

No. 706,989.

Patented Aug. 12, 1902.

R. A. MYERS.
TWINE SPINNING MACHINE.

(Application filed Jan. 28, 1902.)

(No Model.)

2 Sheets—Sheet 2.

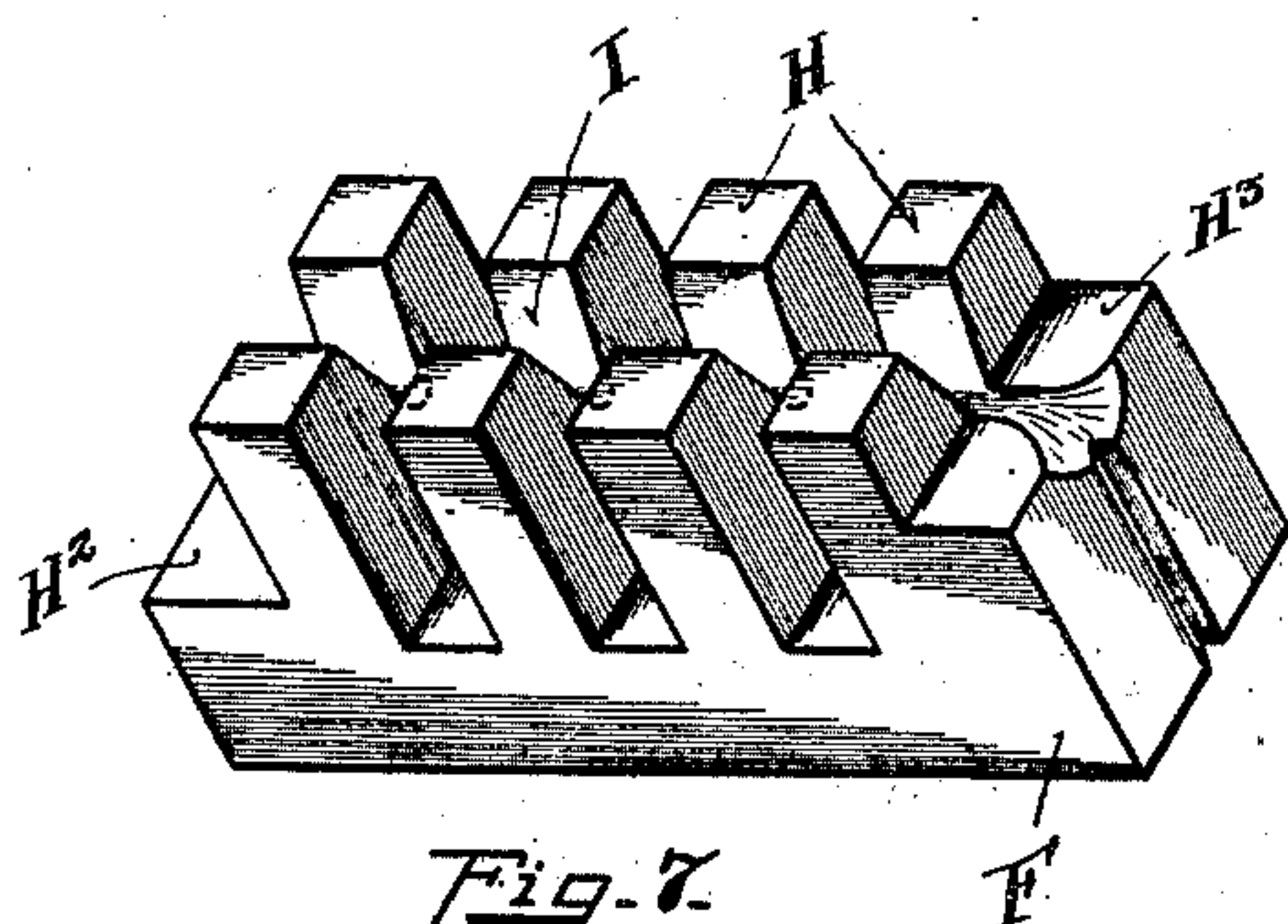


Fig. 7.

