

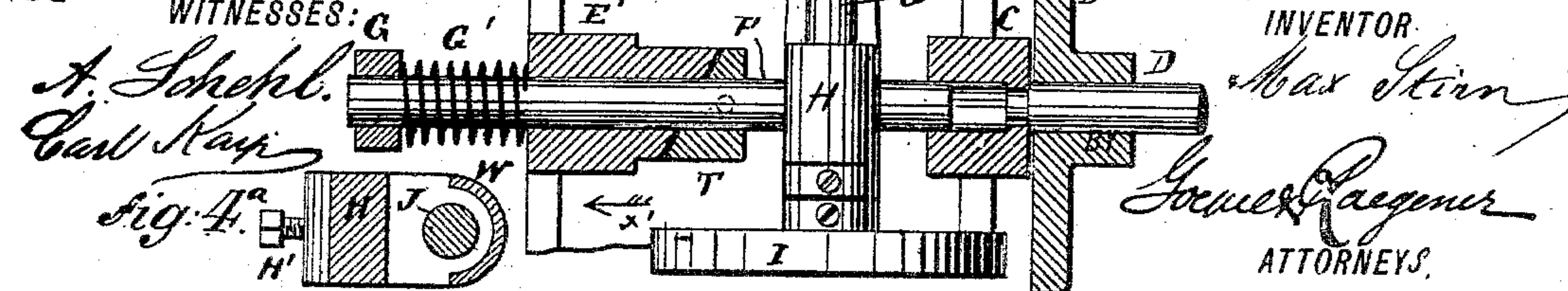
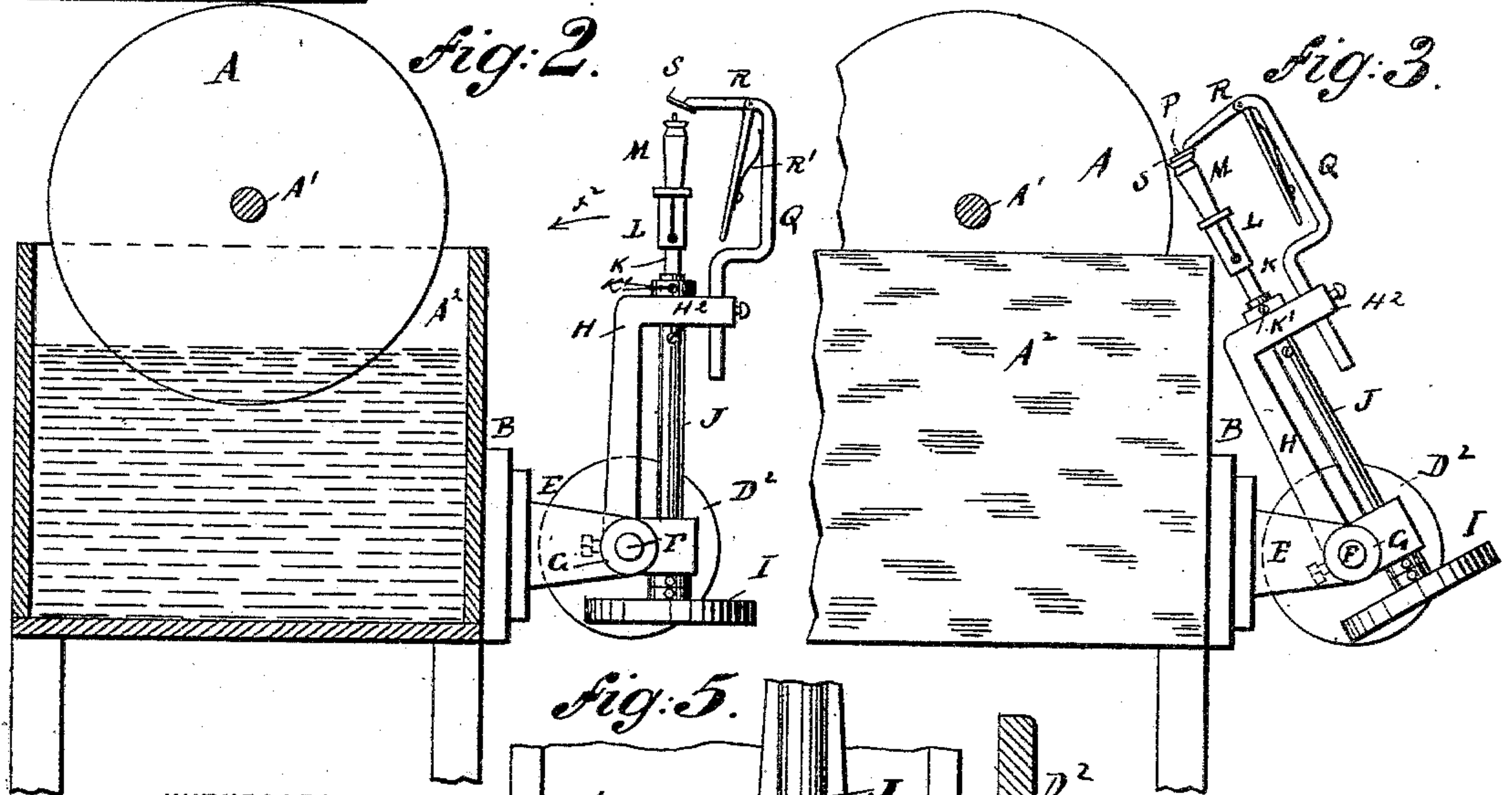
