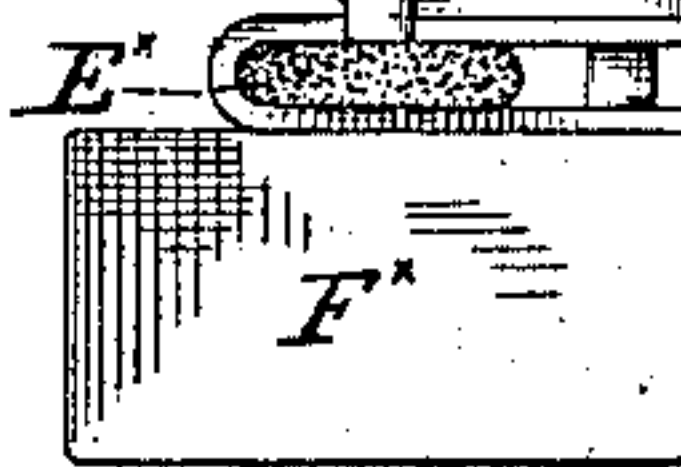
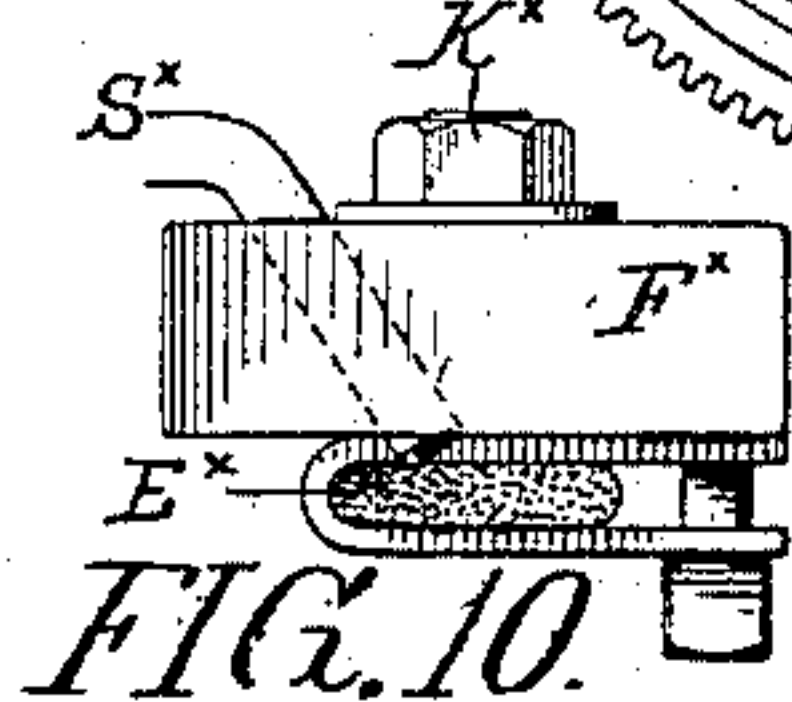