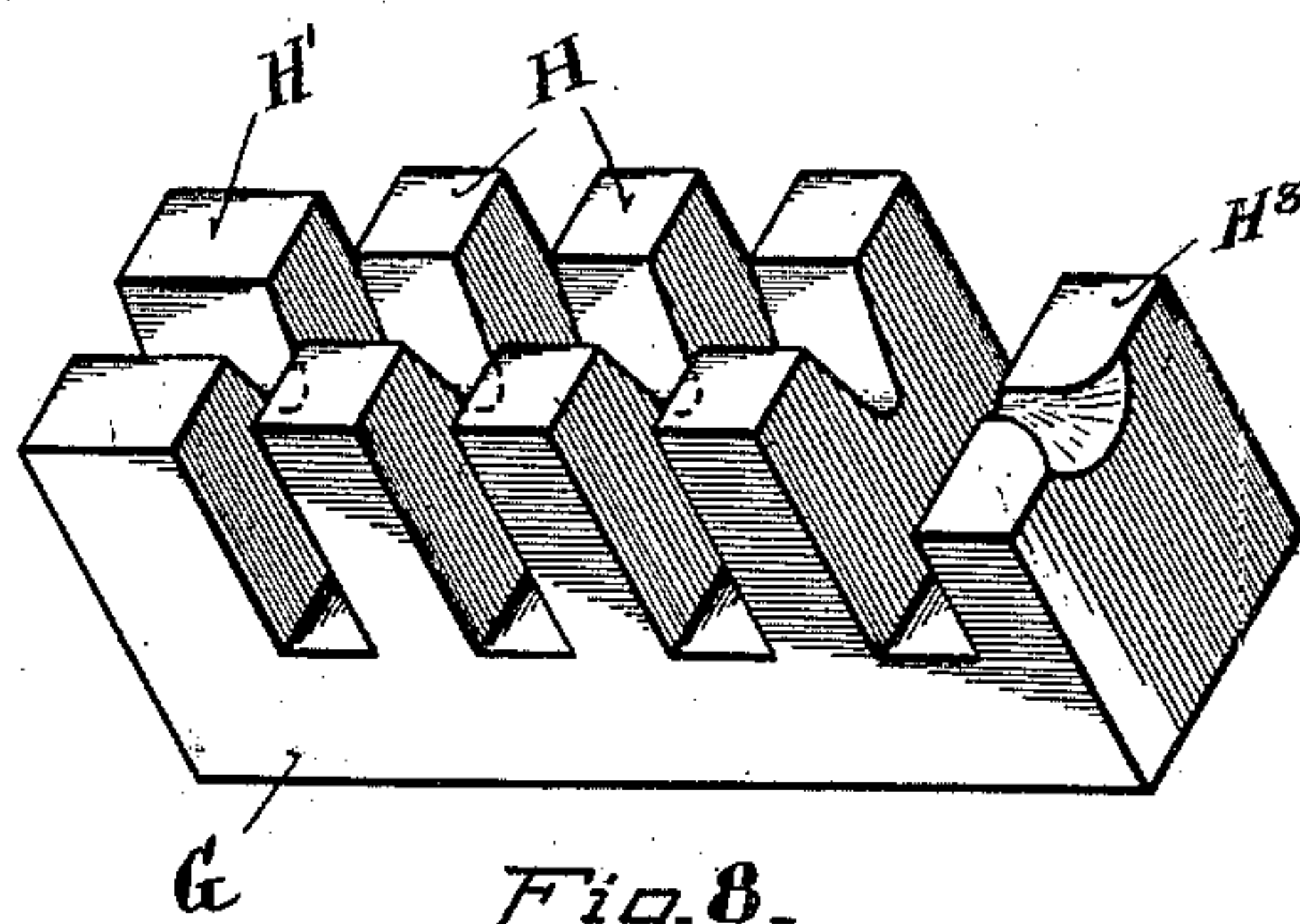


Fig. 8.

