

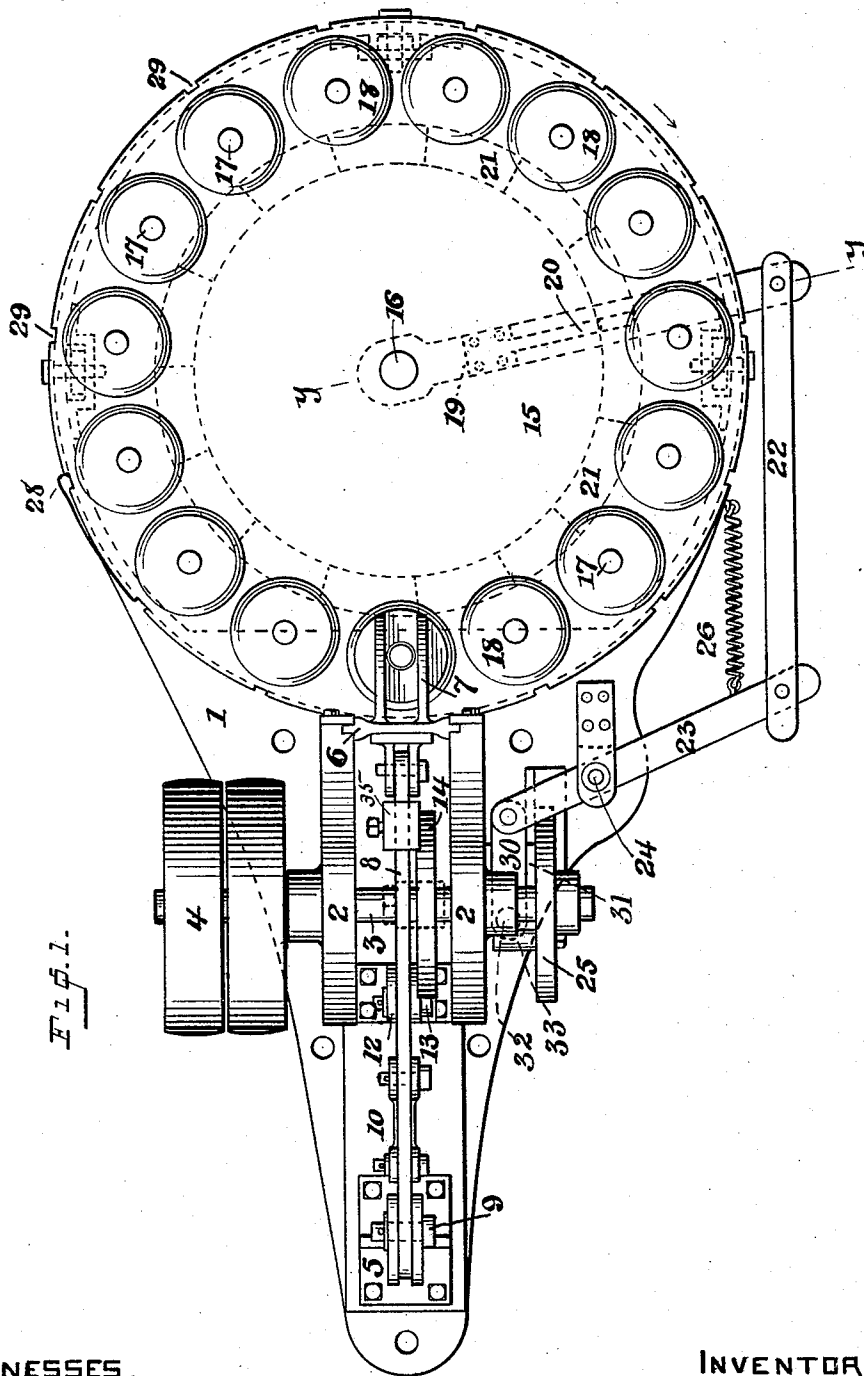
(No Model.)

2 Sheets—Sheet 1.

J. H. MÜLLER.
MACHINE FOR CRUSHING SPRINGS.

No. 486,834.

Patented Nov. 22, 1892.



WITNESSES

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A. J. Tanner.