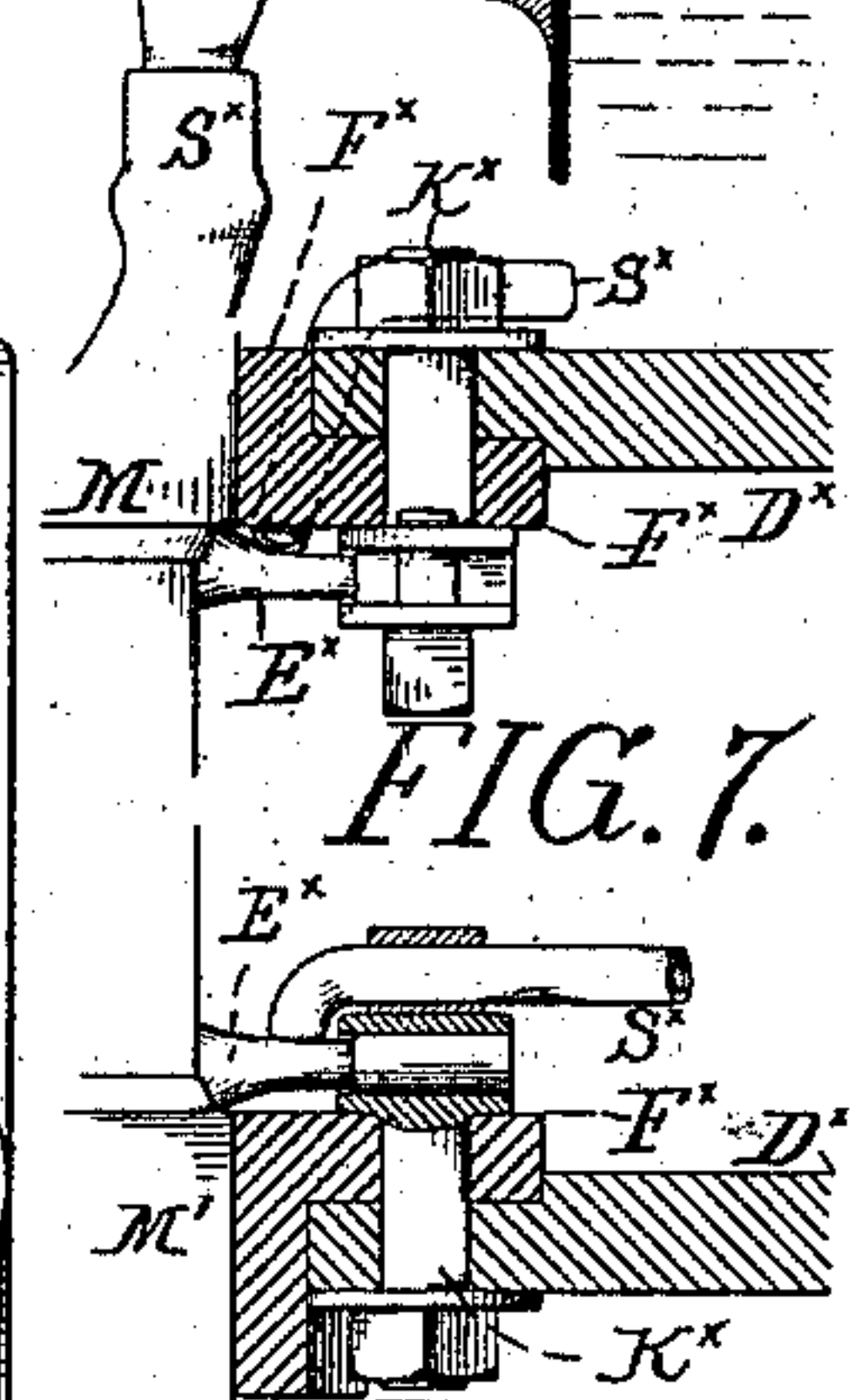
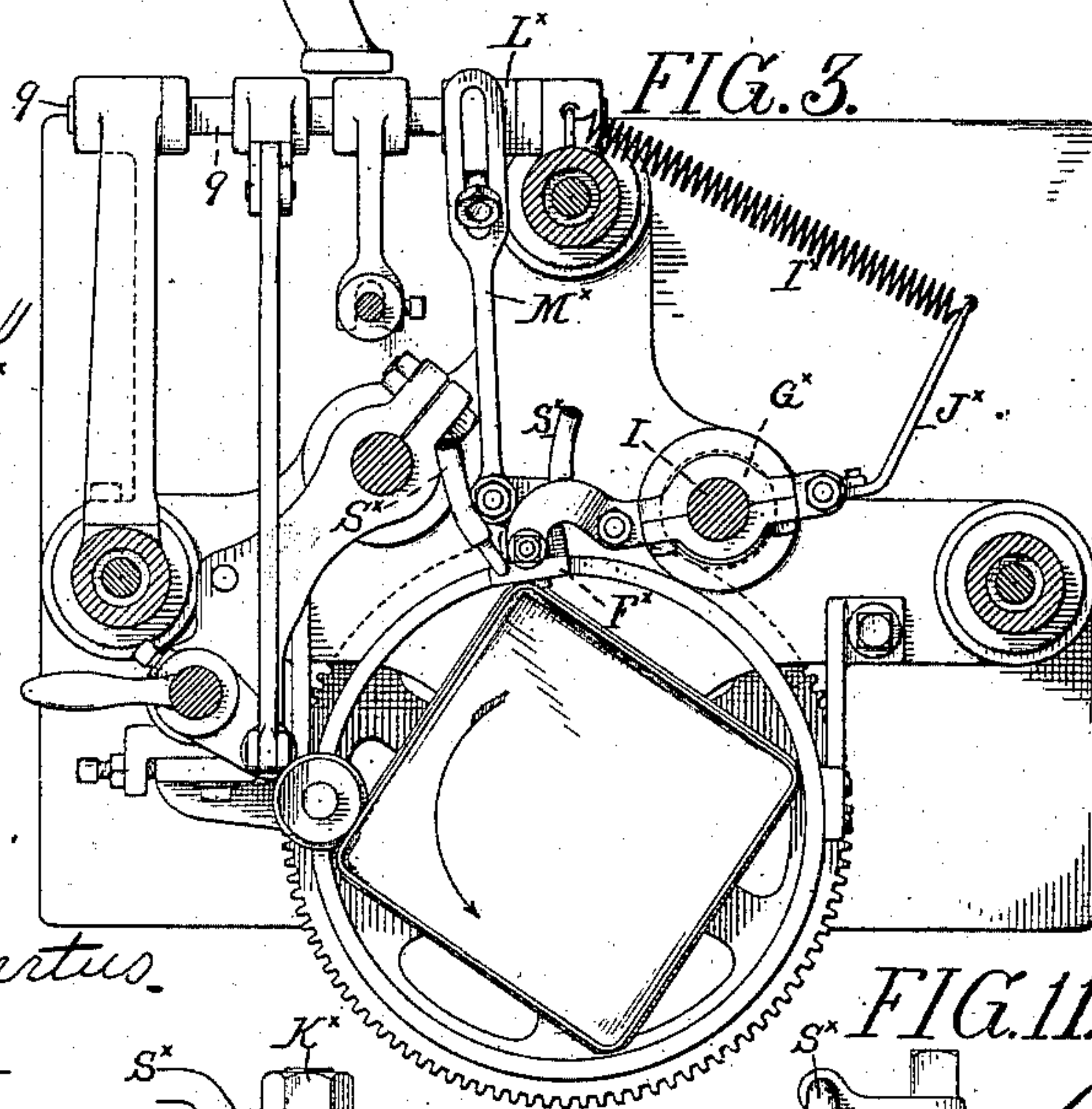
