

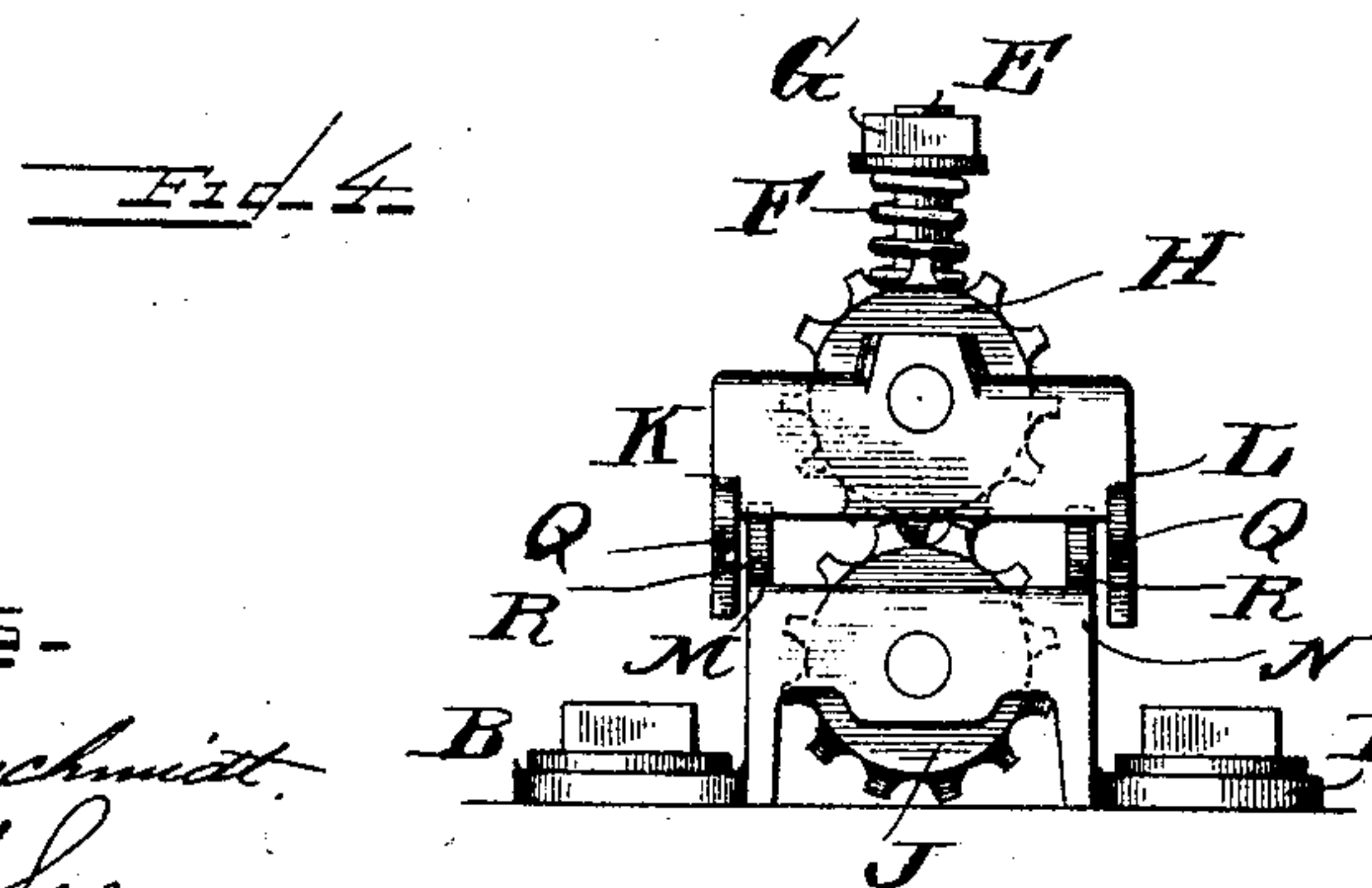
