No. 689,655. Patented Dec. 24, 1901.

H. E. SHELDON.

FEEDING APPARATUS FOR ROLLING MILLS.

(Application filed Feb. 16, 1900.)

(No Model.)

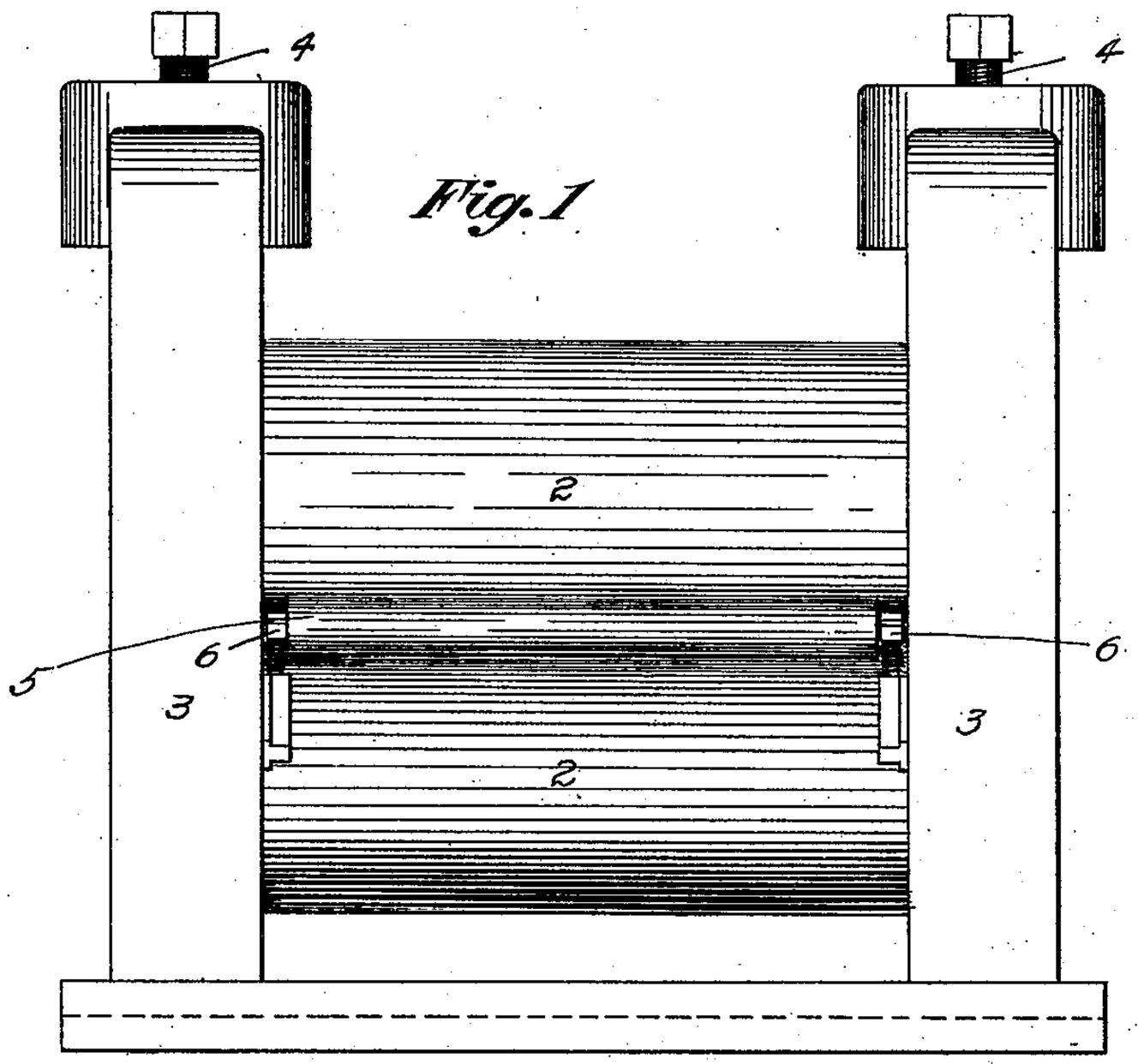

Fig. 1

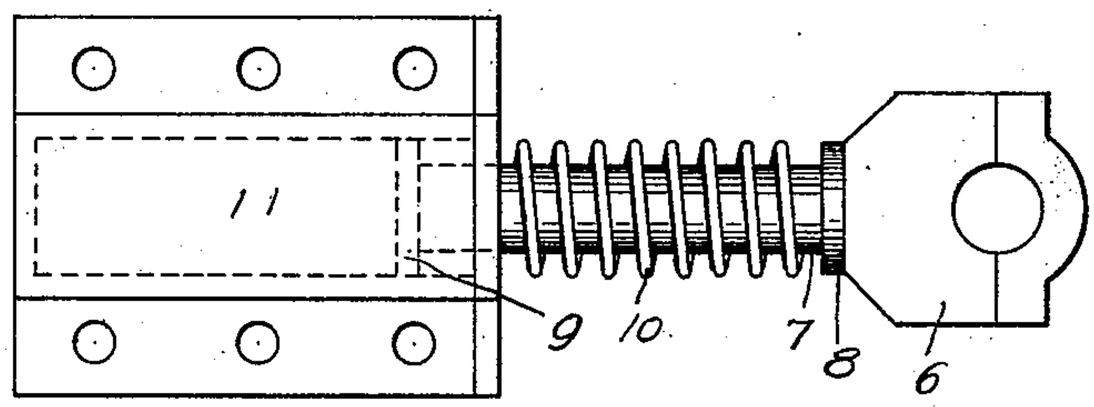

Fig. 2

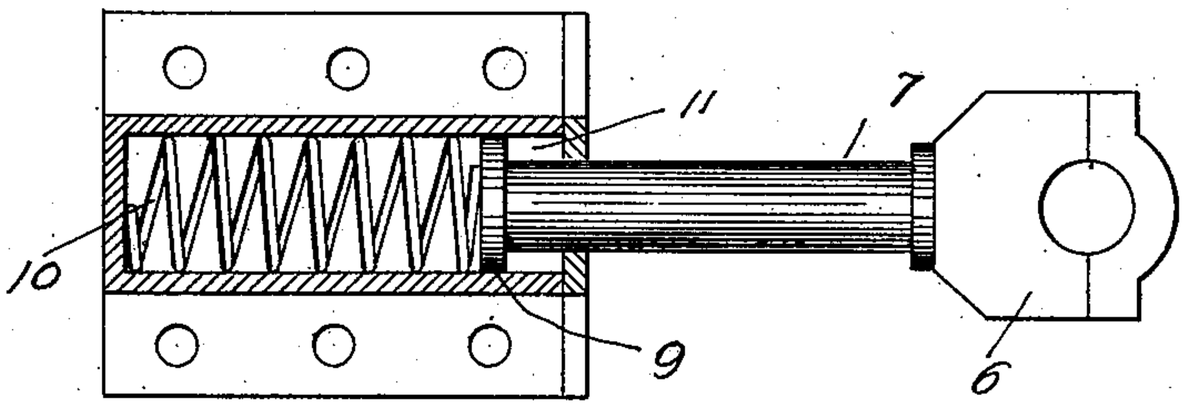

Fig. 3

Witnesses
M. W. Baskey.
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UNITED STATES PATENT OFFICE.

HARRY E. SHELDON, OF LEECHBURG, PENNSYLVANIA.

FEEDING APPARATUS FOR ROLLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 689,655, dated December 24, 1901.

Application filed February 16, 1900. Serial No. 5,422. (No model.)

