

966,892.

H. DUVAL.  
FRICTION LET-OFF FOR LOOMS.  
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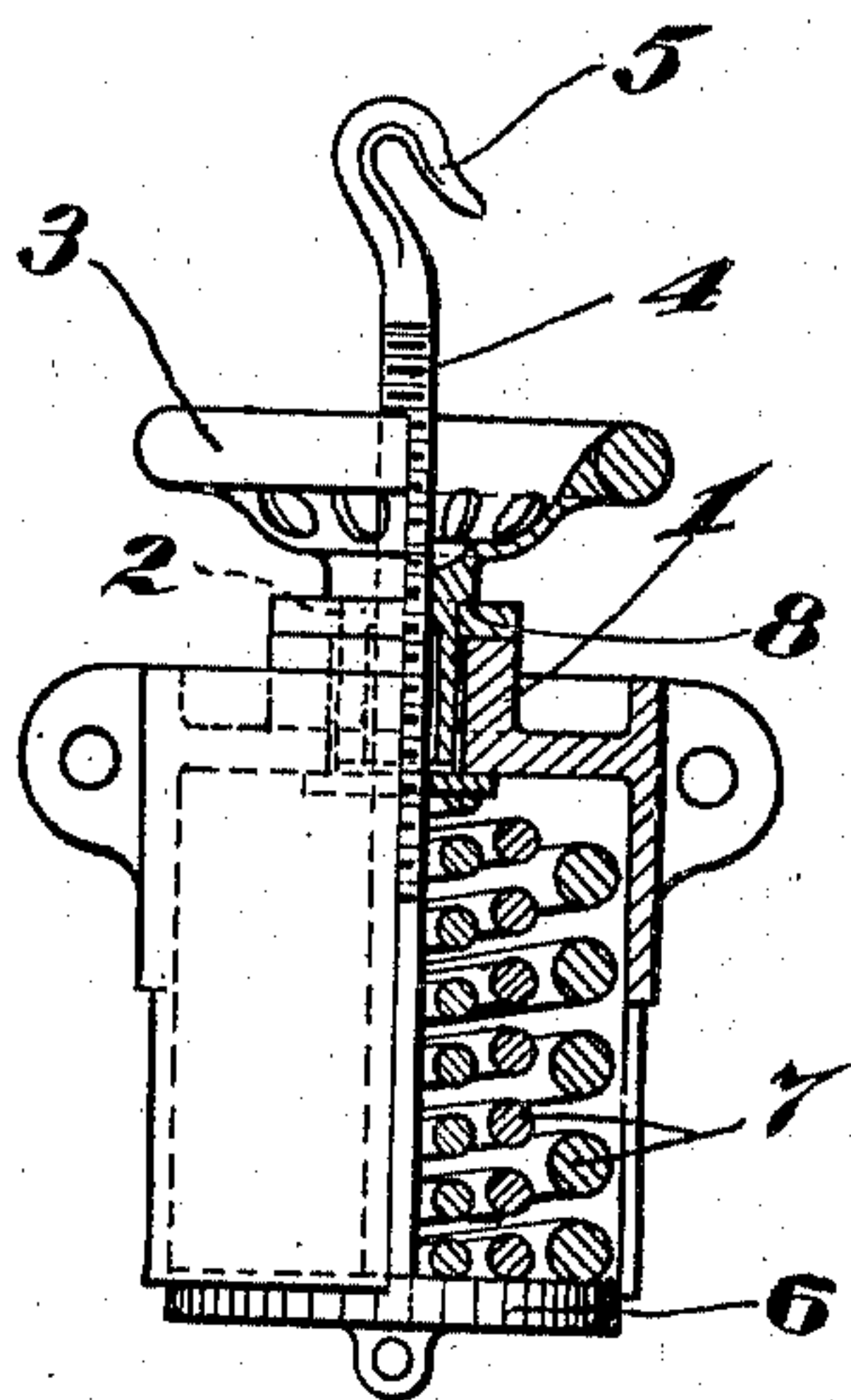
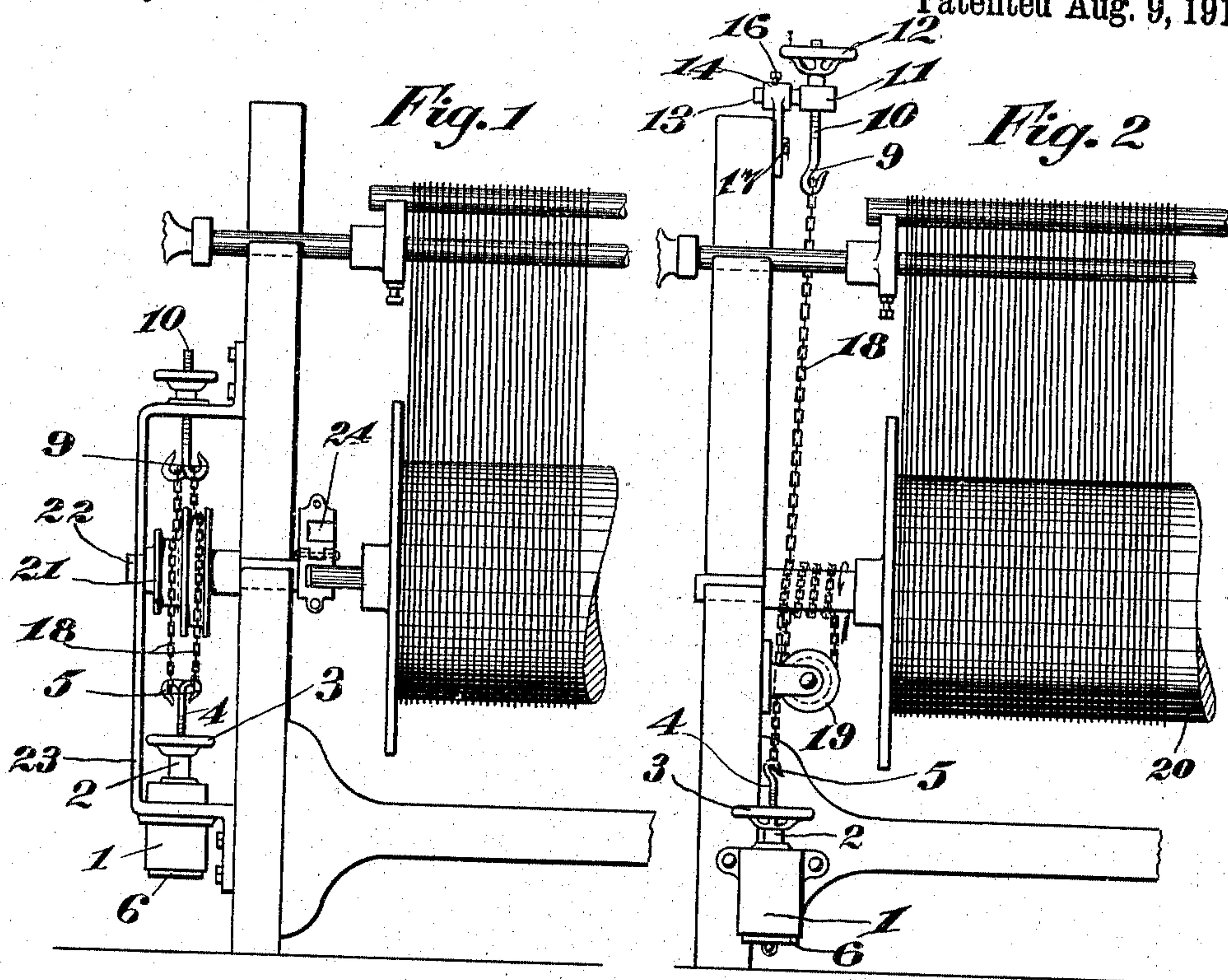


