

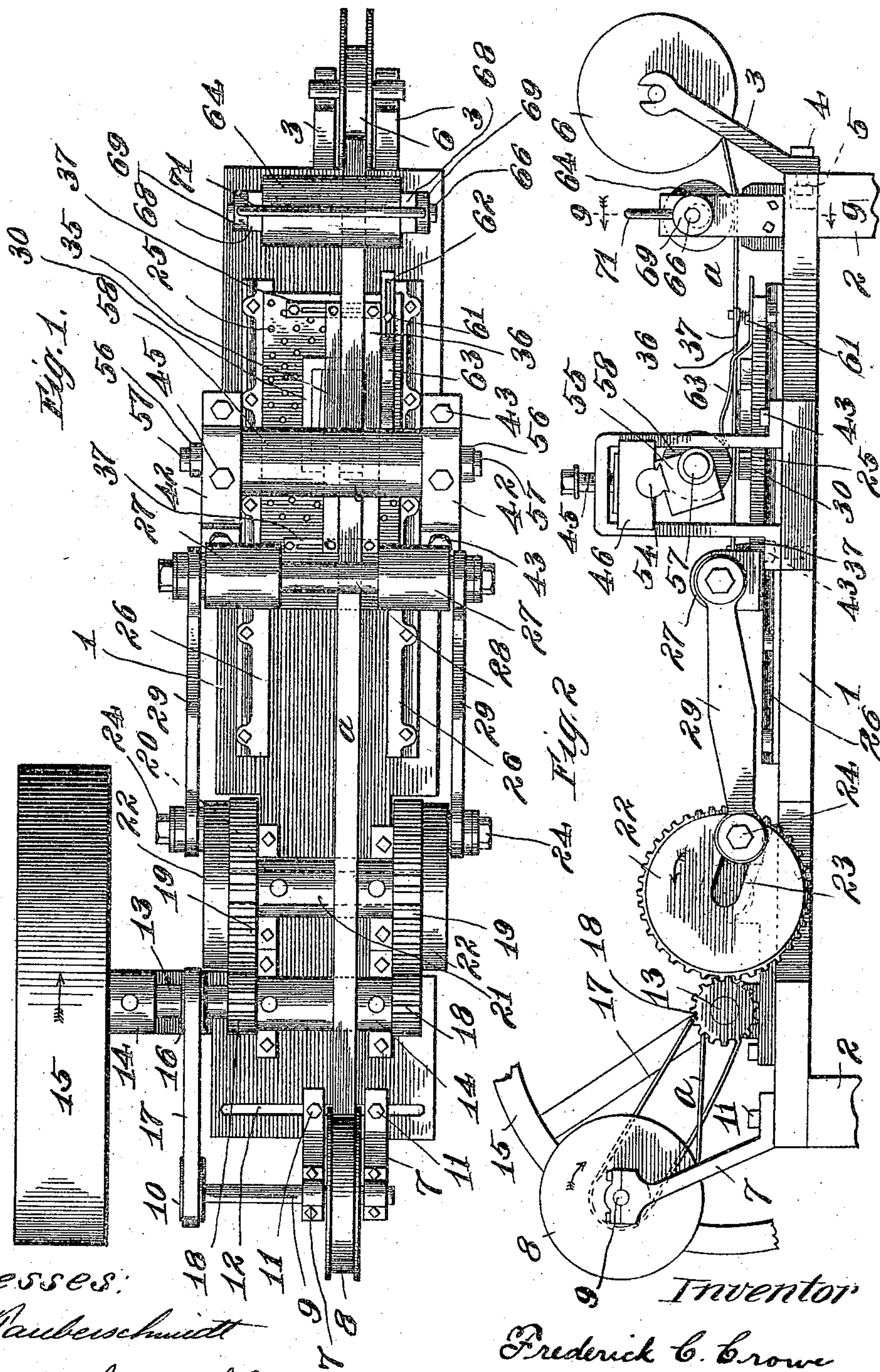
No. 820,183.

PATENTED MAY 8, 1906.

F. C. CROWE.
MACHINE FOR MAKING METAL TAGS.

APPLICATION FILED MAR. 27, 1905.