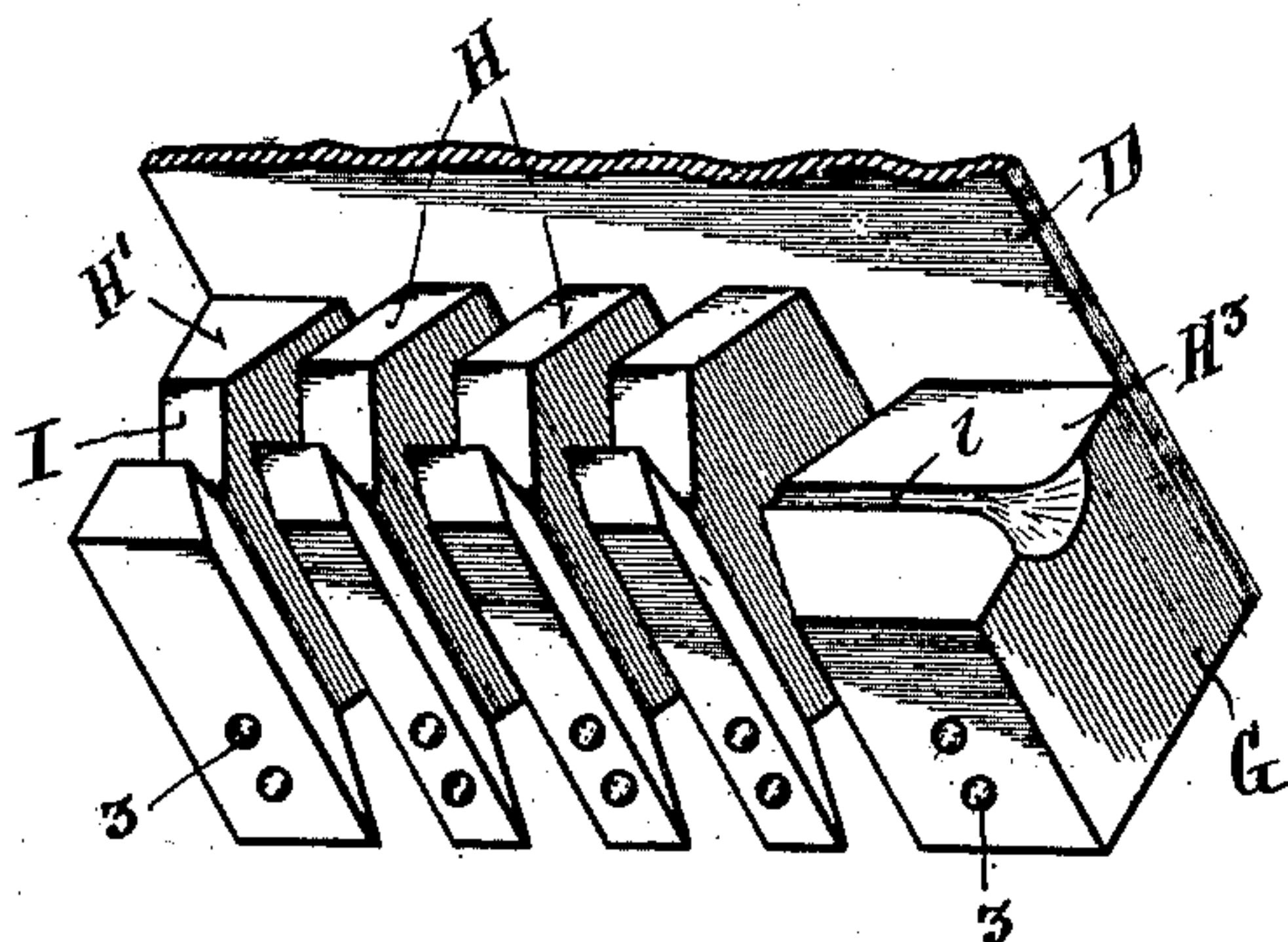


Fig. 9.