Fig. 3

Witnesses:

*L. H. Gauvin*  
*E. J. Gauvin*

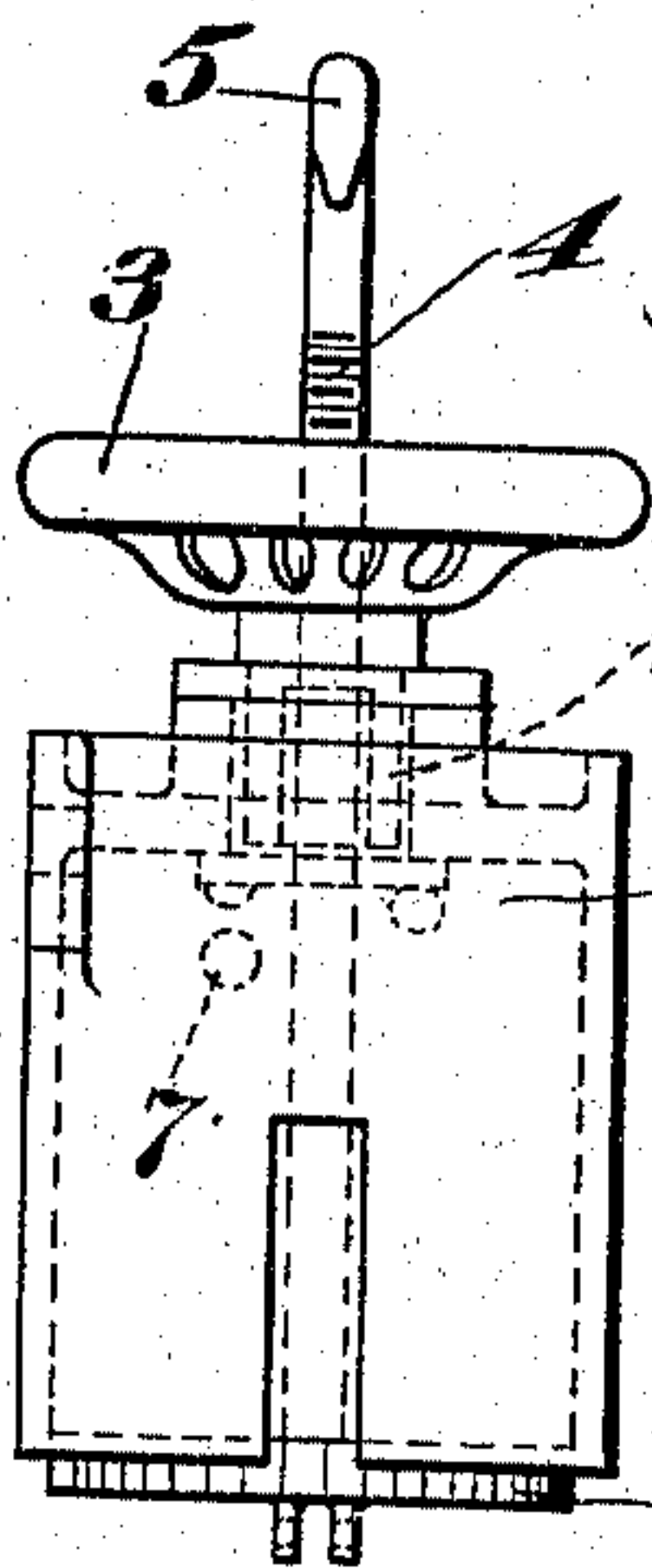


Fig. 4

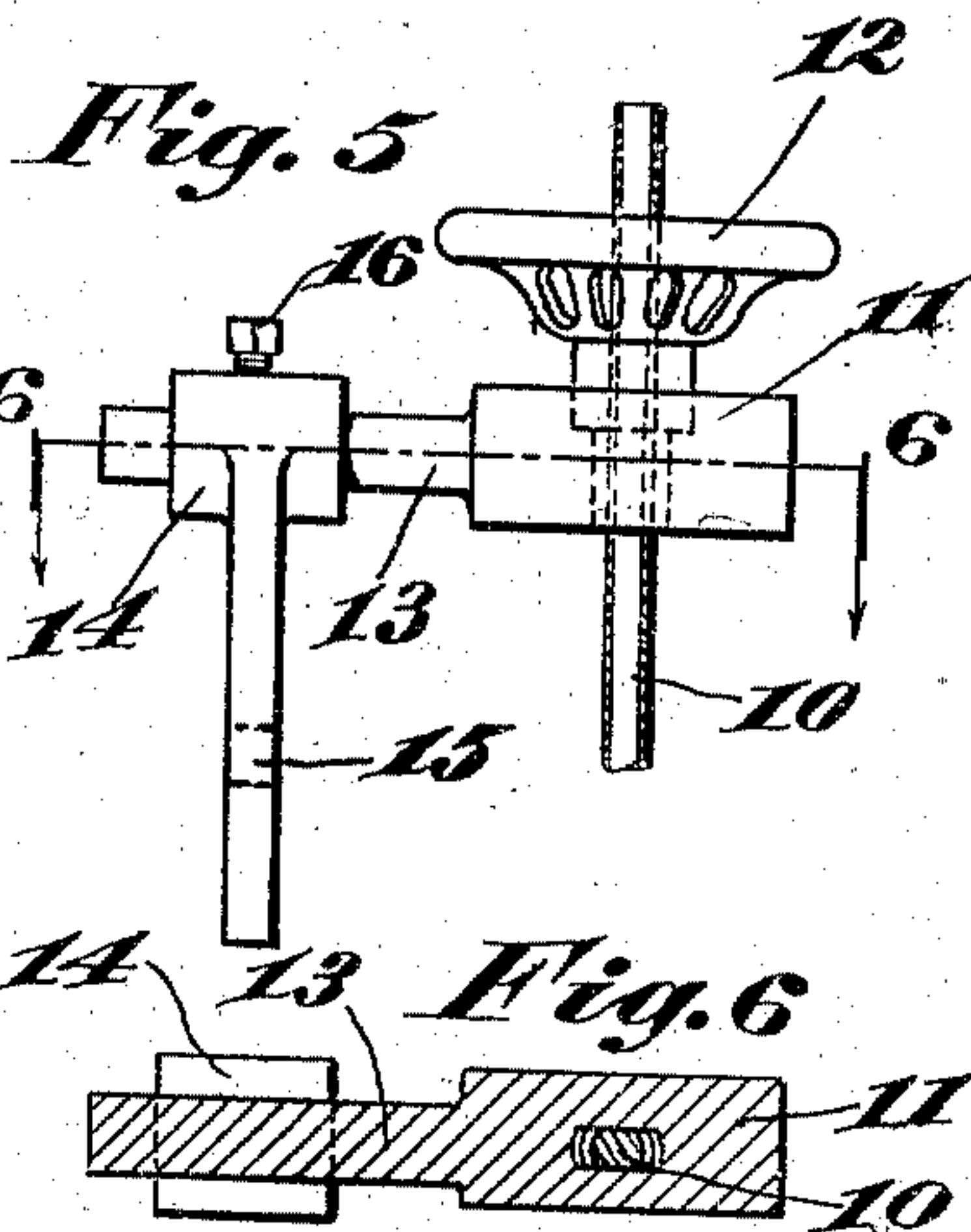


Fig. 5

Fig. 6

HENRI DUVAL  
Inventor,

By *Marion & Marion*  
Attorneys



# UNITED STATES PATENT OFFICE.

HENRI DUVAL, OF MONTREAL, QUEBEC, CANADA.

FRICTION LET-OFF FOR LOOMS.

966,892.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed September 25, 1909. Serial No. 519,625.

*To all whom it may concern:*

Be it known that I, HENRI DUVAL, a subject of the King of Great Britain, residing at the city and district of Montreal, in the Province of Quebec, Canada, have invented certain new and useful Improvements in Friction Let-Offs for Looms; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention to be hereinafter described relates to loom attachments, and more particularly to friction let-offs for warp rolls.

Broadly speaking, it comprises an adjustable lower hook, a spring tension support for the hook, means for increasing the tension of the support, an upper adjustable hook, means for adjusting the upper hook, and a friction band adapted to be mounted about a beam head or axle and connected at its opposite ends respectively to the upper and lower hooks.

In order to more clearly disclose the construction, operation and use of the invention, reference should be had to the accompanying drawings forming part of the present application. Throughout the several figures of the drawings, like reference characters designate the same parts.

In the drawings: Figure 1 is a front view of a portion of one end of a loom with a modified form of the invention applied; Fig. 2 is a similar view with the preferred form of the invention applied; Fig. 3 is a part sectional view showing the lower hook and its support; Fig. 4 is a side elevation of the same; Fig. 5 is a side elevation of the top hook and its support, detached; and, Fig. 6 is a cross section on line 6-6, of Fig. 5, looking in the direction of the arrows.