3 SHEETS—SHEET 1.



Witnesses:
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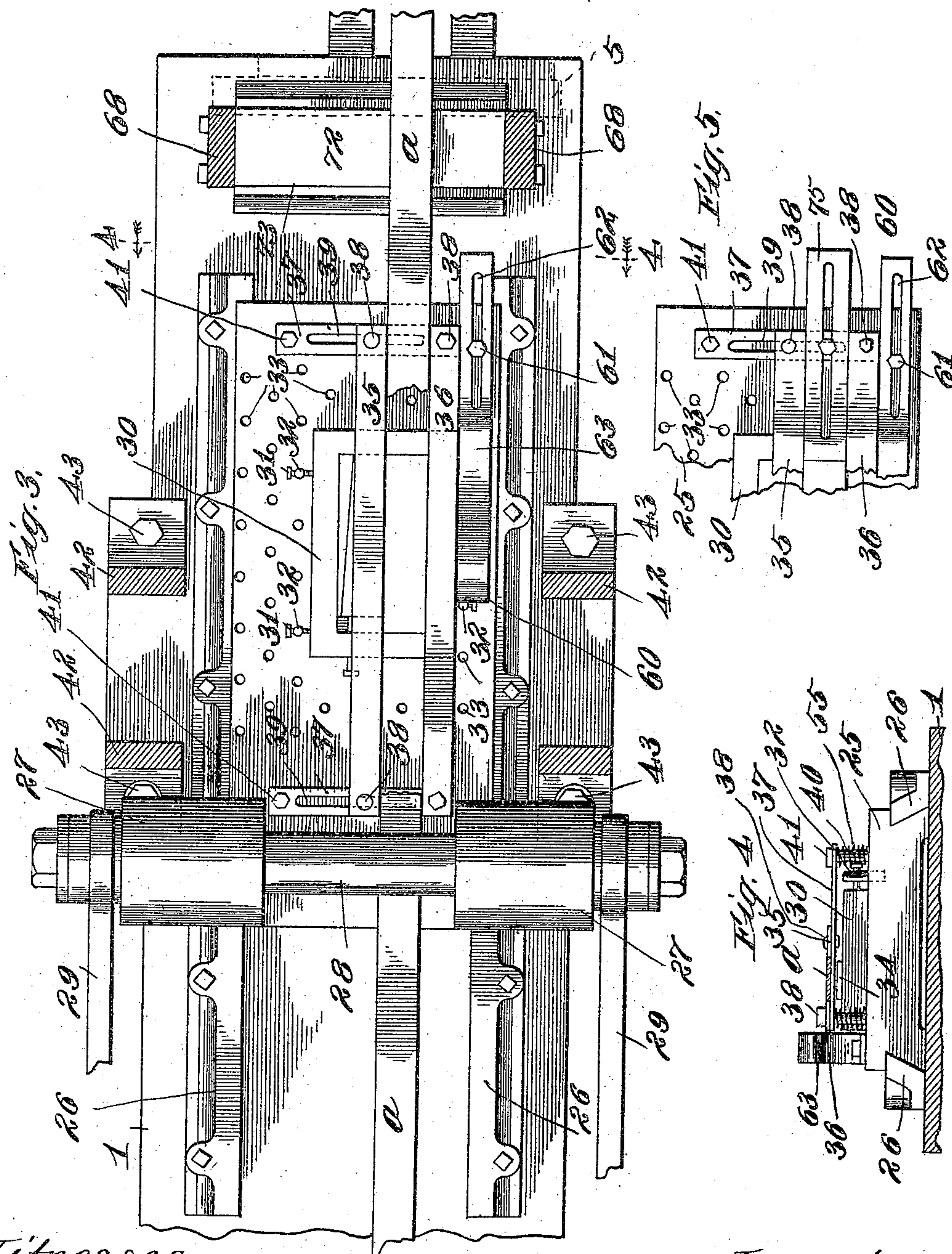