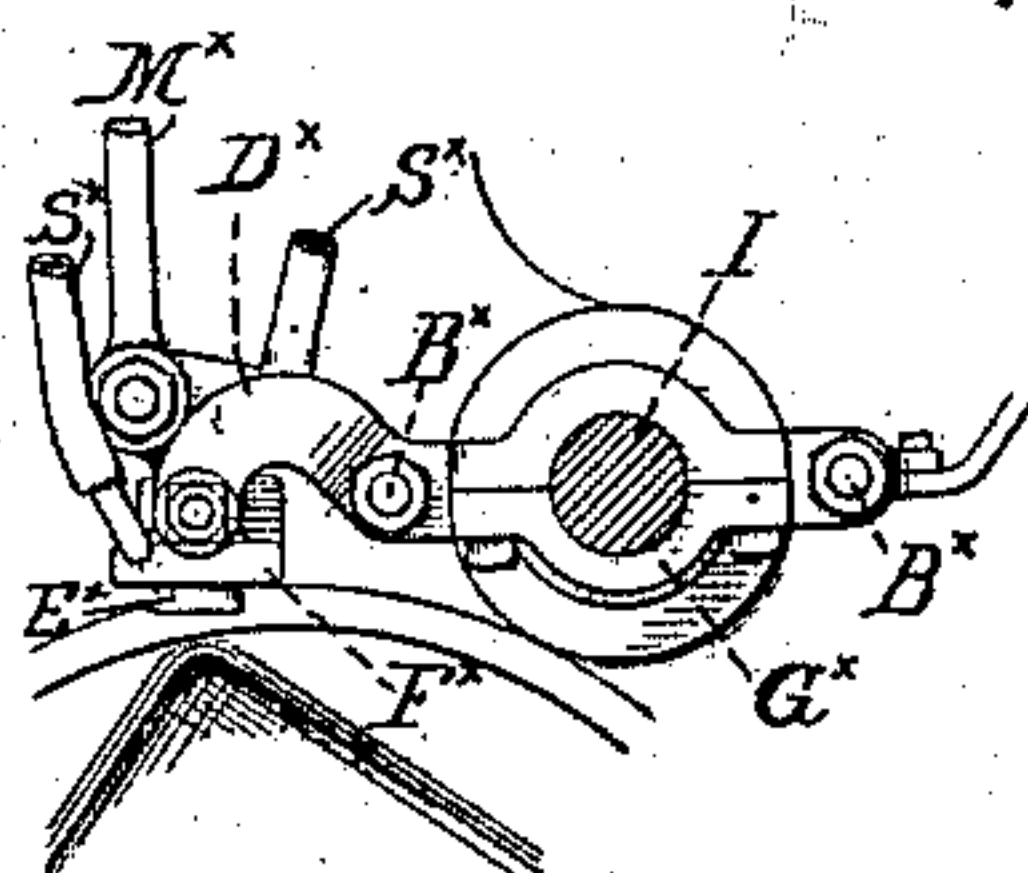
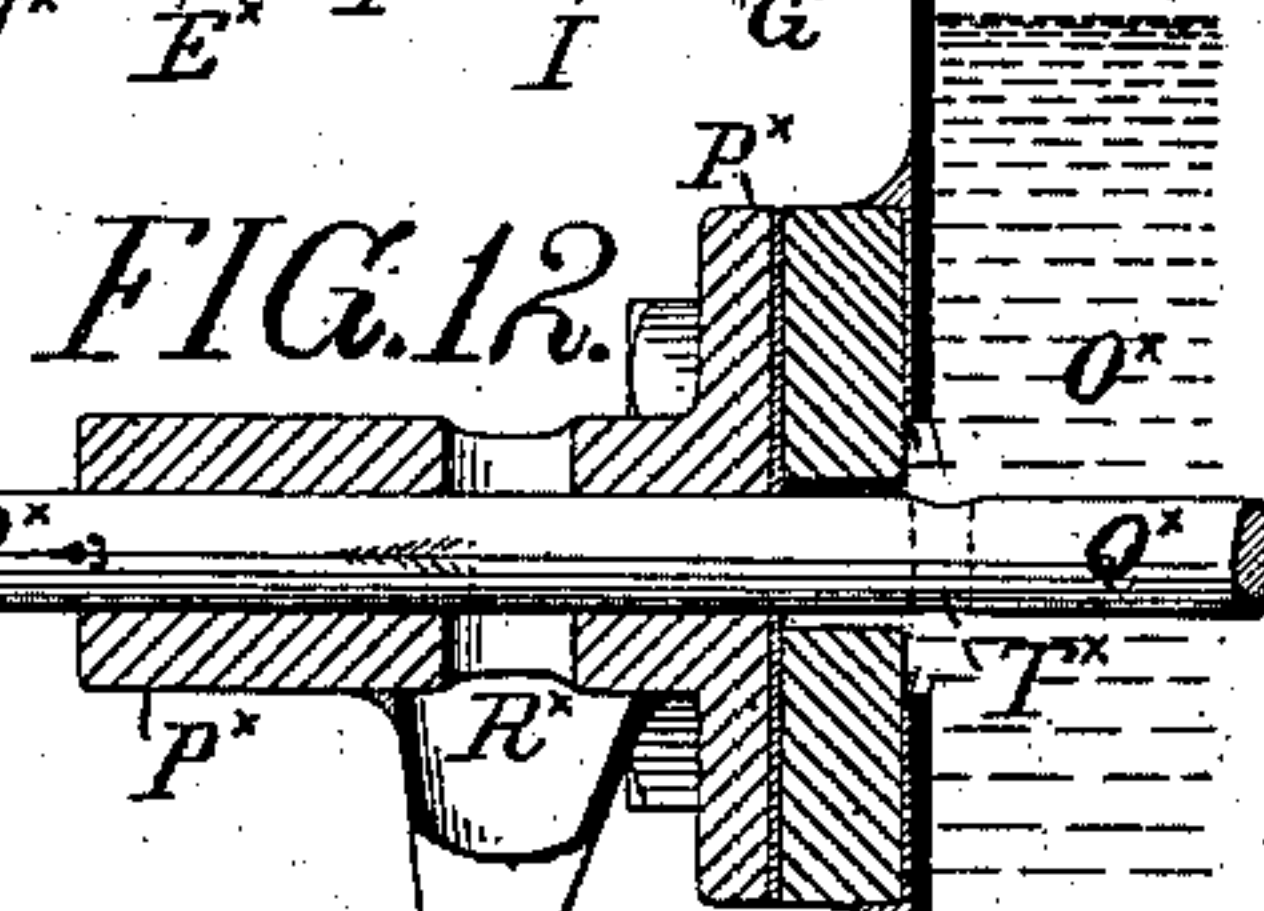
