

(No Model.)

5 Sheets—Sheet 1.

C. S. GOODING & S. W. LADD.
NAIL AND TACK DRIVING MACHINE.

No. 423,920.

Patented Mar. 25, 1890.

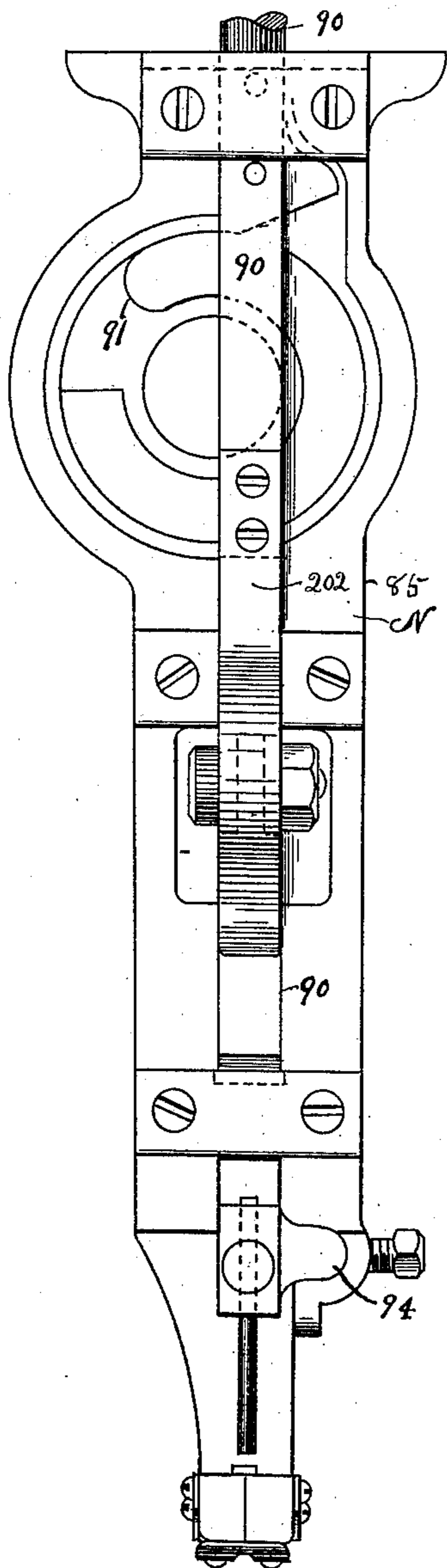


Fig. 1.

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Jas. A. Miller.

