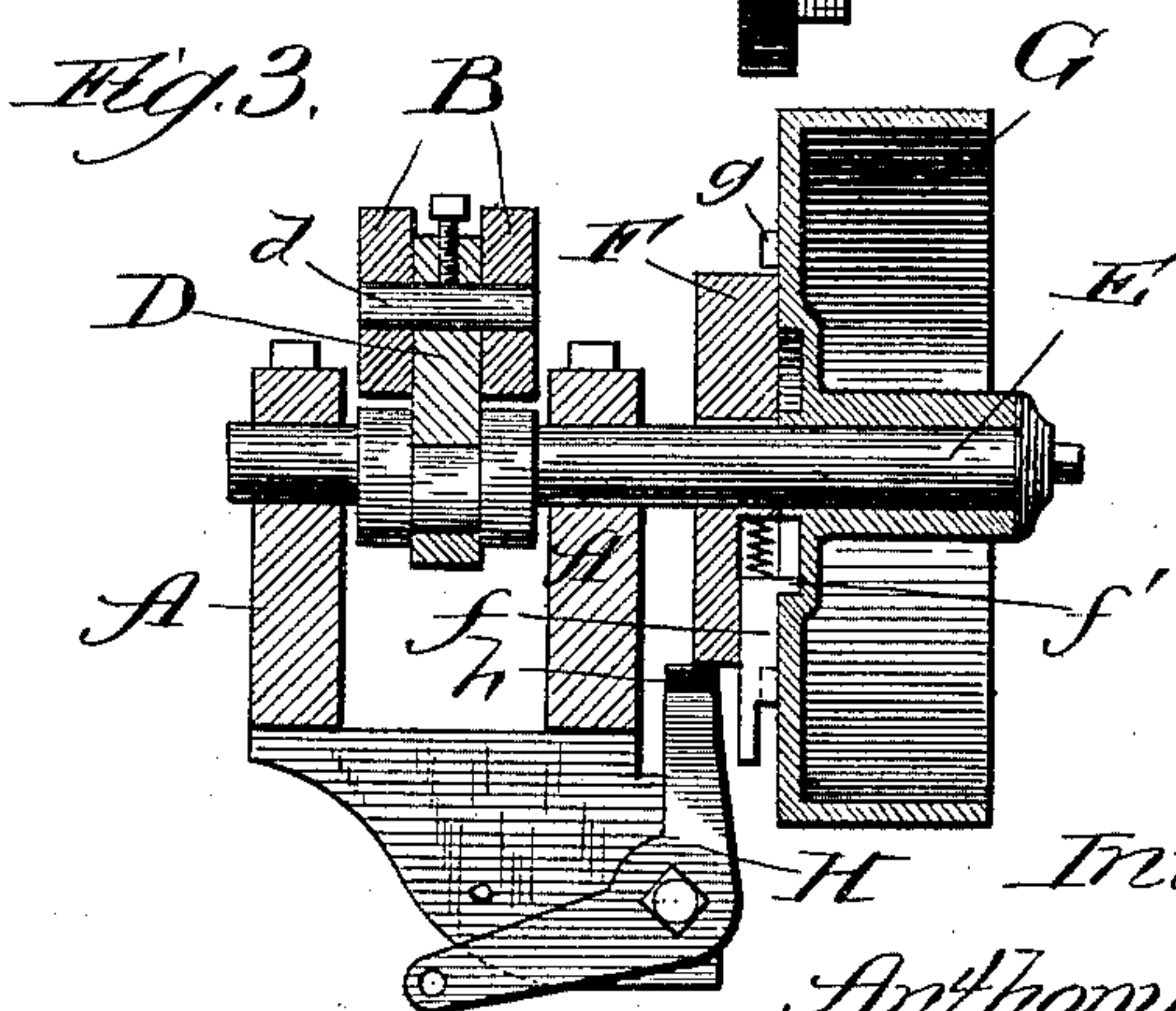