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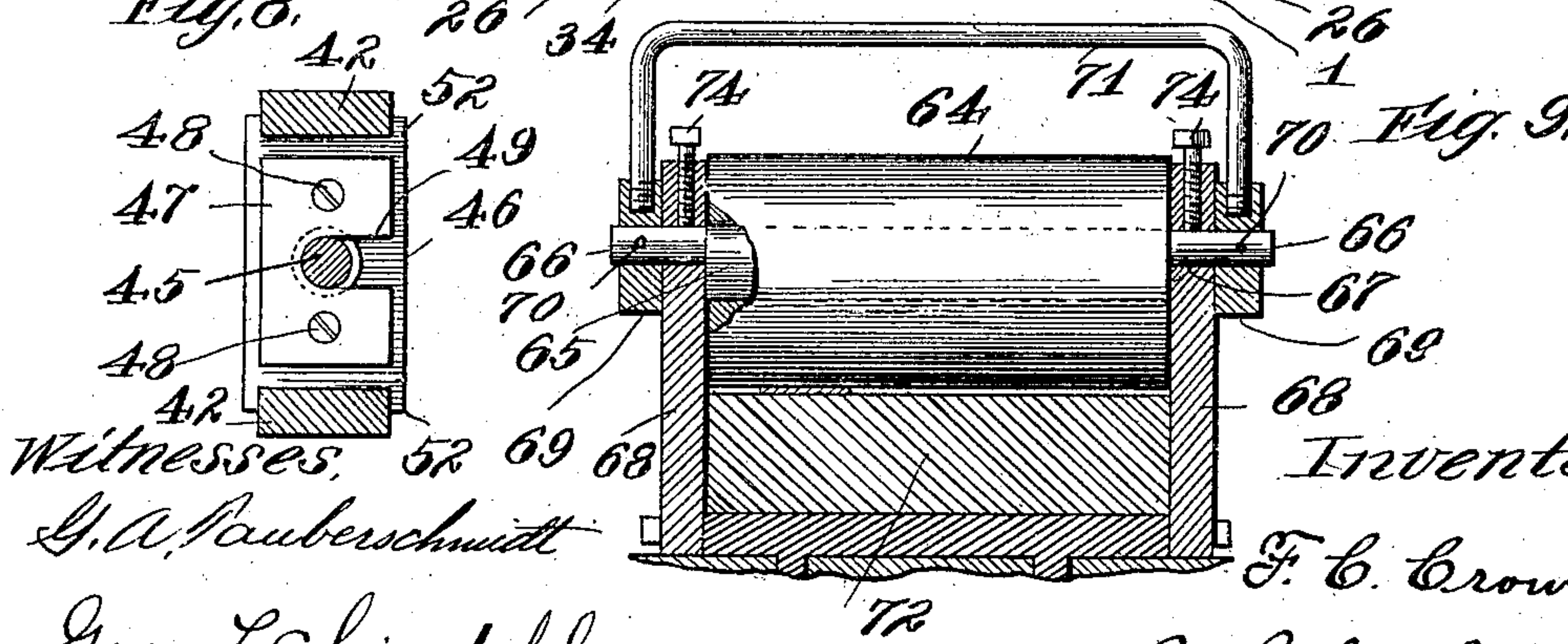