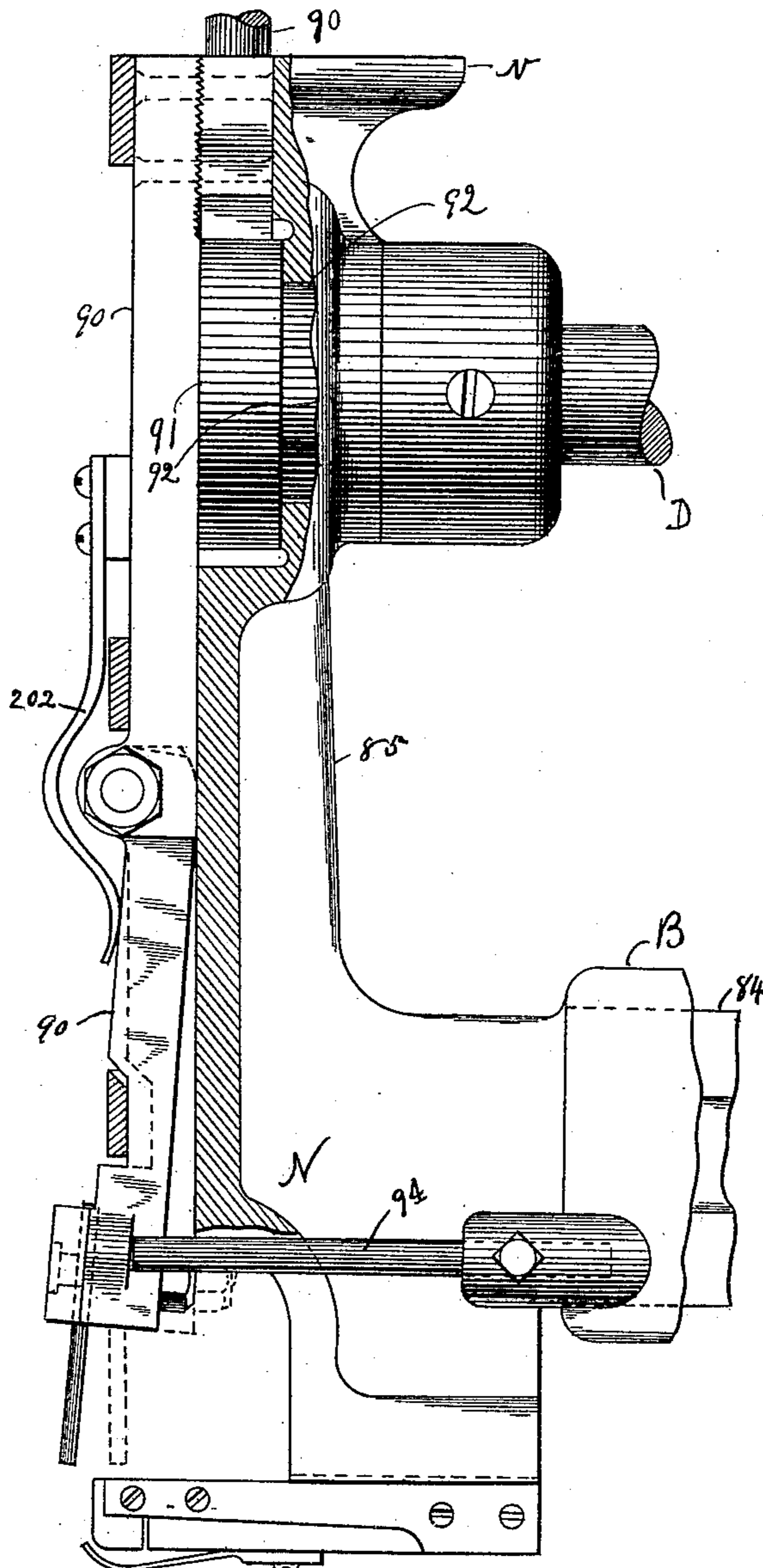


Fig. 2.