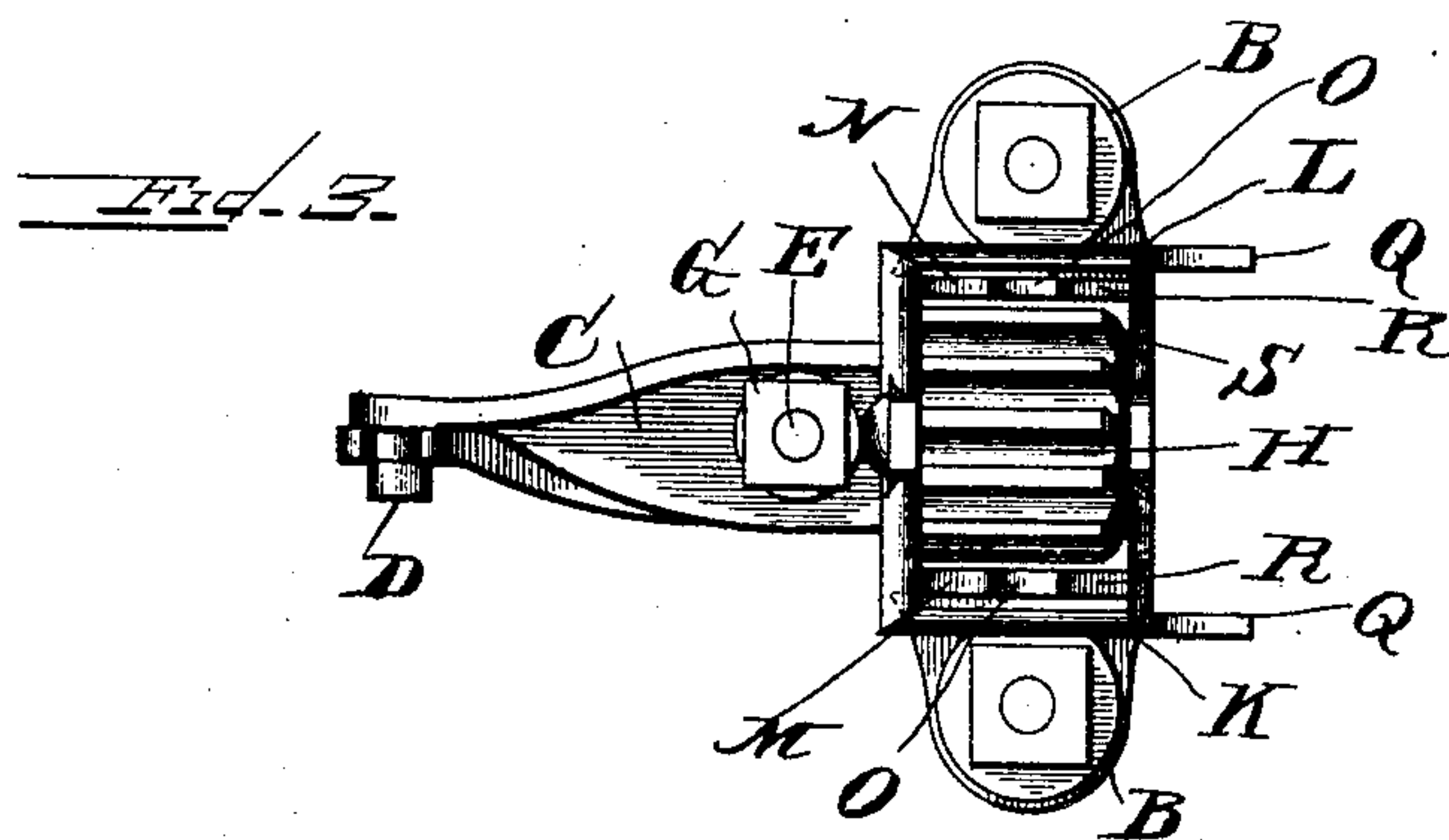
