

(No Model.)

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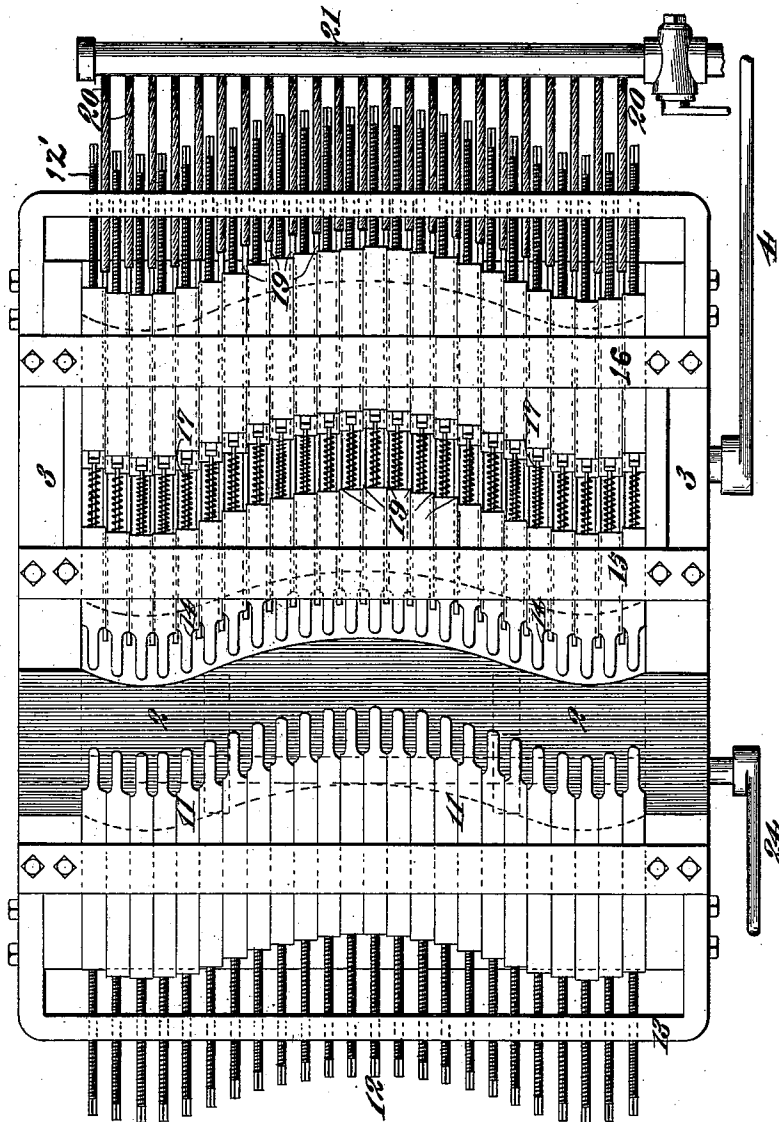
C. E. M. CHAMP.

DEVICE FOR FORMING AND TEMPERING BUGGY SPRINGS.

No. 568,602.

Patented Sept. 29, 1896.

Fig. 1.



Attest;

Stanley Stoner
E. Knight

Inventor;

Charles E. M. Champ.

