

No. 706,151.

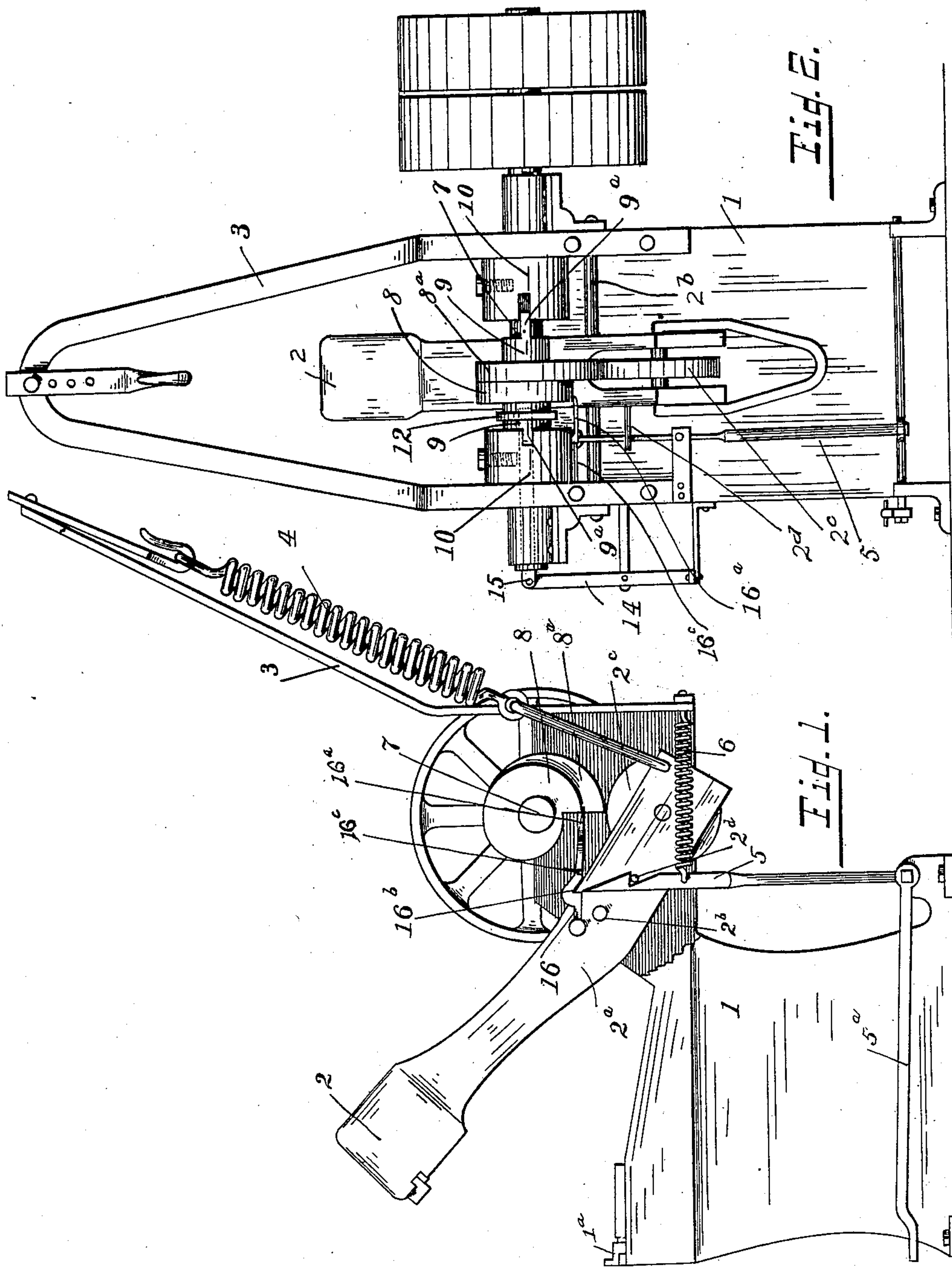
Patented Aug. 5, 1902.