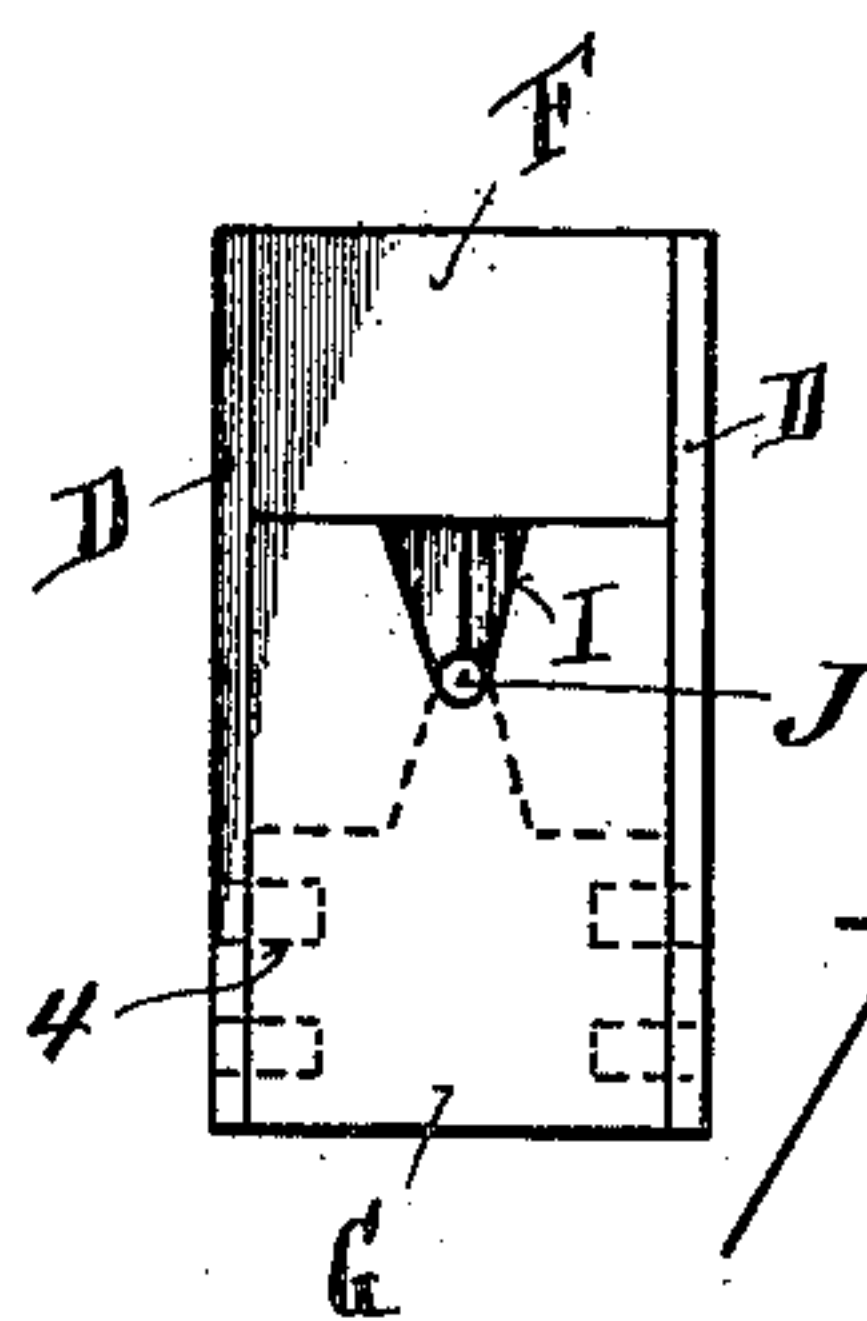


Fig. 11.

