

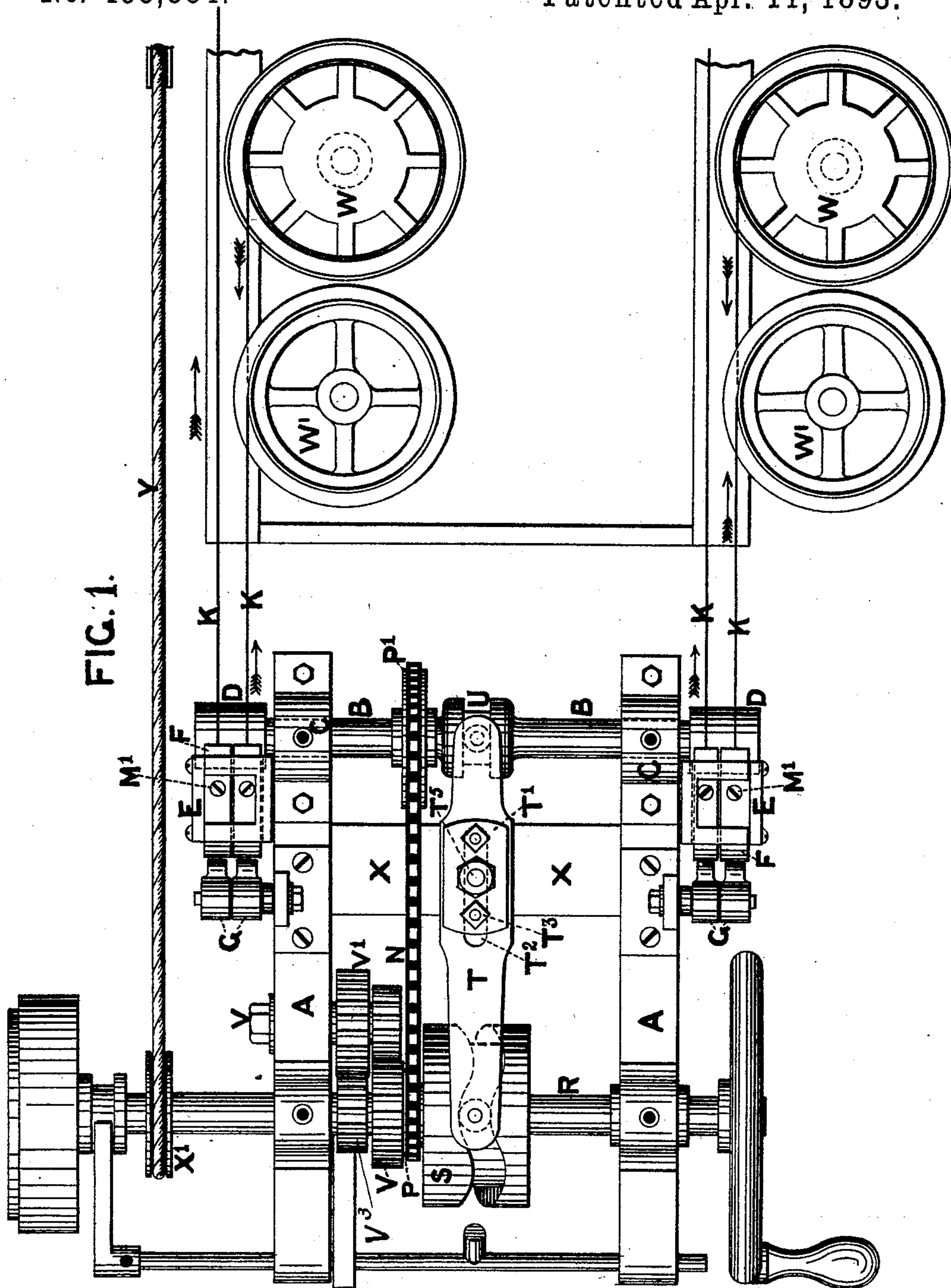
(No Model.)

3 Sheets—Sheet 1.

J. E. WALSH.
MACHINE FOR STRAIGHTENING STEEL WIRE.

No. 495,384.

Patented Apr. 11, 1893.



Witnesses
C. F. Ward
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Inventor
John E. Walsh

(No Model.)