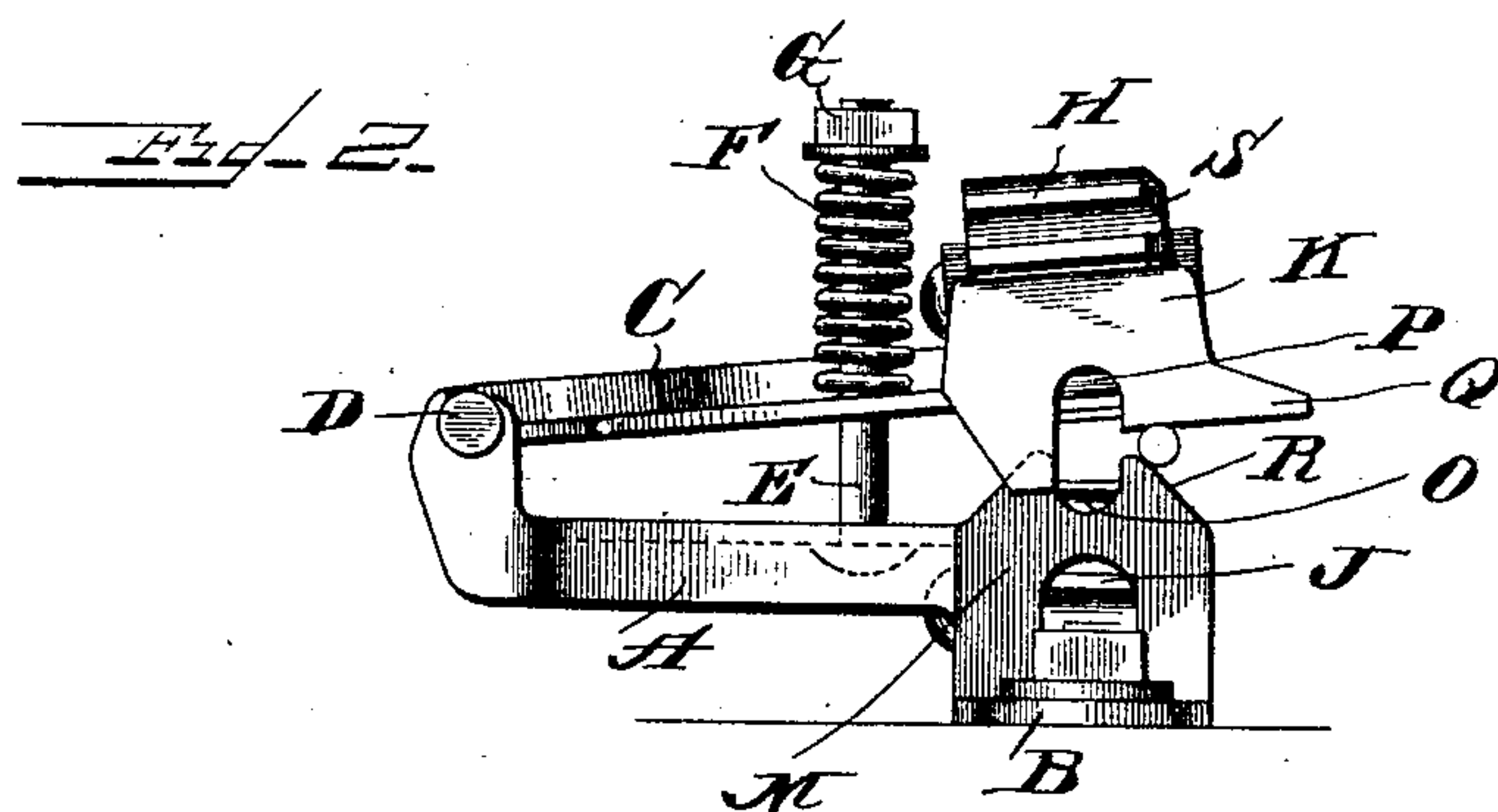