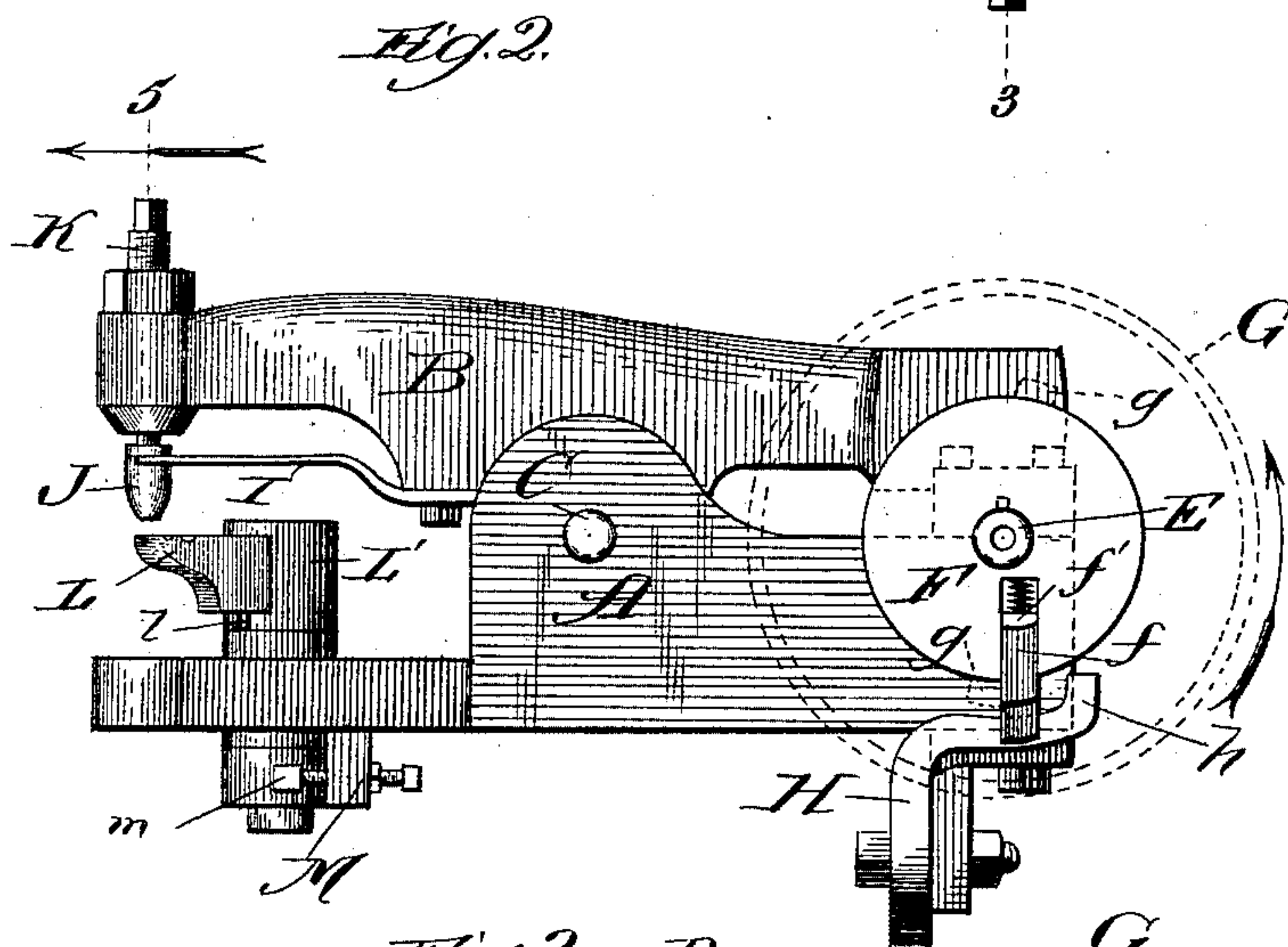
