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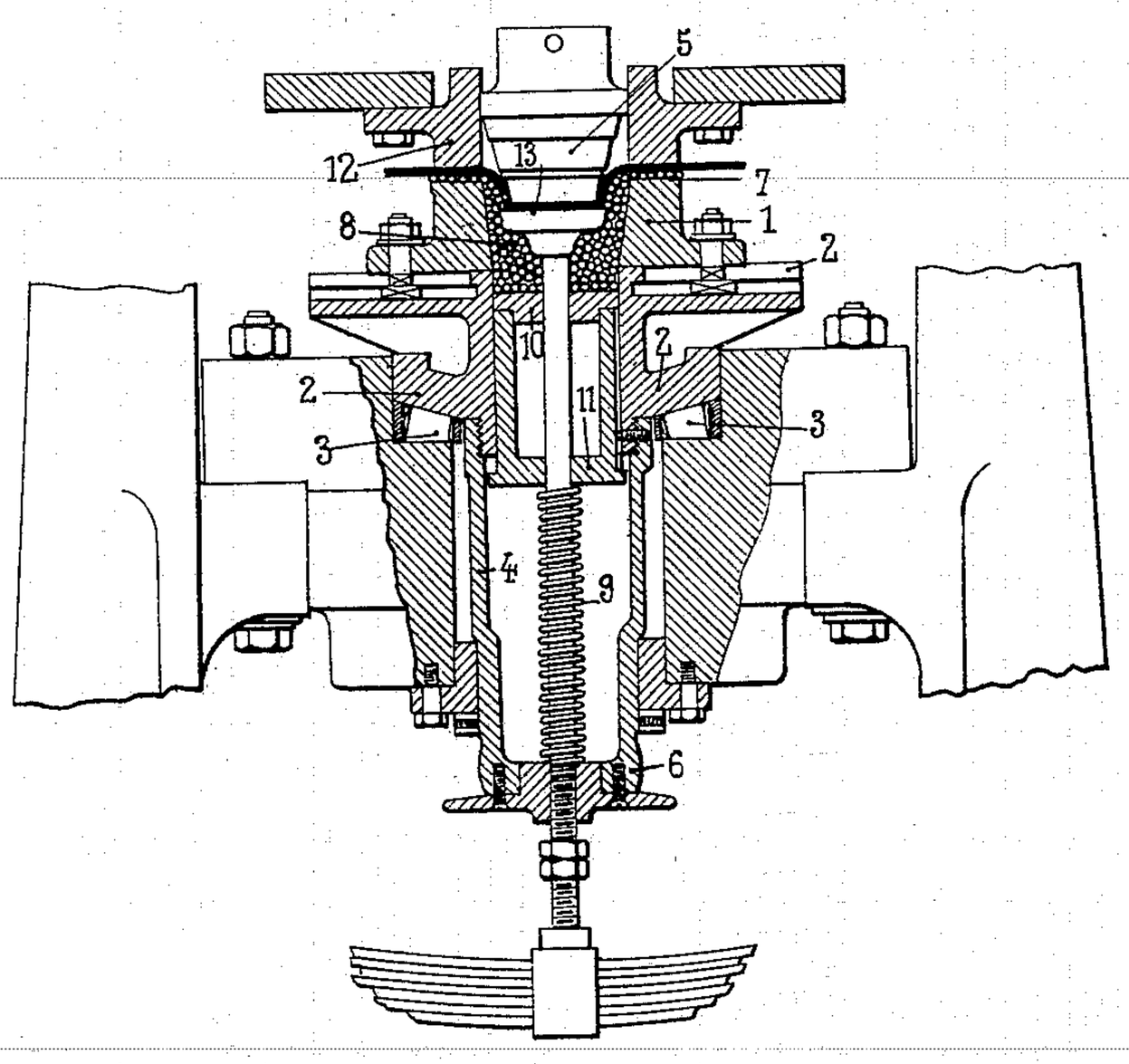
F. G. SEVETTE.

MACHINE FOR SHAPING AND PLANISHING SHEET METAL PLATES.

