

May 9, 1933.

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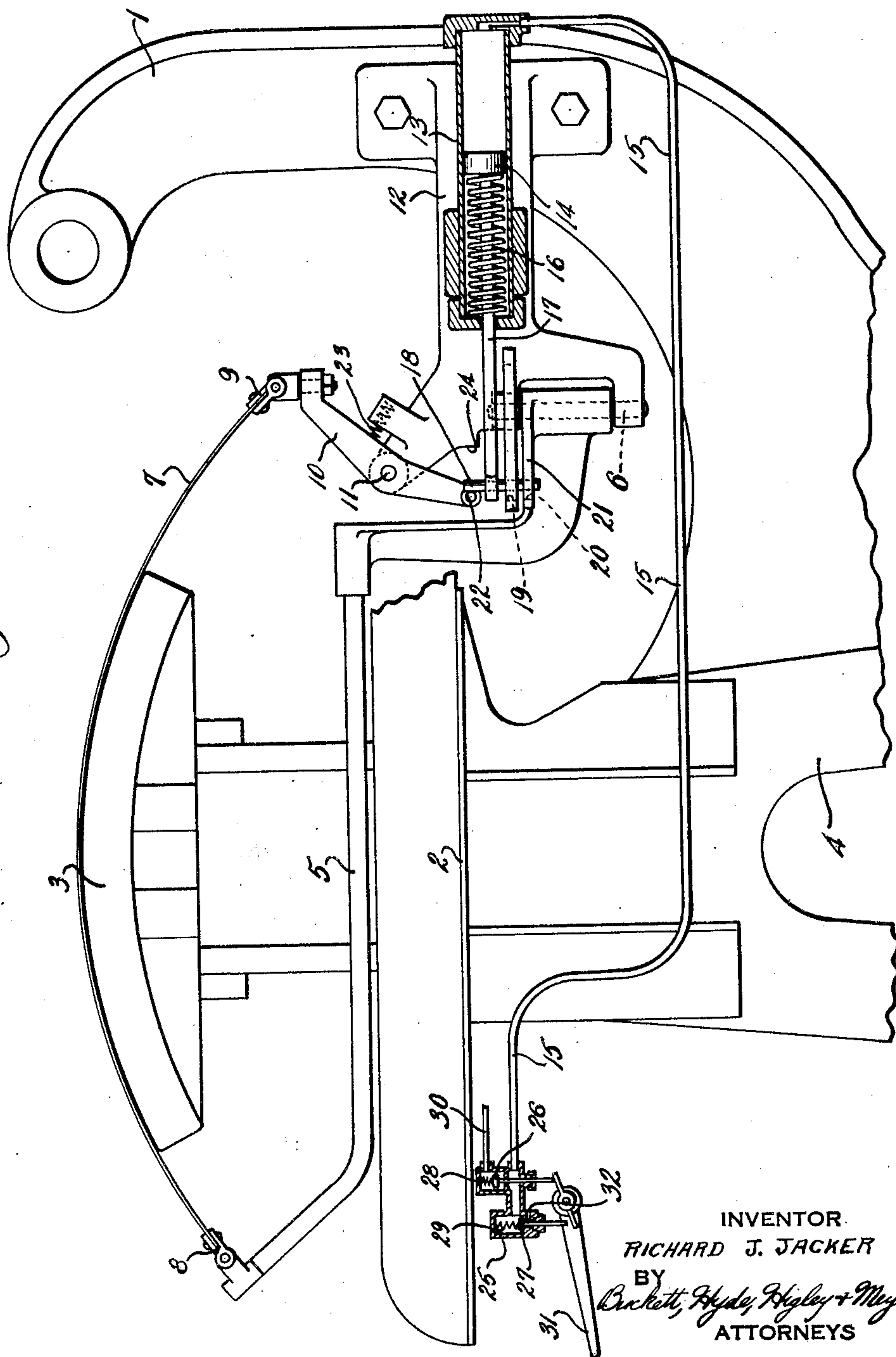
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TAIL CLAMP MECHANISM

Filed Oct. 29, 1931.

