2 Sheets--Sheet 1.

# J. SURERUS.

## Improvement in Machines for Grooving Butchers' Steels.

No. 125,499. Patented April 9, 1872.

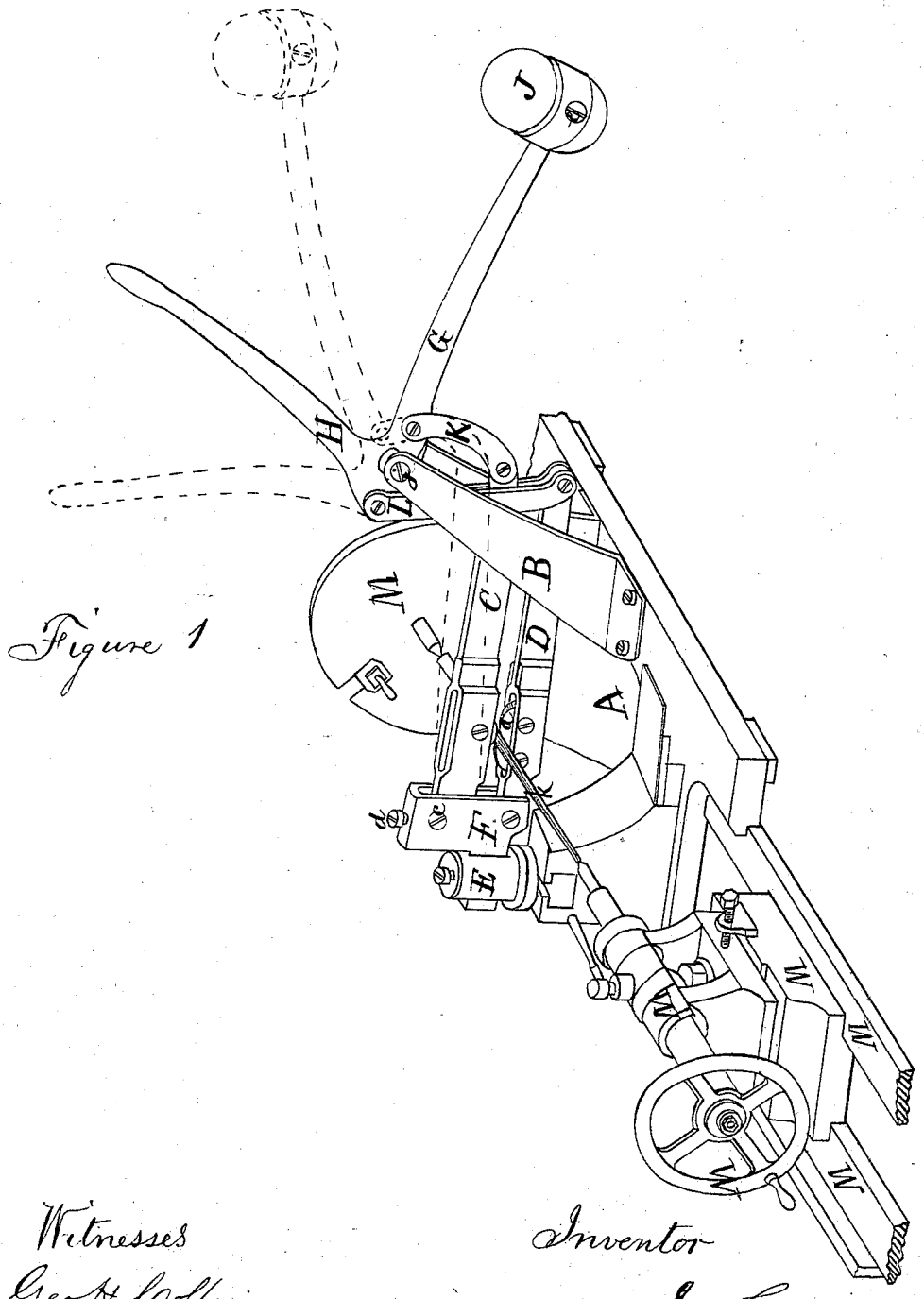



Figure 1

Witnesses
Geo. A. Collins
Geo. Mueller

Inventor
J. Surerus

2 Sheets--Sheet 2.

# J. SURERUS.

## Improvement in Machines for Grooving Butchers' Steels.

No. 125,499. Patented April 9, 1872.