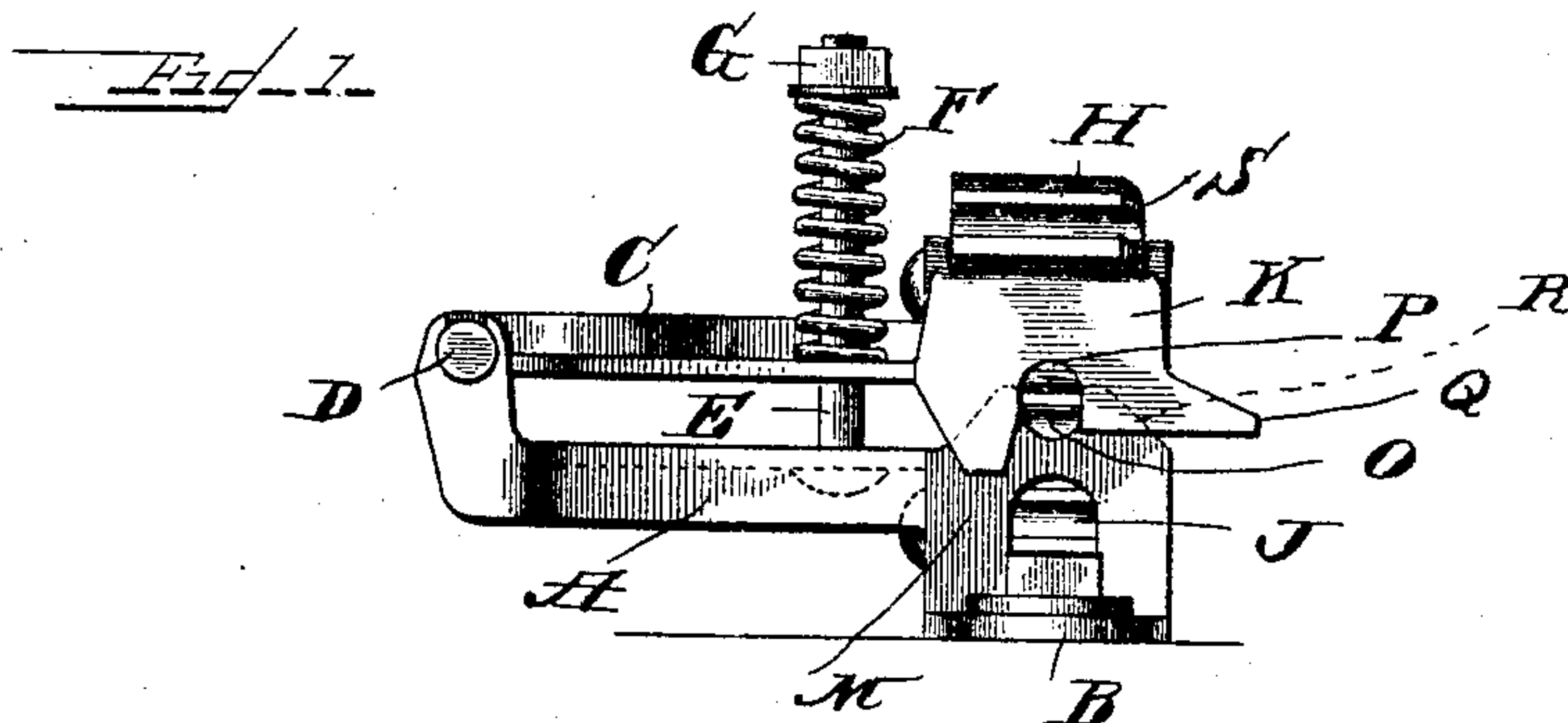
No. 771,229.