2 Sheets-Sheet 1

Fig. 1.



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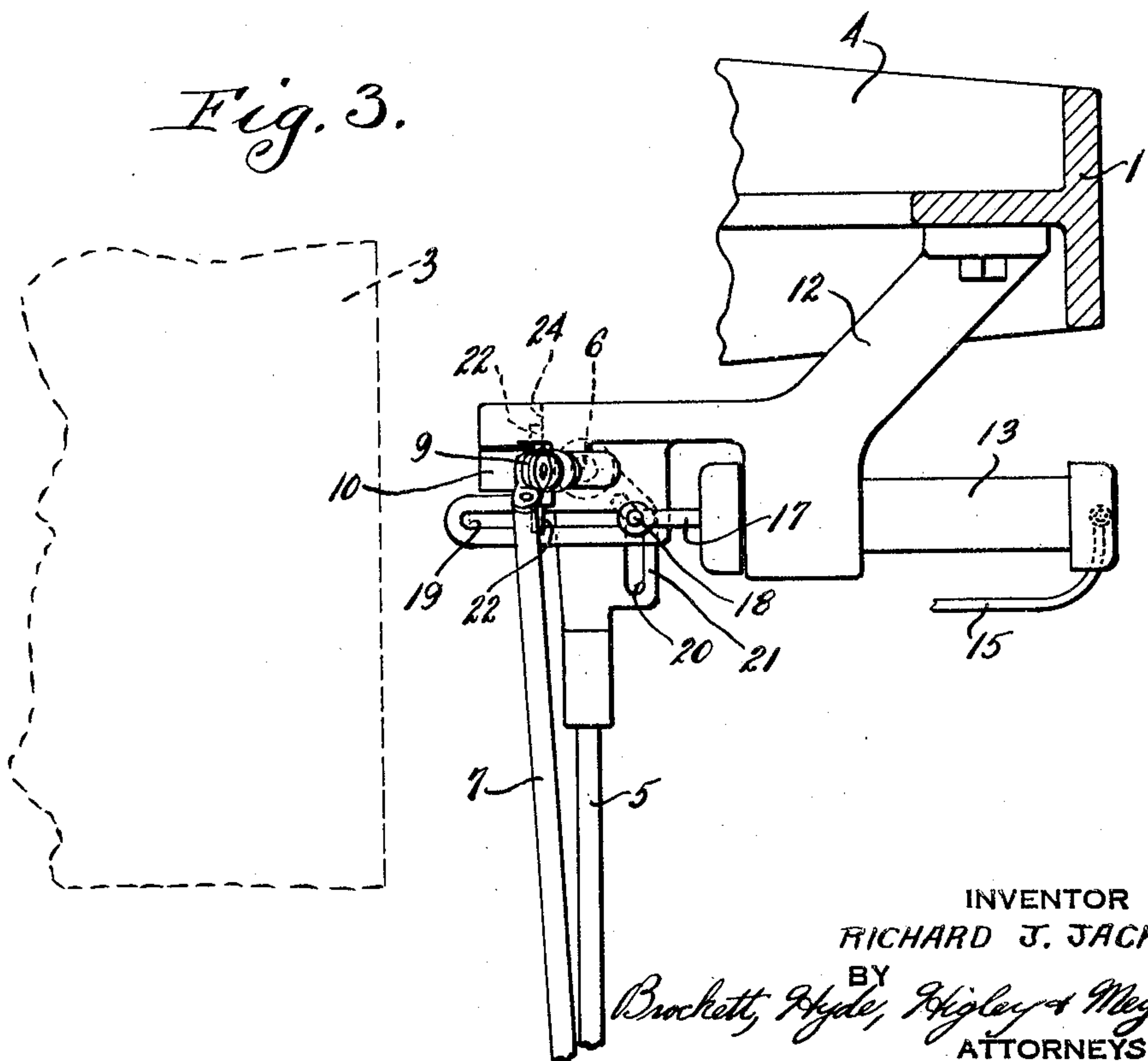
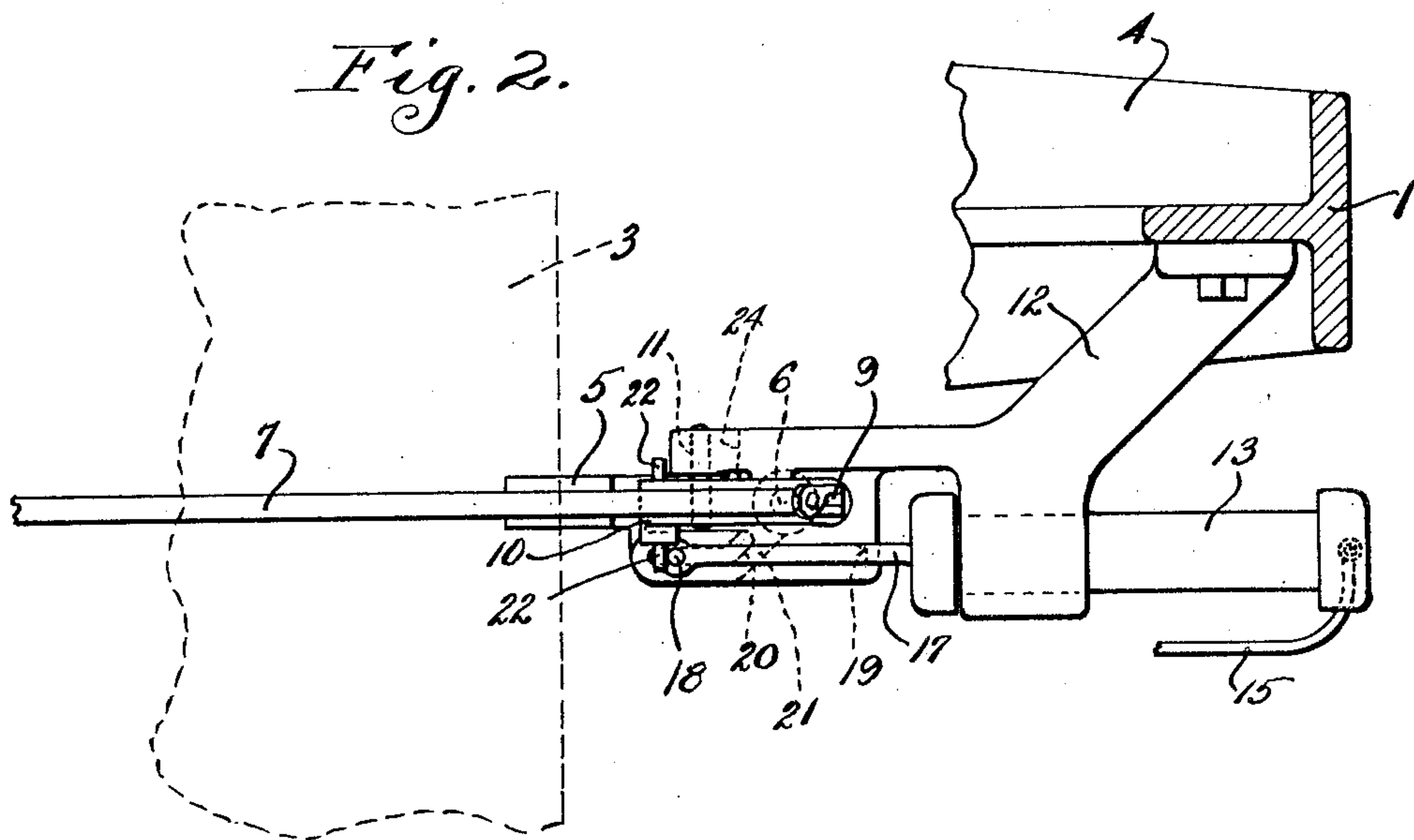
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2 Sheets-Sheet 2



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TAIL CLAMP MECHANISM

Application filed October 29, 1931. Serial No. 571,791.

