

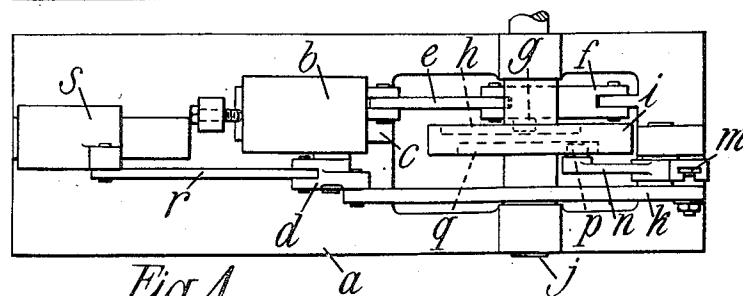
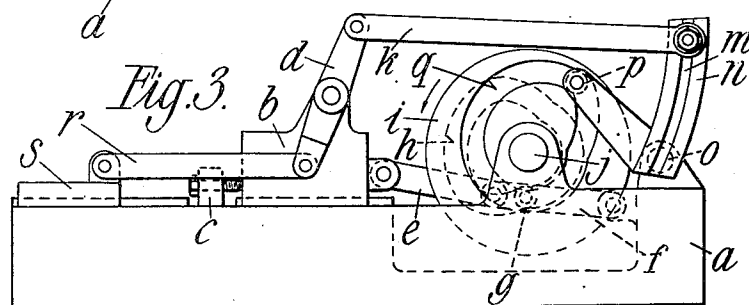
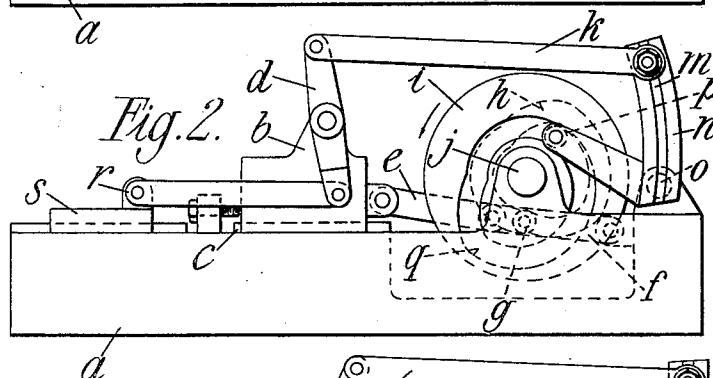
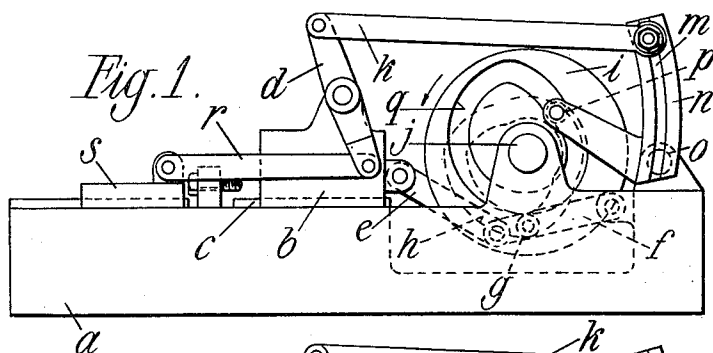
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TOOL-SLIDE ACTUATING MECHANISM FOR LATHES OR OTHER MACHINES

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TOOL-SLIDE ACTUATING MECHANISM FOR
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1 Claim. (Cl. 74—53)

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This invention relates to a tool-slide actuating mechanism, for use on a multi-spindle automatic lathe or other machine, of the kind adapted to effect a rapid movement of the tool-slide from a rest position to a position adjacent to the work piece, a relatively slow feed movement while the tool is acting on the work piece, and a rapid return movement to the initial position.

The object of the invention is to provide a mechanism of the above kind in a simple and convenient form.

The invention comprises the combination of a slide, a toggle mechanism connected to the slide, a two-arm lever carried by the slide and adapted at one end to actuate a tool slide, an adjustable link and lever mechanism connected to the other end of the said lever, and rotary cams for actuating the said toggle and link and lever mechanisms.

In the accompanying drawings:

Figure 1 is a side elevation of a mechanism embodying the invention.

Figures 2 and 3 are similar views to Figure 1, showing two other positions of the mechanism.

Figure 4 is a plan of the mechanism.

Referring to the drawings, there is provided on the frame *a* of the mechanism, a slide *b* which is supported on a guide *c*, and on the slide is pivotally mounted a two-arm lever *d*. The slide has pivotally attached to it one end of a pair of interconnected toggle links *e, f*, the opposite end of the other link being pivotally attached to the frame of the mechanism. A roller *g* on the link *f* is engaged by a cam *h* formed in one face of a disc *i* which is carried by a driving shaft *j*.

One end of the two-arm lever *d* has connected to it one end of a link *k* which at its other end has an adjustable connection with a slot *m* in a lever *n* pivoted at *o* on the frame *a* and operable through a roller *p* by another cam *q* in the other face of the disc *i*, the adjustable connection being such as will enable an angular movement of any desired amount to be imparted to the two-arm lever.

The other end of the two-arm lever has attached to it one end of a link *r* for transmitting motion to the tool slide *s*. Alternatively the said end of the lever may be connected directly to the tool slide.

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The mode of action of the mechanism is as follows:

At the commencement of each cycle of action, the mechanism is in the condition shown in Figure 1. The first effect of rotation of the disc *i* is to cause the cam *h* to move the links *e, f* into alignment with each other as shown in Figure 2 and thereby impart a rapid movement to the tool slide *s* towards the work. Continued rotation of the disc *i* then causes the cam *q* to actuate the lever *d* for imparting a relatively slow feed movement to the tool slide *s* until the latter reaches its final position as shown in Figure 3. Further rotation of the cams then returns the tool slide rapidly to the initial position shown in Figure 1.

By this invention a tool slide actuating mechanism is provided in a simple and convenient form, and the load imposed on the cams while the tool is in action is reduced to a minimum.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

A tool-slide actuating mechanism comprising in combination with the tool slide, an auxiliary slide, a two-armed lever carried by said auxiliary slide and connected at one end to said tool slide, an adjustable link and lever mechanism connected to the opposite end of said two-armed lever, a toggle mechanism connected at one end to said auxiliary slide and provided at its opposite end with a fixed anchorage, a first rotary cam arranged to act on said toggle mechanism for imparting rapid motion through said auxiliary slide and two-armed lever to said tool slide, and a second rotary cam arranged to act on said link and lever mechanism for imparting a relatively slow motion through said two-armed lever and auxiliary slide to said tool slide.

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