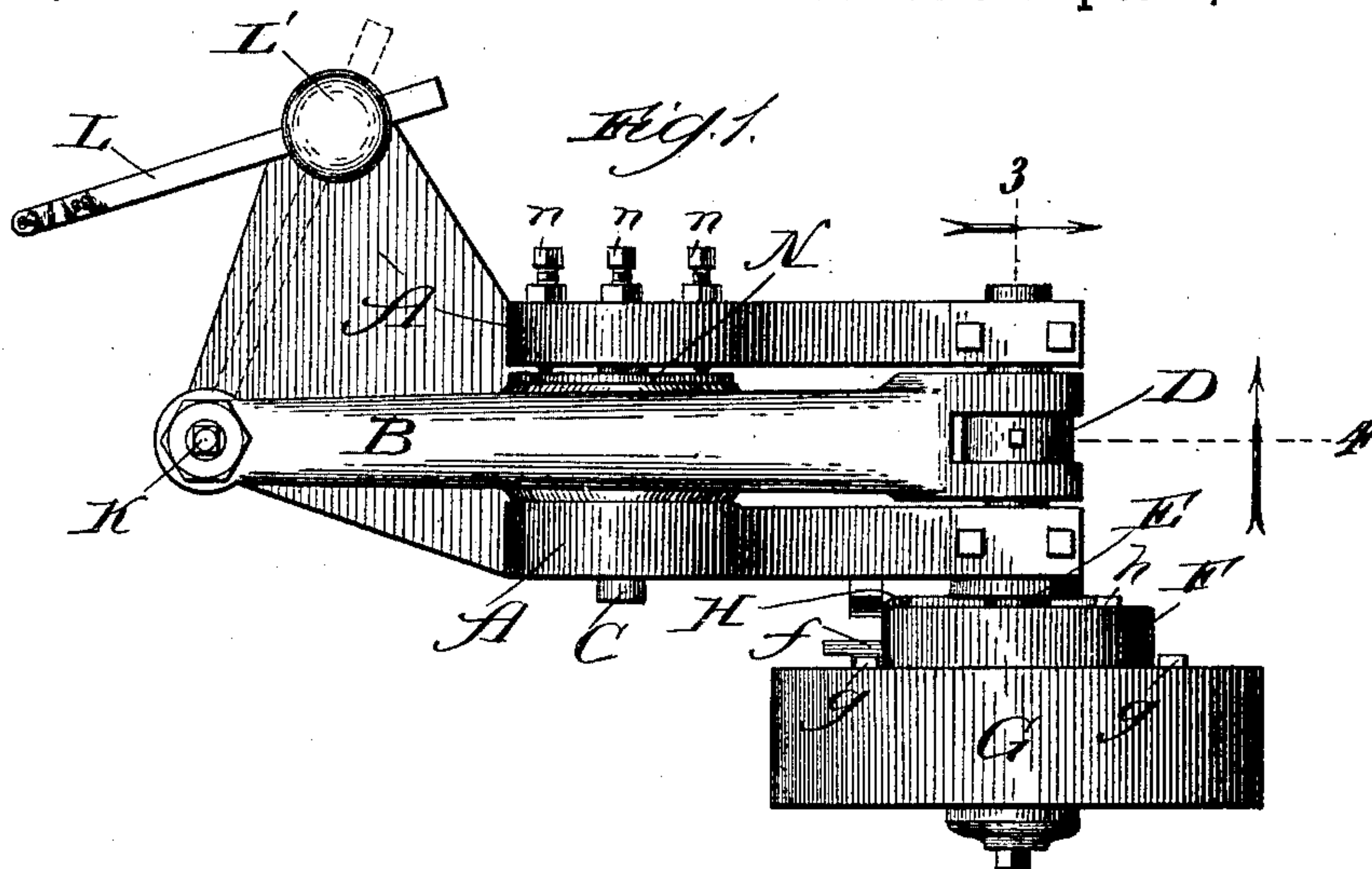