INVENTOR

John H. Müller,
by his atty
D. A. Hubbard,

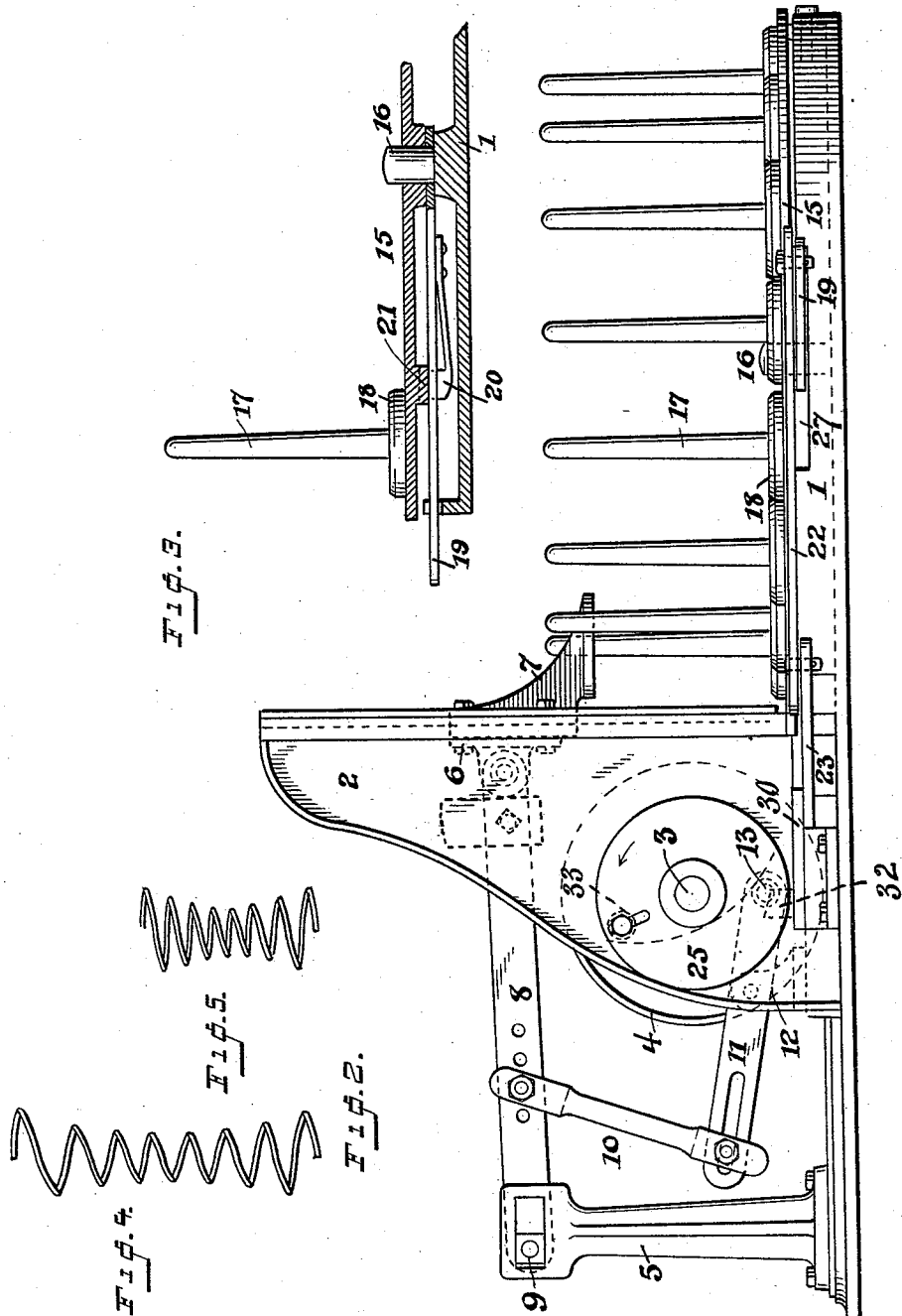
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UNITED STATES PATENT OFFICE.

JOHN H. MÜLLER, OF BRIDGEPORT, CONNECTICUT.

MACHINE FOR CRUSHING SPRINGS.

SPECIFICATION forming part of Letters Patent No. 486,834, dated November 22, 1892.

Application filed November 27, 1891. Serial No. 413,229. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. MÜLLER, a subject of the Emperor of Germany, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Crushing Springs; and I do hereby declare the following to be 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.

This invention relates to certain new and useful improvements in machines for treating spiral springs, such as bed and upholstery springs. Springs of this character are coiled from lengths of wire either by hand or by automatic machines; but said springs are incomplete, because they vary somewhat in length. It is the object of my invention to provide a machine for subjecting each spring to a crushing process, whereby it is collapsed into the smallest possible compass in the direction of its length and made uniform in length; and with these ends in view my invention consists in the construction and combination of elements hereinafter fully explained, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and method of operation, I will describe the same in detail, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan view; Fig. 2, a side elevation; Fig. 3, a section on the line *yy* of Fig. 1; Figs. 4 and 5, elevations of springs, the former showing a spring prior to the operation of my machine and the latter a spring after having been operated upon.