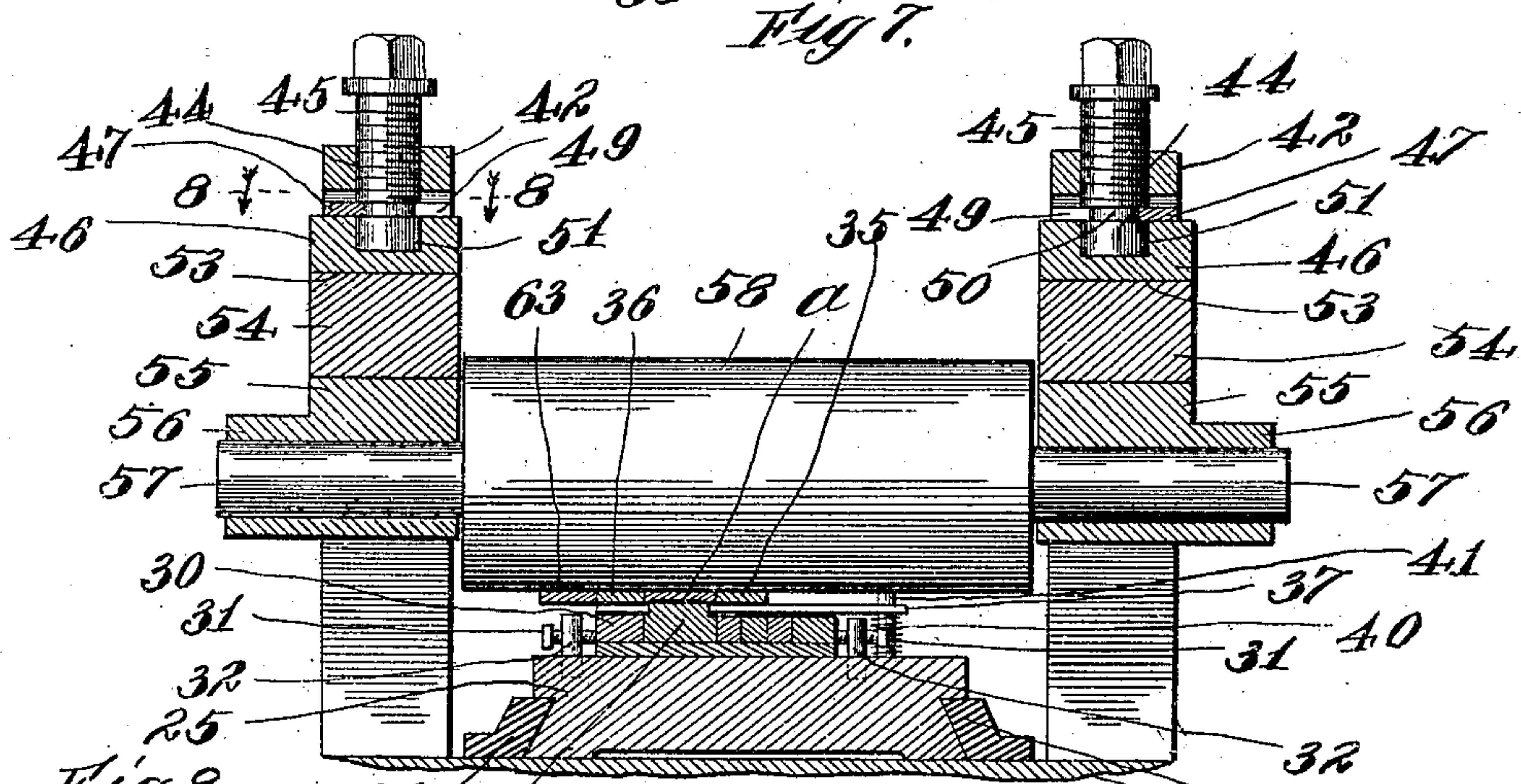
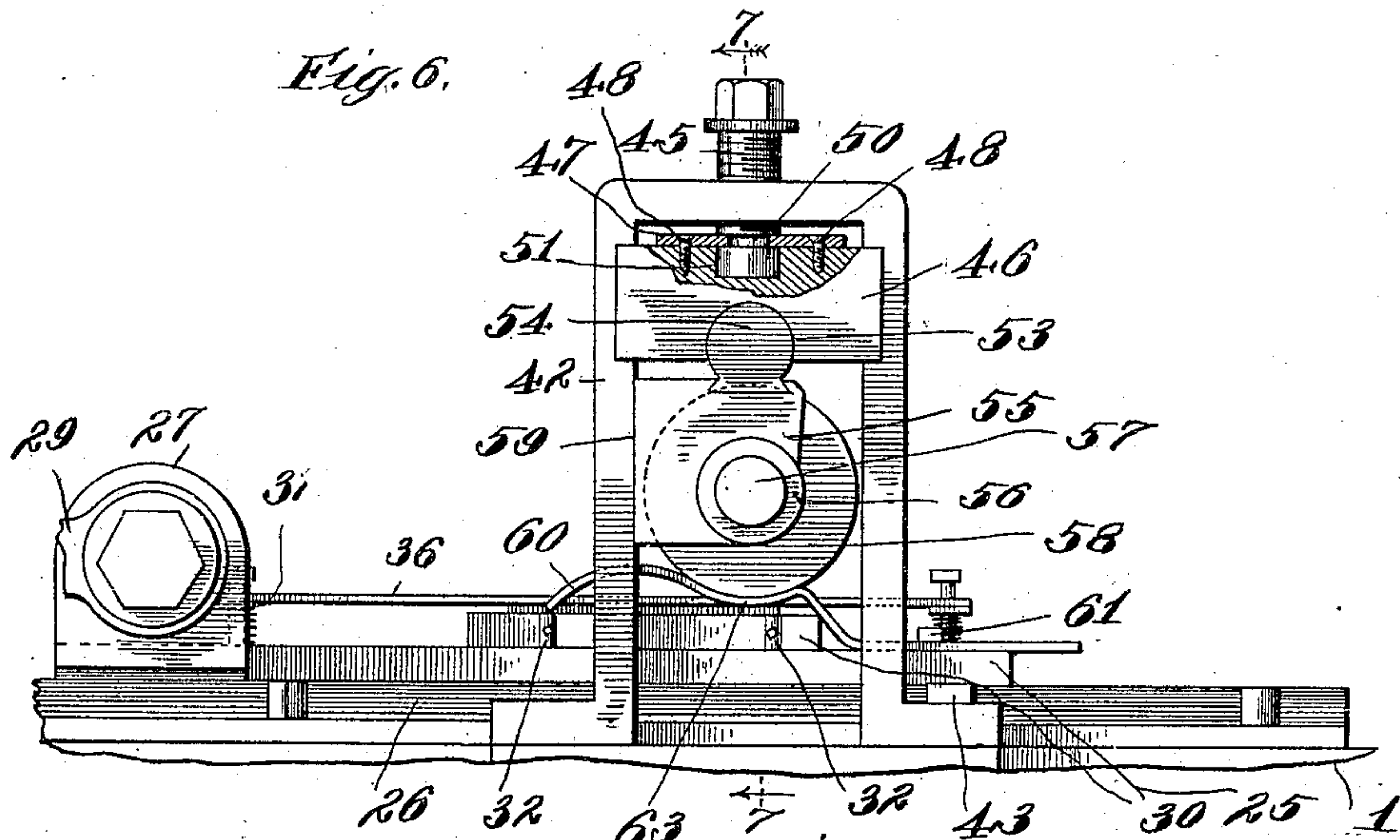
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