A. GALLAUGHER.
RIVETING MACHINE.

No. 435,624.

Patented Sept. 2, 1890.



Witnesses:
Charles Gaylord,
Clifford N. White.

Inventor:
Anthony Gallagher,
By Banning & Banning, Attorneys.

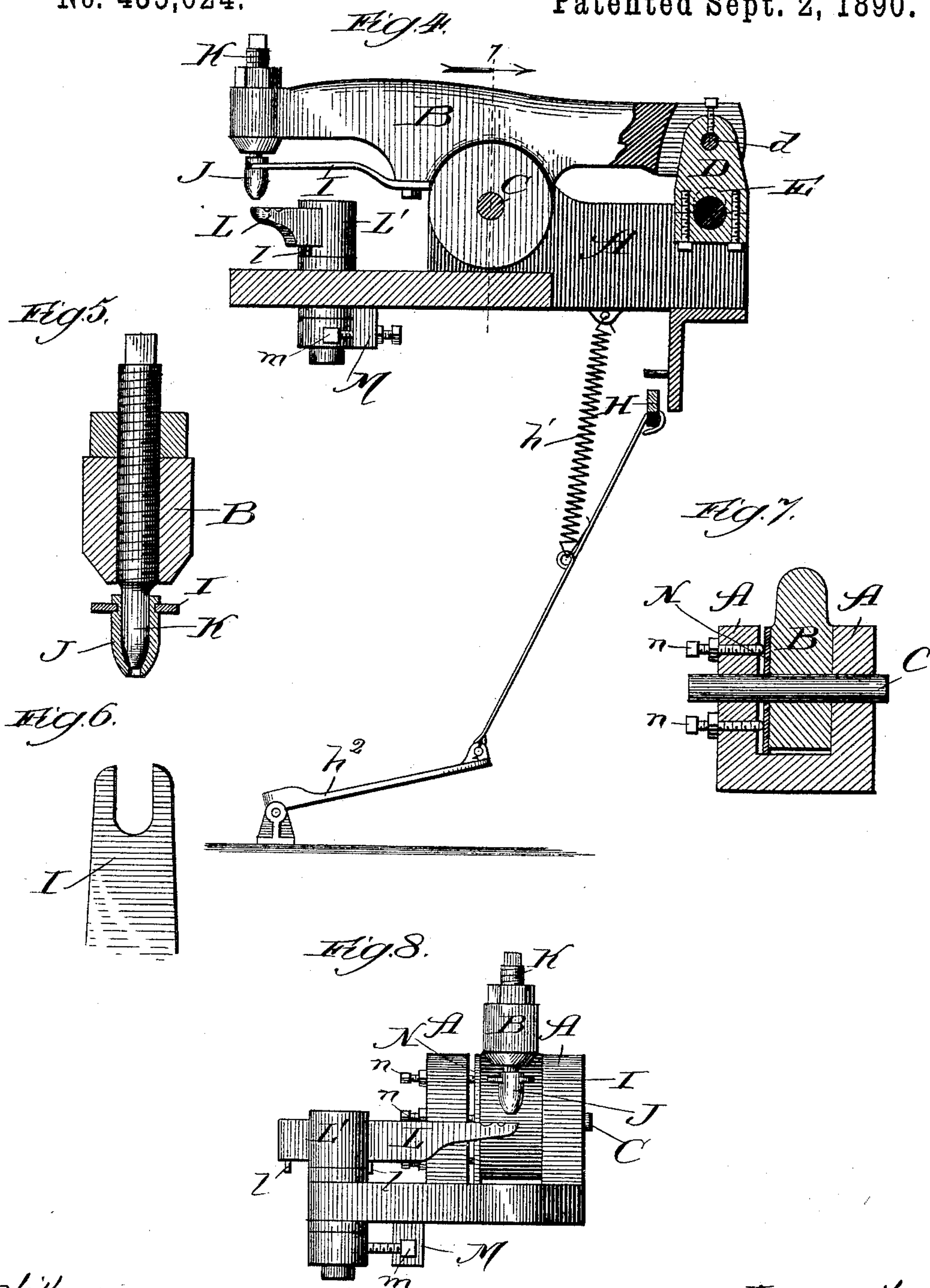
(No Model.)

2 Sheets—Sheet 2.

A. GALLAUGHER.
RIVETING MACHINE.

No. 435,624.