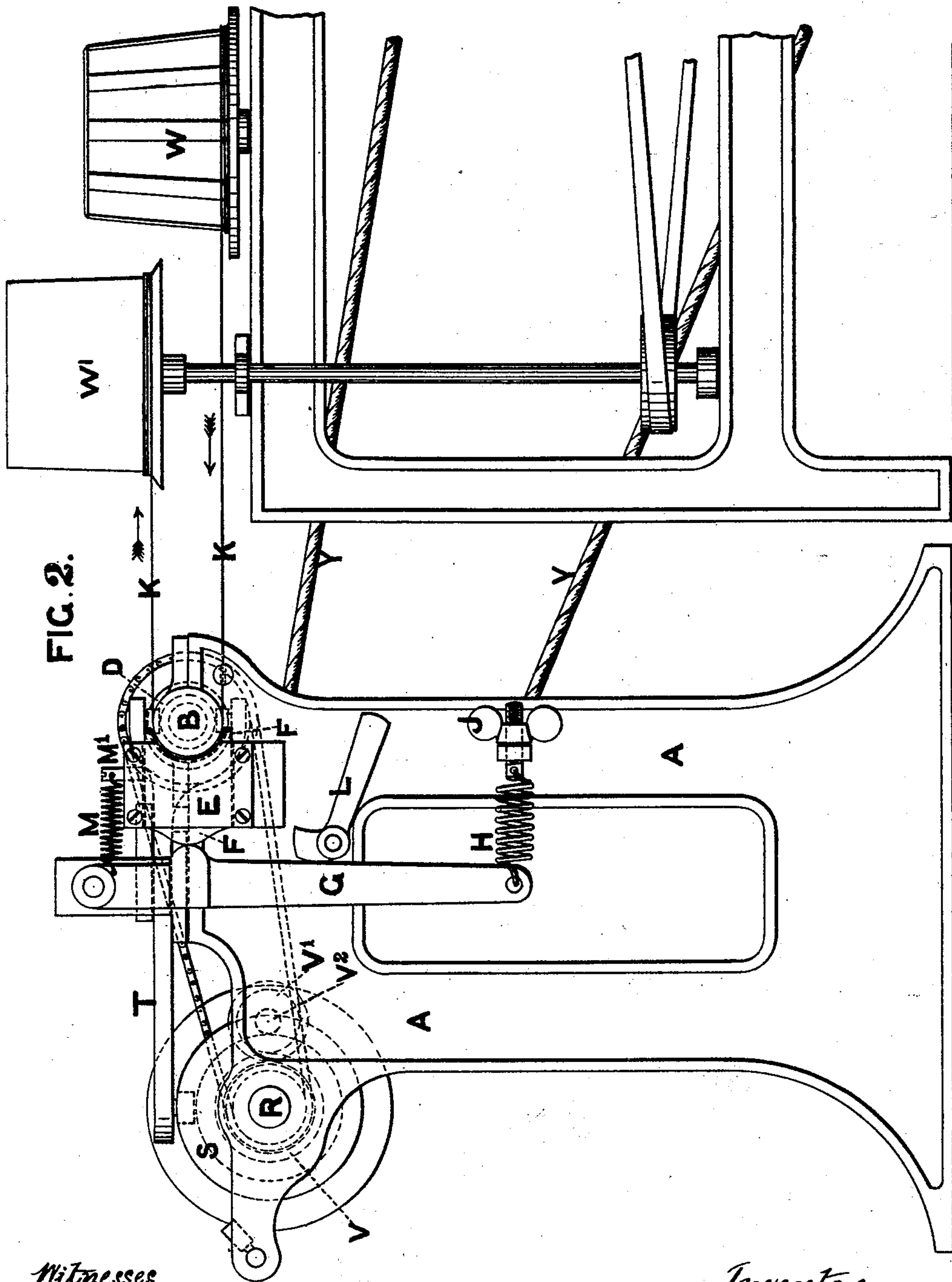
3 Sheets—Sheet 2.

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No. 495,384.

Patented Apr. 11, 1893.



Witnesses
Asa Reed

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Inventor
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(No Model.)

3 Sheets—Sheet 3.

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FIG. 3.