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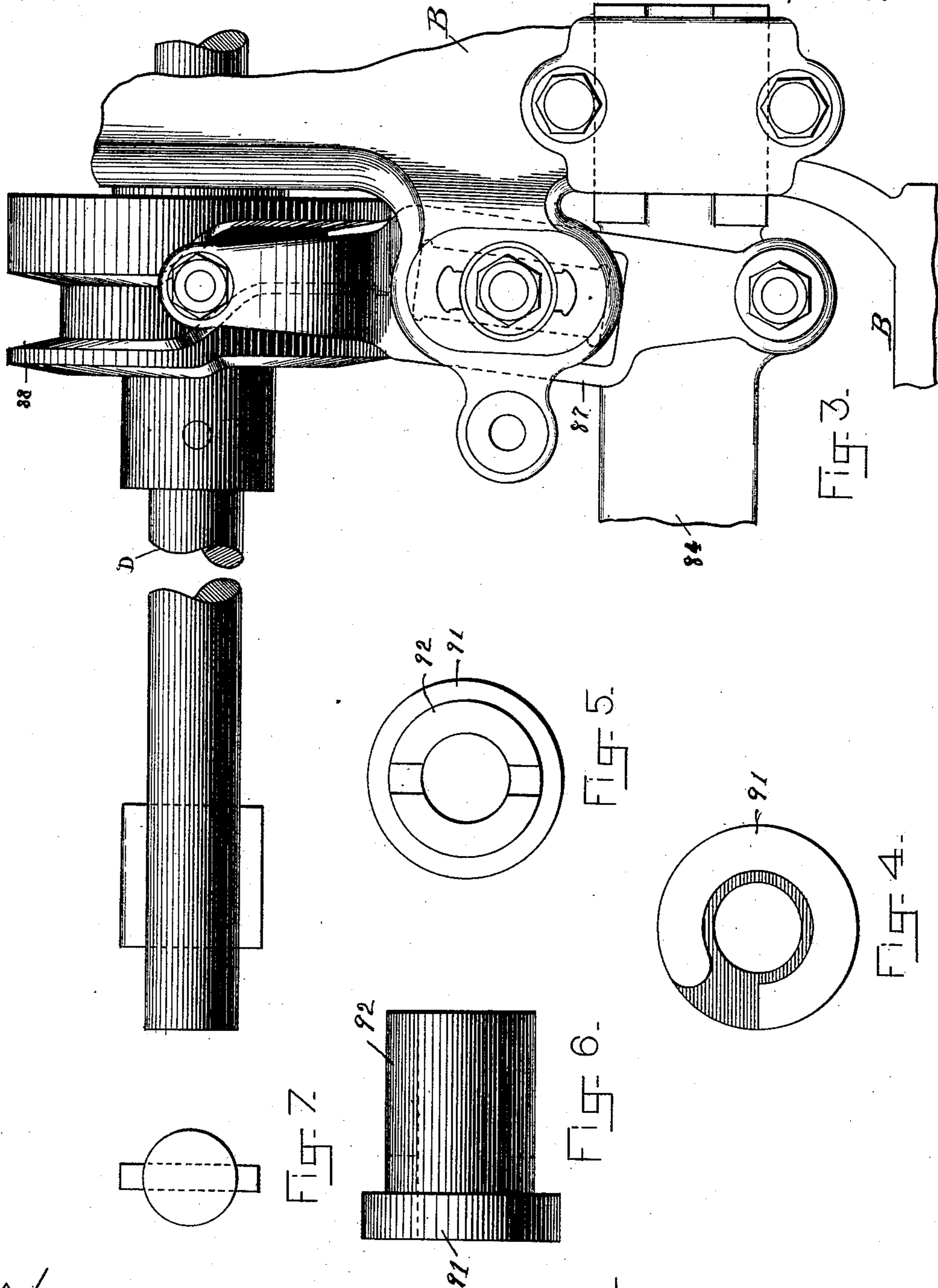
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WITNESSES:
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INVENTORS:
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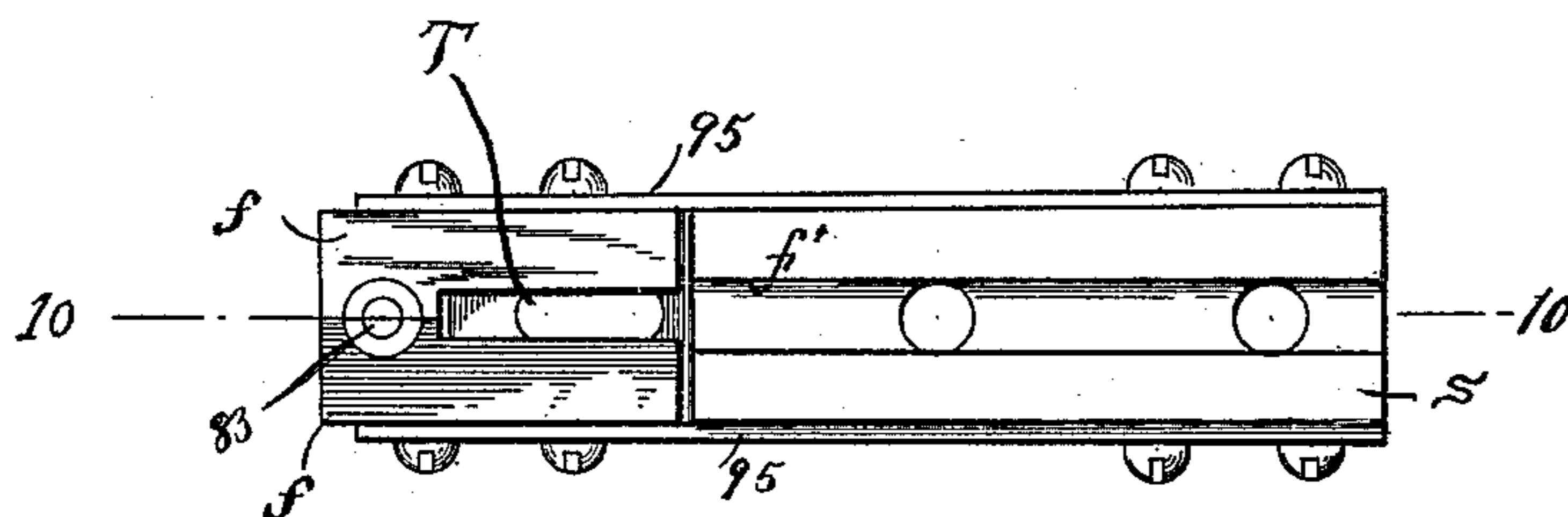