Patented Sept. 2, 1890.



Witnesses:
Edw. Gaylord,
Clifford H. White.

Inventor:
Anthony Gallagher,
By Banning & Banning
Attys.

UNITED STATES PATENT OFFICE.

ANTHONY GALLAUGHER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE HALL & ROSS HUSKING GLOVE COMPANY, OF SAME PLACE.

RIVETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 435,624, dated September 2, 1890.

Application filed June 21, 1890. Serial No. 356,194. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY GALLAUGHER, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Riveting Machinery, of which the following is a specification.

The object of my invention is to make a machine for use in riveting articles of various kinds, but particularly for riveting what are known as "husking-gloves;" and my invention consists in the features and details of construction, hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of my improved riveting-machine. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse vertical section taken in line 3 of Fig. 1, looking in the direction of the arrow. Fig. 4 is a longitudinal vertical section taken in line 4 of Fig. 1, looking in the direction of the arrow. Fig. 5 is a vertical section of the riveting-tool taken in line 5 of Fig. 2, looking in the direction of the arrow. Fig. 6 is a plan view of the spring-plate holding the burr-set. Fig. 7 is a vertical transverse section taken in line 7 of Fig. 4, looking in the direction of the arrow; and Fig. 8 is a front elevation of the movable anvil and riveting-tools.

In making my improved glove-riveting machine, I make a frame A, adapted to be located upon a table, bench, or other suitable support and attached thereto in any convenient manner. This frame is intended to hold certain of the operative parts and should be made of sufficient size and strength to enable it to do the work intended. I mount a reciprocating arm B in this frame, hung or pivoted on a shaft or pin C. The rear end of the reciprocating arm is provided with a pitman D, pivotally hung thereon by a pin *d*. The lower end of this pitman engages a crank on a shaft E, so that as the shaft is revolved the pitman will have an up-and-down reciprocating movement, carrying the rear end of the reciprocating arm up and down with it, and imparting a corresponding movement up and down to the front end of such arm.

Arranged on the shaft E, and preferably outside of the frame A, is a clutch F. This clutch is fixed to the shaft E by a spline or otherwise, so as to rotate it when the clutch is rotated. In the side of this clutch there is

arranged a radial channel or groove, in which is located a latch *f*, with a spring seated in the groove behind it, tending to force it in an outward direction unless restrained. Immediately outside of the clutch and on the shaft E is arranged a loose continuously-revolving pulley G, which is rotated from a belt run by any convenient motive power. This pulley is intended to be constantly revolving to rotate the shaft E and set the machinery connected with it in operation, as desired.

On the side of the pulley G and immediately outside of the circumference of the clutch F are arranged stops *g*. When the latch *f* is permitted to be thrown out by the spring seated in its channel or groove, it protrudes beyond the circumference of the clutch F and is struck by one of the stops *g* and carried around with it. This of course causes the clutch to rotate and with it the shaft E, and thereby the pitman and reciprocating arm to be operated.

To prevent the latch from being forced out from the spring into engagement with the stops, so that the clutch will only be thrown into engagement at the will of the operator, I pivot on the under side of the frame a bell-crank lever H, provided with an upturned end *h*, which stands when in its normal position in the path of the latch. The surface of this lever as it approaches the upturned end is preferably inclined upward, so that when it is thrown into the path of the latch while revolving, the end of the latch will be gradually operated upon and pressed back into its groove in the clutch by an inclined movement, thus preventing any sudden jar or breakage that might occur were it not thus gradually forced back into its position of disengagement with the stops *g*. The incline on the bell-crank further prevents sudden concussion between the latch and the upturned end *h* by gradually slowing or braking the approach of the latch and retarding the movement of the actuated parts. The bell-crank lever is held by a spring *h'* in its normal position in the path of the latch, and when it is desired that the latch should be permitted to be forced out by the spring to engage with the stops G, so as to throw the parts into concussion, the operator can do this by means of

the foot-lever h^2 . The instant this is done the latch is protruded, the concussion of the parts is effected, the shaft E rotated, and the various parts set into operation. The instant, however, that the foot-lever is released the spring h throws the bell-crank lever into its normal position, the latch is intercepted, thrown out of engagement with the stop g , the shaft E stopped in its rotation, and the other parts held stationary.