PATENTED OCT. 4, 1904.

F. P. BURKHARDT.
TENSION DEVICE FOR GRAIN BINDERS.

APPLICATION FILED JUNE 9, 1902. RENEWED OCT. 24, 1903.

NO MODEL.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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TENSION DEVICE FOR GRAIN-BINDERS.

SPECIFICATION forming part of Letters Patent No. 771,229, dated October 4, 1904.

Application filed June 9, 1902. Renewed October 24, 1903. Serial No. 178,416. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN P. BURKHARDT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Tension Devices for Grain-Binders, of which the following is a specification.

This invention relates to tension devices for grain-binders.

The object of the invention is to provide a tension device for the twine used in grain-binders which is simple in construction and efficient in operation and wherein the insertion of the twine in place is facilitated and its accidental removal therefrom guarded against.

The invention consists, substantially, in the construction, combination, location, and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings, and to the various views and reference-signs appearing thereon, Figure 1 is a view in side elevation of a tension device embodying the principles of my invention. Fig. 2 is a similar view showing the parts displaced in the act of inserting the binder-twine. Fig. 3 is a top plan view. Fig. 4 is an end elevation.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

Reference-sign A designates what I shall term the "stationary" part of the frame of the tension device or attachment and is provided with feet B, by which it may be securely bolted to a convenient part of the frame of the machine to which the device or attachment is to be applied.

C designates the movable part of the frame and is provided at one end with a lateral lug or pin D, arranged to be received in a suitable socket or seat formed in an upturned portion of the corresponding end of the stationary part of the frame to form a convenient hinged connection between said parts.

A rod or bolt E is secured in the stationary part A of the frame and passes loosely through an opening in the swinging or movable part C. A spring F is interposed between a nut G, screwed upon the end of rod or bolt E and the movable or swinging part of the frame. The tension of this spring is exerted to yieldingly press the movable part C toward or upon the stationary part A of the frame, and by turning up or backing off the nut G the tension of the spring F may be adjustably regulated. In the free end of movable or swinging part C of the frame is journaled a tension-roller H, the axis of said roller extending lengthwise of said frame part. A similar and cooperating roller J is similarly journaled in the corresponding end of the stationary part A of the frame. If desired, the rollers H J may be fluted, as shown, in order to secure a better gripping action or effect upon the twine, although my invention is not to be limited or restricted in this respect. The roller H is surrounded by a bracket forming part of the swinging or movable frame C and having side pieces K L. Similarly the roller J is surrounded by a bracket forming part of stationary frame A and having similar side pieces M N, and under normal conditions the side pieces K L lap over or past the side pieces M N, as shown most clearly in Fig. 4. In the upper edge of each of the side pieces M N is formed an open-sided notch or seat O, and a similar and cooperating notch or seat P is formed in the lower edge of each of the side pieces K L, said notches or seats cooperating to form a groove when the parts A and C of the tension-device frame are held together in normal relation adapted to receive the binder-twine therein, as will be readily understood. Each of the side pieces K L is provided with an outwardly-projecting extension Q, underneath which the binder-twine may be engaged when it is desired to insert the same into the tension device. In order to facilitate the insertion of the twine into the tension device and between the tension-rollers the front upper edge of each of the side pieces M N is beveled or inclined upwardly, as indicated at

R, and in order to facilitate the entrance of the twine between the tension-rollers H J the front ends of the rollers are coöperatingly beveled, as indicated at S, thereby aiding in the insertion of the twine between the rolls.

Having now described the mechanical construction and arrangement of the tension device embodying my invention, I will set forth the purpose, function, and mode of operation thereof. When it is desired to insert the twine in the device, the twine is grasped by the operator on opposite sides of the device and engaged underneath the projecting extensions S of the frame C. By exerting an upward pull on the twine the part C of the frame is yieldingly raised or swung upwardly against the tension of spring F and the twine rides up the inclined surface R of the side pieces M N, as clearly indicated in Fig. 2. The beveled ends S of the tension-rollers H J facilitate the entrance of the twine between said rollers and enable the twine to be readily and easily drawn in between said rollers until it finally enters the notches or seats O P, whereupon the movable frame C snaps back toward the part A of the frame, and thereby locks the twine against danger of being drawn out of the tension device laterally, while it is permitted to be drawn through the rollers as it is required for use, the spring tension exerted upon the rollers serving to maintain the desired degree of tension thereon, and by adjusting the nut G the degree of said tension may be adjustably regulated.