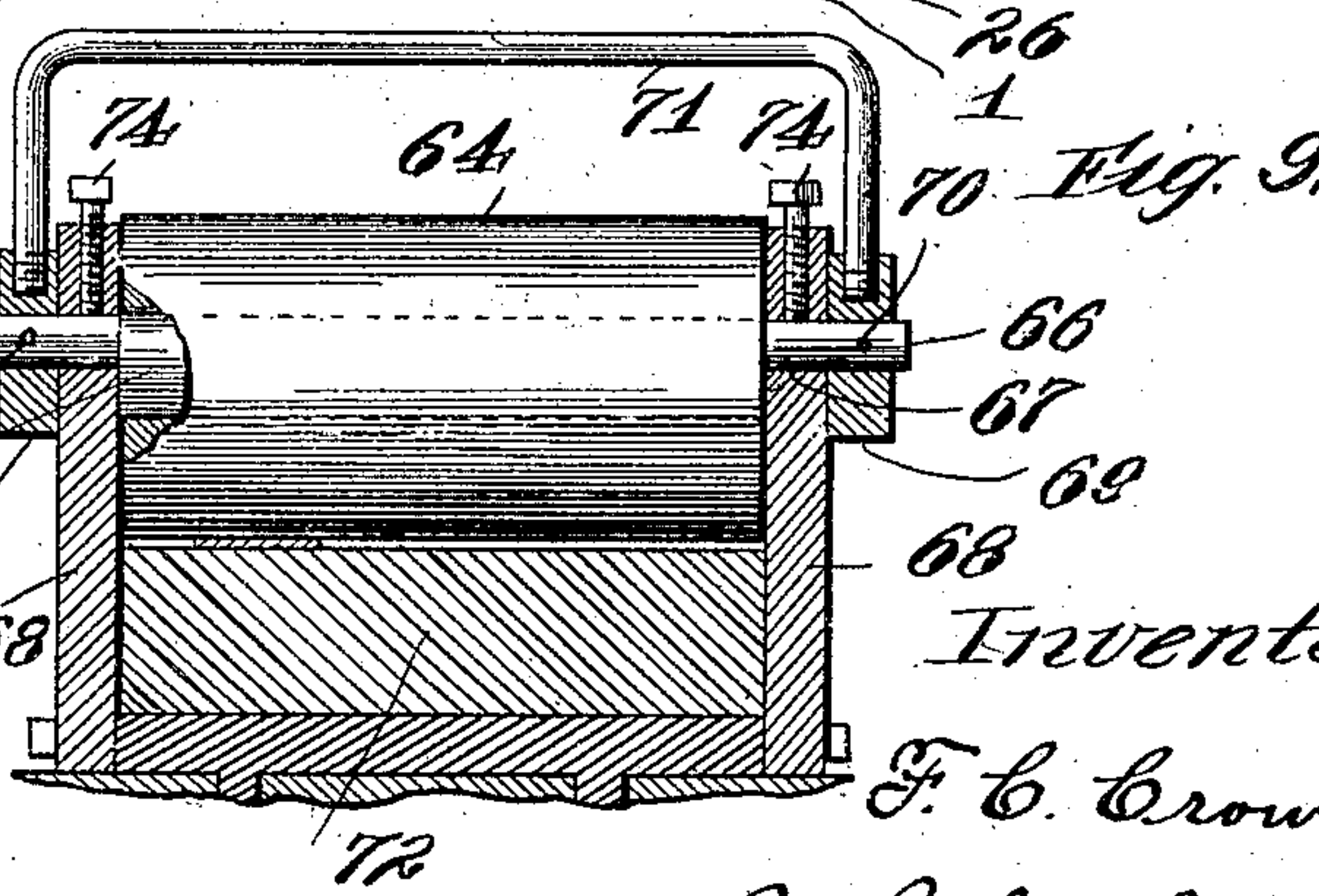
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR MAKING METAL TAGS.