(Application filed June 14, 1897.)

(No Model.)



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UNITED STATES PATENT OFFICE.

FREDERIC GEORGES SEVETTE, OF PARIS, FRANCE.

MACHINE FOR SHAPING AND PLANISHING SHEET-METAL PLATES.

SPECIFICATION forming part of Letters Patent No. 612,279, dated October 11, 1898.

Application filed June 14, 1897. Serial No. 640,701. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC GEORGES SEVETTE, a citizen of France, residing at Paris, in the Department of the Seine, France, have invented certain new and useful Improvements in Shaping and Planishing Sheet-Metal Plates, of which the following is a specification.

My invention relates to an improved machine for shaping and planishing sheet-metal plates; and it consists in the features and in the construction, combination, and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying drawing, forming a part of this specification.

In machines of the character referred to which have hitherto been in common use the blank to be acted upon is usually pressed between the smooth surfaces of a stamp and matrix, which are caused to approach each other for the purpose, so that the material of the blank is caused to take the shape desired. According to my invention I replace one of these surfaces by a surface provided with steel balls and having a rapid rotary movement. The balls act as a great number of shaping and planishing tools and aid in the proper molecular displacement of the material and shape and planish the blank without necessitating a great pressure, so that the material is much less strained than hitherto and the product is free from folds and perfectly smooth.

I will now describe my invention in detail, referring to the accompanying drawing, which shows in vertical section the stamp and matrix of a shaping and planishing machine constructed according to my invention.

The matrix 1 is carried by a support 2, mounted so as to turn on conical rollers 3. The support 2 is fixed on a hollow shaft 4, to which rapid rotation can be imparted when the stamp 5, forming the upper surface, enters the matrix 1 by a pulley 6, for example, fixed on the end of the shaft 4 and driven at proper intervals by suitable mechanism. (Not shown.) A central recess formed in the matrix 1 is filled with balls 8, and when the stamp 5 reaches the surface of the blank, which is held between the fixed surface 12 and the surface 7, formed by the revolving balls, the balls 8, which fill the matrix 1, act upon the material of the blank over the surface of the stamp, no matter what shape it may be, and cause a very efficient action thereon. The blank is thus shaped between a stamp operating as a die and a number of rotating balls, which act as shaping and planishing tools.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a shaping and planishing machine, the combination with a rotatable matrix centrally recessed, of a mass of balls loosely arranged in said recess, a stamp, means for clamping the blank to be operated upon beneath the stamp, and mechanism for forcing the balls against the face of the blank and for causing them to have a rotary movement thereon, substantially as described.

2. In a shaping and planishing machine, the combination with a matrix having a central recess, of a mass of balls loosely disposed therein, a stamp, means for clamping the blank to be operated upon between said matrix and stamp, a plate arranged to enter the matrix-chamber and a spring for forcing said plate in said chamber, substantially as described.

3. In a shaping and planishing machine, the combination with a matrix having a central recess, of a mass of balls loosely disposed in said recess, a stamp, a central stem in the matrix, a counter-abutment fixed on the end of the stem, means for forcing the mass of loose balls against the surface of the blank to be operated upon, thereby causing the balls to enter a closed and gradually-contracted space surrounding the stamp, and means for imparting rotary motion to the matrix, substantially as described.

4. A shaping and planishing machine in which the matrix is provided with balls and rotated during the operation of the stamp or upper surface, the said matrix being mounted on a support 2, fast on a hollow shaft 4, formed with a pulley 6, set in motion when required, the rotation of the matrix causing a large number of balls to revolve under the blank, which by their action avoid the for-

mation of folds during the operation and aid in the molecular displacement of the material while polishing or planishing the surface of the blank, substantially as described.

5. In a shaping and planishing machine the combination of a rotating matrix in which an internal cavity in the said matrix is filled with rolling balls which are pressed upward by a spring, an intermediate cylinder, and a plate forming the base of the cavity, so that the surface of the blank is shaped and polished or planished simultaneously, substantially as hereinbefore described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FREDERIC GEORGES SEVETTE.

Witnesses:

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