

(No Model.)

2 Sheets—Sheet 1.

H. H. TAYLOR.

SWAGING AND COMPRESSING MACHINE.

No. 391,825.

Patented Oct. 30, 1888.

Fig. 1.

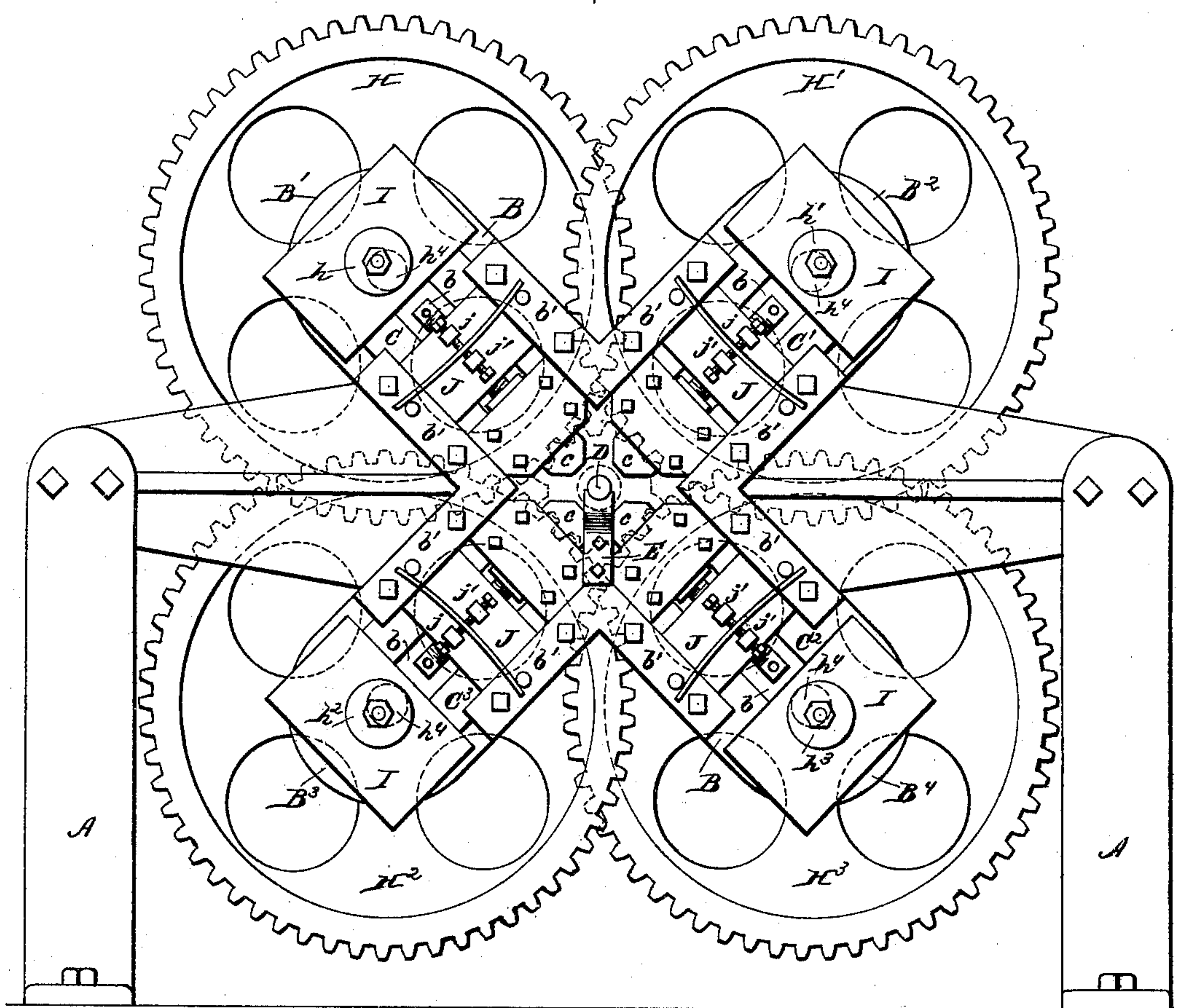
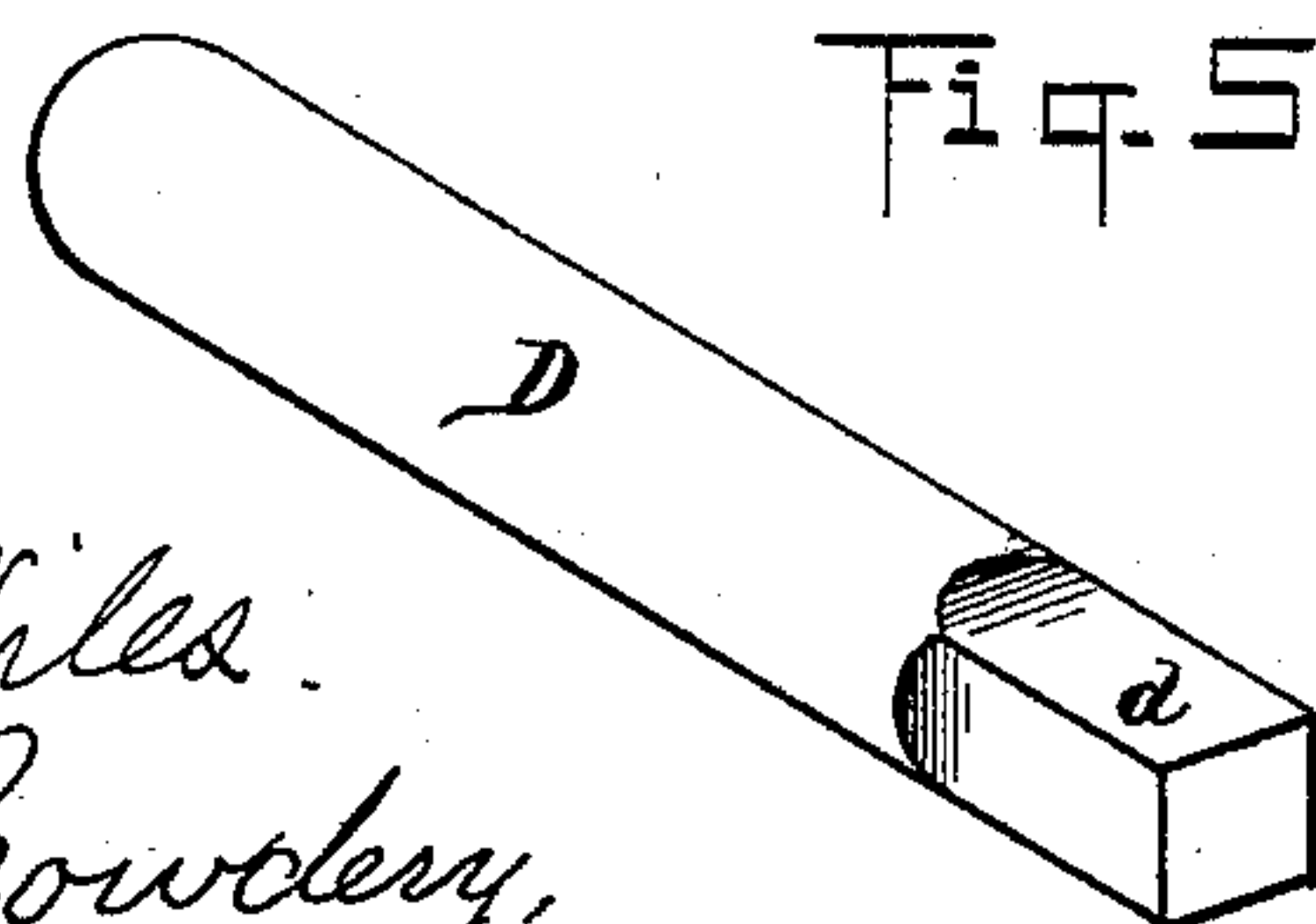