No. 820,183.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed March 27, 1905. Serial No. 252,339.

To all whom it may concern:

Be it known that I, FREDERICK C. CROWE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Making Metal Tags, of which the following is a specification.

This invention relates to machines for making metal tags, name-plates, &c., and refers particularly to a mechanism for impressing a design upon the face of the tag.

The invention further refers to a tag-making machine wherein movable type is used to make up the printing-form.

The invention further refers to means for imparting a rolling impression between the plate and the form.

It further refers to means for removing that pressure upon the backward or recovery movement of the mechanism.

The invention further refers to means for feeding blank tags to dies in a continuous ribbon of metal, to means for adjusting the extent of the feed movement for tags of different lengths, and to means for placing suitable tension upon said ribbon to prevent accidental movement thereof.

The invention further refers to the various details hereinafter pointed out.

In the accompanying drawings, Figure 1 is a top plan view of a mechanism embodying the features of this invention. Fig. 2 is a side elevation of said mechanism. Fig. 3 is a horizontal sectional view through the mechanism, showing the reciprocatory form-carriage in elevation. Fig. 4 is an end elevation of the form-carriage. Fig. 5 is a fragmental top plan view of the form-carriage, showing an adjustable gage thereon. Fig. 6 is a side elevation of one of the housings for the impression-roller, showing said roller in its working position. Fig. 7 is a transverse vertical sectional view on dotted line 7 7 of Fig. 6. Fig. 8 is a horizontal sectional view on dotted line 8 8 of Fig. 7. Fig. 9 is a vertical sectional view through the bearings of the tension-roller.

In the embodiment herein shown of this invention I provide a bed 1, having supporting-legs 2 at its opposite ends. Arms 3 are adjustably mounted at the front end of the bed by means of bolts 4, passing through an elongated slot 5 in said bed, Figs. 2 and 3. The

arms 3 are adapted to support the journals of a spool 6 for containing a quantity of metallic ribbon *a* intended to be made into tags. At the rear end of the bed and supported upon the arms 7 is a similar spool 8, adapted to receive the ribbon from the spool 6 after the impression of the form has been made thereon. The spool 8 is mounted upon a shaft 9, which shaft has secured thereon a pulley 10. The arms 7 are secured to the bed 1 by means of bolts 11, passing through an elongated opening 12. The arms 3 and 7 are adjustably mounted, as shown, in order to accommodate spools of various widths. Near the rear end of the bed 1 a shaft 13 is rotatably mounted in bearings 14, which shaft carries at one of its ends a pulley 15 for receiving a belt (not shown) by means of which motion is imparted to said shaft. The shaft 13 also carries a small pulley 16, over which and over the pulley 10 a belt 17 is intended to run. The belt 17 is intended to rotate the spool 8 to take up the ribbon as it passes through the machine, being made loose enough to slip upon the pulleys 10 and 15 during the intervals between the ribbon-feeding movement of the impressing mechanism, as will hereinafter appear. Upon the shaft 13 are fixed two pinions 18, the teeth of which mesh with the teeth of two spur-gears 19, said spur-gears being fixed at the opposite ends of a shaft 20, supported in bearings 21. Outside the spur-gears 19 the shaft 20 carries two face-plates 22, each of which face-plates has an undercut radial slot 23, adapted to receive an adjustable wrist-pin 24.

A form-carriage 25 is arranged to have a sliding movement lengthwise of the bed 1, being guided upon the ways 26 on said bed. Upon the rear end of the carriage are two upwardly-extending bearings 27 for a shaft 28, the ends of which shaft are connected with the wrist-pins 24 by means of connecting-rods 29. The form-carriage is provided with a chase 30, adjustably secured in position upon said carriage by means of screws 31, passing through posts 32, the carriage being provided with numerous openings 33 for receiving said posts. In use a form 34, Fig. 7, is locked in the chase 30, and over this form passes the metallic ribbon *a*. The rib-

bon is guided with reference to the form 34 by means of guide-bars 35 and 36, Fig. 3, the ends of which bars are secured to cross-bars 37 by means of bolts 38. The bar 35 is adjustable toward and away from the bar 36 to accommodate ribbons of different widths, the bolts 38 for said bars 35 passing through elongated openings 39 in said cross-bars. The cross-bars 37 at their opposite ends are yieldingly supported above the carriage 25 upon compression-springs 40, surrounding bolts 41, fixed to said carriage.