As it is desirable that the reciprocating up and down movements of the ends of the reciprocating arm B should always be interrupted or suspended at a point which will leave the forward end of such lever in its up position, the parts are so arranged that the latch will only be thrown out of engagement and the parts stopped at that point of the revolution of the shaft E as will leave the forward end of the reciprocating arm up.

To prevent the latch f from being forced too far out of its groove or channel by the spring seated behind it, I have provided its inner end with an outwardly-projecting point f' , and have provided the inner face of the pulley G with an annular groove in which such projecting point may rest. This groove is of sufficient width to permit the latch to be pushed in or forced out, but serves to stop its outward movement at the predetermined desired extent.

At the forward end of the reciprocating arm B on the under side is arranged a spring-plate I, carrying in its forward end a cone-shaped hollow burr-set J. This burr-set is immediately under the forward end of the reciprocating arm. Plunger K is arranged in such forward end and immediately over the burr-set and extending down into it, as shown in Fig. 5. The spring-plate I is intended to be stiff enough to prevent the burr-set from yielding until it has sufficiently compressed the material to be riveted. The plunger K, however, is forced down the full extent of the movement of the forward end of the reciprocating arm, which of course is intended to be enough to upset the rivet. To enable the rivet to be adjusted in place and then brought or moved into its position under the burr-set, where it may be struck and upset by the plunger, I arrange a movable anvil L in proper position at one side of the forward end of the reciprocating arm or in such convenient position as may be preferred. This anvil may be turned by the hand out and in position under the plunger. It is preferably arranged to be slid in or out of its anvil-block L' , which is pivoted to enable it to be turned in and out of position. This anvil-block may be supported on the frame A with the reciprocating arm and intermittingly-rotatable shaft. This enables the movable anvil to have different positions of its surface brought under the plunger, so that one or more rivets may be driven, as desired. This capacity to be slid in its anvil-block also permits the movable anvil to have different portions of its

surface arranged for different kinds of work, as illustrated in Fig. 1.

To secure accuracy and insure the exact position of the rivet under the plunger, the movable anvil is provided with stops l , which limit the extent to which it can be slid. When slid so that one stop strikes the anvil-block, it will always be known that, when swung into operative position, a particular portion of its surface is immediately under the plunger and that the material containing the rivet placed on such spot will be properly struck by the plunger and the rivet upset. I have provided these movable anvils with numbers, although letters or other characters may be employed, under the spot where the head of the rivet rests. When struck by the plunger, the particular number, letter, or character on the movable anvil will thus be impressed into the head of the rivet. This enables me always to know what particular operator did any work that may be defectively or carelessly done, as of course it will be understood that the machines under the charge of different operators will be provided with different numbers, letters, or characters.

To prevent the movable anvil from being swung too far when moved into operative position, I arrange a lug M on the frame and a stud m on the anvil-block. I provide the lug with a threaded bolt-hole, through which a bolt is screwed the requisite distance to be struck by the stud exactly when the movable anvil is in the proper position under the plunger. By using a bolt, which may be screwed in or out, movable anvils of different sizes and shapes may be employed, and yet always adjusted exactly to the position for the work.

To prevent the reciprocating arm when it becomes worn at its pivot-point from rocking or getting out of alignment or its proper position, I have provided a plate N at one side, which may always be adjusted by the set-screw n , so as to be held in close position against the side of the reciprocating arm. This will always insure constant and close contact between the reciprocating arm and its supports at each side and prevent wobbling or lateral vibratory motion of the front end of the reciprocating arm, owing to wear or other cause.

In order to adjust the movement of the plunger to adapt it to different kinds of work, I have provided it with screw-threads and the forward end of the reciprocating arm with a hole for it provided with corresponding threads. This will permit the plunger to be adjusted up and down, as desired. To secure it from accidentally becoming displaced or moving or changing position while in work, I prefer to arrange a lock or jam-nut above the reciprocating arm to hold it in the position to which it may be adjusted from time to time.