The same numerals denote the same parts in each of the figures.

A base 1, which may be mounted upon legs or a bench, serves to support the several parts of my machine. Standards 2 are secured upon this base, and through these are journaled a transverse shaft 3, having pulleys 4 or other means for imparting power thereto. A third standard 5 is mounted at the rear of the two standards just referred to. In the front of the standards 2 are formed ways, (see Fig. 1,) in which are supported and guided a cross-

head 6, from which extends outward a bifurcated crusher 7, which is adapted to operate upon the spring in the manner presently to be set forth. A lever 8 has one end connected to the cross-head and its rear end secured to the top of the standard 5 by means of a slide-block 9. A pitman or connecting-link 10 has one end secured to the lever 8 and the other end to another lever 11, which latter is fulcrumed to a bracket 12 (shown in dotted lines at Fig. 2) and carries a roll 13, which is engaged and actuated by a connection with a cam 14 upon the shaft 3. By the adjustment of these elements the length of movement of the cross-head and crusher may be varied to act upon springs of various lengths. Upon the front end of the bed is arranged a rotating plate 15, which turns upon a central hub 16 and is supported at its edges by rolls 25. This plate carries a number of vertical pins 17, disposed at equal distances around its edge, the same being shown as fifteen in number in the drawings. Each pin rises from a base 18. This plate is rotated step by step to bring the pins successively within the field of operation of the crusher by means of a feeding-lever 19, fulcrumed about the hub 16 and carrying a spring-pawl 20, adapted to operate upon ratchet-teeth 21 on the bottom of the plate. The end of this lever is connected by a link 22 with another lever 23, which latter is fulcrumed to the bed at 24 and is operated in proper time by means of its connection through a link 30 with a slide 31, which is fitted in suitable ways upon the bed. This slide has at one end a vertical pin 32, adapted to be operated upon by an adjustable pin 33 in a disk 25 upon the shaft 3. The disk produces the feeding movement by its positive action upon the slide and connected lever 23, and the spring 26 serves, as the cam recedes, to carry the lever 19 backward for engagement with another tooth. For the accommodation and free operation of the lever 19 the bed is recessed, as shown at 27. A round-nosed spring-pawl 28, secured to the bed, is adapted to engage a series of recesses 29 in the periphery of the plate, so as to keep the latter from accidental displacement; but the hold of the pawl is not sufficient to prevent the step-by-step rotation of the plate under the power of the lever.

In the operation of my invention the machine when in motion feeds the plate about its center of rotation with a step-by-step movement, as heretofore explained. As each pin comes beneath the bifurcated part 7 the feeding movement ceases and the cross-head descends, impelled by the weight 35, which may be changed according to the size of spring to be operated upon. The action of the part 7 is to collapse the spring about the pin, after which the rotation of the cam 14, acting through the parts 11, 10, and 8, raises the cross-head and permits the spring to expand. As soon as the part 7 clears the top of the pin the feeding movement takes place and brings a new spring into the field of operation of the crusher. The operator sits at one side of the machine and takes off the springs operated upon, replacing each spring so removed with a spring not yet finished. The weight is shown as disproportionately small through lack of space. It should for ordinary springs weigh from forty to fifty pounds.

I claim—

- 25 1. The combination, in a machine of the character described, with the horizontally-rotative plate having spring-supporting pins, of

the standards, the bifurcated crusher-head mounted and adapted to slide within said standards, a lever connected to and adapted 30 to operate said crusher-head, means for raising the lever, and a weight mounted upon said lever and adjustable along the latter, whereby the downward stroke of the crusher may be varied in force, substantially as de- 35 scribed.

2. In a machine of the character described, the combination, with the standards and the bifurcated crusher-head mounted and adapted to slide therein, of the lever 8, pivoted to said 40 crusher-head and provided with a sliding bearing at its rear end, the weight adjustable along said lever 8, a cam for raising said lever, and adjustable lever connections, substantially as described, between the lever 8 and 45 the cam, whereby the vertical movement of the crusher may be regulated.

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

JOHN H. MÜLLER.

Witnesses:

S. H. HUBBARD,

M. C. HINCHCLIFFE.