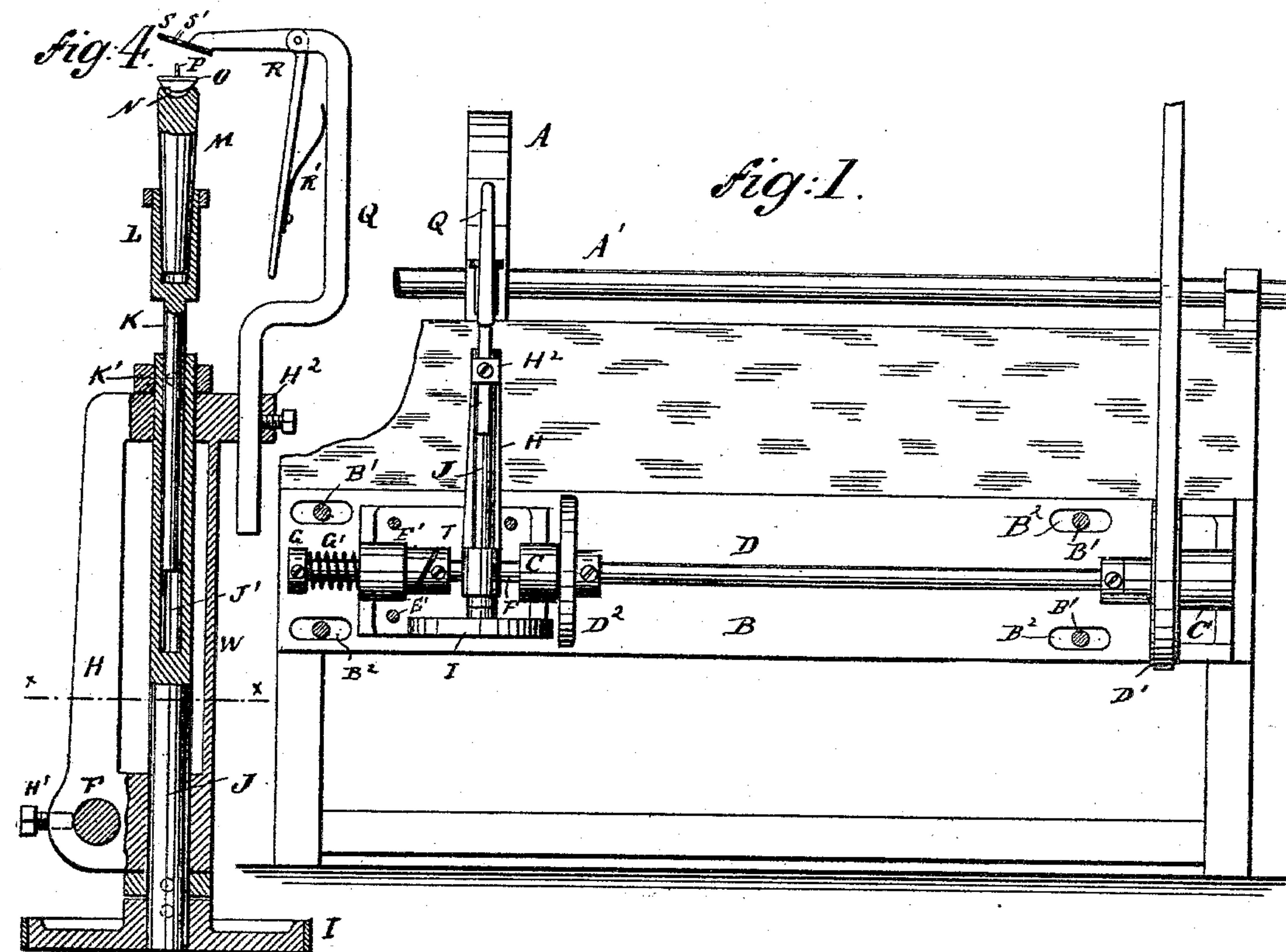
(No Model.)