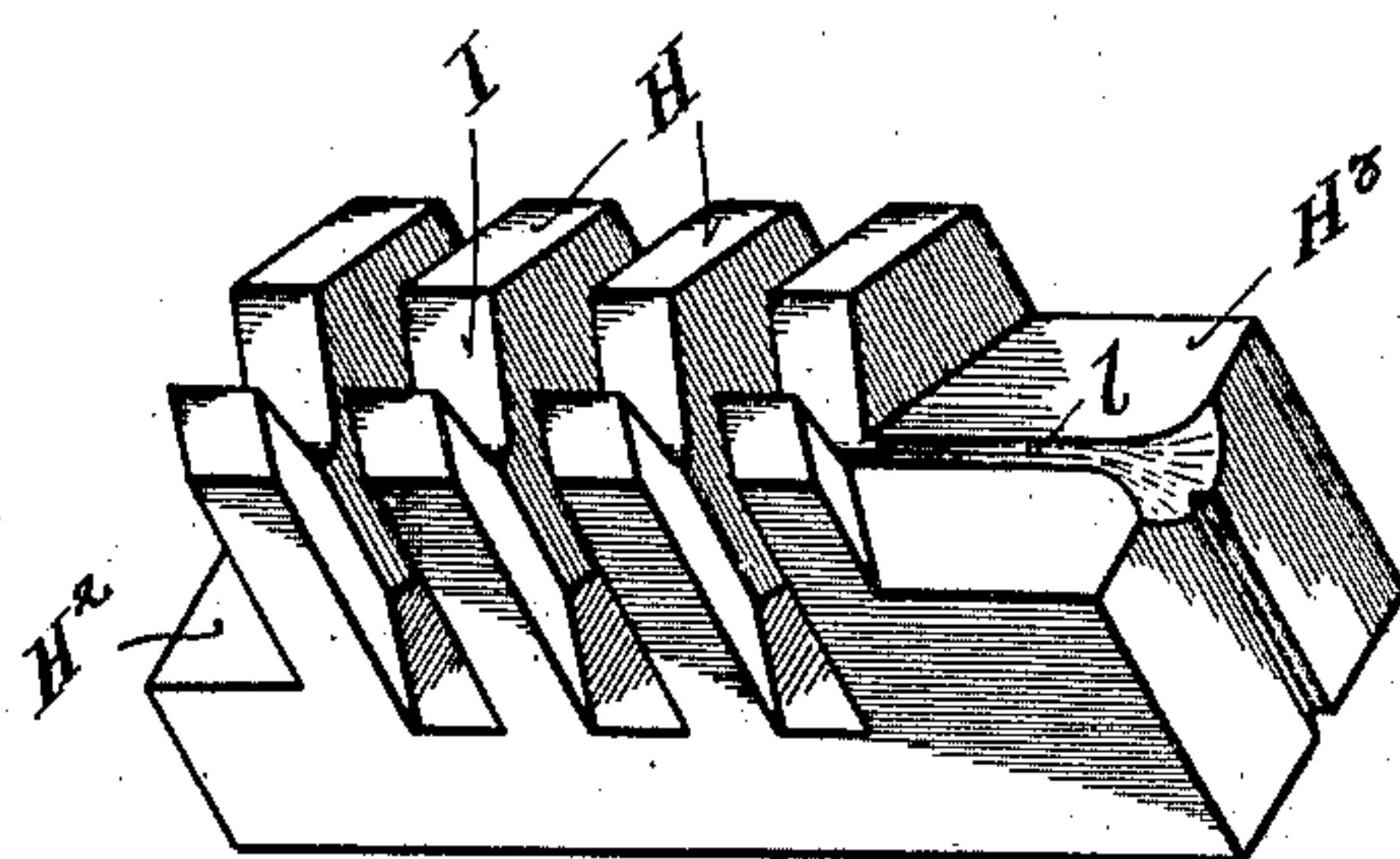


Fig. 10.

