

P. G. C. LUNDBERG.
 PROTECTING ARRANGEMENT FOR ROTARY TOOLS.
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941,427.

Patented Nov. 30, 1909.

Fig. 1

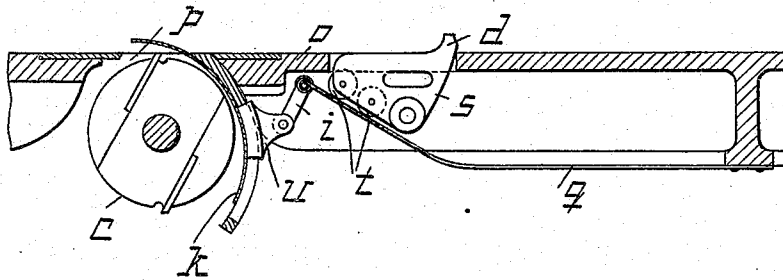
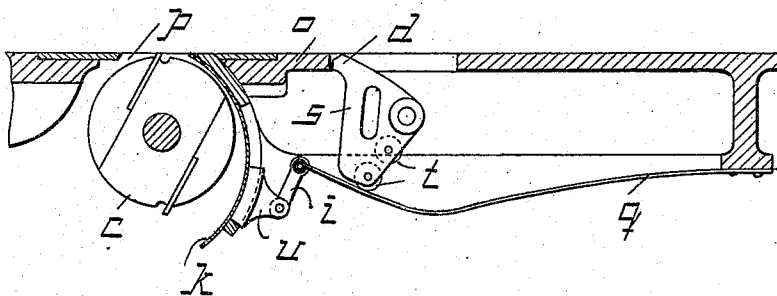


Fig. 2



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PROTECTING ARRANGEMENT FOR ROTARY TOOLS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PER GEORG CARL LUNDBERG, a subject of the King of Sweden, residing at Wernamo, in the Kingdom of Sweden, have invented Improvements in Protecting Arrangements for Rotary Tools, of which the following is a specification.

This invention relates to protecting devices for cutters and other rotary tools and consists in improvements in the type of protecting devices of this kind described in the specification of British Letters Patent granted to me, No. 23,998 of 1907, wherein a protecting screen works through an opening in the work table in curved guides extending downwardly from the front edge of the opening, the screen being carried by one arm of an angle lever the other arm of which projects through an opening in the work table when the screen covers the working opening but is adapted to be pressed down by the work under treatment during the exposure of the working opening and the tool, a spring or weight automatically returning the lever with the screen to their normal position when the work has been treated.

According to this invention the protecting screen, hereinafter called a guard is carried by a spring which constantly tends to move the guard into its operative position. This spring may be in the form of a blade or plate fixed at one end and connected at its other end, either directly or through a link or other mechanism with the guard. In some cases the work-actuated means, which can be furnished with antifriction devices, act through the carrying spring to move the guard into its inoperative position.

It will be understood that as in the apparatus described in the said other specification the guard can comprise a number of sections each mounted and operating as hereinbefore set forth so that when small pieces are being treated parts of the tool not in action are covered.

Figure 1 of the accompanying illustrative drawings is a sectional view illustrating one construction of apparatus embodying this invention with the guard in operative position. Fig. 2 is a similar view to Fig. 1 with the guard in its inoperative position.

c indicates a rotary cutter, *o* a work table through an opening *p* in which the cutter blades extend. *k* is the guard, or it may be one section of a guard comprising several sections arranged side by side; *u* is a bracket

or lug fixed to the back of the guard and *i* is a link connecting the bracket or lug *u* to the free end of a long blade spring *q* whose other end is secured to a fixed part of the frame and which constantly tends to raise the guard, through the link *i* and bracket or lug *u*, into its operative position over the cutter opening *p* of the work table as shown in Fig. 1.

s is a cam shaped member pivoted to the frame above the spring blade *q* and provided with a part *d* that projects, through an opening formed therefor in the work table *o*, in the path of work being fed to the cutter *c*.

The normal position of the parts is shown in Fig. 1 but when work is fed to the cutter *c* it first strikes the projecting part *d* and moves it and the member *s* connected thereto into the position shown in Fig. 2, during this movement a cam face of the member *s* bears upon the spring blade *q* and thereby depresses the spring and moves it into the position shown in Fig. 2 in which the opening *p* is left clear.

In order to reduce friction the member *s* is fitted with rollers *t* adapted to successively bear on the spring blade *q* as the parts are moved from the position shown in Fig. 1 into that shown in Fig. 2.

The spring blade *q* pivoted member *s*, link *i* and bracket or lug *u* or their equivalent, and the guard *k* can be constructed otherwise than as in the example shown without departure from the invention.

What I claim is:—

1. In rotary tool protecting apparatus, a curved guard, guides for said guard, a spring fixed at one end, connected at its other end to said guard and tending to move it into its operative position, and means adapted to be actuated by work under treatment for moving said guard into an inoperative position, said means being free of connection with but serving to slidably engage said spring.

2. In rotary tool protecting apparatus, a curved guard, guides for said guard, a blade spring fixed at one end, connected at its other end to said guard, and constantly tending to move said guard into its operative position, and means arranged to be actuated by work under treatment and free of connection with and serving to slidably engage and move said spring in a direction to move said guard into its inoperative position.

3. In rotary tool protecting apparatus, a curved guard, guides for said guard, a blade spring fixed at one end, linked at its other end to said guard, and constantly tending
5 to move said guard into its operative position, and a pivoted member arranged to be actuated by work under treatment and free of connection with and serving to move said spring in a direction to slidingly engage and move said guard into its inoperative position. 10

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