

No. 707,678.

Patented Aug. 26, 1902.

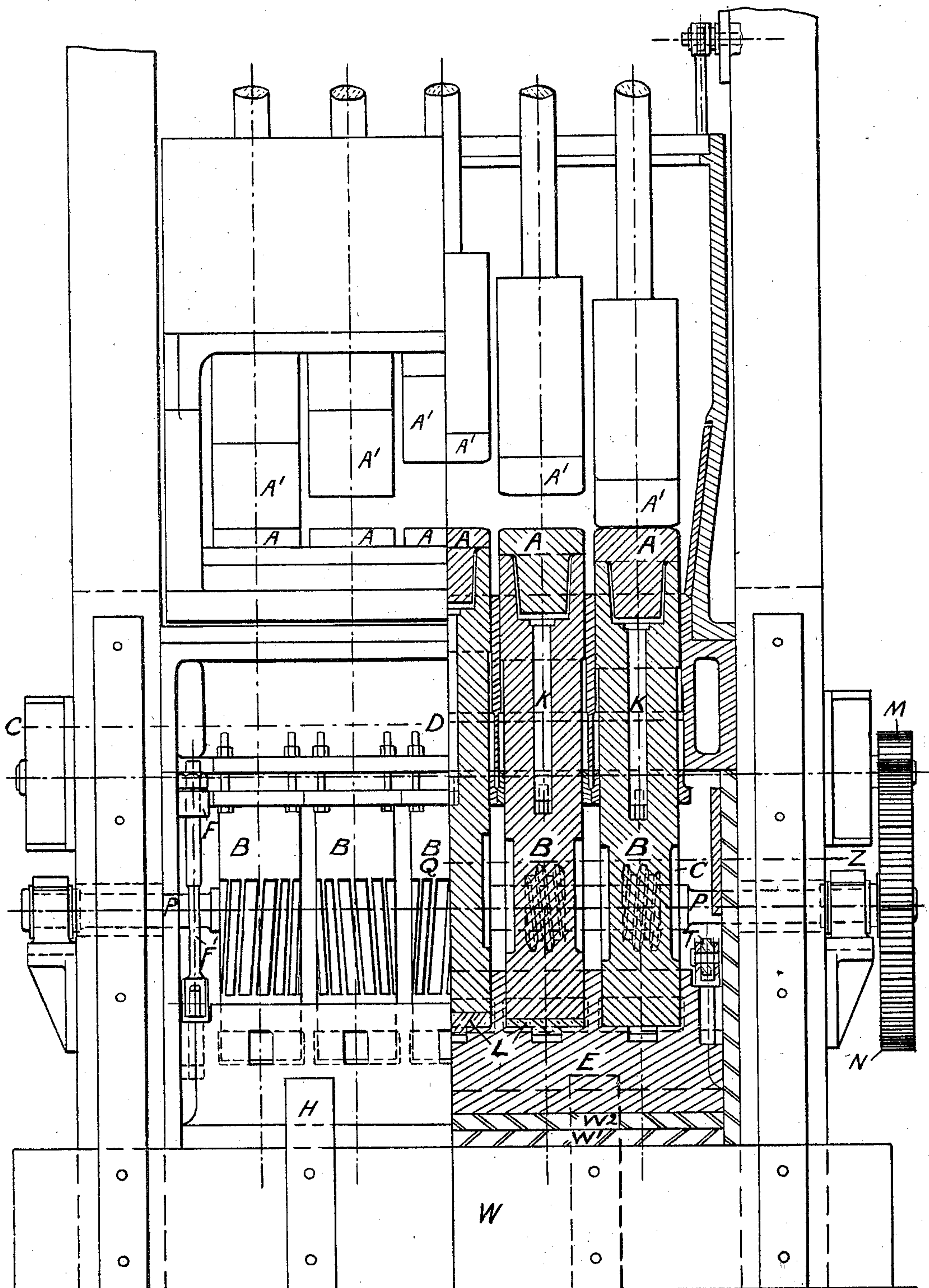
J. G. DAW.

METALLIFEROUS STAMPING MILL OR MACHINE.

(Application filed June 25, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
Desbelle Waldron
Otto Munk

FIG. 1.

Inventor
James Gilbert Daw
By Richard L. Attorneys

No. 707,678.

Patented Aug. 26, 1902.

J. G. DAW.

METALLIFEROUS STAMPING MILL OR MACHINE.

(Application filed June 25, 1901.)