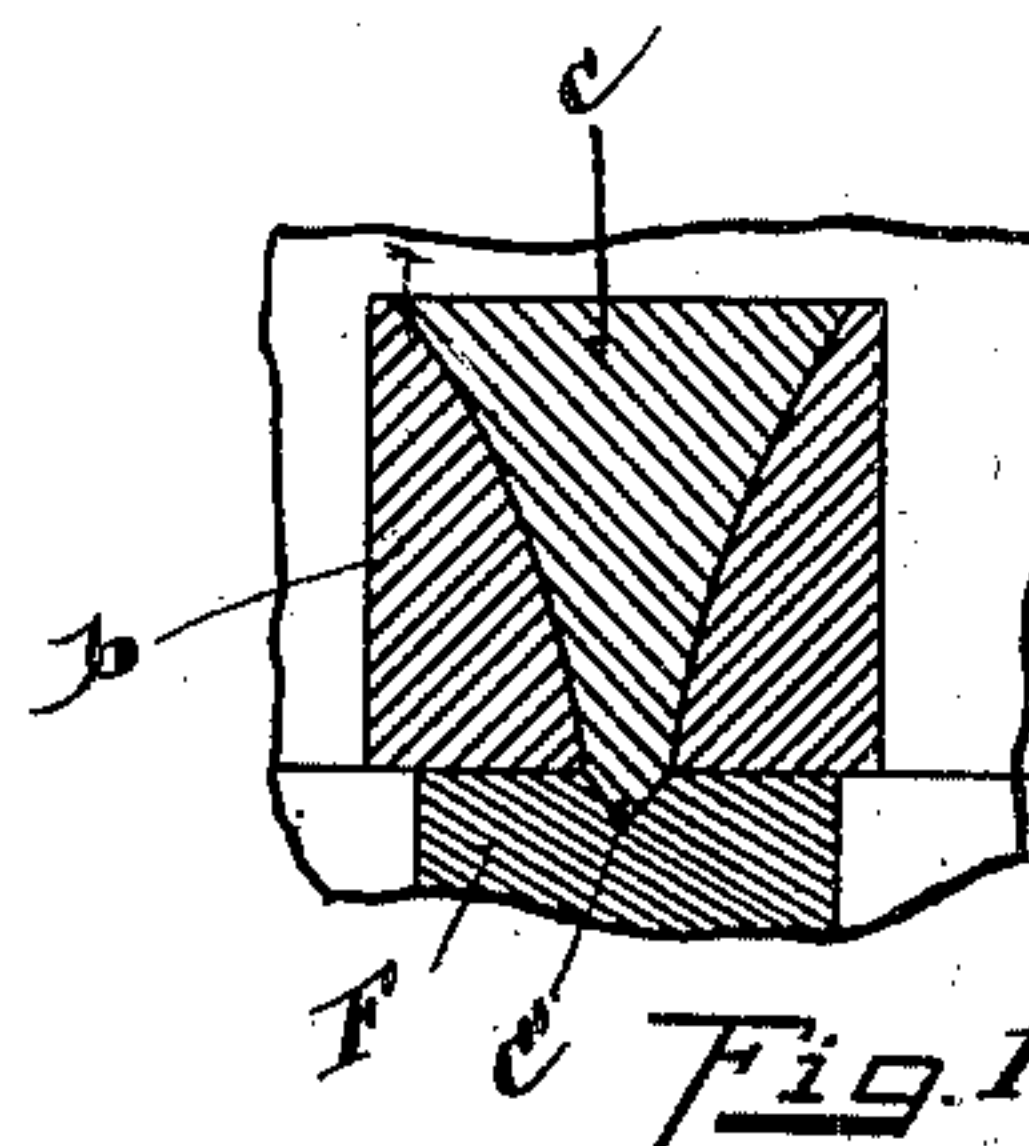


Fig. 12.