Figure 2

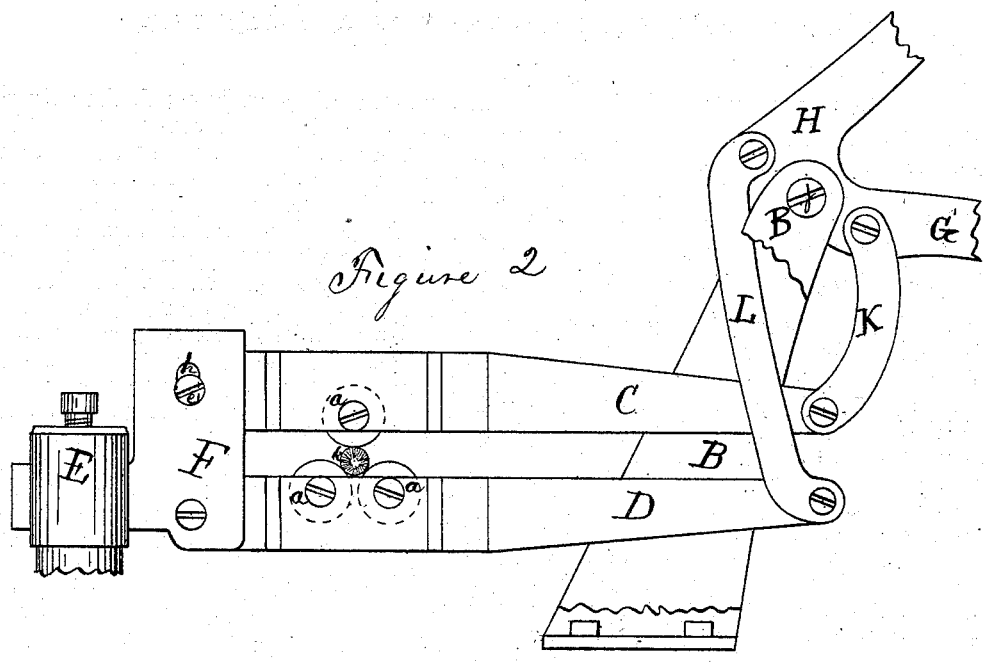



Figure 3

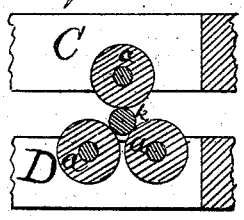
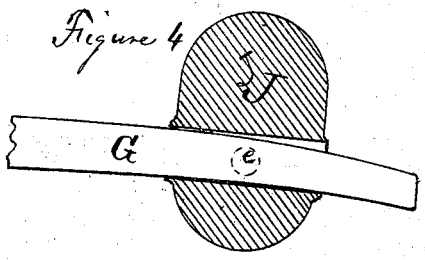



Figure 4




Witnesses.
Geo. A. Collins
Geo. Mueller.

Inventor.
J. Surerus

# UNITED STATES PATENT OFFICE.

JACOB SURERUS, OF NEWARK, NEW JERSEY.

## IMPROVEMENT IN MACHINES FOR GROOVING BUTCHERS' STEELS.

Specification forming part of Letters Patent No. 125,499, dated April 9, 1872.

SPECIFICATION.

I, JACOB SURERUS, of Newark, in the county of Essex and State of New Jersey, have invented certain Improvements in Machinery for Making Butchers' Steels, of which the following is a specification:

*Nature and Objects of the Invention.*

My invention relates to grooving or channeling steel blanks for butchers' steel; and consists of providing an adjustable weighted lever for the purpose of giving an even pressure of the milling-wheels upon the blank; and also of providing an additional milling-wheel to operate upon the upper side of the blank; and I connect the arms or jaws which hold the milling-wheels by double levers or links which clamp the blank equally upon each side above and below. The object of providing the additional milling-wheel is to hold the blank upon every side as it passes through the machine, whereas heretofore it had been held by milling-wheels upon the lower side only. The adjustable weighted lever enables me to regulate the pressure or clamping of the blank as I wish, and by it I can give an equal pressure upon all portions of the blank, although it varies in size from heel to point, and each portion requires the same depth of groove.

*Description of the Drawing.*

Figure 1 shows the machine as in operation, and operated by a common lathe; Fig. 2 shows side view with a portion of the standard or frame removed; Fig. 3, a section showing the milling-wheels; Fig. 4, the end of lever and weight—a part of the adjustable weight removed.

*General Description.*

A is the bed or platform of the machine; B B, standards or frame for supporting the front of machine; C, the upper arm or jaw of clamp; D, the lower arm or jaw of clamp; E, the post supporting the rear of machine; F, the frame into which the back end of arms C and D are pivoted; G, the arm upon which the weight is supported; H, the lever-handle for opening and closing the arms or jaws; J, the adjustable weight which gives pressure upon the blank; *e*, the set-screw that holds the weight in place; *c*, a set-screw which holds the back end of the arm C to the frame and upon which it moves; *d*, the set-screw by which the arms or jaws are closed for small-sized blanks; *j*, the screw in the frame which pivots the weighted arm and handle, and holds them in place; K and L are lever links which open and close the jaws upon the blank; *a a a*, the burring or grooving wheels which operate upon the steel blank; *k*, the blank or steel to be operated upon; M M M, show different portions of an engine-lathe to which the machine is attached and by which it is operated. This machine is made secure to the bed of the lathe, so that the steel blank is put into the block of the lathe at its large end, and in such way that the small end rests in the center of the tail-block, the bed of the machine being made fast to the carriage of the lathe, the jaws closed, and the weight adjusted so as to give the desired pressure upon the blank, and the lathe set in motion. The carriage of the lathe moved forward at the required speed, while the blank is revolved in the lathe, carries the machine along the length of the blank, which latter being revolved as it (the machine) travels, receives the grooves or channels desired; and as the weighted lever gives the same pressure upon the blank during its entire passage through, the channels or grooves are the same upon the whole length of the steel.

*Claims.*

1. In a machine for making butchers' steels the adjustable weighted arm in combination with the double-acting lever-links K and L, and levers C D, constructed as and for the purposes described.

2. The combination of the three burring-wheels *a a a* with lever links K and L', levers C and D, arm G, and adjustable weight J, as described for the purposes set forth.

JA. SURERUS.

Witnesses:

GEO. H. COLLINS,

GEO. MUELLER.