

May 17, 1955

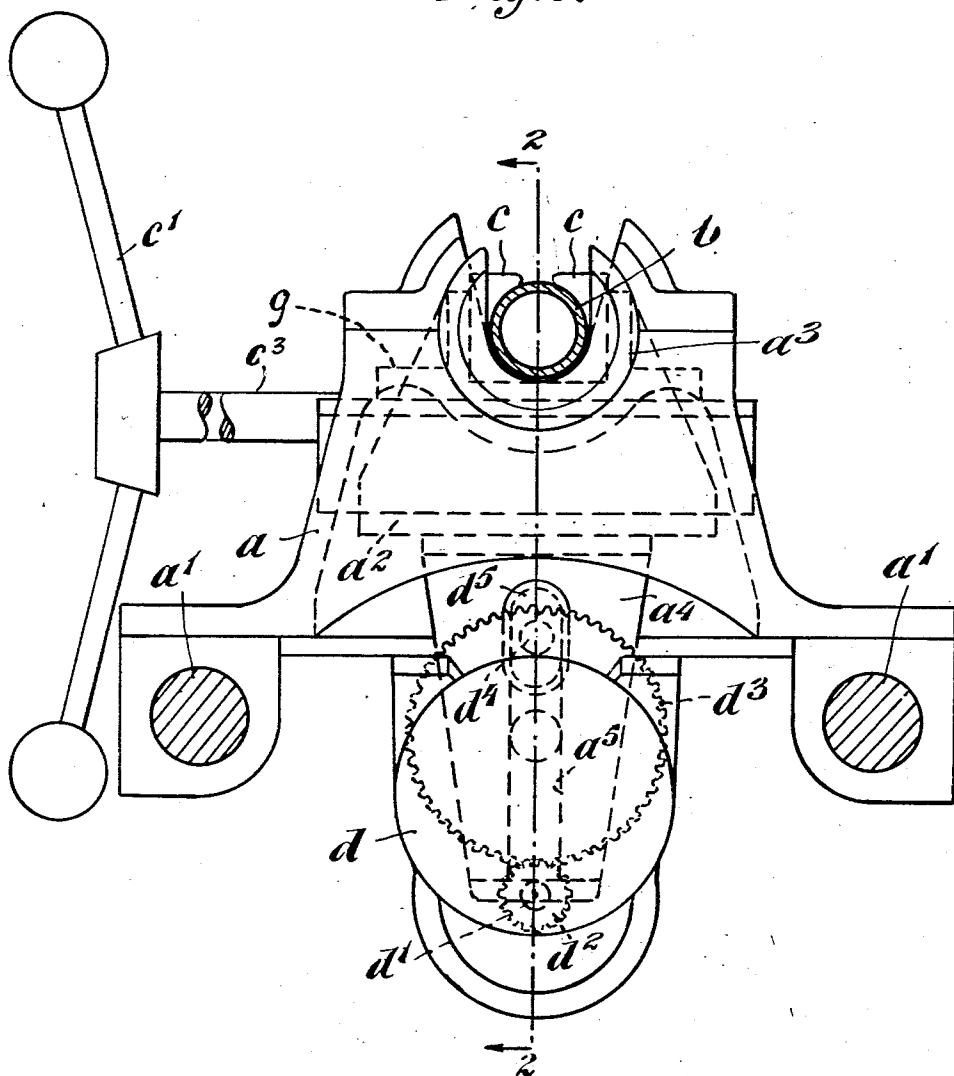
S. SMITH
MECHANICALLY OPERATED FEED MECHANISM
FOR SWAGING MACHINES

2,708,378

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3 Sheets-Sheet 1

Fig. 1.