Fig. 8

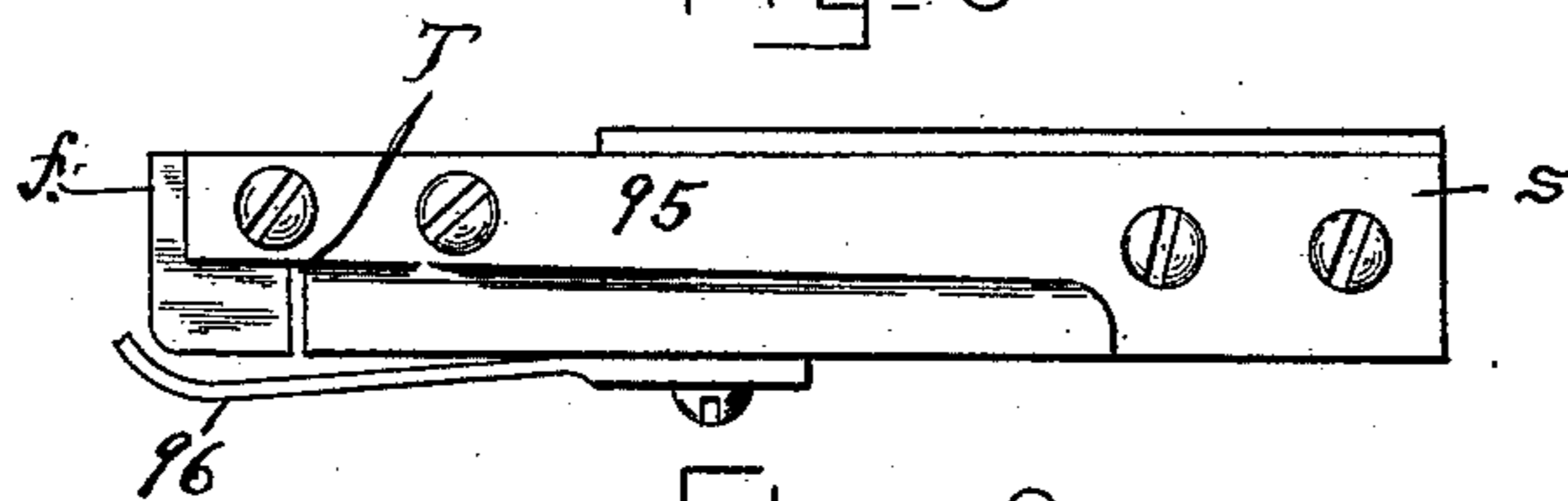


Fig. 9

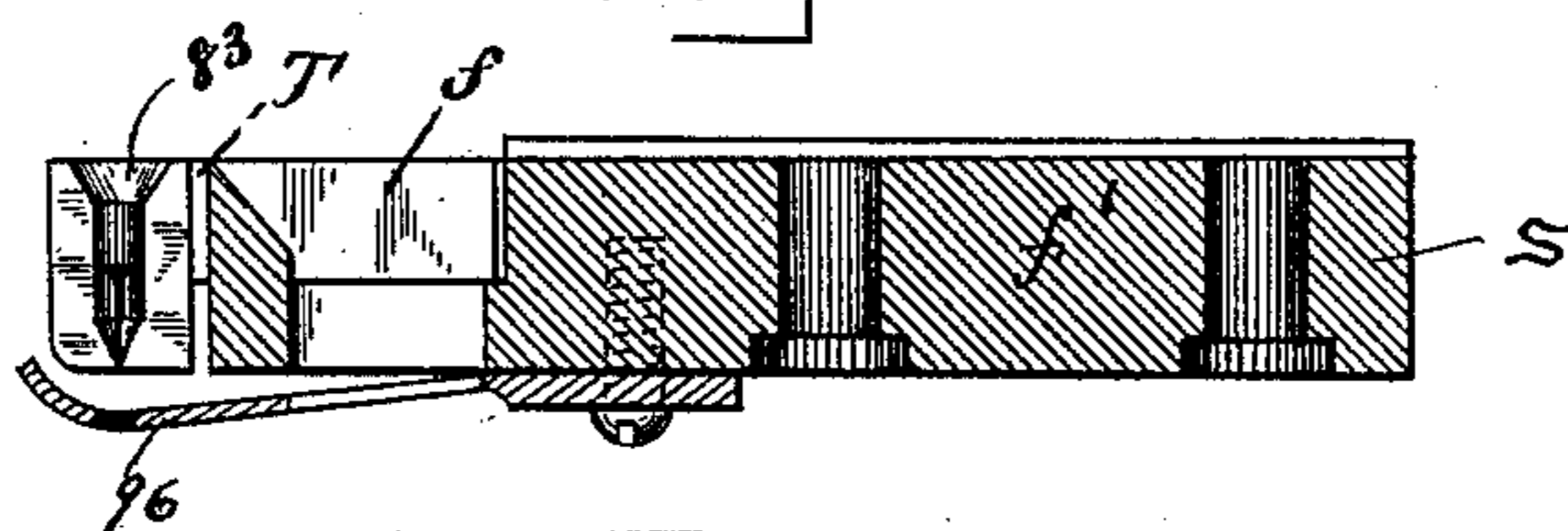


Fig. 10.

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INVENTORS:
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