Housings 42 are secured upon the upper face of the bed by means of bolts 43. Extending through the upper sides of each of said housings is a screw-threaded opening 44 for the reception of screws 45 for supporting bearing-blocks 46. Each of the blocks 46 is connected to its screw 45 by means of a plate 47, affixed to said block by screws 48, said plate having a slotted opening 49 therein, the walls of which opening lie within an annular groove 50 in the lower portion of the screw 45, the lower end of the screw lying within an opening 51 in said block. The bearing-blocks 46 are thus adjustable vertically in the housings 42, being guided in their movement by the flanges 52. In the lower face of each of the bearing-blocks 46 is a concave bearing-opening 53, the concavity being somewhat more than semicylindrical in extent in order to make the opening slightly undercut. In each of these openings is mounted a knuckle 54, connected, as by means of a dovetail connection, Fig. 6, with a tilting block 55. The tilting blocks 55 have bearings 56 for rotatably supporting the journals 57 of an impression-roller 58, the function of the roller 58 being to press the ribbon *a* into contact with the form upon the carriage 25. One side 59 of each of the tilting blocks 55 is adapted to bear squarely against one side of its housing 42 when the impression-roller is in printing position.

To swing the impression-roller 58 rearwardly to force the ribbon *a* against the form and to swing said roller forwardly to release the ribbon, I mount upon the carriage 25 a spring-arm 60. Said spring-arm is adjustably secured to the carriage by means of a screw 61, passing through an elongated opening 62 in said spring-arm and into a suitable opening in the carriage in order to provide for a longitudinal adjustment of said arm with relation to said carriage. The free end of the arm 60 is of ogee form, a portion 63 of said spring conforming to the periphery of the roller 58. Upon the rearward movement of the form-carriage the free end of the spring-arm 60 is forced under the roller 58, oscillating said roller rearward until the rear faces 59 of the tilting blocks 55 bear against the rear inner sides of the housings 42. When the carriage reaches its rearmost position, the portion 63 of the spring-arm 59 is in contact

with the periphery of the roller 58. Upon the forward movement of the carriage the roller remains in contact with said portion 63 of the arm 60 and is drawn forward, rising in its forward movement to allow the springs 40 to raise the ribbon *a* clear of the form.

A tension-roller 64 is rotatably mounted upon a shaft 65. The ends of said shaft are provided with eccentric extensions 66, which extensions lie within bearing-openings 67 in the upper ends of brackets 68, secured in any suitable manner upon the forward end of the bed 1. The extensions 66 at their ends carry collars 69, fixed to said extensions by means of pins 70 or any other suitable means, said collars being joined by means of an operating-bail 71, by means of which bail the roller 64 may be rocked in its bearings 67 toward and away from a friction-block 72. Said friction-block 72 lies within a frame 73, secured in any suitable manner to the bed 1. The tension-roller 64 may be locked in operative position by means of set-screws 74. The roller 64 and the block 72 frictionally engage the ribbon with sufficient force to prevent said ribbon from being moved by the rotation of the spool 8, the ribbon being drawn from between said roller and said block only when the impression-roller and the form grip the ribbon and move rearwardly.

In operation a spool 6, having wound thereon a metallic ribbon *a* of any suitable width within the limits of the machine, is placed upon the arms 3 and the free end of the ribbon passed between the tension-roller 64 and the friction-block 72 (said tension-roller being tilted for this purpose by means of the bail 71) and extending from said roller over the cross-bars 37, between the guide-bars 35 and 36, to the spool 8, upon which latter it is secured. A form containing the matter to be impressed upon the ribbon is secured within the chase 43. The bail 71 is moved to throw the tension-roller 64 into contact with the ribbon, so as to place a retaining tension upon said ribbon. Motion is imparted to the machine by passing a belt (not shown) over the pulley 15, the form-carriage 25 being reciprocated at each revolution of the wrist-pins 24. The extent of this reciprocating movement of the form-carriage is regulated by adjusting the position of the wrist-pin 21 within the elongated radial openings 20 of the face-plates 19, thus determining the length of ribbon fed between succeeding impressions accordingly as the tag impressions are long or short. At each rearward movement of the carriage 25 the impression-roller 58 is rocked or oscillated rearwardly, swinging said roller downward slightly and upon the continued rearward movement of the carriage pressing the ribbon closely in contact with the form. The spring-arm 60 is so adjusted that at the rearward extremity of the movement of the carriage the roller 58 lies in

the depression 63 in said arm. Upon the forward movement of the carriage the roller is moved forward by reason of its engagement with said arm. The guide-bars 35 and 36 lie

5 above the face of the chase 30 in order to guide the ribbon with relation to said form. When the roller 58 is swung down upon the form, said guide-bars are depressed against the action of the compression-springs 40.
10 The impression-roller 58 is vertically adjustable in position to suit ribbons of different thicknesses by means of the screws 45. After the ribbon has been thus fed through the machine the spool 8 is removed and the ribbon
15 cut up into tags in any suitable way.