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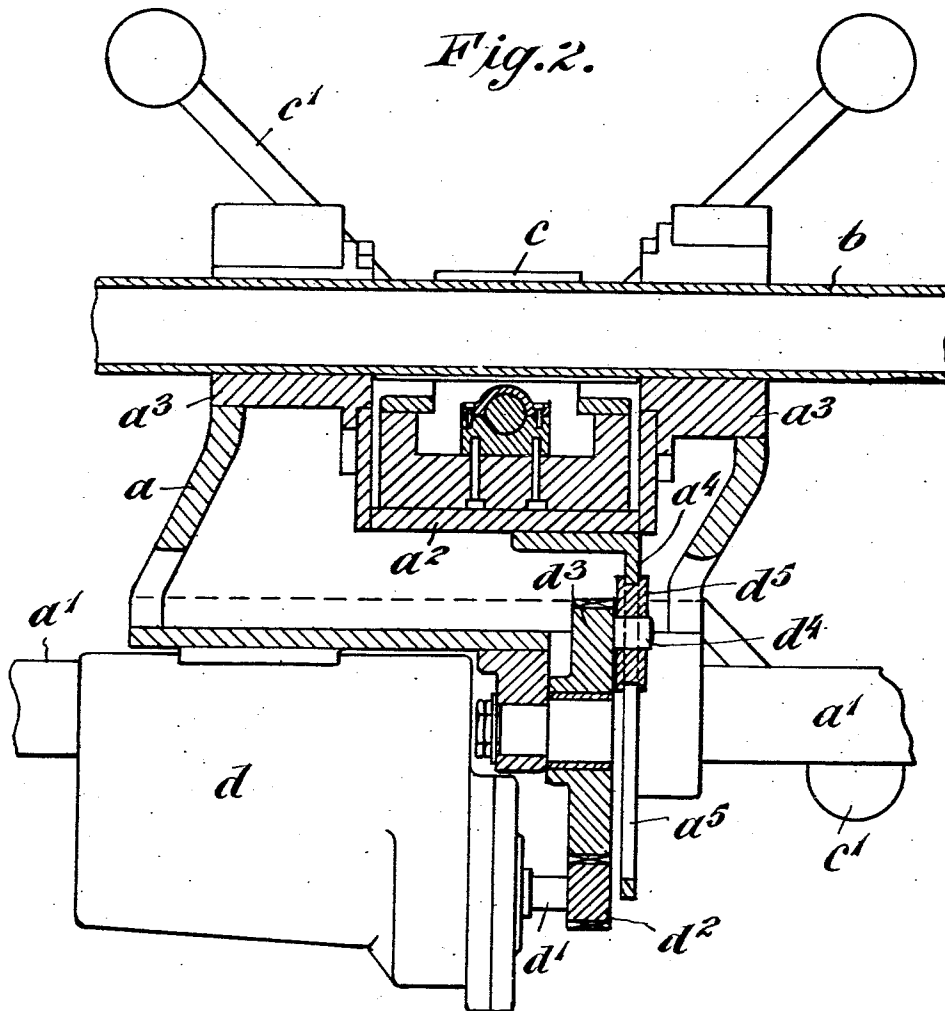
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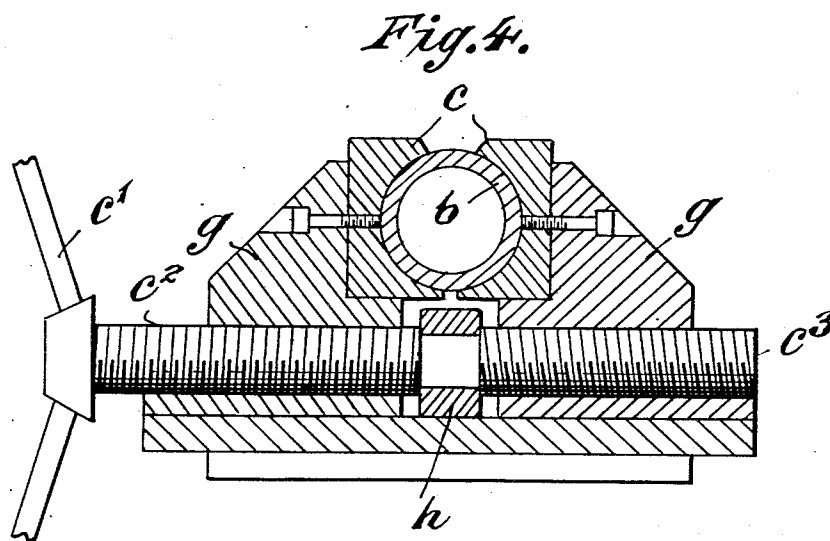
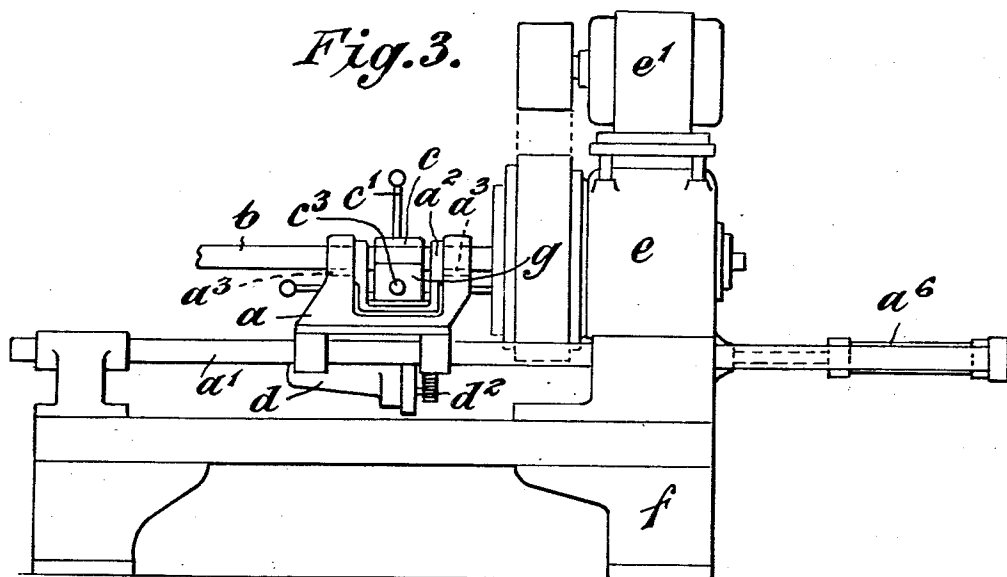
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MECHANICALLY OPERATED FEED MECHANISM FOR SWAGING MACHINES