Inventor

Witnesses

Oliver B. Kaiser
Caleb Richardson

Richard A. Myers
By Vernon W. P. P. Attorneys

UNITED STATES PATENT OFFICE.

RICHARD A. MYERS, OF DAYTON, OHIO, ASSIGNOR TO THE HOOVER & GAMBLE COMPANY, OF MIAMISBURG, OHIO, A CORPORATION.

TWINE-SPINNING MACHINE.

SPECIFICATION forming part of Letters Patent No. 706,989, dated August 12, 1902.

Application filed January 28, 1902. Serial No. 91,570. (No model.)

To all whom it may concern:

Be it known that I, RICHARD A. MYERS, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Twine-Spinning Machines, of which the following is a specification.

My invention relates to an improved nipping and forming mechanism in a spinning-machine through which the sliver is fed to the usual twisting mechanism, consisting of the flier and capstan, not necessary to be shown in the drawings.

The features of my invention are more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my improvement. Fig. 2 is a rear end view of Fig. 1. Fig. 3 is a top plan view of my improvement with the top sections of the nipper and the former detached. Fig. 4 is a section on line $x x$, Fig. 2. Figs. 5 and 6 are perspective views of the nipper-sections. Figs. 7, 8, 9, and 10 are perspective views of the top and bottom sections of modified forms of the forming device. Fig. 11 is a vertical section enlarged, showing the forming-channel through the top and bottom sections of the former when placed together. Fig. 12 is a detached sectional view of the nipper mechanism.

My invention has for its object the production of a cheap and simple mechanism for feeding the sliver to the twisting mechanism of a spinning-machine in which devices are embodied for limiting the twist of the yarn or twine in the throat of the receiver, so that the twisting of the sliver commences at a point just beyond the receiver and the yarn is pressed and drawn through a forming-duct leading to the flier. The twisting of the yarn in this channel as it is fed longitudinally through the channel has the effect of reducing the yarn to a uniform diameter. The yarn in passing to the flier is inclined to bunch up, tangle, or agglomerate at intervals, which inequality and defects go into the twine, so as to destroy the homogenous effect thereof. Therefore the result, broadly speaking, of my device is the production of a more uniform and homogeneous grade of twine. Another

advantage is that the device automatically removes the tangling, bunching, &c., of the sliver with improved efficiency resulting from the use of the combination of mechanical elements herein claimed as invention, so that the machine operates more perfectly than prior devices in this particular.

A represents the standard suitably supported on the spinning-machine, forming the basis of the attachment of my improved devices.

B represents a funnel-shaped receiver converging to a receiving-throat B' , and this receiver is secured by bolts 1 2 to the said standard A. (See Figs. 2 and 3.) This receiver is provided with an open shaft or nipper seat extending through the same in vertical plane transversely to the throat B' . (See Fig. 3.) C represents the two-part nipper fitting with in said shaft, consisting of a lower section b , which section is inserted in the said shaft and seats upon the end of the adjusting-screw e , screw-threaded into a lug d , extended from the said standard A. By this means the nipper may be raised up and down for adjustment. This lower section b is provided with the bifurcated beveled limbs $b' b'$, forming between them the slot b^2 . b^3 represents a throat in this section b .

c represents the upper section of the two-part nipper, which is substantially triangular-shaped and seats with the recess formed by the bifurcated beveled limbs $b' b'$ of the lower section b , the apex c' of the said upper section passing through the said slot b^2 of the lower section, as shown in Fig. 4. c^2 represents a throat in the under side of this section c . When the nipper-sections are in position, the throat proper, $c^2 b^3$, registers with the throat formation B' of the receiver, forming a continuation thereof, which converges to the duct of the forming mechanism to be hereinafter described. The point c^3 of the said apex c' is the essential nipping feature, as it impinges squarely upon the shoulder a of the section b . The upper section is preferably weighted and seated simply by gravity in the lower section, and consequently yieldingly supported in position. A spring could be substituted for the weight.