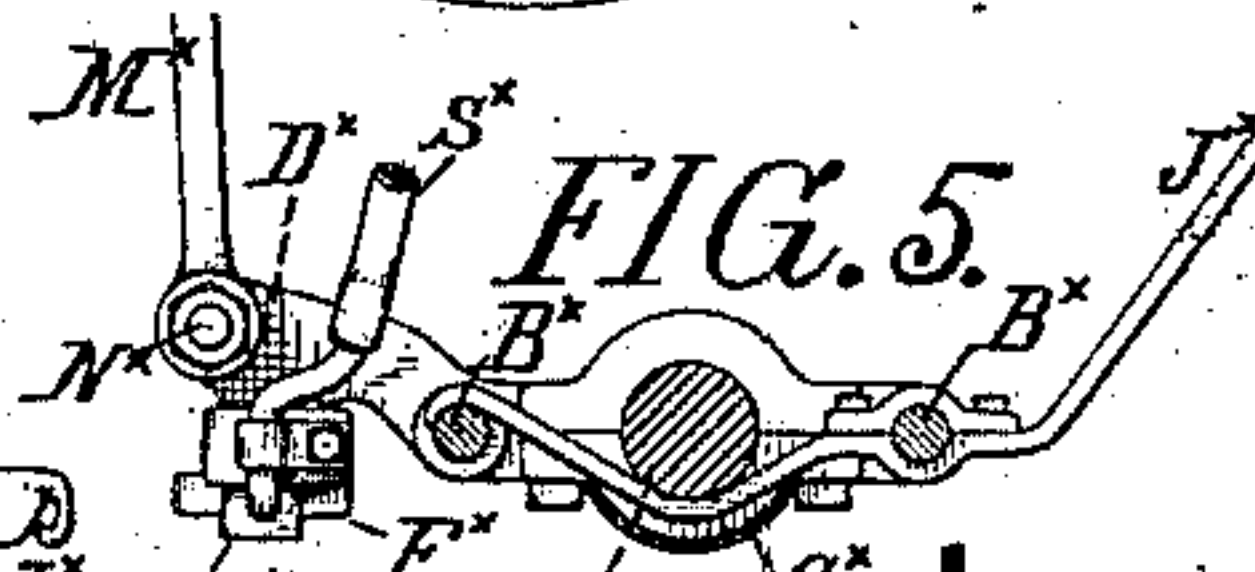