(No Model.)

3 Sheets—Sheet 2.

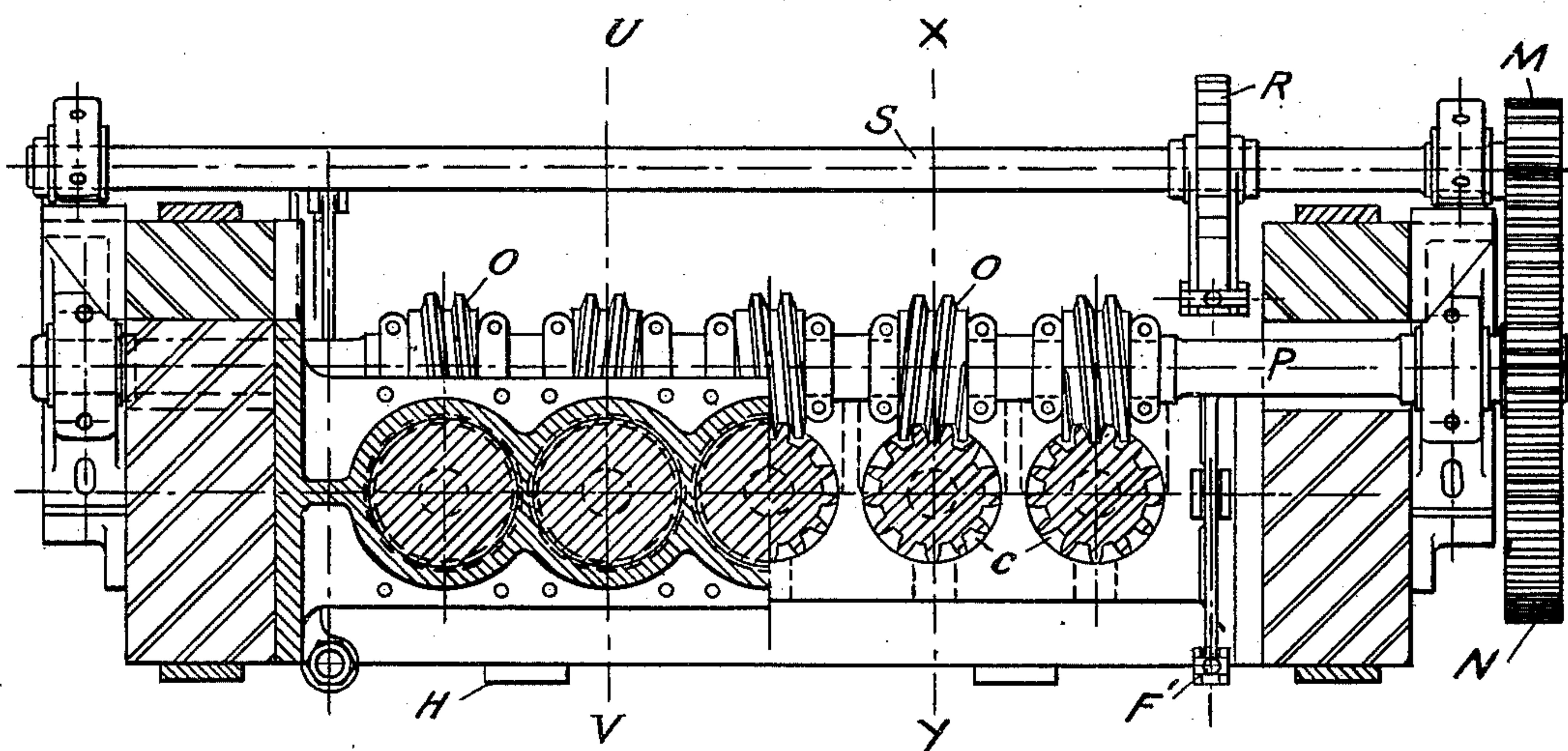


FIG. 2.

WITNESSES:
Isabella Waldron
Oliver

INVENTOR.
James Gilbert Daw
BY
Richard
ATTORNEYS.

No. 707,678.

Patented Aug. 26, 1902.