Fig. 5.



Attest.

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(No Model.)

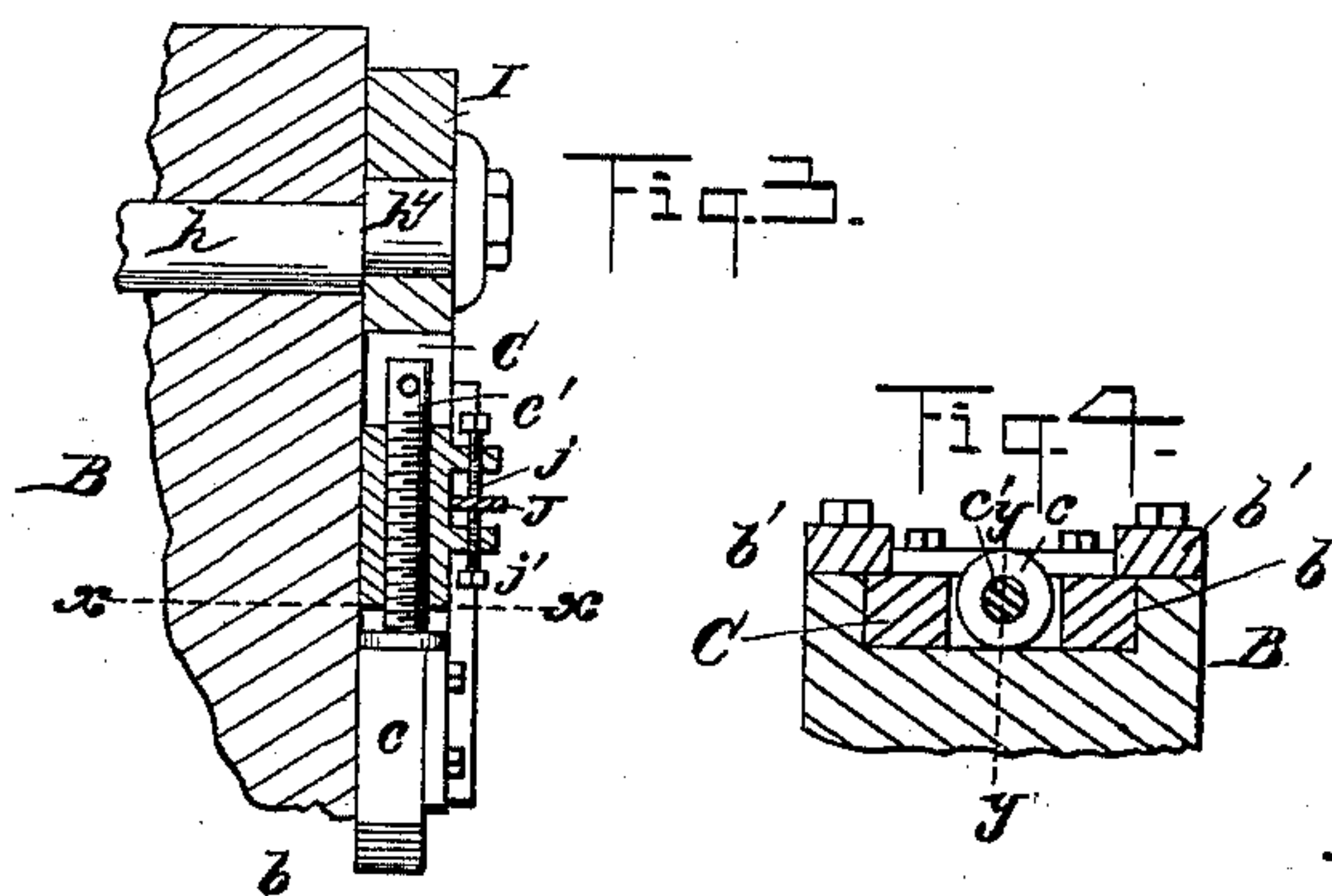
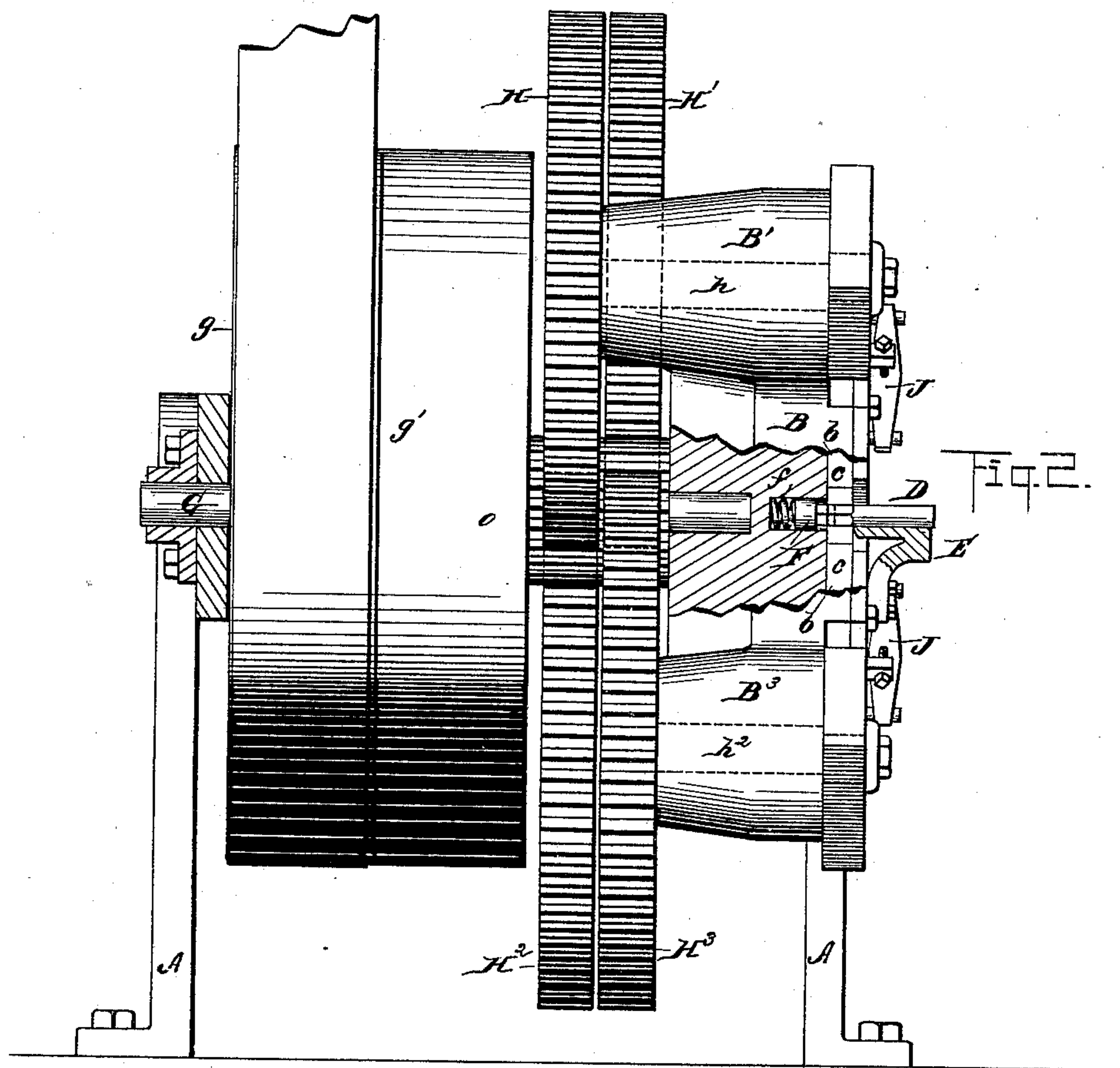
2 Sheets—Sheet 2.