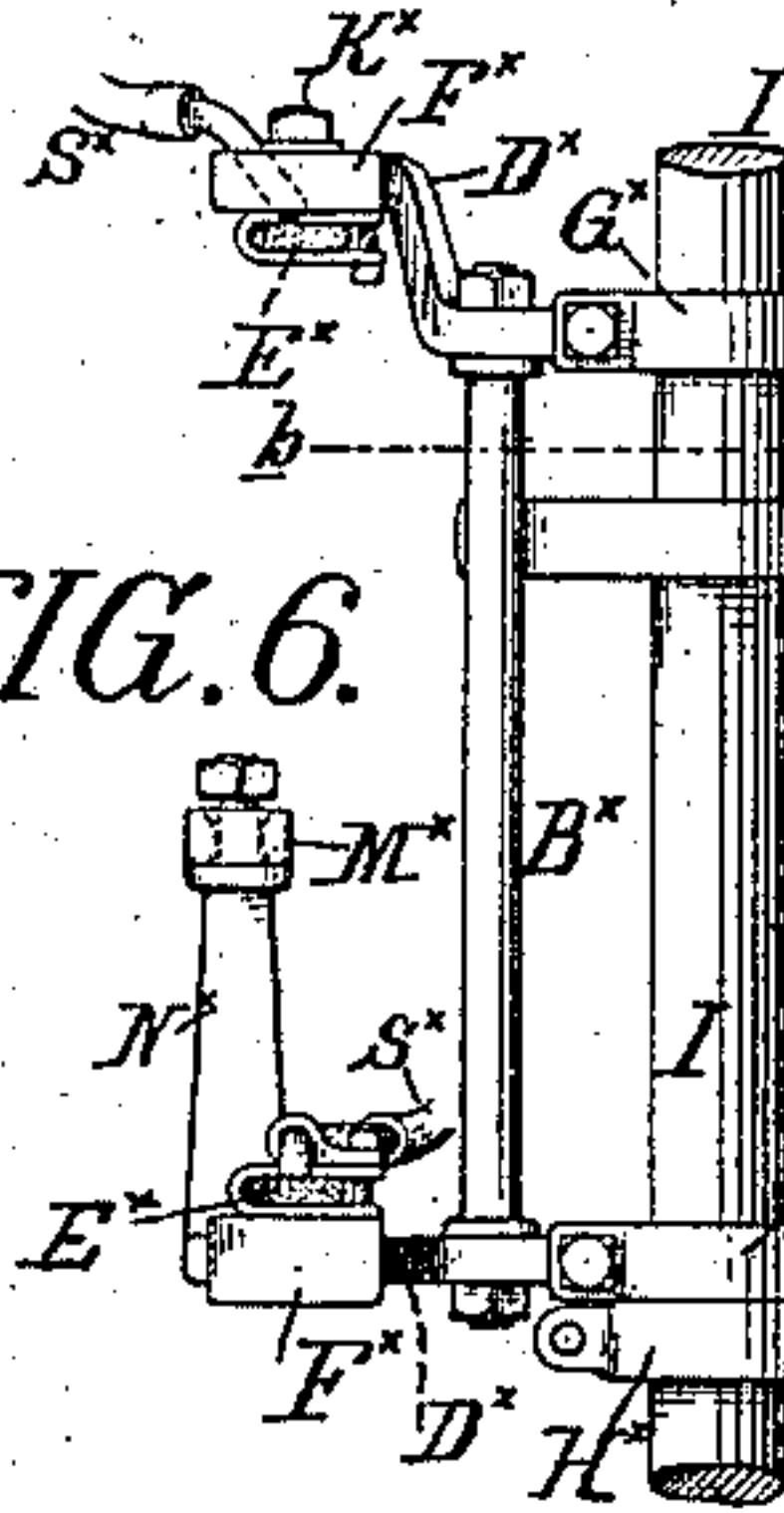
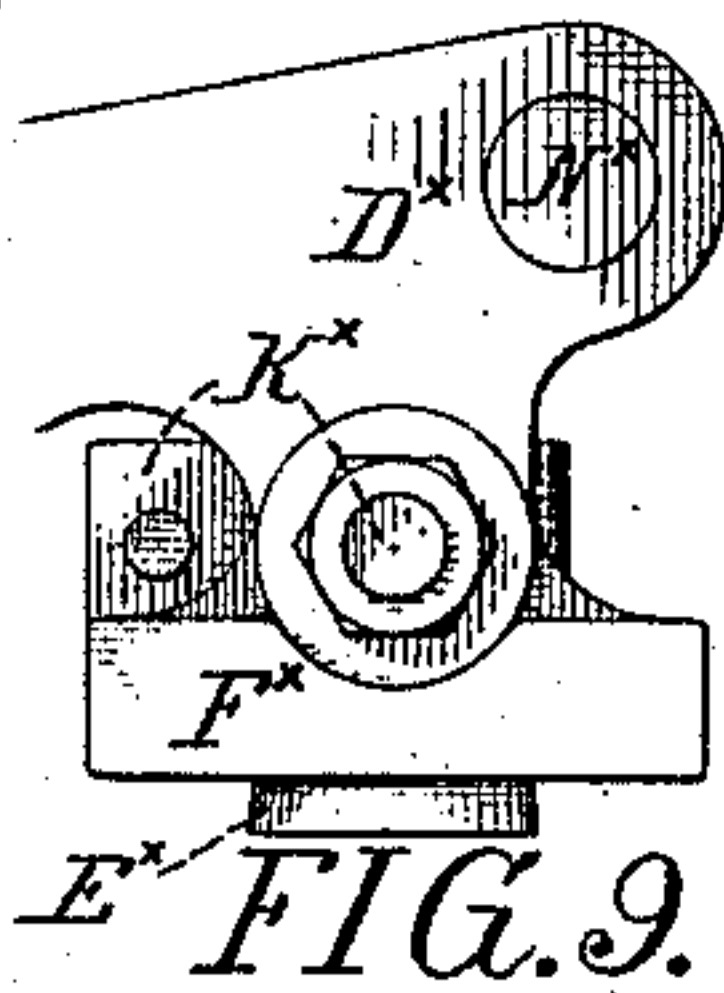