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Application July 1, 1952, Serial No. 296,693

Claims priority, application Great Britain July 6, 1951

2 Claims. (Cl. 78—98)

This invention has reference to improvements in or connected with mechanically operated feed mechanism for swaging machines and has particular application to swaging machines wherein the dies of the machine are not rotated relative to the work. It has been found in practice that when using a mechanical feed mechanism with such swaging machines, there is a tendency for fins or ribs to be formed on the work, and it is the object of the present invention to overcome this disadvantage.

The invention consists of a mechanically operated feed mechanism for swaging machines characterised in the provision of traversable grippers for the work which are adapted to be rotationally oscillated by a power source during the feed operation.

In order that the invention may be clearly understood and readily carried into practice reference may be had to the appended explanatory drawings in which:

Fig. 1 illustrates in end elevation a mechanically operated feed mechanism for a swaging machine in accordance with the present invention.

Fig. 2 is a vertical sectional elevation taken on the line 2—2 of Fig. 1.

Fig. 3 is a side elevational view on a reduced scale of a swaging machine incorporating the feed mechanism illustrated in Figs. 1 and 2.

Fig. 4 is a fragmentary sectional view on an enlarged scale showing the work gripping means illustrated in Fig. 1.

According to a convenient embodiment of the present invention there is provided a traversable carriage *a* mounted to slide upon or move with parallel rods *a*¹ which are part of the frame *f* of the swaging machine illustrated in Fig. 3. Within this traversable carriage *a* is mounted a mechanically or pneumatically operated gripper for the work piece *b*. A mechanically operated gripper is shown comprising two arcuate gripping members *c* mounted on the cradle *a*² which is rockably mounted at *a*³ in the carriage *a*. These grippers *c* are adapted to be opened and closed by means of a hand wheel or like device

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*c*¹ which is fixed to a shaft *c*³ that is threaded by means of right and left threads into a pair of gripper mountings *g* to move them toward or away from each other as the shaft *c*³ is turned.

It is to be noted that the workpiece *b* is mounted in the bearings *a*³ in which the cradle *a*² is rockably mounted and that the work piece rocks with the cradle. Attached to the lower part of the cradle *a*² is a dependent extension arm *a*⁴ having a slot *a*⁵ wherein a sliding member *d*⁵ is mounted carried by a trunion *d*⁴ on a pinion *d*³ driven by a pinion *d*² mounted on a shaft *d*¹ of an electric motor *d* carried by the carriage *a*.

In operation therefore the hand wheel *c*¹ is initially tightened and the whole device caused to traverse with the rods *a*¹ towards the swaging machine by suitable mechanism such for example as a hydraulic cylinder *a*⁶. An electric motor *d* acting through transmission mechanism consisting of the gear wheels *d*², *d*³ and slide *d*⁵ oscillates the lever *a*⁴ about the axis of the workpiece *b* by virtue of the bearings *a*³ swinging in the carriage *a* so that the workpiece *b* is oscillated in a reciprocatory manner during its passage towards and through the swaging machine. The movement is, therefore, a slow forward feed by independent mechanism with reciprocatory rotation by the present mechanism and it will be appreciated that in this manner the fins usually obtaining between the dies of a rotary swaging machine are avoided. The swaging mechanism may be of any suitable type such as the rotary swaging mechanism *e* operated by a motor *e*¹ as illustrated in Fig. 3.

I claim:

1. A mechanically operated feed mechanism for a swaging machine comprising a traversable carriage, a cradle rockable therein, a gripper mounted on the cradle, a slotted extension arm on the cradle, a motor carried by the carriage, a gear wheel driven from the motor and a crank pin on the gear wheel engaging the slotted extension arm.

2. A mechanically operated feed mechanism for a swaging machine comprising a traversable carriage, a cradle rockable therein, a gripper mounted on the cradle, a slotted extension arm on the cradle, a motor carried by the carriage, a first gear wheel driven from the motor, a second gear wheel meshing therewith, a crank pin on the second gear wheel and a slide in the slotted extension arm engaged by the crank pin.

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