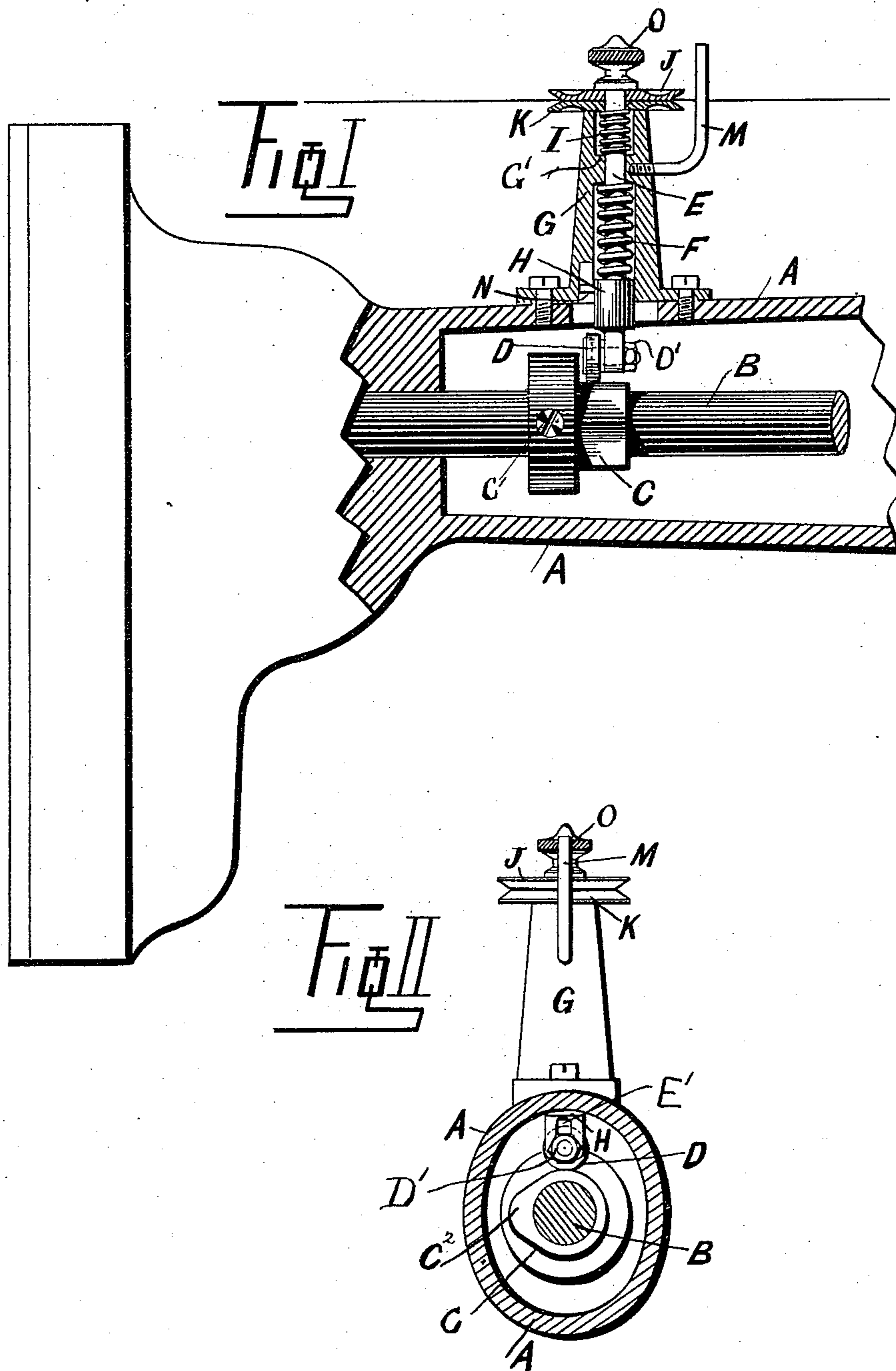


(No Model.)

C. B. HUNT.  
TENSION DEVICE FOR SEWING MACHINES.

No. 485,546.

Patented Nov. 1, 1892.



Witnesses:—  
J. A. Rutherford. Charles B. Hunt.  
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Attorney.



# UNITED STATES PATENT OFFICE.

CHARLES BRANSTON HUNT, OF LONDON, ENGLAND.

## TENSION DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 485,546, dated November 1, 1892.

Application filed July 25, 1892. Serial No. 441,185. (No model.) Patented in England June 11, 1892, No. 11,039.

*To all whom it may concern:*

Be it known that I, CHARLES BRANSTON HUNT, a subject of the Queen of Great Britain, and a resident of 59 Holborn Viaduct, in the city of London, England, have invented certain new and useful Improvements Relating to Sewing-Machines, (patented in Great Britain, No. 11,039, dated June 11, 1892,) of which the following is a specification.