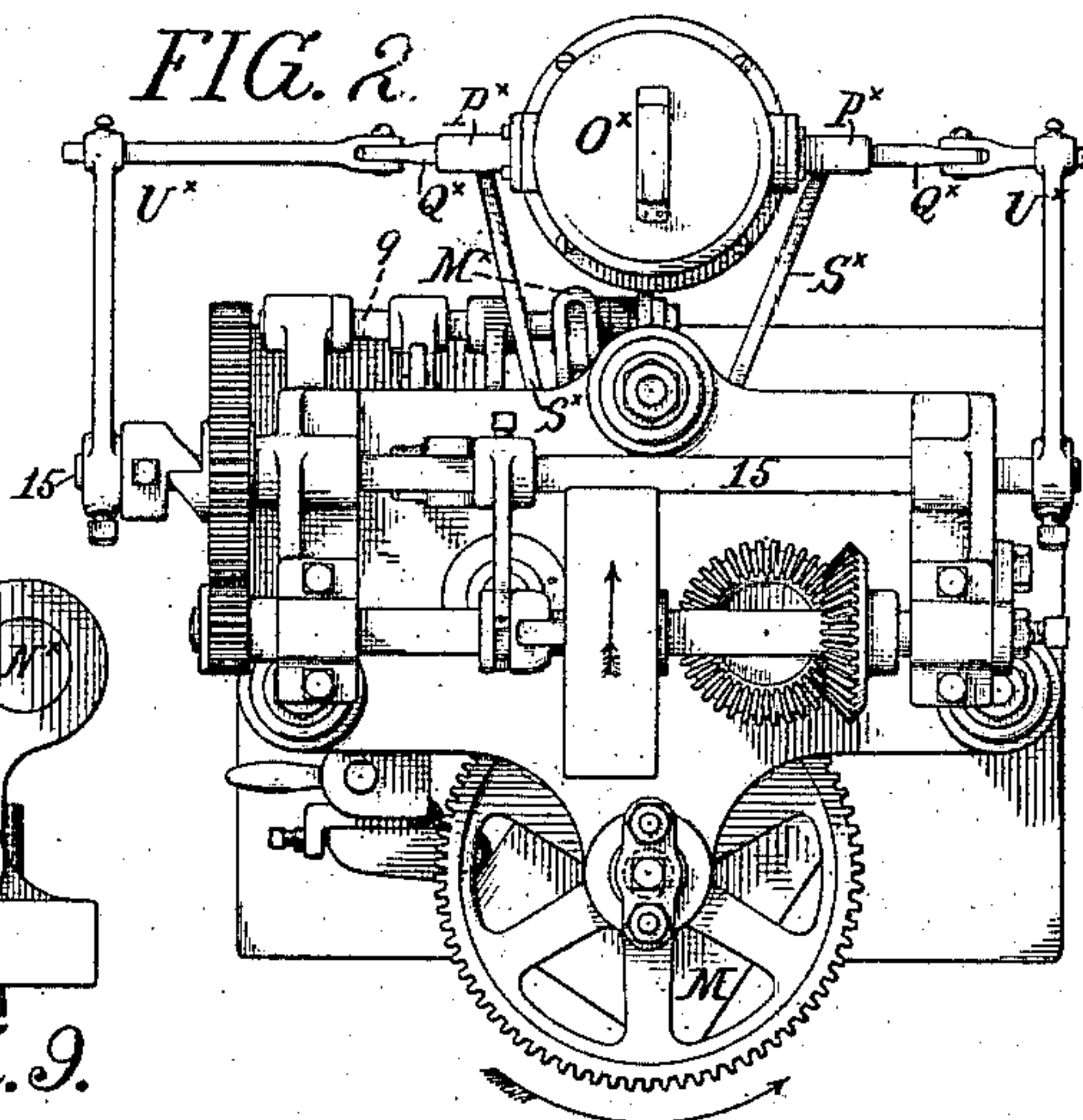
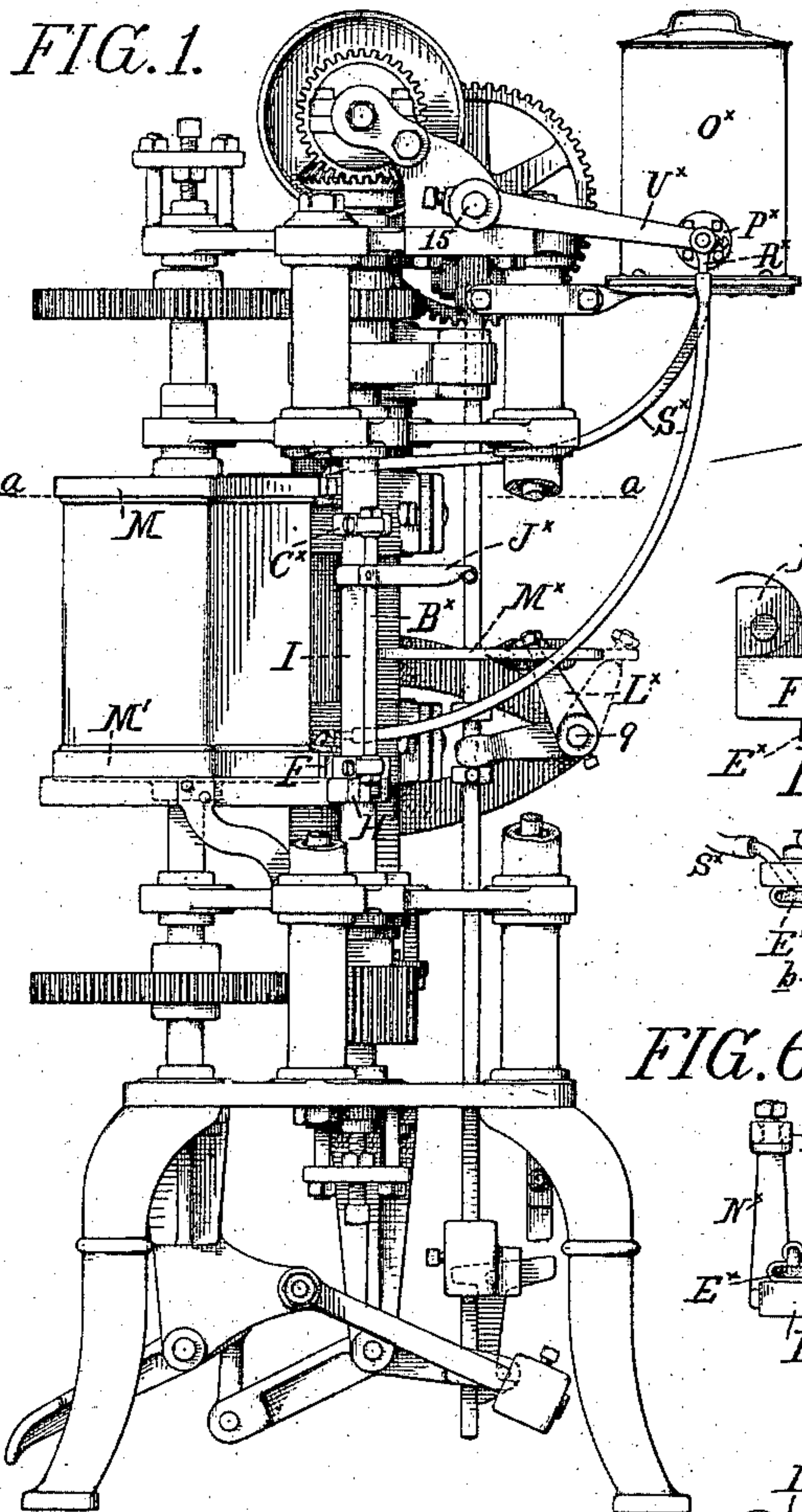