D represents two frame-plates attached to

the standard in vertical parallel planes, between which is secured the forming device. The forming devices are constructed as follows, and consist of an upper section F and
 5 a lower section G, having teeth H projecting from the opposing faces of said sections, so as to intermesh telescopically. The lower section is provided with the bolt or pin holes 3, and the plates D with corresponding pin
 10 holes for securing the lower section in position by pins 4. That portion of the plates D which extends above the teeth of the lower section forms a housing in which the upper section is telescopically supported. The
 15 middle of each tooth has a notch I formed therein, so that when the sections are placed together with the teeth engaging telescopically the inner extremities of the said notches I are alined to form the forming-
 20 duct J. (See Fig. 11.)

K represents two brackets projecting from the standard A parallel with the plates D.

L represents a stirrup straddling the plates D, having upturned hook ends engaging under the brackets K. M represents a stem
 25 passing through the said stirrup. N represents a spring coiled around said stem and engaging against the bridge of the stirrup at the top, and at the bottom engaging against
 30 an adjusting-nut, the bottom end of the stem being screw-threaded into the top of the top section F of the forming device. It is readily apparent that when the stirrup is placed in position as shown in Fig. 2 the top
 35 section is held to its position by compression of the spring and will yield to excessive inequalities of the sliver passing through the duct J. The last tooth H' of the lower section of the former engages with the shoulder
 40 H² of the upper section. At the other end of the former the shoulders H³ of the two sections engage one another, so that when the sections are placed together these abutting shoulders form stops limiting the depth
 45 of intermeshing of the teeth of the opposing sections. Thus the sections of the former are prevented from engaging one another to a sufficient depth to destroy the alinement of the forming-duct J. The particular
 50 construction of the former shown in Figs. 9 and 10 is preferred, the teeth being inclined from the opposite sides of the former toward the center in the direction of the travel of the sliver through the duct J, so as
 55 to offer the least possible resistance thereto.

Mode of operation: It will be seen that the throat of the receiver, the continued throat formation in the nipper, and the forming-duct in the former are all three in alinement, so as to form a single continuous straight
 60 passage-way into the twisting-machine. The sliver is impinged between the nipper-point c³ and the abutting shoulder a of the nipper-section b, so that the twists imparted to the
 65 twine by the capstan and flier begin at this point and the sliver is turned and fed along a confined passage l, formed in the shoulder H³ of the former-sections, and the duct J, formed by the notched teeth of the former-
 70 sections. In the particular form shown in Figs. 9 and 10 the teeth of the lower section are open at the bottom, so that the particles of sliver and dust which are combed or removed from the yarn drop down between
 75 these teeth, and thus do not accumulate in the machine.

Having described my invention, I claim—

1. In a twine-spinning machine the combination of a funnel-shaped receiver converging to a throat, a two-part nipper, the lower
 80 section having bifurcated limbs, the upper section fitting and engaging between said limbs telescopically in vertical plane, a throat and a nipper-point formed on the opposing
 85 surfaces of said nipper-sections, substantially as specified.

2. In combination with a twine-spinning machine, a funnel-shaped receiver having a converging throat, a seat formed in said receiver transversely to said throat, a lower
 90 nipper-section adjustably supported in said seat, said section having two upwardly-extended, beveled limbs, an upper nipper-section yieldingly and detachably engaging with
 95 said lower section telescopically in vertical plane, a throat formed between the meeting surfaces of said sections, the said upper section being substantially triangular-shaped, having the apex projected between the said
 100 limbs of the lower section, and a nipper-point formed on the lower end of said apex adapted to impinge upon the sliver, substantially as specified.

In testimony whereof I have hereunto set my hand.

RICHARD A. MYERS.

Witnesses:

OLIVER B. KAISER,
 CABELL RICHARDSON.