The main objects of the invention are to provide a friction let-off of simple economical construction and one in which the degree of friction may be varied, as desired.

In the preferred form of the invention, a cup or spring box 1 is provided and adapted to be secured to the frame of the loom, in any desired manner. The top of this box is provided with a central bore, in which is loosely journaled the tubular sleeve-like stem 2 of a hand wheel 3, through which is threaded the shank 4 of the lower hook 5, the lower end of the shank being provided with a head or cap plate 6 which travels

freely in the lower part of the cup or box 1. By rotation of the hand wheel 3 relatively to the shank 4, the plate 6 may be moved either toward or from the head 1, as desired. Coil springs 7 are mounted within the box 1 about the lower end of the hook shank 4 and rest upon the plate 6. Consequently, movement of the plate 6 will act to vary the tension of the springs 7.

The sleeve 2, of course, is formed to have both vertical sliding motion as well as rotary motion relatively to the cup or box 1, and to that end is formed with a long reduced portion terminating in a shoulder 8, which is adapted to engage the inner top of the box 1. The plate 6 and vertical walls of the box 1 may be formed with cooperating lugs and slots, if desired, to prevent rotation of the plate relatively to the box.

The upper hook 9 is provided with a threaded and flattened shank 10, which is passed through a cooperating opening through a block 11 and may be adjusted vertically by a small hand wheel 12 having a threaded sleeve somewhat similar to that of the hand wheel 3. This block 11 is provided with a shank 13, which is adapted to be adjustably held in a sleeve 14 carried by an arm 15 adjustably mounted on the frame work of the loom. The block 11 and sleeve 14, respectively, may be held in their adjusted positions by set screws 16 and 17. By flattening the shank 10, rotation of the same relatively to the block 11 may be prevented. The usual friction belt or chain 18 is connected at one end of the hook 9, passed downward and carried over a guide roller or pulley 19, wound several times about the axle or spindle end of the warp roll 20, and then secured to the lower hook 5.

If it is desired to increase the friction on the friction chain 18, the hand wheel 3 will be turned to draw the plate 6 upward against the tension of the springs 7. The hook 5 will, of course, be moved upward with the plate 6, causing slack in the friction chain 18. This slack may be taken up by adjusting the upper hook 9 a distance equal to the adjustment of the lower hook. The increased tension of the springs 7, bearing on the plate 6, will, of course, make increased friction between the friction chain 18 and the axle or spindle end of the warp roll 20.

Where a very considerable degree of friction is required, the slightly modified form shown in Fig. 1 may be used. This com-



prises the provision of a plurality of hooks 5 and 9 on each of the respective shanks, and a corresponding number of friction chains or belts 18, together with friction drums 21, about which the friction chains are passed. These friction drums are secured to a short auxiliary or stub shaft 22 journaled at its opposite ends in the loom frame and an attached bracket 23, respectively. The inner 10 end of this stub shaft is provided with a sectional hinged journal or bearing 24 adapted to receive the spindle end of the warp roll and to be keyed thereto to rotate therewith. The operation and use of the modified form 15 is substantially identical with that of the preferred form.

It is thought that the operation and use of the invention will be clear from the preceding detailed description.

20 Changes may be made in the construction, arrangement and disposition of the several parts of the invention, without in any way departing from the field and scope of the same, and it is meant to include all such 25 within this application, wherein only preferred forms have been disclosed.

Having thus fully described my invention,

what I claim as new and desire to secure by Letters Patent, is:—

In combination with a friction let-off of 30 the character described, a box adapted to be secured to a loom frame, a hand wheel provided with a tubular sleeve having a screw-threaded central bore, connections between said sleeve and the aforesaid box adapted to 35 allow both sliding longitudinal movement and rotary movement of said sleeve relatively to said box, a hook shank provided with threads adapted to cooperate with the threads of the tubular sleeve, said shank be- 40 ing mounted in said sleeve and movable therewith and provided with a plate or head on its lower end, tension springs disposed between said plate and the top of the aforesaid box, and means for adjusting said hook 45 shank with relation to said box in order to vary the tension of said springs.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

HENRI <sup>his</sup> X DUVAL.  
mark

Witnesses:

L. A. GAUVIN,  
E. J. GAUVIN.