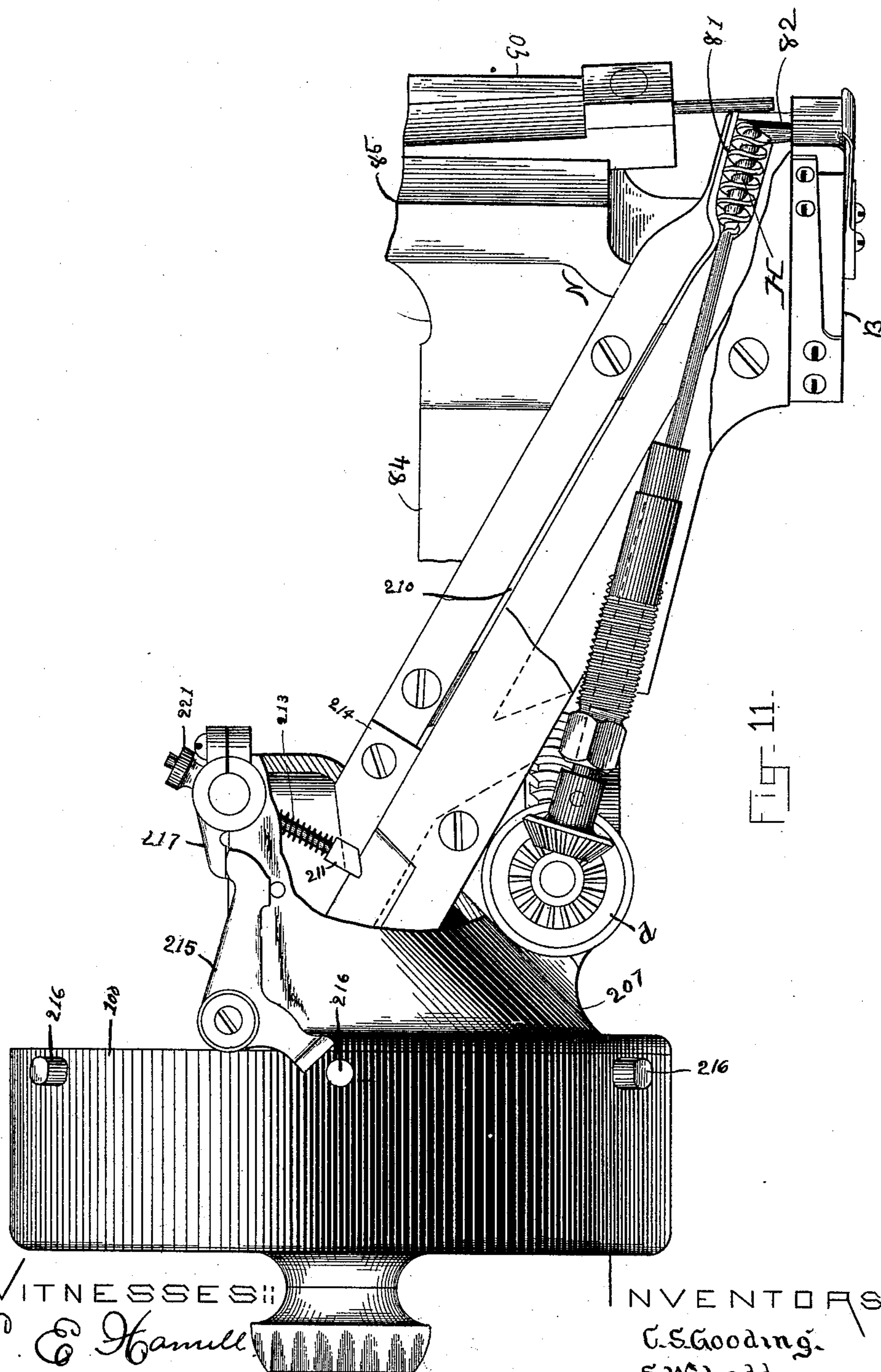
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C. S. GOODING & S. W. LADD.
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No. 423,920.