To all whom it may concern:

Be it known that I, HARRY E. SHELDON, a citizen of the United States of America, and a resident of Leechburg, county of Armstrong, and State of Pennsylvania, have invented certain new and useful Improvements in Feeding Apparatus for Rolling-Mills, of which the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a front elevation of a pair of rolls provided with my improved feed-roll. Fig. 2 is a detail in side elevation of one form of device for supporting the journal of the feed-roll; and Fig. 3, a device, partly in section and partly in side elevation, of another form of device for supporting the journal of the feed-roll.

In a previous patent, No. 499,259, dated June 13, 1893, granted to me and one John W. Kirkpatrick, for feeding and discharging apparatus for rolling-mills I have shown a feeding mechanism which accomplishes the same result as the mechanism set forth in the present application. The means, however, for supporting the feed-roll in a yielding contact with the main rolls are quite different from the means herein shown and which constitute the differences between such prior patent and the present invention. In said previous patent I explained at length the difficulties experienced in feeding thin sheets of iron, steel, and copper or other metals evenly and uniformly to the rolls. I therein fully explained that these thin sheets were not of uniform gage, and, furthermore, being of a flexible character and unsupported except by the hands of the feeder they were liable to sag and drop out of line when presented to the bite of the rolls. If the sheets entered the rolls in this uneven alinement, the result was pinched or buckled sheets, necessarily resulting in loss and waste.

The object of the present invention, like that of my prior patent, is to feed mechanically the sheets to the bite of the rolls and in the meantime support the sheet preferably entirely from side to side upon an idle feed-roller which is held flexibly in contact with the main roll and effectually prevents the sagging of the sheet. I accomplish this result by mounting an idle feed-roller in journal-boxes which are spring-supported, as hereinafter more specifically set out.

In the drawings, 2 2 are the rolls, mounted in the usual housings 3 3, having the ordinary adjusting nuts and screws 4 4. The friction and feed roller 5 is mounted in the boxes 6 6, each of which is supported by a plunger 7. As shown in Fig. 2, the plunger 7 is provided with a collar 8, against which is seated a spring 10.

9 is a piston which works in a guiding-box 11, bolted to the housing 3. The lower end of the spring 10 bears against the upper end of the guiding-box 11. As shown in Fig. 3, the spring 10 is entirely within the guiding-box 11, and its lower end rests against the bottom of the opening in said box. This is merely an alternating construction.

The operation of the mechanism is as follows: The sheet is fed to the rolls between the upper roll 2 and the idle roller 5. By reason of the friction between the idle roller 5 and the upper roll 2 the idle roller will be rotated in a reverse direction to the upper roll 2 and will thus feed forward the sheet to the bite between the main rolls. The springs will be sufficiently yielding to accommodate themselves to differences in gage between the sheets, and the sheet will be supported evenly for its entire length, thus preventing drooping and sagging of the sheet and also making it easier for the feeder to present the front edge of the sheet in a line parallel with the bite of the rolls.

My present form of apparatus is somewhat simpler than that shown in my hereinbefore-recited patent and will not require repeated adjustment for different gages of sheets.

The same advantage of dispensing with skilled labor in feeding is accomplished by the present device as is obtained by the mechanism set out in the hereinbefore-recited patent.

My invention is applicable to all rolling wherein thin flexible sheets, whether hot or cold, are presented to the action of the rolls.

Having described my invention, I claim—

1. The combination of a pair of rolls mounted in suitable housings, an idle feed-roller

mounted in journal-boxes, and spring-supports for said journal-boxes for forcing said feed-roller toward one of said pair of rolls.

2. The combination of a pair of rolls mounted in suitable housings; an idle feed-roller mounted in front of said rolls; journal-boxes for said feed-roller; plungers upon which said boxes are supported; guide-boxes for said plungers and springs surrounding said plungers and forcing said feed-roller toward one of the rolls.

Signed by me at Leechburg this 7th day of February, 1900.

HARRY E. SHELDON.

Witnesses:
B. R. PARR,
R. D. CAMPBELL.