P. G. Gardiner,

Creasing and Shearing Metal,

No. 16,915, Patented Mar. 31, 1857.

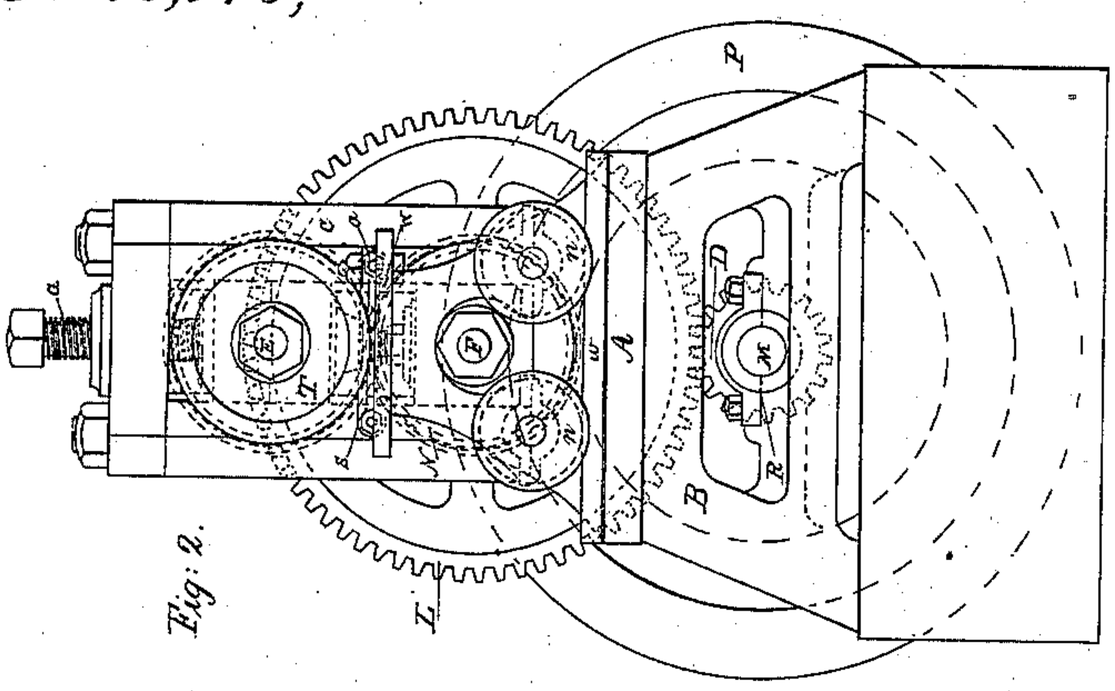

Fig: 2.