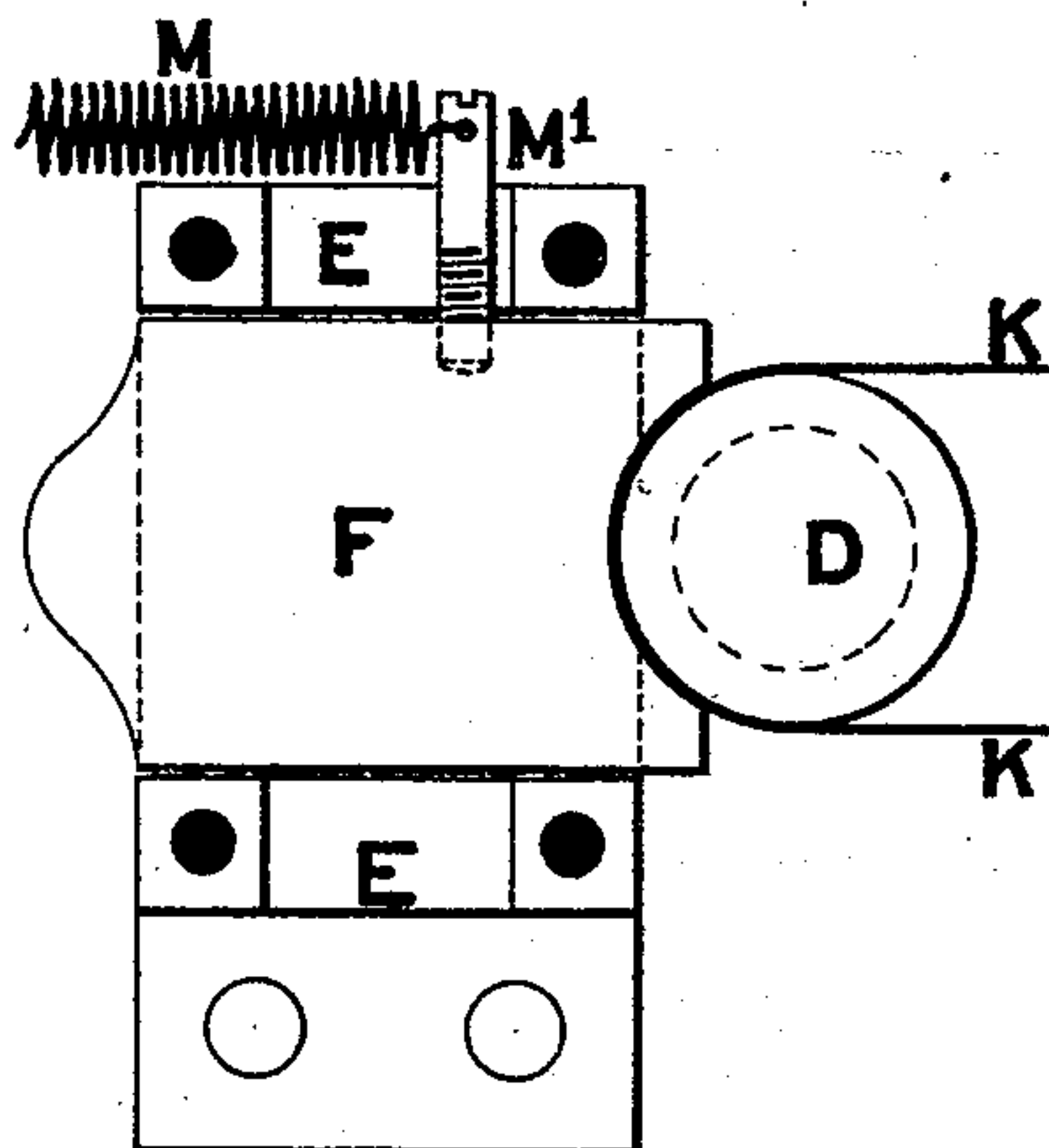