Patented Mar. 25, 1890.



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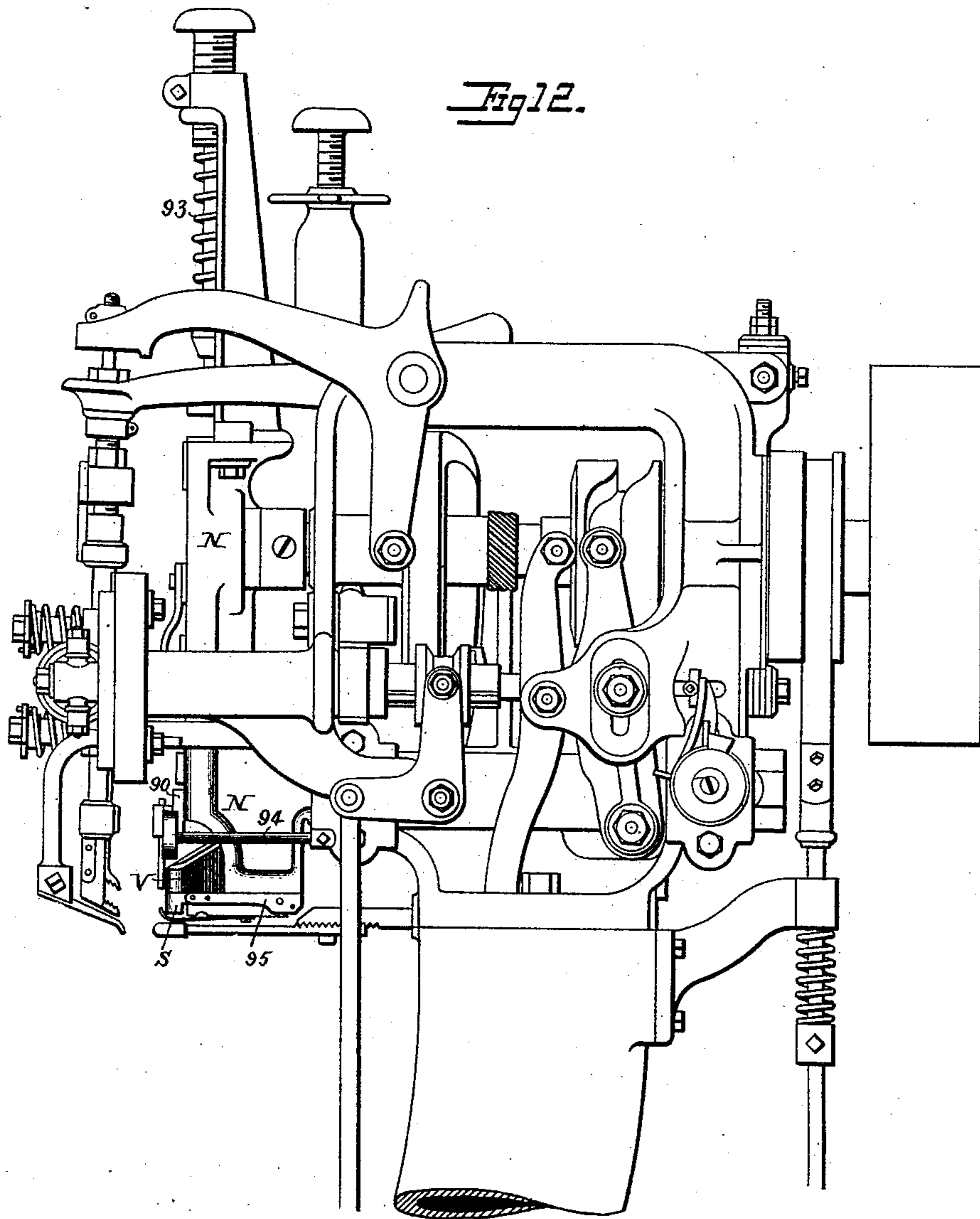
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C. S. GOODING & S. W. LADD.
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No. 423,920.