W. BAUERMEISTER.
POWER HAMMER.

(Application filed Feb. 7, 1902.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

Benz. Finckel

G. H. Voskreschler.

INVENTOR

William Baermeister

BY

Finckel, Finckel
his ATTORNEYS

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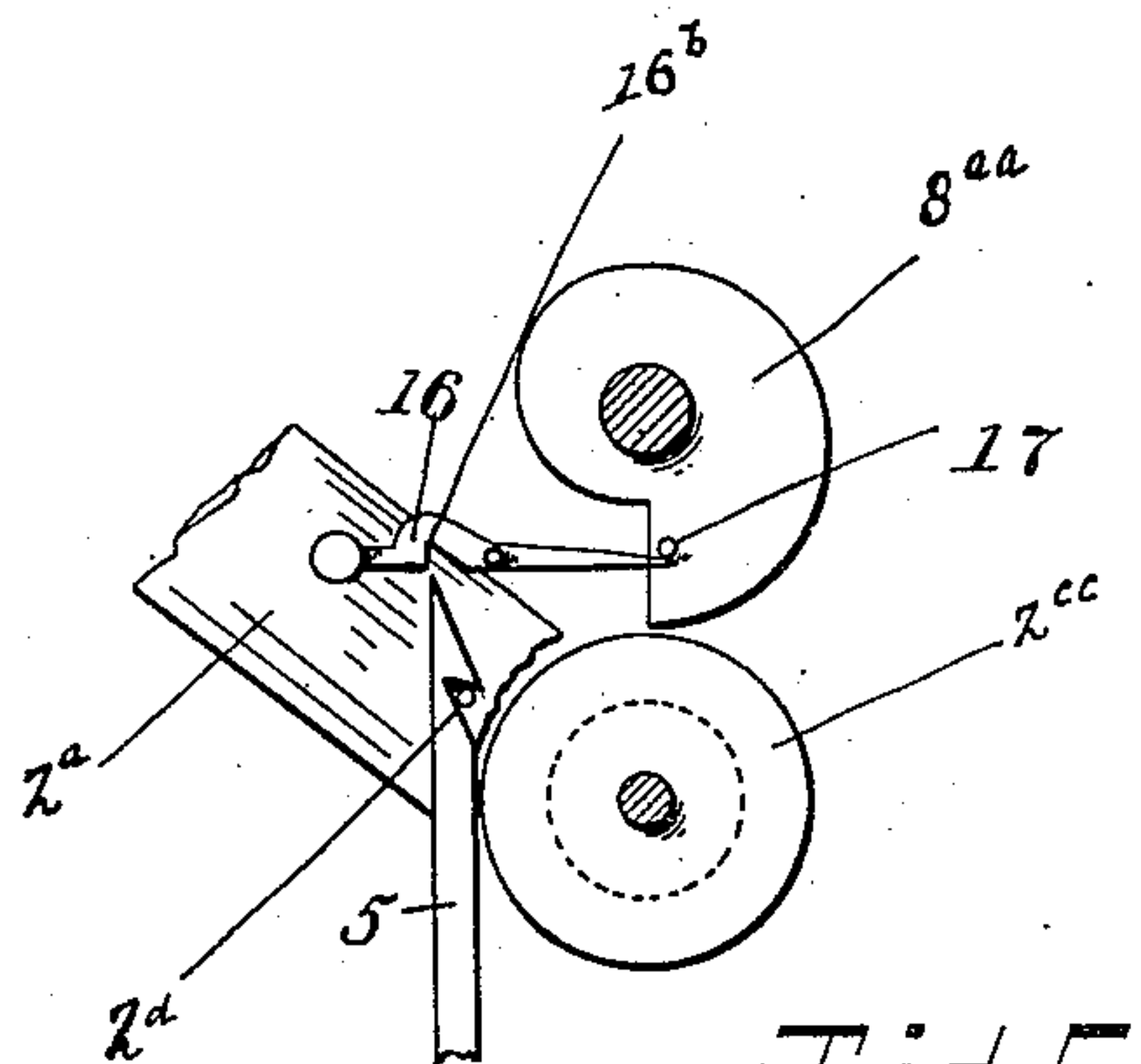
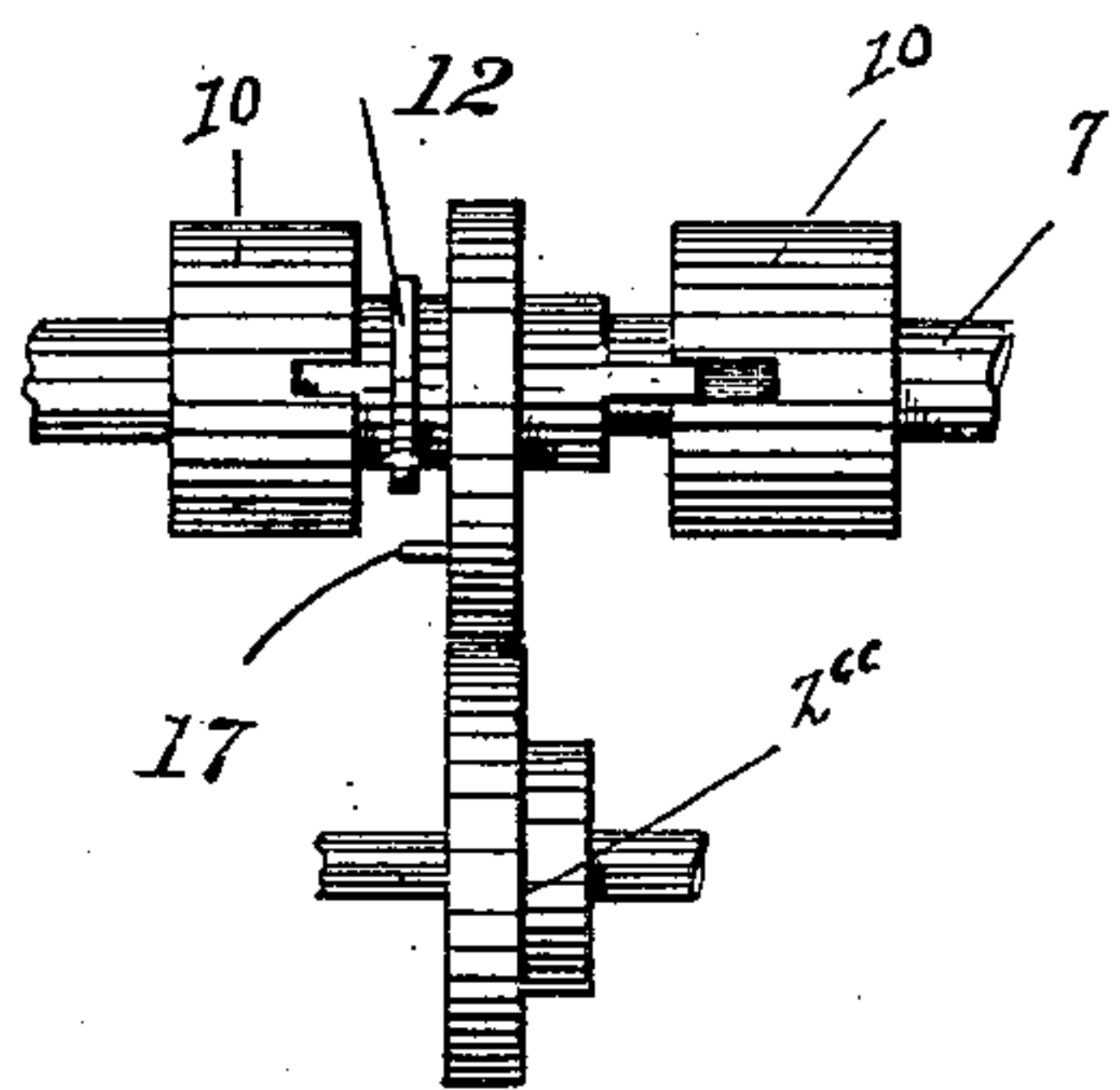
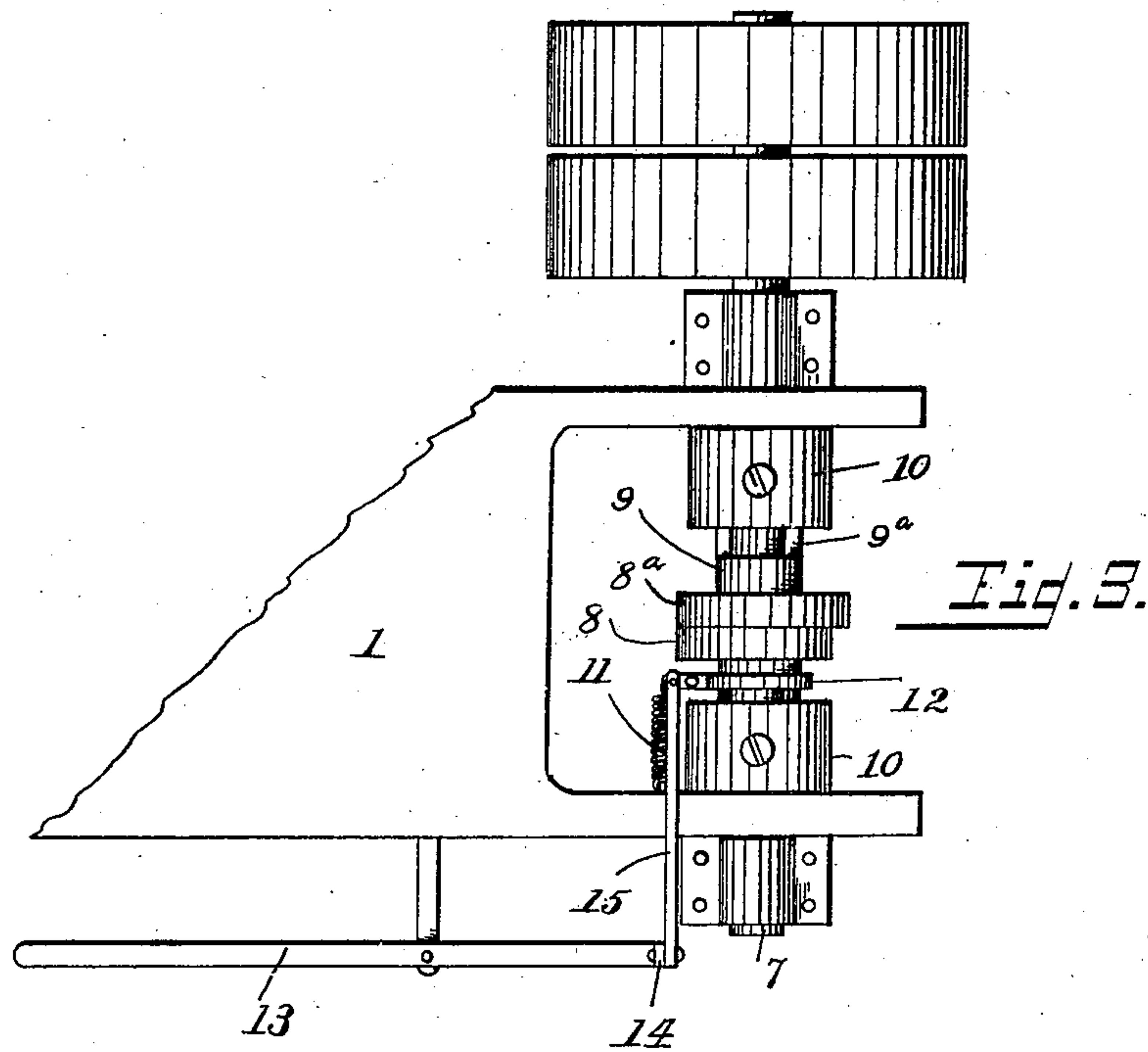
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WITNESSES:

Benj. Linckel
J. H. Vosskuhler.

INVENTOR

William Bauermeister

BY

Linckel & Linckel
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM BAUERMEISTER, OF COLUMBUS, OHIO, ASSIGNOR TO THE HAYDEN-CORBETT CHAIN COMPANY, OF COLUMBUS, OHIO, A CORPORATION OF NEW JERSEY.

POWER-HAMMER.

SPECIFICATION forming part of Letters Patent No. 706,151, dated August 5, 1902.

Application filed February 7, 1902. Serial No. 92,954. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BAUERMEISTER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Power-Hammers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to power-hammers especially adapted for welding chain-links and other articles of metal.

The object of the invention is to provide a hammer with which heavy or light blows, as required, can be given.

The invention is embodied in the combination, with a pivoted hammer shank or lever, of two or more rotated cams so arranged that they can be shifted to act on said shank or lever to raise the hammer and allow it to drop to strike the blow, the blow being heavy or light according to the size or radius of the cam acting on the shank or according to the size of a wheel upon which a cam acts.

The invention further consists in a trip device arranged to release the hammer at the proper point with respect to the cam, so as not to allow the hammer to drop prematurely, thereby interfering with its proper operation and jarring and possibly breaking or damaging the machine.

In the accompanying drawings, Figure 1 is a side view of the machine, a part being broken out. Fig. 2 is a rear view, the spring for actuating the hammer being omitted. Fig. 3 is a plan view of a detail illustrating the cam-shifting devices. Figs. 4 and 5 show rear and side views of a modified form of devices for varying the blow of the hammer.

In the several views, 1 designates the frame of the hammer and operative devices. This frame has at its forward portion an anvil on which is any suitable die or shaping device 1^a.