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. In a tension device for grain-binders, a fixed and a movable frame, coöperating rollers mounted therein, a spring arranged to exert its tension on said movable frame to hold the same pressed yieldingly upon the fixed frame, said movable frame provided with side extensions or projections underneath which the twine may engage to operate said frames in the insertion of the twine between said rollers, as and for the purpose set forth.

2. In a tension device for grain-binders, a fixed and a movable frame, coöperating rollers mounted therein, a spring arranged to exert its tension on said movable frame to yieldingly press the same upon said movable frame, said frames provided with side plates having coöperating seats or recesses arranged to receive the twine when inserted between the rollers and prevent lateral displacement thereof, as and for the purpose set forth.

3. In a tension device for grain-binders, a fixed and a movable frame, rollers mounted in said frames, and means for yieldingly pressing said movable frame upon or toward said fixed frame, said movable frame provided with an extension or projection, and said fixed

frame having inclined surfaces to facilitate the insertion of the twine between said rollers, as and for the purpose set forth.

4. In a tension device for grain-binders, a fixed and a movable frame, rollers mounted in said frames, and means for yieldingly pressing said movable frame upon or toward said fixed frame, coöperating seats or recesses formed in said frames and adapted to receive the twine when inserted between said rollers, said movable frame provided with an extension and said fixed frame provided with coöperating inclined surfaces to facilitate the insertion of the twine between said rollers and into said seats or grooves, as and for the purpose set forth.

5. In a tension device for grain-binders, frames pivotally connected together at one end and each carrying a tension-roller in the free end thereof, means for yieldingly pressing said frames together or toward each other, said rollers provided with inclined or beveled surfaces on the ends thereof farthest removed from the hinged connections of said frames to facilitate the insertion of the twine therebetween, and said movable frame having side extensions on opposite sides of the roller carried thereby and extending beyond the end of said roller, as and for the purpose set forth.

6. In a tension device for grain-binders, frames pivotally connected together at one end, rollers mounted in the free ends of said frames, means for yieldingly pressing said rollers toward each other, said frames having plates, said plates on one of said frames having extensions or projections on the side plates, the other of said frames provided with coöperating inclined surfaces and coöperating seats or grooves formed in said side plates, all combined and arranged as and for the purpose set forth.

7. In a tension device for grain-binders, relatively separable rollers between which the twine is held when in place, a twine-guide to receive the twine when inserted in place between the rollers, and means operated by the separation of the rollers to open the guide to receive the twine, as and for the purpose set forth.

8. In a tension device for grain-binders, relatively separable rollers between which the twine is held when in place, a twine-guide arranged on opposite sides of said rollers to receive the twine when inserted in place between the rollers, and means operated by the separation of the rollers to open the guides to receive the twine therein, as and for the purpose set forth.

9. In a tension device for grain-binders, relatively movable frames, rollers carried by said frames and between which the twine is held when in place, means for yieldingly pressing said rollers toward each other, said frames having side plates operating past each other, and having seats or grooves formed therein

adapted to form a guide to receive the twine when the latter is inserted between the rollers, whereby the separation of said frames opens said seats to receive the twine therein, 5 as and for the purpose set forth.

10 10. In a tension device for grain-binders, a fixed and a movable frame, coöperating rollers mounted in said frames, a spring arranged to exert its tension on said movable frame to hold the same pressed yieldingly upon the fixed frame, one of said frames provided with a side extension or projection parallel with

the axes of the rollers and extending beyond the ends thereof, and underneath which projection the twine may engage to separate said frames in the insertion of the twine between said rollers, as and for the purpose set forth. 15

In witness whereof I have hereunto set my hand, this 5th day of June, 1902, in the presence of the subscribing witnesses.

FRANKLIN P. BURKHARDT.

Witnesses:

A. L. SPRINKLE,
E. H. KIMBARK.