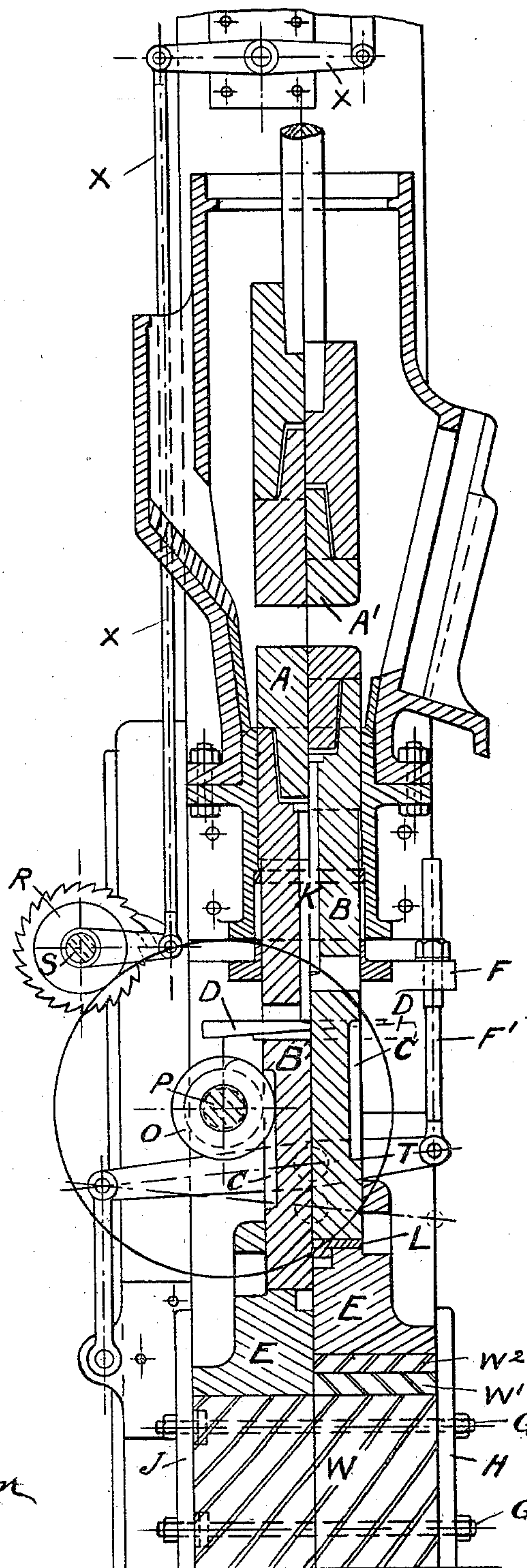
J. G. DAW.

METALLIFEROUS STAMPING MILL OR MACHINE.

(Application filed June 25, 1901.)

(No Model.)

3 Sheets—Sheet 3.



WITNESSES:

Isabella Waldron

Oldenburg

INVENTOR.

James Gilbert Dawd

81

BY 

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES GILBERT DAW, OF LLANELLY, ENGLAND.

METALLIFEROUS STAMPING MILL OR MACHINE.

SPECIFICATION forming part of Letters Patent No. 707,678, dated August 26, 1902.

Application filed June 25, 1901. Serial No. 65,990. (No model.)

To all whom it may concern:

Be it known that I, JAMES GILBERT DAW, a subject of the King of Great Britain and Ireland, and a resident of 2 Goring road, in the town of Llanelly, in the county of Carmarthen, in the Principality of Wales, England, have invented certain new and useful Improvements in Metalliferous Stamping Mills or Machines, (for which I have filed an application for a patent with a provisional specification in Great Britain, No. 11,761, bearing date June 8, 1901,) of which the following is a specification.

The objects of my invention are to construct a metalliferous stamping-mill that shall be more effective and durable than those at present in use. I effect this in the following manner: First, by making each and all the anvils or dies revolve around their perpendicular axes in order that their respective faces may be maintained even and parallel with those of the heads and shoes which work upon them, thereby obviating the tendency which these working faces have to wear down on one side; second, to provide the means of vertically adjusting the anvils or dies and so keeping their faces always at the same level or thereabout; third, to more firmly secure the anvils or dies in position and facilitate the changing of the same.

Referring to the drawings which form a part of this specification, Figure 1, Sheet 1, is a front elevation, half in section, through the anvils or dies of a metalliferous stamping-mill provided with five sets of anvils or dies and heads or shoes, one half of which shows the anvils or dies before they become worn and the other half showing the anvils or dies in different stages of wear. Fig. 2, Sheet 2, is a plan of the same, half in section on the line C D and half in section on the line Q Z; and Fig. 3, Sheet 3, is a transverse view, half in section on the line U V, Fig. 2, showing the anvils or dies before they become worn, and half in section on the line X Y, showing the anvils or dies adjusted to the proper position after they have become worn.