I claim—

1. In a riveting-machine, the combination

of a reciprocating arm, an upsetting riveting-tool actuated thereby, and a movable anvil, substantially as described.

2. In a riveting-machine, the combination of a frame, a reciprocating arm mounted therein, a rotatable shaft, and a movable anvil, substantially as described.

3. In a riveting-machine, a frame with supports thereon for a reciprocating arm, a rotatable shaft, and a movable anvil, substantially as described.

4. In a riveting-machine, a reciprocating arm actuating an upsetting riveting-tool connected therewith, in combination with a movable anvil arranged to be swung from under the riveting-tool for placing thereon the rivet and the material to be riveted together and then swung to place under the riveting-tool, substantially as described.

5. In a riveting-machine, an upsetting riveting-tool and an anvil movable both endwise and sidewise, substantially as described.

6. In a riveting-machine, the combination of a riveting-tool making a rivet-upsetting movement in a uniform place and an adjustable anvil movable to bring the different portions of its surface under the riveting-tool, substantially as described.

7. In a riveting-machine, the combination of a movable anvil provided with different seats or forms thereon where the riveting may be done, substantially as described.

8. In a riveting-machine, a movable anvil provided with stops or guides to insure the proper position of the anvil when in operative position, substantially as described.

9. In a riveting-machine, a plunger working through a burr-set, substantially as described.

10. In a riveting-machine, the combination of a yielding burr-set and a plunger working therethrough, substantially as described.

11. In a riveting-machine, the combination of a burr-set, a plunger working therethrough, and a reciprocating arm actuating both the burr-set and plunger, substantially as described.

12. In a riveting-machine, the combination of a reciprocating arm carrying a riveting-tool, a shaft actuating the reciprocating arm, a loose pulley continuously driven by belt mounted on the shaft, and means to connect or disconnect the continuously-revolving pulley to the shaft to rotate or stop it at the will of the operator, substantially as described.

13. In a riveting-machine, a reciprocating arm carrying a riveting-tool adjustable up or down in its position in the reciprocating arm.

14. In a riveting-machine, a reciprocating arm, a riveting-tool adjustable up and down in its position in the reciprocating arm, and means for locking it in position in the arm, substantially as described.

15. In a riveting-machine, the combination of a reciprocating arm carrying a riveting-tool, a rotatable shaft actuating the reciprocating arm, a continuously-revolving pulley loosely mounted on the shaft, and means for making the shaft rotate with the pulley while the rivet is being upset and to stop it from rotating while a new rivet is being put in place, substantially as described.

16. In a riveting-machine, a reciprocating arm and adjustable means for maintaining the alignment of the arm, substantially as described.

17. In a riveting-machine, a movable detachable anvil, substantially as described.

18. In a riveting-machine, the combination of a reciprocating arm, a shaft actuating the arm, a clutch fixedly mounted thereon, a continuously-revolving pulley loosely mounted thereon, and a latch within the control of the operator for engaging the clutch and the pulley, substantially as described.

19. In a riveting-machine, the combination of a reciprocating arm carrying a riveting-tool, an endwise-movable anvil, and stops controlling the extent of its endwise movement, substantially as described.

20. In a riveting-machine, the combination of a reciprocating arm carrying a riveting-tool, a sidewise-movable anvil, and a stop controlling the extent of its sidewise movement toward its operative position, substantially as described.

21. In a riveting-machine, the combination of a continually-revolving pulley, a latch engaging such pulley for imparting movement to other parts and a lever for disengaging the latch from the revolving pulley and stopping movement of other parts, the lever being provided with a lengthwise-inclined surface against which the latch rubs while being disengaged, thus gradually retarding and arresting the moving parts, substantially as described.

22. In a riveting-machine, an anvil provided with a mark, letter, or number at the spot where the head of the rivet rests while being upset, substantially as described.

ANTHONY GALLAUGHER.

Witnesses:

THOMAS A. BANNING,
WM. A. KNOWLTON.