My invention relates to an attachment for pressing machines and, particularly, to an attachment commonly known as a tail clamp which is adapted to hold the tail of a shirt in such position on the buck of a press that it may be properly pressed without necessitating the use of the operator's hands to hold the work in the proper position until the pressing head engages the work.

The objects of my invention are to simplify the construction of such work holding means, to reduce the cost of construction, and to provide a work holding means of the above type wherein the upkeep is as inexpensive as possible while, at the same time, providing a work holding means that is efficient in operation.

Various other objects and advantageous features of my invention will be seen in the following description and one embodiment thereof may be seen in the accompanying drawings wherein similar characters of reference designate corresponding parts, and wherein:

Fig. 1 is an end view of a portion of a garment press showing a work holding means embodying my invention, the work holding means being in clamping position; Fig. 2 is a plan view of a fragmentary portion of the work holding means shown in Fig. 1; and Fig. 3 is a view similar to Fig. 2 but showing the work holding means in unoperated position.

Referring to Fig. 1 of the drawings, I have shown a pressing machine, with the exception of the well known pressing head that is pivotally mounted on an arm 1 secured to the frame, which may be of any ordinary type but which is shown as consisting of a pressing table 2 and a pressing bed or buck 3, the table and buck being supported on a frame 4 that supports the previously mentioned arm 1.

In accordance with my invention, a work holding means is provided that consists of an arm 5 mounted on a vertical pivot 6 so as to be adapted to swing from its normal position at the rear of the buck 3 to a position under the buck as shown in Fig. 1. Mounted on the arm 5 is a flat spring band 7 that is

always in a plane above the top of the buck 3 and is so mounted that it will be curved to substantially conform to the convexly curved upper surface of the buck in transverse cross section.

One end of the band 7 is secured to the free end of the arm 5 by means of a fastening clip 8 and the opposite end of the band is secured, by means of a swivel connection 9, to one free end of a lever 10 that is pivotally mounted at 11 on a supporting bracket 12. With this construction, the band 7, after being swung to a position over the buck 3 as shown in Fig. 1 may be moved longitudinally by swinging the arm 10 about its pivot 11 to move the band into clamping engagement with the top of the buck 3 or the work thereon. The swivel connection 9 is provided to permit swinging of the band since the arm 10 and bracket 12 remain in the same position.

Suitable means are provided for swinging the arm 5 in a horizontal plane from a position under the buck 3 as shown in Fig. 1 wherein the band 7 is disposed transversely across the top of the buck, to a position substantially parallel to the longitudinal axis of the buck wherein the band 7 is out of operative position relative to the buck as shown in Fig. 3. This means consists of a cylinder 13 that is mounted in the bracket 12 and has a piston 14 therein. The piston is moved in one direction by fluid pressure entering the cylinder 13 through a conduit 15 and in the opposite direction by an expanding spring 16 disposed around a piston rod 17 and between the seating surface of the piston 14 and the corresponding surface of the cylinder 13.

The outermost end of the piston rod 17 is provided with a vertically extending pin 18 that projects upwardly and downwardly on both sides of the piston rod with the downwardly extending projection traveling in a guide slot 19 in the frame 12. The extreme lower end of the downward projection of the pin 18 is adapted to travel in an angular slot 20 in a horizontally disposed web 21 at the end of the arm 5, the slot 20 being so disposed that outward movement of the piston rod 17 and pin 18 will swing the arm 5 and the band

7 carried thereby to operative position relative to the buck 3. That is, outward movement of the piston rod 17 and pin 18 will swing the arm 5 to a position under the buck 3 as shown in Fig. 1 wherein the band 7 is in a position to cooperate with the work on the buck. Reversely, rearward movement of the piston 14 under the action of the spring 16 will swing the arm 5 and band 7 to the inoperative position hereinbefore described and shown in Fig. 3.