The same letters refer to similar parts throughout the several views.

In metalliferous stamping-mills as at present constructed the anvils or dies are fixed and usually wear down on one side in an irregu-

lar manner, more so on the feeding side than on the discharge side of the mill. Consequently only a very limited portion of the area of the faces of anvils or dies can be utilized for crushing the material. When the anvils or dies wear in this way, the heads or shoes strike harder on one side than the other, which occasions more wear and tear in the mortar-box and throughout the mill. In my improved mill I fit the anvils or dies A into anvil-blocks B. These anvil-blocks I also fit into a bottom block or holder E, and I make the blocks B sufficiently heavy to allow of the force of the blow given by the fall of the shoe or head A' being absorbed by the ores. The anvil-blocks and holder rest upon a wood foundation W. I make the anvils or dies A and the anvil-blocks B revolve by fixing an eccentric on the main driving-shaft of the mill. This eccentric I connect by suitable levers X to a ratchet-wheel R, fixed on a longitudinal shaft S, carried in bearings on the standards of the mill. On one end of this shaft I fix a pinion M, gearing into a spur-wheel N, which is fixed on a longitudinal shaft P, (also carried in bearings on the standards of the mill.) On this last-named shaft P, I fix the same number of worms O as there are stamps in the mill and which in order to relieve the collars of the shaft I make alternately right and left handed. Each of these worms gears into a worm-wheel C, formed on each of the anvil-blocks B. It will thus be seen that when the main shaft of the mill is put in motion the anvil-blocks, with the anvils or dies, will revolve, and instead of wearing in an irregular manner and on one side, as is at present the case, any wear which takes place will necessarily be in an even manner over their faces and parallel with the faces of the heads or shoes working on them. Again, in stamping-mills as at present constructed as the anvils or dies wear down there is greater difficulty in discharging the crushed material, because the stamping after a time is done in a pit, with the result that a large quantity of slime is produced, which is most undesirable. To remedy this defect, I provide the means for keeping the faces of the anvils or dies always at the same level or thereabout and in the best position in relation to the discharge-grating of the mill. This I effect as fol-

lows: On one side of each standard of the mill I provide lugs F, to which I secure, by means of nuts, two screwed rods F' F'. These rods I connect by the levers T T to the anvil-blocks B and the bottom anvil-blocks or holders E. When the anvils or dies become more or less worn, it will be seen that they can, with their anvil-blocks B and holders E, be raised and adjusted to the proper level by means of the nuts and screwed rods F F' and the levers T T. Wood liners W' W² of the required thickness may then be placed under the bottom anvil-block or holder E. These wood liners are held in place by means of the stops H H and J J. The stops H H in front of the mill are screwed up tightly by the collar-bolts G G, whereas the stops J J at the back of the mill can be easily removed whenever a new liner is required. As the wear is greatest on the center or feeding set of anvils or dies in a mill and the wear on the intermediate sets is greater than on the end sets, I provide adjustable metal liners L L of the required thickness under the anvil-blocks B. These liners I provide with projections on their under sides, which fit into recesses in the bottom anvil-blocks or holders E, thereby making it impossible for them to work out, although they can be easily and readily changed by slightly lifting the anvil-blocks B. It will thus be seen that by inserting these adjustable liners L of a suitable thickness under the anvil-blocks the faces of the anvils or dies may be raised to the proper level to compensate for any irregularity caused by

the center or intermediate sets wearing faster than the end sets.

In stamping-mills as at present in use the changing of the anvils or dies entails considerable time and trouble, as each one has to be dug out and the adjoining anvils or dies have to be moved before this can be successfully accomplished. My arrangement obviates this, as I provide each anvil-block B with a vertical pin K down its center, such pin having a collar-head fitting underneath the anvil or die A, so that when it is desired to change any anvil or die the pin K can be knocked up by the employment of the folding cotters D D, and it will then lift the anvil or die clear of the block B, so that it can be removed or changed without interfering with any of the adjoining anvils or dies.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a stamp-mill, a plurality of anvils arranged in a row, worm-gears connected with said anvils, a shaft carrying a plurality of worms meshing with said worm-wheels, pawl-and-ratchet mechanism for rotating said shaft, and stamps coöperating with said anvils, substantially as described.

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

JAMES GILBERT DAW.

Witnesses:

G. W. BOWEN,
W. L. DAVIES.