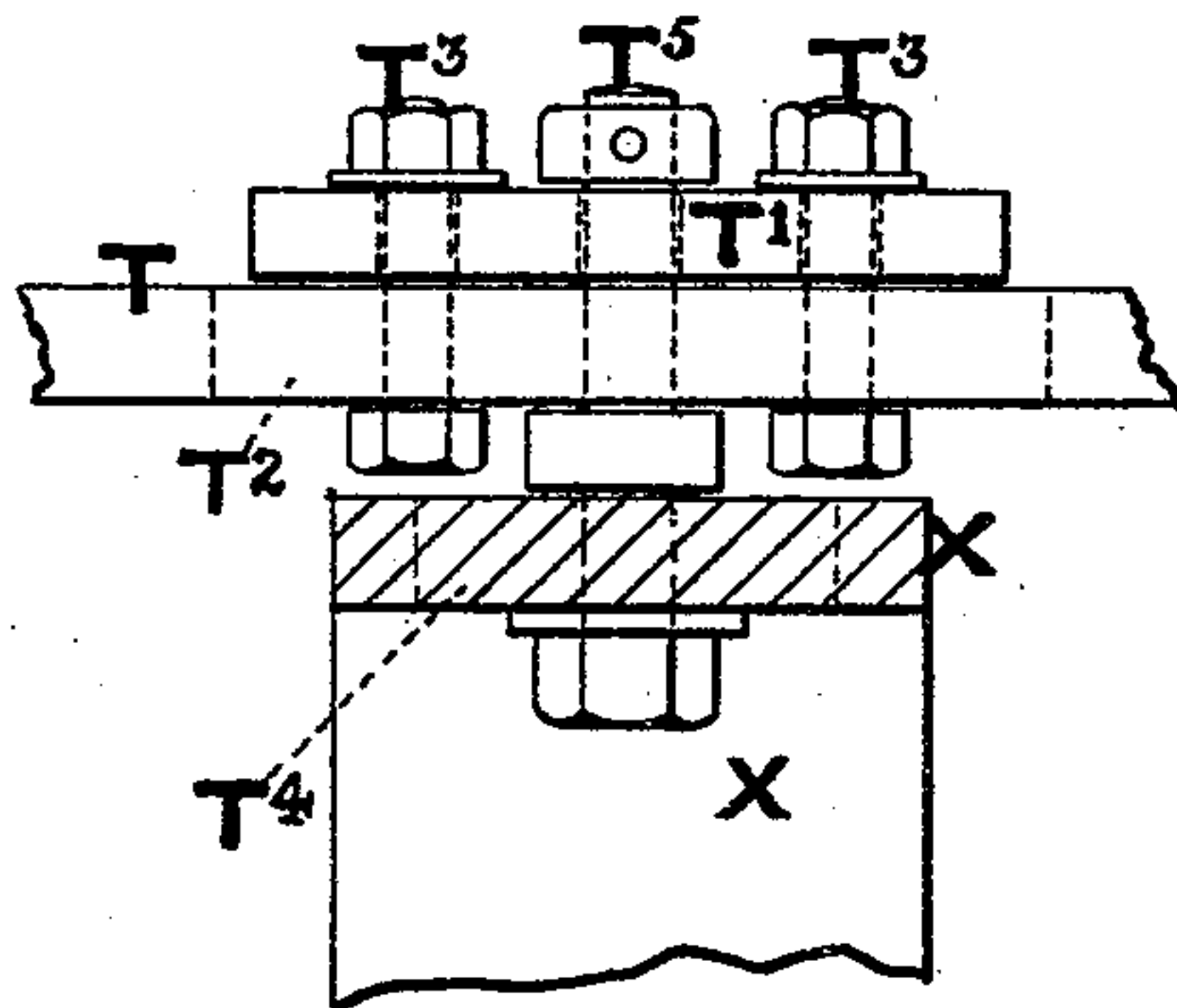