As shown in Figs. 1 and 2, the upwardly extending projection of the pin 18 is adapted to contact with a horizontally extending pin 22 on the lower end of the arm 10 as the piston rod 17 and pin 18 move outwardly. Then, continued outward movement of the piston rod and pin will swing the arm 10 clockwise about its pivot 11 which will draw the band 7 longitudinally and downwardly into engagement with the work on the buck 3 as shown in Fig. 1. Reversely, rearward movement of the piston rod 17 and pin 18 under the action of the spring 16 will result in a compression spring 23, which has been compressed by clockwise movement of the arm 10, being effective to swing the arm 10 in a contra-clockwise direction until the pin 22 abuts a stop 24 on the bracket 12. This contra-clockwise movement of the arm 10 is effective to move the band 7 upwardly so that the band 7 and arm 5 may be swung to inoperative position as hereinbefore described. The guide slot 19 in the bracket 12 is provided for the purpose of guiding the pin 18 in its movement to the left and right as shown in Figs. 1 and 3 and to relieve all side strain on the outermost end of the piston rod 17.

A control means for the fluid pressure supply flowing through the conduit 15 to move the piston 14 and its associated parts to the left as shown in Fig. 1, consists of a duplex valve structure 25 embodying a fluid pressure inlet valve 26 and a fluid pressure exhaust valve 27 that are normally held in closed and opened position respectively by means of springs 28 and 29. A fluid pressure supply conduit 30 leads to one side of the fluid pressure inlet valve 26. An operating handle 31 is adapted, when moved downwardly, to permit closure of the normally open exhaust valve 27 under the action of the spring 29 and to open the inlet valve 26 against the resistance of the spring 28 whereby fluid pressure will flow through the conduit 30, past the valve 26, and through the conduit 15 to the cylinder 13 wherein it is effective to move the piston 14 forwardly against the resistance of the spring 16. Reversely, upward movement of the handle 31 will result in closure of the inlet valve 26 and opening of the exhaust valve 27 whereby the fluid pressure supply will be cut off and the fluid pressure in the cylinder 13 will exhaust through the conduit 15, past the valve

27 and through the port 32 to the atmosphere.

With the above construction, I have provided a work holding mechanism which embodies a minimum number of parts and is simple in construction while being of a nature to permit movement of the work holding mechanism into and out of cooperative relation with the work by the simple expedient of operating a single valve. Further, I have provided a work holding means with the parts so arranged that movement of a piston through one portion of its cycle will be effective to move the work holding means into cooperative relation with a buck and into clamping relation with work thereon while movement of the piston through the remaining portion of its cycle will be effective to release the work holding means from clamping relation with the work and move the work holding means entirely out of cooperative relation with the buck.

What I claim is:

1. A pressing machine including, in combination with relatively movable head and bed members, a work grip for cooperation with said bed member, a pivoted arm having a clamping band thereon, said arm being mounted to swing in a plane parallel to the horizontal plane of said bed member to bring said band into and out of registry with the work surface of said bed member, a motor means, a slot and pin connection between said motor means and said pivoted arm whereby operation of said motor means is effective to swing said band into and out of registry with said bed member, and means whereby operation of said same motor means is effective to move said clamping band longitudinally and into clamping engagement with said bed.

2. A pressing machine including, in combination with relatively movable head and bed members, a work grip for cooperation with said bed member, a pivoted arm having a clamping band thereon, said arm being mounted to swing in a plane parallel to the horizontal plane of said bed member to bring said band into and out of registry with the work surface of said bed member, a motor means including a cylinder and piston disposed in and with the piston operating in a plane parallel with the horizontal plane of said bed member, a slot and pin connection between said motor means and said pivoted arm whereby operation of said motor means is effective to swing said band into and out of registry with said bed member, and means whereby operation of said same motor means is effective to move said clamping band longitudinally and into clamping engagement with said bed.

In testimony whereof I hereby affix my signature,

RICHARD J. JACKER.