When a comparatively small number of plates are to be made or when it is desirable to make each tag impression upon a separate plate instead of upon a continuous ribbon, I
20 mount upon one of the cross-bars 37 and between the guide-bars 35 and 36 an adjustable gage 75, Fig. 5. The separate tags are fed to and removed from the machine by hand, being placed upon the form and against the
25 gage 75 and removed therefrom when the carriage 25 is moving toward or away from the printing position.

My invention is not restricted to the precise construction and arrangement of parts
30 herein shown, as such construction and arrangement may be varied or modified without departing from the spirit and scope of the invention. I therefore wish to have it understood that I do not desire to limit myself to
35 the particular details herein specified.

I claim as my invention—

1. In a printing-machine, in combination, a reciprocating form-carriage; means for supporting a continuous strip of material along
40 the line of movement of said form-carriage; and means for recurrently moving said strip into and out of contact with a form on said carriage.

2. In a printing-machine, in combination,
45 a reciprocatory form-carriage; means for supporting a continuous strip of material along the line of movement of said form-carriage; and a roller movable toward and from said carriage for recurrently moving said strip into
50 contact with a form on said carriage.

3. In a printing-machine, in combination, a reciprocatory form-carriage; means for supporting a continuous strip of material along the line of movement of said form-carriage; a
55 roller movable toward and from said carriage for recurrently moving said strip into contact with a form on said carriage; and an arm carried by said carriage adapted to engage and move said roller.

60 4. In a printing-machine, in combination, a reciprocatory form-carriage; means for supporting a continuous strip of material along the line of movement of said carriage; means for preventing free movement of said strip;
65 and means for recurrently moving said strip

into and out of contact with a form on said carriage, said last-mentioned means and said carriage being arranged to grip and feed forward said strip.

5. In a printing-machine, in combination, 70 a reciprocatory form-carriage; an impression-roller mounted to oscillate toward and away from said carriage; and a spring-arm carried by said carriage adapted to engage and oscillate said roller. 75

6. In a printing-machine, in combination, a reciprocatory form-carriage; an impression-roller mounted to oscillate toward and away from said carriage; and a spring-arm carried by said carriage, the forward end of which
80 arm is adapted to engage said roller for oscillating it, said arm having a curved portion conforming to the periphery of said roller.

7. In a printing-machine, in combination, a supporting-frame; a reciprocatory form-
85 carriage on said frame; housings on said frame; a bearing-block in each of said housings; a bearing member pivotally connected with each of said blocks, said member having a portion adapted to contact said housing to
90 limit the movement of said bearing member; a roller carried by said bearing members; and means for pivotally moving said roller.

8. In a printing-machine, in combination, means for preventing free movement of the
95 material operated upon; and a printing-couple arranged to travel and to grip and feed forward the material against the action of the means for preventing free movement of the material. 100

9. In a printing-machine, in combination, a form-bed provided with a plurality of openings; posts adapted to be connected with said
105 bed by means of said openings; and set-screws having a screw-thread engagement with said posts for clamping a chase in position on said bed.

10. In a printing-machine, in combination, a reciprocatory form-bed; means for pressing the material operated upon into contact with
110 a form on said form-bed; and a yieldingly-supported frame carried by said form-bed comprising spring-supported cross-bars for supporting said material adjacent to the form. 115

11. In a printing-machine, in combination, a reciprocatory form-bed; means for recurrently pressing the material operated upon into contact with a form on said form-bed; said pressing means and form-bed being
120 adapted to advance the material through the machine and spring-actuated means on said form-bed for moving the material out of contact with the form.

12. In a printing-machine, in combination, 125 a form-bed, spring-supported cross-bars for supporting a strip of material above the form; and guide-bars carried by said cross-bars for guiding the strip.

13. In a printing-machine, in combination, 130

a form-bed; pins fixed to said bed; cross-bars slidably mounted upon said pins; springs surrounding said pins and supporting said cross-bars; and guide-bars adjustably secured to
5 said cross-bars.

14. In a printing-machine, in combination, a form-bed; a yielding support carried by

said form-bed for the material; and guide-bars for the material, carried by said support.

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Witnesses:

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