2 is the hammer-head, and 2^a the shank or lever thereof, the latter being fulcrumed on a shaft 2^b between the sides of the frame. The lever or shank of the hammer has, as shown in Figs. 1 and 2, an antifriction-wheel 2^c. Connecting the rear end of the hammer

lever or shank and the upper end of a yoke or bracket 3, reaching upward and rearward from the frame, is a spring 4, tending to pull the hammer-head downward with considerable force; but a lever having an upwardly-extending latching-arm 5 and a forwardly-extending footpiece 5^a is fulcrumed in the lower part of the frame, so that the latching-arm can engage a pin 2^d on the side of the hammer-shank to hold the hammer-head normally raised when not performing the operation of welding. A spring 6, connecting the latching-arm 5 and the frame 1, tends to automatically hold said latching-arm in engagement with said pin 2^d until removed by the pressure of the foot of the operative, and when the foot is released from the lever 5^a the hammer is automatically caught and held in its elevated or striking position. Journaled between the sides of the frame and directly above the antifriction-wheel 2^c is a power-shaft 7, on which, as shown in Figs. 1, 2, and 3, are slidably keyed two cams 8 and 8^a, one small and the other large, and having their active or crescent edges beginning and terminating in the same plane, but offset or stepped from each other. The two cams have oppositely-extending hubs 9, with lateral splines 9^a, to enter and engage collars 10, fastened or keyed to the shaft 7. The cams are thus kept constantly rotating and can be shifted on the driving-shaft, so that first one and then the other revolves over the antifriction-wheel 2^c; but normally the larger cam is held in position to rotate over the antifriction-wheel by means of a spring 11, (see Fig. 3,) connecting a non-rotative shifting-ring 12, that engages a groove in the hub 9 and the frame. The cams can be shifted by means of a horizontally-arranged lever 13, the outer end of which is in easy reach of the knee of the operative at the front of the machine and the inner end of which engages a vertical lever 14, having hinged to its upper end a rod 15, that is connected to the shifting-ring 12.

In order that the hammer-lever shall be releasable for the action of the large cam at the proper time, I provide a trip device consisting of a lever 16, supported on a pin 16^c, projecting from the inner side of the frame and weighted at its front portion and having a lat-

erally-extending end 16^a (see Fig. 2) at its rear end to be acted on by the small cam 8 (see Fig. 1) and a notch 16^b to hook down over the upper end of the latch-arm 5, that 5 holds the hammer up. The hammer can only be released by pressing on the foot-lever 5^a when the cams are in proper position with respect to the antifriction-wheel 2^c, because the latch-arm 5 can only be removed from the 10 pin 2^d when the trip-lever 16 is lifted off the latch-arm by the action of the small cam 8 on the laterally-extending portion 16^a of the said trip-lever 16.

In Figs. 4 and 5 I have shown a modification in which I can employ one cam 8^{aa} on the 15 power-shaft and two or more wheels 2^{cc} of different diameters on the hammer-shank. In this case the cam is to be shifted to act first on one wheel or part and then on the other. 20 In this construction a pin 17 on the cam actuates the trip device 16.

The antifriction roller or rollers in the shank can be omitted and the cam or cams act upon flat or other surfaces on the end of 25 the hammer-shank.

In welding chain-links or other articles with this hammer the first few blows can be hard to expedite the work of welding and rough-shaping, and by simply shifting the cam or 30 cams with the knee the final blows can be light to nicely finish the shaping.

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

1. In combination with a hammer-shank, 35 means for latching or holding the same in ele-

vated or striking position, a lock for said hammer-holding device, a laterally-shiftable cam device for varying the strength of the blows and means for automatically operating said lock to permit the release of the hammer- 40 holding device when the cam device has reached a definite position, substantially as described.

2. In combination with a hammer-shank, means for automatically latching or holding 45 the same in elevated or striking position, a lock for said hammer-holding device, a laterally-shiftable cam device for varying the strength of the blows, and means for automatically operating said lock to permit the 50 release of the hammer-holding device when the cam device has reached a definite position, substantially as described.

3. In combination with a hammer-shank, a cam device for lifting and dropping the same, 55 means for catching and holding the hammer-shank in elevated or striking position, a lock for said hammer-shank-holding device, and means for automatically operating said lock to permit the release of the hammer-shank- 60 holding device when the cam device has reached a definite position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM BAUERMEISTER.

Witnesses:

GEO. M. FINCKEL,
SAMUEL W. LATHAM.