This invention relates to devices for enabling the thread of a sewing-machine to be kept in tension by a spring and to be drawn from the reel by the descent of the needle for the proper supply only, in order to avoid sag or loose thread forming between the reel and the head of the machine, as in the Gibbs patent, No. 171,559, issued December 28, 1875. In the construction exhibited by the patent alluded to the tension-disks are housed in or covered and cannot be adjusted for varying the tension, and, further, the connecting-rod encircles an eccentric on the drive-shaft, which has been found objectionable in that there is no sudden stroke or jump imparted to one of the tension-disks. The gradual rising and falling movements imparted by an eccentric engaging the connecting-rod render the operation imperfect.

The object of my invention is to improve the prior tension devices alluded to and to render the same efficient in practical operation.

To accomplish this object my invention involves the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional elevation of sufficient of a sewing-machine to illustrate my invention, and Fig. 2 is a transverse sectional view of the same.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The letter A indicates the arm of a sewing-machine of that type wherein a large loop requires to be drawn by the take-up for the completion of a stitch.

The letter B indicates the upper shaft for operating the needle-arm in the usual manner, and C indicates a nose-cam adjustably

mounted on the upper shaft through the medium of a screw C', which enables the nose-cam to be accurately adjusted for the perfect operation of the tension devices located above the upper shaft.

The machine-arm A is provided with an attached post or pedestal G, containing a vertical rod E, which is constructed with a flattened lower extremity having a vertical slot E', through which extends a stud carrying a roller D, one end of the stud having a screw-nut D' for the purpose of adjusting the stud and roller in a vertical plane and placing said stud in proper operative connection with the nose-cam C. The rod E is enlarged directly above its flattened lower end, as at H, and this enlargement is cylindrical to accurately fit the bore extending through the post or pedestal, so that the rod is guided as it rises and falls. The post or pedestal contains an internal shoulder G', between which and the cylindrical enlargement H is located a spiral or other suitable spring F, while above the shoulder is arranged a spiral or other suitable spring I, of less power than the spring F. The tension-disks J and K are located above the post or pedestal, and the lower disk K rests directly upon the upper end thereof, while the upper disk J lies contiguous to the lower disk. The upper end portion of the vertical rod E extends through both disks and carries an adjustable thumb-piece O, which is in screw-threaded engagement with the rod and bears against the upper disk in such manner that by turning the thumb-piece in the proper direction the pressure of the two disks against each other can be increased or diminished, as occasion may demand. This construction is desirable in that it enables the tension to be adjusted at will.

The enlarged cylindrical portion H of the vertical rod E is provided with a guide-pin N, working in a vertical groove in the post or pedestal, for the purpose of insuring the correct movement of the rod in a vertical plane. The rod E is entirely disconnected from the upper shaft B and from the cam C; but the nose C' of the nose-cam is adapted to strike the roller and impart a sudden upward movement to the rod E for the purpose of releasing the grip on the thread. The instant the



nose of the nose-cam moves past the roller D the rod E is thrown suddenly downward and the tension-disks are caused to grip the thread. The spring F operates to throw the  
 5 rod E toward the nose-cam, while the weaker spring I presses upon the lower tension-disk K and forces it against the upper disk J. A thread-guide M may be used to guide the thread to the tension-disks.

10 The nose-cam is an important feature for the practical operation of the tension devices in that it secures the sudden elevation of the rod E, while the spring F secures the sudden descent of the rod, thereby obtaining the re-  
 15 quired rapidity of action which is essential for the practical operation of the parts.

Having thus described my invention, what I claim is—

1. The combination, with a machine-arm, of  
 20 a post or pedestal provided with upper and lower chambers separated by an intermediate shoulder, an upper shaft provided with a nose-cam, a vertically-movable rod disconnected from the cam and provided at its lower end  
 25 with a roller adapted to be struck and suddenly elevated by the nose-cam, a pair of springs located, respectively, in the upper and lower chambers of the post or pedestal and constructed of different power or tension, and  
 30 a pair of tension-disks through which the vertical rod extends, the under one of said disks

resting upon the upper and weaker spring, substantially as described.

2. The combination, with a machine-arm A and an upper shaft B, having a nose-cam C, 35 of a post or pedestal G, rising from the machine-arm and having an internal shoulder G', the springs F and I, constructed of different power or tension and located, respectively, below and above the internal shoulder of the  
 40 post or pedestal, the vertically-movable rod E, extending through said springs and having a roller D at its lower end, adapted to be struck and suddenly elevated by the nose-cam, a pair of tension-disks J and K, mounted on the  
 45 vertically-movable rod, and the lower disk bearing against the uppermost spring, and a thumb-piece O, adjustable on the vertically-movable rod and acting upon the upper disk for varying the gripping action on the thread, 50 substantially as described.

In witness whereof I have hereto signed my name, in the presence of two subscribing witnesses, this 5th day of July, 1892.

CHARLES BRANSTON HUNT.

Witnesses:

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