Patented Mar. 25, 1890.



Chas. S. Gooding & Sherman W. Ladd

Inventors

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Attorney

UNITED STATES PATENT OFFICE.

CHARLES S. GOODING, OF BROOKLINE, AND SHERMAN W. LADD, OF
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NAIL AND TACK DRIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 423,920, dated March 25, 1890.

Application filed November 19, 1888. Serial No. 291,261. (No model.)

To all whom it may concern:

Be it known that we, CHARLES S. GOODING and SHERMAN W. LADD, residing, respectively, at Brookline and Somerville, Massachusetts, have invented certain Improvements in Tack and Nail Driving Mechanism, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to mechanism for driving tacks and nails. It is employed by us particularly as a component part of a lasting-machine which forms the subject-matter of a separate application for Letters Patent, Serial No. 291,263.

The nature of this invention will be specifically described and claimed hereinafter.

Referring to the drawings, Figure 1 is a front view of the hammer-rod, its supporting-carriage, and lifting-cam. Fig. 2 is a side view of the same, the supporting-carriage being in section to better show details of construction. Fig. 3 is a side elevation of the mechanism for operating the hammer-rod and its supporting-carriage. Figs. 4, 5, 6, and 7 are details connected therewith. Fig. 8 is a plan view of the tack-carrying block. Fig. 9 is a side view of the same. Fig. 10 is a vertical longitudinal section on line 10 10 of Fig. 8. Fig. 11 is also a side view illustrating the hammer and tack carrying block in combination with a tack and nail distributing mechanism. Fig. 12 is a side view of sufficient of a lasting-machine to illustrate our improvements.

It will be understood that this invention comprises a driving mechanism movable first to the point for driving the tack and then retreat backward to allow other devices to come into position and manipulate the material to be tacked, and a tack-carrying block or mechanism adapted to receive the tack from the distributing device, advance it to the point for driving, and support it in position under the driver mechanism. To this end we provide a carriage N for supporting the driving mechanism. Said carriage has a lateral extension 84 and a vertical extension 85. (See Fig. 2.) The lateral extension 84 is arranged to permit sliding movement in a suitable groove formed in the machine head or frame B, and pivoted thereto is a lever 87, (see Fig.