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A. H. Cowdery.

Inventor  
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By Jewell S. Wright.  
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# UNITED STATES PATENT OFFICE.

HARRISON H. TAYLOR, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF  
TO GEORGE THRALL, OF SAME PLACE.

## SWAGING AND COMPRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 391,825, dated October 30, 1888.

Application filed May 15, 1888. Serial No. 273,990. (No model.)

*To all whom it may concern:*

Be it known that I, HARRISON H. TAYLOR, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Swaging or Compressing Machines; and I 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, reference being had to the accompanying drawings, which form a part of this specification.

My present invention has for its object to provide a new and useful swaging or compressing machine for shaping pieces of metal or their ends to a required form—as, for instance, in squaring an end of a piece of metal for various purposes. I do not limit myself, however, to shaping the metal to any particular form alone, as my invention contemplates the shaping of the metal into various forms, as may be desired.

My invention consists of the devices and appliances, together with their combinations and arrangements, as illustrated in the drawings submitted herewith, and as more fully hereinafter specified, and set forth in the claims.

In the drawings, Figure 1 is a front elevation of a machine embodying my invention. Fig. 2 is a side elevation thereof with parts broken away. Fig. 3 is a longitudinal section through one of the jaws along the line *yy*, Fig. 4; and Fig. 4 is a cross-section through one of the jaws along the line *xx*, Fig. 3, and looking toward the head of the jaw. Fig. 5 illustrates a piece of metal having one of its ends swaged or compressed.

I carry out my invention as follows:

A represents any suitable support. B is a bed-plate engaged thereupon, and which may be made of a solid casting of any desired form.