By Wm. H. Bond
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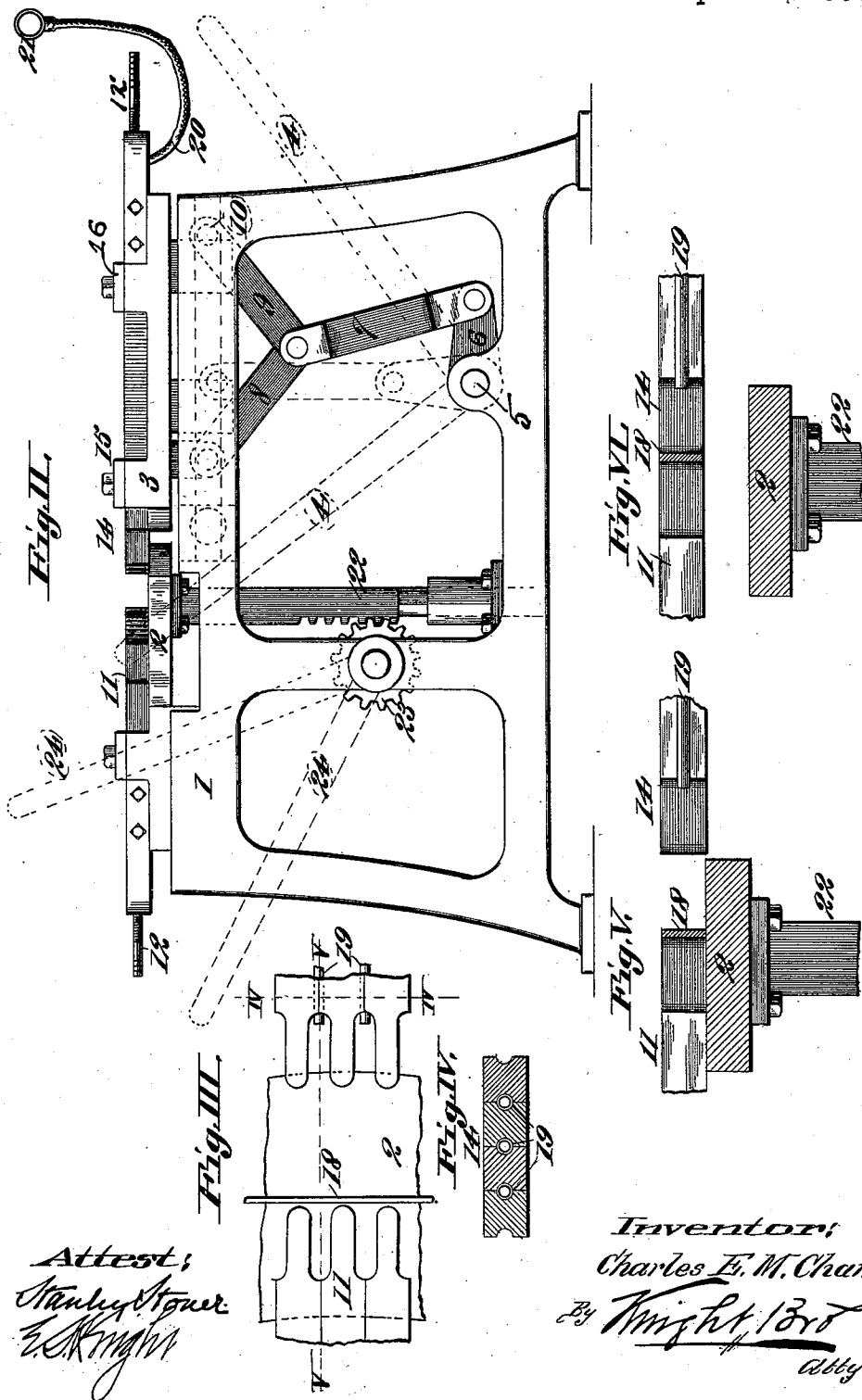
2 Sheets—Sheet 2.

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DEVICE FOR FORMING AND TEMPERING BUGGY SPRINGS.

No. 568,602.

Patented Sept. 29, 1896.



Attest;
Stanley H. Jones
W. Knight

Inventor;
Charles E. M. Champ
By *Knight & Brant*
Atty's

UNITED STATES PATENT OFFICE.

CHARLES E. M. CHAMP, OF ST. LOUIS, MISSOURI.

DEVICE FOR FORMING AND TEMPERING BUGGY-SPRINGS.

SPECIFICATION forming part of Letters Patent No. 568,602, dated September 29, 1896.

Application filed June 27, 1896. Serial No. 597,173. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. M. CHAMP, a citizen of the United States, and a resident of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in a Device for Forming and Tempering Buggy-Springs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is to provide an improved machine on which buggy-springs may be formed to a desired curve and then properly tempered and such curve made permanent. I accomplish this object by means of the device illustrated in the accompanying drawings, in which—

Figure I is a top plan view of the machine. Fig. II is a side elevation of the same. Fig. III is a detail plan view of the two sets of impinging fingers, showing a portion of a spring. Fig. IV is an end view of one set of fingers, taken along the line IV IV of Fig. III. Fig. V is a vertical section taken along line V V of Fig. III. Fig. VI is a similar view, but showing the table 2 lowered.