M. STIRN.

MACHINE FOR GRINDING AND FINISHING THE EDGES OF BUTTONS.

No. 411,691.

Patented Sept. 24, 1889.



WITNESSES:

A. Schuhl.
Carl Kay

INVENTOR

Max Stirn
Geyer & Paege
ATTORNEYS.

UNITED STATES PATENT OFFICE.

MAX STIRN, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO LEO STIRN,
OF SAME PLACE.

MACHINE FOR GRINDING AND FINISHING THE EDGES OF BUTTONS.

SPECIFICATION forming part of Letters Patent No. 411,691, dated September 24, 1889.

Application filed April 28, 1888. Serial No. 272,159. (No model.)

To all whom it may concern:

Be it known that I, MAX STIRN, of the city of New York, in the county of New York, State of New York, have invented certain
5 new and useful Improvements in Machines for Grinding and Finishing the Edges of Buttons, of which the following is a specification.

The object of my invention is to provide a
10 new and improved machine for grinding and finishing the edges of buttons, especially those made of jet or glass.

The invention consists in the combination, with an abrading-disk, of a frame mounted
15 to swing toward and from the abrading-disk, and carrying a rotative button-holder.

The invention further consists in the combination, with a shaft, of an abrading-disk on the same, a driving-shaft, an independent
20 shaft in line with the driving-shaft, a frame fixed on the said independent shaft and mounted to rock toward and from said abrading-disk, a rotative button-support on said rocking frame, and driving-gear for driving
25 the shaft in the rocking frame from the driving-shaft.

The invention also consists in the combination and construction of parts and details, as will be fully described and set forth herein-
30 after, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of my improved machine for grinding and finishing the edges of buttons, parts being broken out and others being
35 in section. Fig. 2 is a side view of the same with the trough containing the abrading-disk and the shaft in section, the button-supporting frame being in the position it has when not in use. Fig. 3 is an end view of the same,
40 showing the button-supporting frame in the position it has when in use. Fig. 4 is an enlarged detail vertical transverse sectional view of the button-holding frame. Fig. 4^a is a transverse horizontal section on the line *xx*,
45 Fig. 4. Fig. 5 is an enlarged vertical longitudinal detail section of the friction driving mechanism of the button-holding frame.

Similar letters of reference indicate corresponding parts.

50 The grindstone or other abrading-disk A is fixed on the shaft A', suitably journaled in

bearings on the ends of a trough or tank A² containing water, into which the grindstone or abrading-disk dips. On the front of the tank the board B is held by bolts B', passed
55 through the longitudinal slots B² of said board, and admitting of shifting of said board in the direction of its length. In sleeves or bearings on the ends of the arms C, projecting from the front of the board B, the horizontal
60 shaft D is mounted, which is provided at one end with a belt-pulley D' and at the opposite end with a friction driving-disk D². In the sleeve on the end of the arm C and the sleeve E' on the end of the arm E of the board B a
65 short shaft F is mounted to rock and slide in the direction of its length, one end projecting beyond the sleeve E', and said end being provided with a fixed collar G, between which and the outer end of the sleeve E' a spring G'
70 is coiled on said shaft F and presses the same in the direction of the arrow *x'*, Fig. 5. The shaft F passes through an aperture in the lower end of a frame H, held on the shaft F by means of a binding-screw H'. In the frame
75 H a spindle J is journaled, that carries on its lower end a friction-disk I, the plane of which is at right angles to the plane of the friction driving-disk D². The upper end of the shaft J is provided with a longitudinal bore J', for
80 receiving the spindle K, that can be locked in place by means of a set-screw K', and on the upper end of said spindle K the chuck L is formed, which serves to receive the button-support M, provided at its upper end with a
85 suitably-shaped recess N, for receiving the button O, having the eye P. The frame H is provided at its upper end with an arm H², through which the lower end of a bent arm Q passes, and to the upper end of said bent arm
90 an angle-lever R is pivoted, provided at its swinging upper end with a plate S, having an aperture S', through which the eye P of the button O can pass. A spring R', secured to the lower or handle end of the angle-lever R,
95 rests against the arm Q and presses said handle end of the angle-lever R in a direction from the arm Q and keeps the plate S raised from the end of the button-support M. The inner end of the sleeve E' is beveled, as is like-
100 wise the adjacent end of a collar T, secured on the shaft F. That end of the shaft F ad-