I have herewith illustrated my invention as applied to squaring the end of pieces of metal; and to this end the bed-plate is provided with four reciprocatory jaws, C C' C<sup>2</sup> C<sup>3</sup>, the number of the jaws being not essential, however, to my invention, as the number may

be increased or diminished, as may be required—as, for instance, to shape the end of a piece of metal into triangular or hexagonal or other desired form. As shown, these jaws are arranged to move simultaneously toward a common center, where the piece of metal D is located to receive the compression of the jaws at one of its ends, as shown in completed form, Fig. 2, at *d*. By causing all the jaws to move coincidently toward and from the common center the work is inclosed by all the jaws at the same time on the various sides adjacent thereto, and whereby the work is equally acted upon synchronously by the various jaws in an efficient and satisfactory manner. Adjacent to the common center of the jaws a suitable feed-rest, E, is engaged upon the bed-plate. Adjacent to the inner end of the said rest I also locate a yielding stop, F, which may be provided with a spring, *f*, in the rear thereof. As the jaws compress the metal the expansion of the metal in consequence thereof will force the stop rearward, this movement of the stop permitting the expansion of the metal in that direction, while the compression of the spring and its retraction again when the jaws recede from the work will discharge the work and thrust it off the supporting-rest, so that the rest is freed for the reception of another piece to be compressed.

G represents the driving shaft, which may be provided with fast and loose pulleys *g g'*.

For driving the various jaws I provide a corresponding number of gears, H H' H<sup>2</sup> H<sup>3</sup>, each meshing with a pinion, G', upon the driving-shaft. The four gears are preferably all driven from a single pinion, as shown. The shafts of the various gears are journaled in hubs B' B<sup>2</sup> B<sup>3</sup> B<sup>4</sup> upon the bed-plate. Two of the hubs may be elongated to facilitate the location of the gears relative to the pinion, one gear above and below the driving-shaft meshing with the pinion in the rear of the adjacent upper or lower gear. The several shafts *h h' h<sup>2</sup> h<sup>3</sup>* of the various gears H H' H<sup>2</sup> H<sup>3</sup> are each constructed with an eccentric arm, *h<sup>4</sup>*, engaged to force the jaw to its work.

The several jaws are each engaged in corre



sponding recesses, as at *b*, in the bed-plate, and may be held in place by suitable removable caps or flanges, *b'*. The several jaws are each constructed and operated by the eccentric arms respectively in the following manner:

I is a movable plate, with which the corresponding journal is eccentrically engaged. I prefer to so construct the device that the said plate will abut against the adjacent jaw, as the jaw must reciprocate in a straight line, while the plate has a lateral as well as a driving movement. The pressure of the plate thus drives the jaw to its work. The jaw is preferably constructed with a removable head, *c*, so that any size and form of head may be employed with different work desired. The head in each jaw is also preferably made adjustable, as by means of an adjusting-screw, *c'*, whereby it may be engaged in place, so that the head may be adjusted to conform to different-sized pieces of metal.

The jaw may be made self-retracting by means of a spring, *J*, suitably engaged upon the bed, and which may also be provided with adjusting-screws, *j j'*, whereby the tension of the spring may be regulated as may be found desirable. The operation of the machine will be readily understood.

A machine so constructed is found capable of doing very rapid work, while accomplishing it in a very efficient and satisfactory manner without the necessity of heating the metal in order to swage it into desired form.

What I claim is—

1. The combination, with a supporting-bed, of a series of simultaneously-reciprocatory jaws, all arranged to move coincidently toward and from a common center, substantially as described.

2. The combination, with a supporting-bed,

of a series of simultaneously-reciprocatory jaws, all arranged to move coincidently toward and from a common center, a support for the work adjacent said center, and a yielding stop adjacent to said support, substantially as described.

3. The combination, with a supporting-bed, of a series of simultaneously-reciprocatory jaws, all arranged to move coincidently toward and from a common center, and gears to drive said jaws, said gears driven by a common pinion, substantially as described.

4. The combination, with a supporting-bed, of a series of simultaneously-reciprocatory jaws, all arranged to move coincidently toward and from a common center, and an eccentric driving-shaft for operating said jaws, substantially as set forth.

5. The combination, with a supporting-bed, of a series of simultaneously-reciprocatory jaws, said jaws made adjustable and arranged to operate coincidently toward and from a common center, substantially as described.

6. The combination, with a supporting-bed, of a series of simultaneously-reciprocatory jaws, all coincidently moving toward and from a common center, and springs for retracting said jaws, substantially as set forth.

7. The combination, with a supporting-bed, of a series of reciprocatory jaws, all coincidently movable toward and from a common center, said jaws made adjustable and provided each with a removable head, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

HARRISON H. TAYLOR.

Witnesses:

N. S. WRIGHT,  
WM. LEVIT.