1 is the frame supporting the device, and 2 is a table movable in a vertical plane, properly supported in the frame 1. 3 is a second table movable in a horizontal plane, likewise properly supported in the said frame 1.

4 is a hand-lever pivoted at 5 to the frame 1, and having rigidly connected therewith a crank-arm 6. To this crank-arm 6 is pivoted a second arm 7, which operates the toggle 8 and 9, the arm 9 of which being pivoted to the frame 1 at 10. It will be seen by raising the lever 4 the toggle will be spread and the movable table 3 will be thrown to the left. (See Fig. II.)

11 is a set of fingers, which fingers are secured under a bar attached to the frame 1. They are adjusted to any desired curve which it is intended that the buggy-springs should take by means of the set-screws 12, which set-screws pass through the bar 13 and secure said fingers 11 in any desired position.

14 is a second set of fingers placed opposite to the set 11 and adapted to impinge on the opposite side of the buggy-spring, which is placed between the two sets. These fingers are also provided with set-screws 12'.

15 and 16 are two bars which are secured to the table 3, and which are adapted to keep the said fingers 14 in position.

17 are coil-springs bearing against the back of the fingers 14, adapted to keep the same closely pressed against the buggy-spring.

18 is the buggy-spring to be formed and tempered, and which is placed upon the table 2.

19 are pipes or passages passing between the fingers 14, said fingers being grooved on each side to admit the passage thereof, which pipes are attached by a flexible connection 20 with the water-pipe 21.

22 is an upright support to the table 2, said support being supplied with a rack which is adapted to mesh with the pinion 23, secured to the frame 1, which pinion is operated by a lever-arm 24. It will thus be seen that the swinging of the lever-arm 24 will raise or lower the table 2, on which the spring 18 rests.

The device is operated as follows: The heated spring, as yet untempered, is placed upon the table 2, said table being in the position shown in Figs. II and V, and the fingers 11 are adjusted by means of the set-screws 12 to the position which it is desired that the spring shall assume. Then by means of the toggle device already described the second set of fingers 14 is forced to the left, Fig. II, driving the spring 18 against the first set of fingers 11 and bending or curving the same into the position defined by the said fingers. Next the table 2, by means of the rack and pinion, is lowered from the said spring, leaving it supported entirely by the two sets of impinging fingers 11 and 14. Then the water is turned on from the pipe 21 and is allowed to flow through the pipes 19 against the hot spring 18, and the said spring is thus properly tempered. The former devices provided a means of introducing water against the hot spring after the said spring had been forced into a desired curve by impinging fingers, but by reason of the said spring and fingers being supported by a table 2 the lower part of the spring would be cooled first, and thus the spring would not be evenly tempered; but my device, which provides for the lowering of the table 2 after the spring has been forced into position, allows the water when thrown against the spring to immedi-

ately run off without forming any pool in which the lower part of the spring rests, thereby accomplishing the even cooling of said spring, and the flexible connections 20, 5 between the water-pipe 21 and the series of pipes 19, which introduce a separate jet between each pair of fingers 14, enable an instantaneous and uniform spray of water to be thrown upon the spring 18.

10 While I have shown the passages for water, 19, as introducing a stream against the spring from between each set of fingers, I do not limit myself to this construction, as the streams may be introduced from the sides or 15 ends of the fingers themselves.

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

1. The combination of two sets of adjustable impinging fingers adapted to hold a 20 spring, the water-spraying device, and the vertically-movable table, substantially as described.

2. The combination of two sets of adjust-

able impinging fingers adapted to hold a spring, the set-screws whereby the sets of fin- 25 gers are adjusted, the vertically-movable table, and a means for directing a stream of water from between each pair of one set of fingers; substantially as described.

3. The combination of a set of fingers hav- 30 ing a fixed support and provided with set-screws, a set of fingers having a movable table and provided with springs and set-screws, and a toggle adapted to operate the movable table horizontally, substantially as 35 described.

4. The combination of a fixed set of fingers, a movable set of fingers, a means of directing streams of water through the movable set of fingers, a vertically-movable table and 40 means for operating the movable set of fingers; substantially as described.

C. E. M. CHAMP.

In presence of—

G. H. KNIGHT,
STANLEY STONER.