adjacent to the end of the shaft D is mounted to slide in the sleeve on the outer end of the arm C.

If desired, a semicircular or like guard W can be provided on the frame H on the side facing the workman, so as to prevent his clothing being caught by the shaft.

The operation is as follows: The parts being in the position shown in Fig. 2, the button O is placed at the top of the button-support M, with the eye P to the top. Then the lower or handle end of the angle-lever R is pressed toward the arm Q, whereby the plate S is pressed down upon the under side of the button O, which under side is now at the top, whereby the button is held on the support M. The frame H is then swung in the direction of the arrow x^2 , Fig. 2, so as to bring the edge of the button in contact with the edge of the stone or abrading-disk A. As the frame H is fixed on the shaft F, said shaft F is turned a short distance on its axis by swinging the frame in the direction of the arrow x^2 , and as the bevels of the sleeve E and collar T act on each other the shaft F and with it the frame H are moved in the inverse direction of the arrow x' , Fig. 5, whereby the friction driving-disk I is pressed against the face of the friction driving-disk D², and thus the shaft J, spindle K, the button-support M, and the button O are rotated, and, as the rim of the button is in contact with the rim of the stone A, said rim is ground off perfectly. The frame H is then swung back in the inverse direction of the arrow x^2 and the angle-lever R released, permitting the spring R' to throw the lower end of the same outward, whereby the plate S is raised and the button released, so that it can be removed. The spindle K, carrying the chuck L, may be raised or lowered according to the desired bevel of the edge, so that not all of the buttons are ground off on the same part of the periphery of the grinding-disk. The board B can be made adjustable in the direction of its length, and the upper end of the button-support M can be brought opposite different parts of the rim of the abrading-disk. The arm Q can also be raised or lowered.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with an abrading-disk, of a button-supporting frame mounted to

swing toward and from the rim of the abrading-disk, a lever, a plate on said lever mounted to swing toward and from the top of the button-support and provided with an aperture through which the eye of the button can pass, substantially as shown and described.

2. The combination, with an abrading-disk, of a frame mounted to swing toward and from the rim of said abrading-disk, a rotative shaft in said frame, a button-support on the shaft, an arm on said frame, a lever pivoted on said arm, and an apertured disk on one end of said lever, substantially as shown and described.

3. The combination, with an abrading-disk, of a frame mounted to swing toward and from the rim of the same, a rotative shaft in said frame, a chuck on said shaft, a button-support in said chuck, an arm on the frame, an angle-lever on said arm, an apertured plate on one end of said angle-lever, and a spring acting on the angle-lever and pressing that end carrying the apertured plate from the end of the button-support, substantially as shown and described.

4. The combination of the shaft D, having a friction driving-disk, the shaft F in line with the shaft D, which shaft F is mounted to slide in the direction of its length and to rock, a spring for pressing the shaft F in the direction from the shaft D, a frame on said shaft, a rotative shaft in said frame, a friction driving-disk on the rotative shaft in the frame, a beveled collar on the shaft F, and a fixed sleeve having a beveled end adjacent to the bevel of the collar on the shaft F, substantially as shown and described.

5. The combination, with a shaft and an abrading-disk on the same, of a board mounted longitudinally adjustable in the direction of the shaft carrying the abrading-disk, a driving-shaft on said board, a swinging frame on said shaft, and a rotative shaft in said swinging frame and driven by said driving-shaft, and a button-holder on said rotative shaft, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

MAX STIRN.

Witnesses:

OSCAR F. GUNZ,
JOHN A. STRALEY.