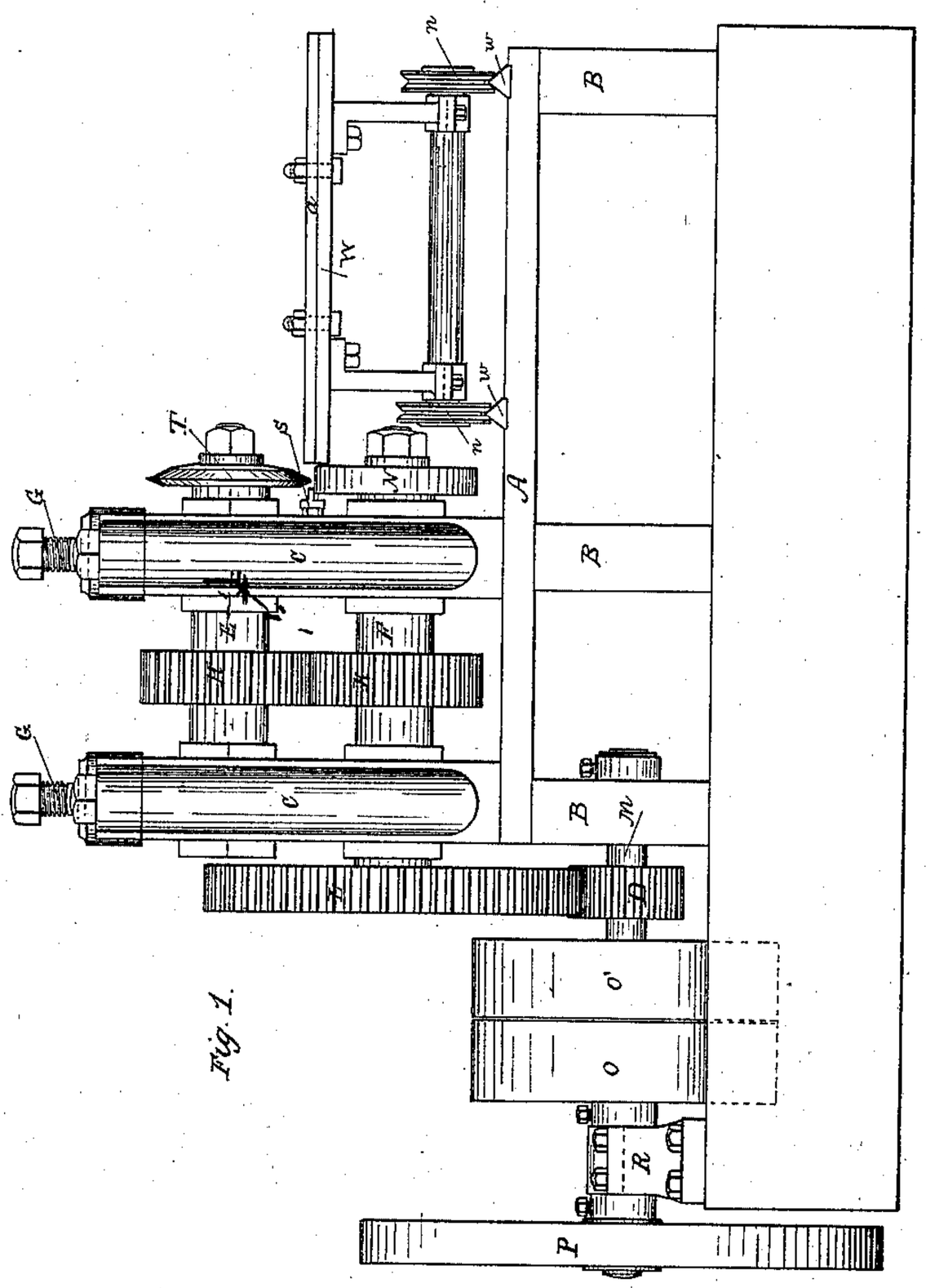

Fig. 1.