FIG. 4.



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UNITED STATES PATENT OFFICE.

JOHN E. WALSH, OF HALIFAX, ENGLAND.

MACHINE FOR STRAIGHTENING STEEL WIRE.

SPECIFICATION forming part of Letters Patent No. 495,384, dated April 11, 1893.

Application filed July 28, 1892. Serial No. 441,526. (No model.) Patented in England October 17, 1890, No. 16,501, and June 27, 1892, No. 11,932.

To all whom it may concern:

Be it known that I, JOHN EDWARD WALSH, a subject of the Queen of Great Britain, residing at Halifax, in the county of York, England, have invented new and useful Improvements in Apparatus for Straightening Undressed Hard Drawn Steel Wire for Cards and other Suitable Purposes, (for which I have obtained patents in Great Britain, dated October 17, 1890, No. 16,501, and June 27, 1892, No. 11,932,) of which the following is a specification.

In the drawings—Figure 1 is a plan of my improved apparatus for straightening steel card wire. Fig. 2 is a front elevation of Fig. 1. Fig. 3 is an elevation of hardened pressure necks or concaves, and hardened steel boss, between which the wire passes. Fig. 4 is a detail view showing method of adjusting the pivoted lever.

I employ upon a suitable frame A, a shaft B, preferably horizontal, and in fixed bearings C; preferably at each end of this shaft are hardened steel bosses D, working against which (in suitable box or boxes E fixed upon the frame A) are a number of narrow hardened steel pressure necks F, pressure being preferably put upon each neck by means of levers G, and springs H, the said springs being also arranged so that the pressure can be regulated or adjusted (to suit the different sizes of wire being operated upon) by means of a thumbscrew J, or in any other suitable manner. Between each neck and its steel boss is passed the wire K to be straightened, this being accomplished by withdrawing the necks by means of an eccentric ended hand lever L, which pushes back the lever G, and with the spring M, and stud M' draws the pressure neck F out of contact with the boss D, so allowing the wire to be passed between the same; on turning back the hand lever, the spring H returns the neck to its position. By this arrangement of levers and separate adjustable pressure necks for each wire, various sizes of wire may be straightened at the same time; and when one end has run off another may be put on without having to stop the machine.

To the shaft B is imparted simultaneously a rotary and reciprocating or backward and

forward endwise motion, by means of a chain N, and chain wheels P and P', operated by the driving shaft R of the machine. The chain wheel P is attached to a gear wheel V, which is loose upon the shaft R, upon which is a post gear wheel V³, and these gear wheels V and V³ gear with a double or stepped gear wheel V', upon a stud V², by means of which the speeding of the driving shaft R and the straightening shaft B, may be independent of each other. Upon this driving shaft is also a cam S, having preferably three, four or more ways; in the groove of this cam works one end of an adjustable forked pivoted lever T, the other end of which operates within a grooved bush or collar U, upon the shaft B, and as the cam S revolves, it imparts (by means of the pivoted lever T) the necessary backward and forward endwise or rubbing motion to the shaft B. The adjustability of the said fork lever T is effected by means of a fulcrum joint; on the fork lever T is a plate T', adjustable along the slot T² of the lever, and attached to this lever by means of bolts T³; the cross bar X is also provided with a slot T⁴; a stud bolt T⁵ passing through the cross bar X, stud hole in plate T', and forked lever T, allows an adjustment of the parts, and giving any desired amount of movement to the horizontal shaft B.

Wincels W and blocks W' for holding and receiving the wire are arranged in any suitable manner upon a suitable frame or frames.

By lengthening the hardened steel bosses and increasing the number of pressure necks and levers, any number of wires may be passed through the machine.

A number of machines of any size may be mounted on one gantry.

The oil upon the wire can be taken off it by passing the said wire through emery, indiarubber, or by other suitable means. Or it may be passed through pegs if required on its passage to the block or winder.

The blocks or winders may be operated and speeded as desired by means of a pulley X', and rope Y, upon the driving shaft R.

What I claim as the invention, and desire to secure by Letters Patent, is—

1. In a machine for straightening wire, the combination with a suitable frame, a rotary

and reciprocating shaft journaled thereon, and a boss carried by the shaft, of a series of independently adjustable pressure necks arranged in operative relation to the said boss
5 for simultaneously straightening various sizes of wire, a series of spring-pressed levers acting respectively on the independently adjustable pressure necks, and means for operating the levers to relieve the pressure of the necks
10 against the boss, substantially as described.

2. In a machine for straightening wire having wire feed mechanism, the combination with a suitable frame and a rotary and reciprocating shaft journaled therein and provided
15 with a boss, of a plurality of independent pressure necks in operative relation to said boss, independent pivoted levers G connected to said pressure necks, springs connecting said levers to said frame, and eccentric levers
20 L. pivoted to the frame and engaging the levers G, substantially as described.

3. In a machine for straightening wire hav-

ing wire feed mechanism, the combination with a suitable frame carrying a driving shaft R, and a shaft B provided with a boss, 25 of independent pressure necks F located in operative relation to said boss, independent levers G journaled in the frame and connected to the pressure necks, springs connected to said frame and levers G, eccentric levers piv- 30 oted to the frame and working against the levers G, chain wheels carried by the shafts R and B, a chain trained over said wheels, a cam S carried by the shaft R, and a lever T, connected at one end to the shaft B and at the 35 other end engaging the cam S, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN E. WALSH.

Witnesses:

ABRAHAM REED,

C. F. WARD,

Both of Halifax.