G. H. PERKINS.

No. 270,109.

Patented Jan. 2, 1883.



Witnesses,

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C. Taylor. S-

Inventor,
George H. Perkins,
By his Attorney
Wm C. Strawbridge
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UNITED STATES PATENT OFFICE.

GEORGE H. PERKINS, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR APPLYING FLUX TO THE SEAMS OF SHEET-METAL CANS.

SPECIFICATION forming part of Letters Patent No. 270,109, dated January 2, 1883.

Application filed November 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. PERKINS, of Philadelphia, Pennsylvania, have invented an Improved Apparatus for Applying Flux to the Seams of Sheet-Metal Cans, of which the following is a specification.

This improvement relates in general and is applicable to a class of mechanisms employed to secure the heads upon the bodies of sheet-metal cans, in which seaming-rolls are caused to bear against the seams to be closed while the can is rotated against them.

It relates specifically and in the present case is applied to a rotary machine for closing the seams of sheet-metal cans invented by me and patented to me in and by Letters Patent No. 245,392, dated August 9, 1881, the said machine being an improvement upon a machine invented by Edmund Jordan, of Brooklyn, N. Y., and patented to him in and by Letters Patent No. 236,499, dated January 11, 1881. The said Jordan machine is designed for the closing of the head-seams of quadrangular, square, hexagonal, or other shaped sheet-metal cans not being circular or oval, and embodies in its organization the following instrumentalities in combination, viz: first, a pair of head-plates conformed to the shape of the head of the can to be closed, and adapted by suitable means together to retain and rotate the can; second, seaming-rolls; and, third, mechanism whereby the seaming-rolls are retained against the seams of the heads and in close conjunction therewith throughout the entire length of the seams, of whatever outline the seams may be.

My present invention consists in an attachment to my aforesaid improved Jordan machine, designed to apply flux to the seams of a can which is being operated upon by said machine, in order that without further operation the said can may be removed from said machine and soldered, my object being to avoid the delay and expense incident to a separate operation of applying flux.

For a thorough comprehension of this improvement reference will be necessary to my Letters Patent No. 245,392, above referred to, as the present attachment is applied to precisely such a machine as is represented and described therein, and as a redescription of

that machine would be redundant in a specification describing my present improvements.

In the accompanying drawings, Figure 1 is a right-hand side elevation of a Jordan heading-machine embodying both my former patented and my present improvements, and representing the parts in the position which they occupy when the can is clamped in place and when the flux-brushes are in contact with its head-seams, the rear and the right-hand side frame-work pillars being broken away for clearer illustration. Fig. 2 is a top plan view of the same. Fig. 3 is a sectional plan of the same, section being supposed on a horizontal plane projected through the dotted line *a a* of Fig. 1. The parts in both Figs. 2 and 3 are represented in the position which they occupy in Fig. 1. Fig. 4 is a top plan detail of the flux-brushes and brush-frame when the brushes are out of contact with the seams, it being the opposite position from that represented in Fig. 3. Fig. 5 is a sectional top plan view of the same, section being supposed in a horizontal plane projected on the dotted line *b b* of Fig. 6. Fig. 6 is a front elevation of the brush-frame and brushes shown applied to the cam-shaft which carries them. Figs. 7 and 8 are magnified vertical sectional details representing the brush-supporting extremities of the brush-frame and the mode of attachment of the brushes and guide-blocks, representing also the flux-feed tubes and the guide-blocks, which latter travel against the head-plates and guide the brushes. Figs. 9, 10, and 11 are respectively a bottom plan view of the lower front extremity of the brush-frame and lower guide-block, a front elevation of the upper guide-block and upper brush, and a front elevation of the lower guide-block and lower brush. Fig. 12 is a magnified longitudinal vertical section through the flux-tank and flux-tube feeding devices.

Similar letters of reference indicate corresponding parts.

In the accompanying drawings, I is the cam-shaft of the Jordan heading-machine, the arrangement and operation of which it is unnecessary here to describe.

A^x, Fig. 6, is what I term a "brush-frame," being a yoke conveniently composed of vertical side posts, B^x, connected together by

cross-heads C^* , which latter are formed with boxes or bearings G^* , fitted to surround the cam-shaft, and with outwardly-extending extremities D^* , to each of which latter is connected a flux-applying brush, E^* , and a guide-block, F^* , the whole being formed as a connected frame adapted to rest free for oscillation upon a collar, H^* , fixedly secured upon the cam-shaft. The construction of brush-frame represented in the drawings, and especially illustrated in Figs. 4 to 11, inclusive, is both convenient and simple, and one which I have for that reason adopted. Other constructions or devices for supporting the flux-supplying brushes free for travel over the seams of the can may, however, be substituted in its stead. In the setting up of the machine the brush-frame is so placed as to bring its brushes, which are apart the distance of the length of the can, into line with the head-seams of the can, so that one brush faces the upper seam and the other the lower.

I^* is a stretched spiral spring, conveniently hung between a fixed portion of the frame-work, preferably the rear pillar, and a rearwardly-extending arm, J^* , connected with the brush-frame on the opposite side from that upon which the brushes are applied, the office of which spring, by its constant tendency to contract, is to retain the brushes in contact with the can-seams throughout the movement of said brushes and their frame, occasioned by the rotation of the can, and also to retain the guide-blocks in constant contact with and travel against the head-plates $M M'$, for the guidance of the brushes in their above action. The guide-blocks and brushes are conveniently swiveled by means of the bolts K^* to the outwardly-extending extremities of the brush-frame, as represented in Figs. 7, 8, and 9.

The brush-frame, by means of the above-described spring, is caused to retain the guide-blocks and brushes in constant contact with the head-plates and seams, of whatever outline the seams may be, during the entire period of the rotation of the can.

9 is the horizontal rock-shaft of the machine, from which is erected an arm, L^* , the upper extremity of which is inserted in the slotted end of a link, M^* , extending forwardly and pivoted to a standard, N^* , erected from the brush-frame. At the moment when the machine is thrown out of action the horizontal rock-shaft 9 is rocked so as to tilt up the arm L^* and cause it to exert such influence upon the frame-link M^* as will draw the latter back, and thereby deflect the brush-frame, draw the brushes and guide-blocks out of contact with the seams and head-plates, and expand the spiral, such position of parts being necessary to the removal of the finished can and the introduction of a fresh can.