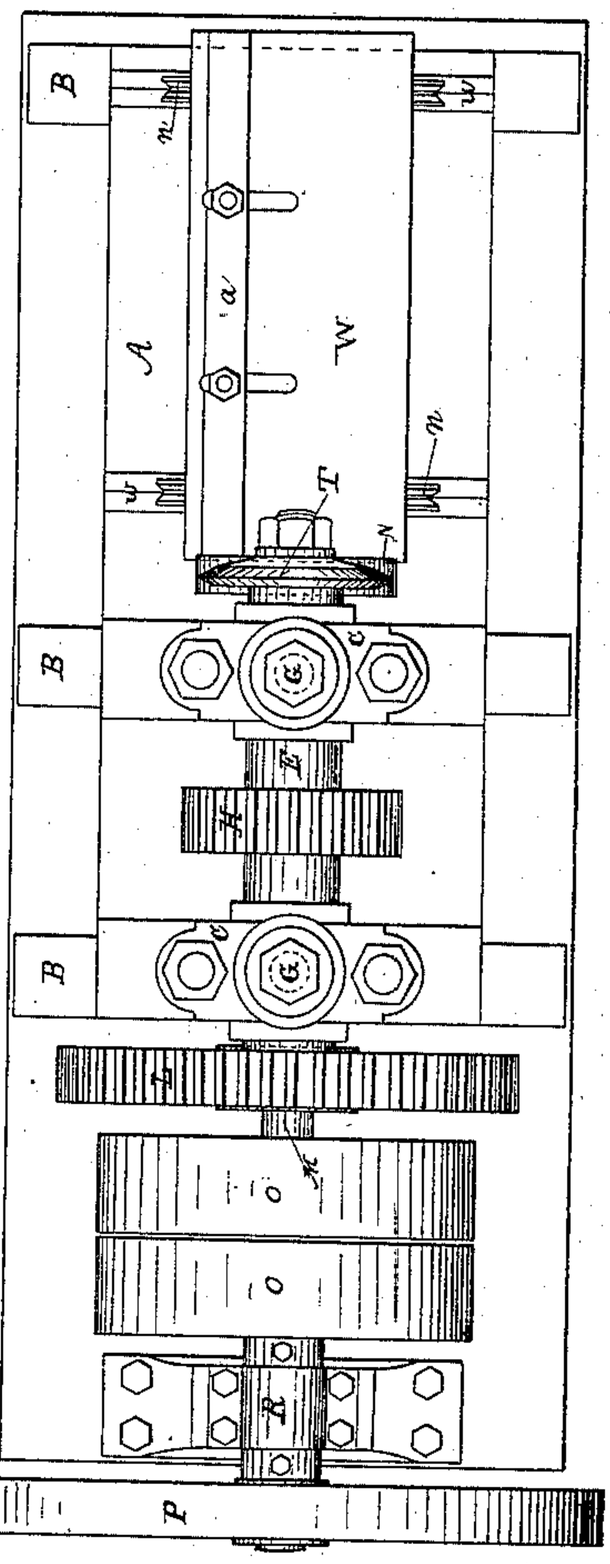

Fig: 3

Witnesses.
J. H. Hartley
Richard Winne

Inventor:
P. G. Gardiner

UNITED STATES PATENT OFFICE.

PERRY G. GARDINER, OF NEW YORK, N. Y.

MACHINE FOR CREASING PLATES FOR RAILWAY-CAR SPRINGS.

Specification of Letters Patent No. 16,915, dated March 31, 1857.

To all whom it may concern:

Be it known that I, PERRY G. GARDINER, of the city and county of New York, mechanical engineer, have invented a new and useful Machine for Indenting or Creasing Steel Plates to be Used in Making Conical Coiled Steel Railroad-Car Springs, and that the following is a full and exact description of my said invention, reference being had to the drawings accompanying and making part of this my specification.

In manufacturing the conical coiled steel springs upon the coiling machine described in my specification for Letters Patent for said machine, the flat thin plate of steel of which the spring is made, has, as described in said specification to be creased or indented near the end. This end of the steel plate is inserted into a slot or groove in the mandrel used in said coiling machine, by which it is held fast while being coiled upon the cone. The first turn of the mandrel turns the end of the plate to a very square bend, almost to a right angle; and it is to prevent the steel plate breaking and also to hold it fast upon the edge of the slot, that the crease or indentation is made; were it not for the crease, the plate would either slip out, or break short off; and it has been found that cutting or filing a groove or breaking the fiber of the steel, will not answer as it causes the plate to break off at the first turn of the mandrel. I have therefore constructed and invented a machine for indenting or pressing down into a crease the surface of the steel plate across its face near the end, without breaking the fiber or cutting it; the construction and operation of which is as follows:

In the accompanying drawings Figure I, represents a side elevation. Fig. II, represents an end elevation. Fig. III represents a top view, similar letters representing similar parts in all the figures.

A is the bed plate supported upon standards B, B, B and is provided with parallel uprights frames C C, containing suitable bearings for the shafts E and F. The bearings of the upper shaft E are so arranged as to be capable of being adjusted by means of the screws G, G. The shafts E and F are connected together through the toothed wheels K and H.

L is a spur wheel attached to the outer end of the lower shaft F and working into a pinion D fixed on the driving shaft M. This driving shaft runs in suitable bearings R, R and is provided with a fast and loose pulley O, O′; a fly wheel P and the before mentioned pinion D.

To the end of the shaft E a disk-like roller T having its edge shaped like the letter V but the edge or point formed by sides having an easy curve to the edge is attached; and upon the end of the shaft F and directly underneath the roller T, a roller N is attached having a perfectly flat face or periphery which is nearly in contact with the edge of the roller T.

S is a guide plate attached to the upright frame C and projecting somewhat over the upper surface of roller N, so that when the steel plate is between the rollers, the guide plate S will regulate its position there and also the distance of the crease from the end of the plate. This guide is capable of being set at any required distance from the rollers by means of the screws which fasten it to the frame.

W is a carriage supported on four wheels *n*, *n*, *n*, *n*, running upon ways W, W fitting into recesses in the wheels, which ways are attached to the bed plate A. The upper surface of the carriage W is a table having a flat and even surface and has upon its surface an adjustable stop or guide plate *a*, fastened to the table by set screws for the steel plate to rest against in the proper position, and to give it any required inclination, so that the crease or indentation will always be parallel with the end of the steel plate. Motion being given to the driving shaft M and thence to the rollers T and N the steel plate is placed upon the carriage W against the side of the guide plate *a*, and its end against the guide or stop plate S; the carriage is then moved forward toward the rollers and the steel plate is thereby carried between the rollers T and N, by which the steel plate receives the required indentation or crease upon its surface, without cutting or breaking the fiber of the plate.

What I claim as my invention in the foregoing and for which I desire Letters Patent, is—

The use of the V-shaped roller T and flat-faced roller N for creasing the plates as described when operating in connection with the carriage W, the plate S, and guide or stop plate *a*, in the manner and for the purposes specified.

P. G. GARDINER.

Witnesses:

J. B. MAPLES,

RICHARD WINNE.