3,) which engages a cam 88 on the main shaft, as shown, whereby the carriage is moved forward and backward for advancing and withdrawing the driving mechanism. The hammer-rod comprises the jointed bar 90 90, supported in the vertical arm 85 and arranged to permit movement in a suitable groove formed in said arm. The driver-bar is lifted by a cam 91, the shape of which is represented in Fig. 4. To this end said cam is supported on a sleeve 92, (see Fig. 5,) which sleeve is arranged on the main shaft D, and is grooved and splined thereto, so as to be revolved thereby for lifting the hammer-rod and permit endwise sliding movement thereon for allowing the necessary movement of the block or carriage N in advancing and withdrawing the nailing mechanism. The driver-bar is lifted against the spring 93, which, being contracted by the lifting of the hammer, operates to depress the hammer when released by the cam, and this, it will be understood, is the power which drives home the tack. The tacks are received from the distributing mechanism of any suitable character, and are dropped one at a time into the receptacle 82 in a block V, Figs. 1 and 11, through which they discharge into a suitable chamber 83, formed in the carrier-block S, (see Figs. 8, 9, and 10,) whereby they are supported and carried forward to the driving-point.

The tack and nail distributing mechanism employed by us has been specifically described in an application for Letters Patent therefor to be filed in the United States Patent Office simultaneously with this, Serial No. 287,988.

The tack-carrier block S is secured to the bottom of the driver-carriage N, as shown in Fig. 11, to the end that it may be carried forward and backward thereby. Said block is provided with a receiving-tube 82, and the rearward movement of the block N for withdrawing the hammer mechanism operates to place the block S in position under the distributing-tube with the opening 83 in line to receive the tack-discharge from the opening 82, as shown in Fig. 11. The next forward movement of the hammer mechanism moves forward the block S, which, during said forward movement, holds the tack suspended in the chamber 83, as represented in Fig. 10, and

when the point for driving is reached the hammer-bar descends into the opening 83 and drives home the tack. To this end the block S is made in three parts *f f f'*, which parts
 5 are pivotally connected and compressed together by springs 95 95, for holding the tack while the block advances to the driving-point. The driver in descending passes into the tube 83 and opens the parts *f f* against the springs
 10 95 95, and thus releases the tack at the point of driving.

Attached to the machine-frame is a rod 94, which, during the rearward movement of the block N, engages and presses forward the
 15 lower section of the hammer-bar, as shown in Fig. 2, to permit the parts to move above the end of the distributing-tube while the driver is at one side thereof. (See Fig. 11.) A spring 202, during the forward movement of the block
 20 N, operates to force the bottom section of the hammer-bar into line for driving the tack.

A hole or opening T is provided in the block S, through which chips and broken pieces of tack may escape, instead of grinding in be-
 25 tween the working parts.

Having thus described our invention, we claim and desire to secure by Letters Patent—

1. In a nailing-machine, the combination, with a stationary tack-receptacle, of a carriage movable laterally relatively thereto and having a driving mechanism secured to and moving with the carriage above the tack-receptacle, and a tack-carrier block secured to and moving with the carriage below the tack-receptacle, substantially as described.
 30 35

2. In combination, a receptacle for tacks singly, a sliding block or carriage N, a hammer mechanism supported in said block, a tack-carrier S, secured to and movable with
 40 the block below said receptacle, and means

for advancing and withdrawing the block, substantially as and for the purposes described.

3. In a nailing-machine, the combination, with a stationary tack-receptacle, of a carriage movable laterally relatively thereto, and a hammer or driving mechanism attached to the carriage, the lower portion of which is movable relatively to the operating-line of movement of the upper portion, substantially
 50 as described.

4. In a nailing-machine, the combination, with a stationary tack-receptacle, of a carriage movable laterally relatively thereto, and a hammer or driving mechanism attached to
 55 the carriage, the lower portion of which is pivotally secured to the upper portion, substantially as described.

5. In a nailing-machine, the combination, with the tack-receptacle, of a reciprocating
 60 jointed hammer, the lower portion of which is adapted to swing out of the line of vertical movement, and means for operating it, substantially as described.

6. In a nailing-machine, the carrier-block S, 65 having tack-receiving tube 83, the pivotally-connected parts *f f*, and spring devices 95 95, substantially as described.

7. The combination, with the receptacle V and tack-carrier, arranged to operate substan-
 70 tially as described, of the jointed hammer 90 90 and supporting and operating mechanism therefor, substantially as described.

Signed at Boston, Massachusetts, this 15th day of November, A. D. 1888.

CHAS. S. GOODING.
 SHERMAN W. LADD.

Witnesses:

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 C. B. TUTTLE.