O^* is a tank or reservoir for flux, suitably bracketed or otherwise supported from the upper frame-work of the machine. On both sides of the tank are applied hollow studs P^* , one

of which is shown in section in Fig. 12, the two studs being aligned upon opposite sides, and a plunger, Q^* , being fitted within them and tightly packed, so as to allow of a motion through them from side to side.

R^* are spouts attached to both studs, to which spouts are connected tubes S^* , extending down to the brushes, so as to conduct the flux to the latter for their constant supply.

The plunger is provided with two vertical perforations, T^* , which are, when within the tank, filled by the flux, and which serve to alternately convey such quantity of flux as they respectively contain from the interior of the tank to the two spouts in the reciprocation of the plunger. The throw of the plunger is conveniently accomplished by the application of a plunger-yoke, U^* , (clearly represented in Fig. 2,) supported from and connected so as to reciprocate with the shifter-rod 15 of my improved Jordan machine.

Such being a preferred construction of an apparatus conveniently embodying my improvements, it will be understood that not only are the flux-applying brushes constantly supplied with the flux employed, but during the entire period of the operation of the machine constantly kept in contact with the seams of the can, whatever may be the shape of the can itself. It will be also understood that while the cam-shaft of the machine is a convenient member to which to apply the brush-frame, yet the latter may be applied upon a separate shaft or other support introduced into the machine for such purpose; that while the device is herein represented and described as applied to a vertical machine, it yet by a simple modification of mechanical arrangement is applicable to such a horizontal machine as was patented to me April 12, 1881, in and by Letters Patent No. 239,981; that, moreover, while I have represented a specific contrivance for effecting a continuous feed of flux, yet other feeding devices may be substituted in its stead. Finally, I desire it to be understood that this fluxing attachment is applicable, as hereinbefore stated, to other can seaming or heading machines than that to which it is herein described and represented as especially applied. Thus, for example, it can be applied to any machine in which two head-plates conformed to the shape of the can to be closed, are rotated against seaming-rolls, which latter are caused by a cam or other equivalent movement, to be in continuous contact with the seams throughout their extent and during the period of their revolution; and this is true whether the cans be circular or oval as opposed to quadrangular or other angular-corner cans.

Of course it is to be understood that a modification of devices for removing the brush-frame out of contact with the seams, and other means than those herein described for actuating the flux-supplying devices, are to be resorted to. I have simply described the arrange-

ment as applied to a specific machine, to illustrate a means by which the devices may be applied and operated.

Having thus described my invention, I claim—

1. In a machine for closing the seams which secure the heads to the bodies of sheet-metal cans, the following instrumentalities in combination: first, a pair of head-plates or disks conformed to the shape of the heads of the can to be closed and adapted by suitable means together to retain and rotate the can; second, flux-applying brushes; and, third, mechanism whereby the flux-applying brushes are retained against the seams of the heads of the can and in close conjunction therewith throughout the entire length of the seams, of whatever outline the seams may be.

2. In a machine for closing the seams which secure the heads to the bodies of sheet-metal cans, the following instrumentalities in combination: first, a pair of head-plates or disks conformed to the shape of the heads of the can to be closed and adapted by suitable means together to retain and rotate the can; second, seaming-rolls; third, flux-applying brushes; fourth, mechanism whereby the seaming-rolls are retained against the seams of the heads and in close conjunction therewith throughout the entire length of the seams of whatever outline the seams may be; and, fifth, mechanism whereby the brushes are retained against the seams of the heads and in close conjunction therewith throughout the entire length of the seams, of whatever outline the seams may be.

3. In a machine for closing the head-seams of sheet-metal cans, the combination of a pair of head-plates or disks conformed to the outline of the heads of the can to be closed and adapted together to retain and rotate the same, an oscillatory frame, flux-applying brushes connected with said oscillatory frame in such manner as to be capable of receiving therefrom a movement which will enable their traveling in contact with all portions of the head-seams of the can, guide-blocks, likewise connected with said oscillatory frame and bearing against the head-plates, and a spiral spring or its equiv-

alent connected with said oscillatory frame and with a fixed point of support exterior thereto and adapted to secure the constant contact of the guide-blocks with the head-plates, and of the brushes with the head-seams, and mechanism whereby the head-plates are revolved to secure the revolution of the can and the proper movement of the oscillatory frame, guide-blocks, and brushes, substantially as set forth.

4. In a machine for closing the seams which secure the heads to the bodies of sheet-metal cans, the following instrumentalities in combination: first, a pair of head-plates conformed to the shape of the heads of the can to be closed and adapted by suitable means together to retain and rotate the can; second, flux-applying brushes; third, mechanism whereby the flux-applying brushes are set and retained against the seams of the heads and in close conjunction therewith throughout the entire length of the seams during the period of the rotation of the can; and, fourth, mechanism whereby when the machine is stopped the brushes are automatically withdrawn from contact with the seams and retained out of contact until the machine is again started.

5. In a machine for closing the seams which secure the heads to the bodies of sheet-metal cans, the following instrumentalities in combination: first, a pair of head-plates or disks conformed to the shape of the heads of the can to be closed and adapted by suitable means together to retain and rotate the can; second, flux-applying brushes; third, mechanism whereby the flux-applying brushes are retained against the seams of the heads of the can and in close conjunction therewith throughout the entire length of the seams of whatever outline the seams may be; and, fourth, means for continuously supplying the brushes with fresh flux.

In testimony whereof I have hereunto signed my name this 2d day of November, A. D. 1882.

GEORGE H. PERKINS.

In presence of—

J. BONSALE TAYLOR,
JOHN JOLLEY, Jr.