

(No Model.)

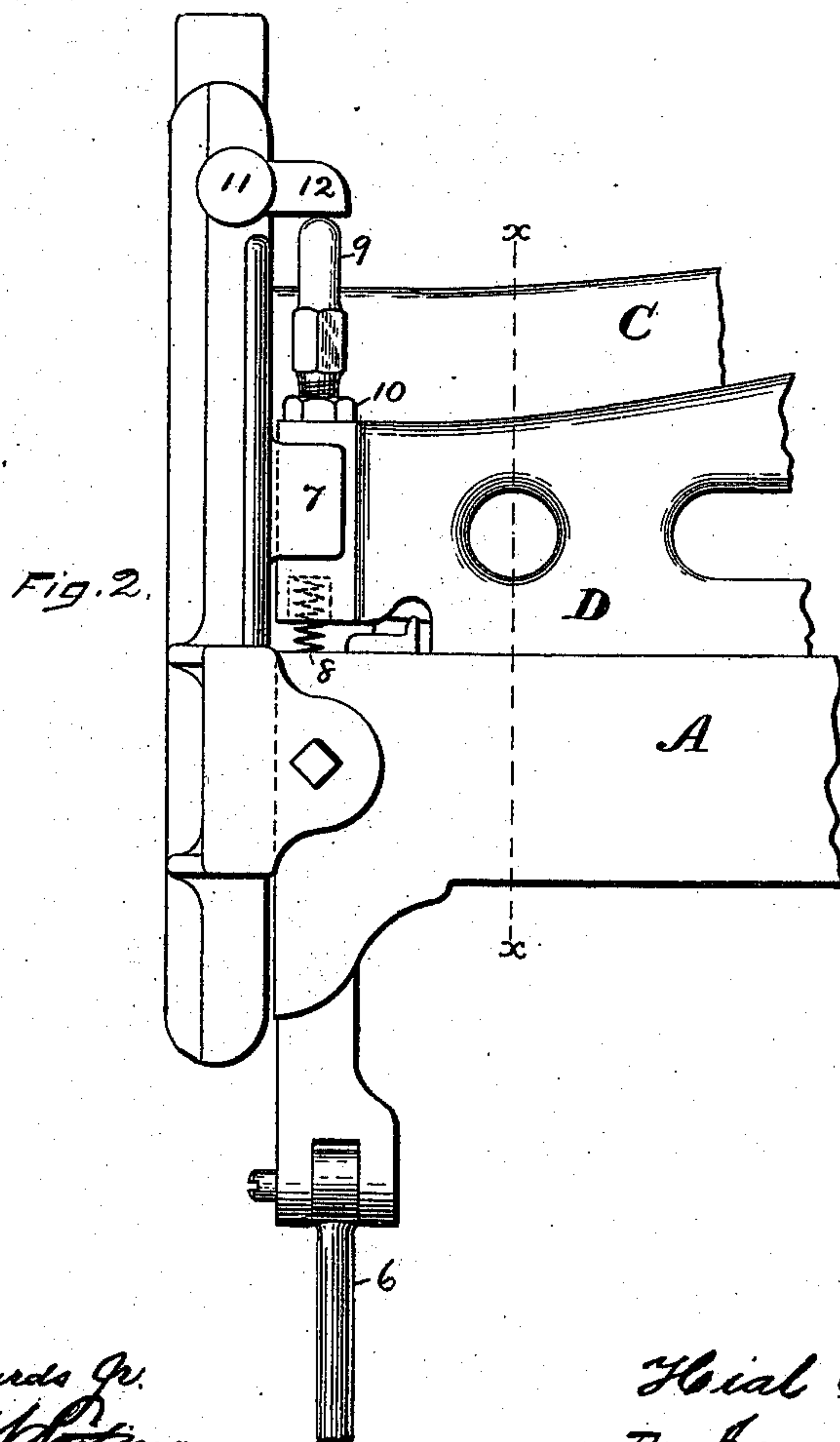
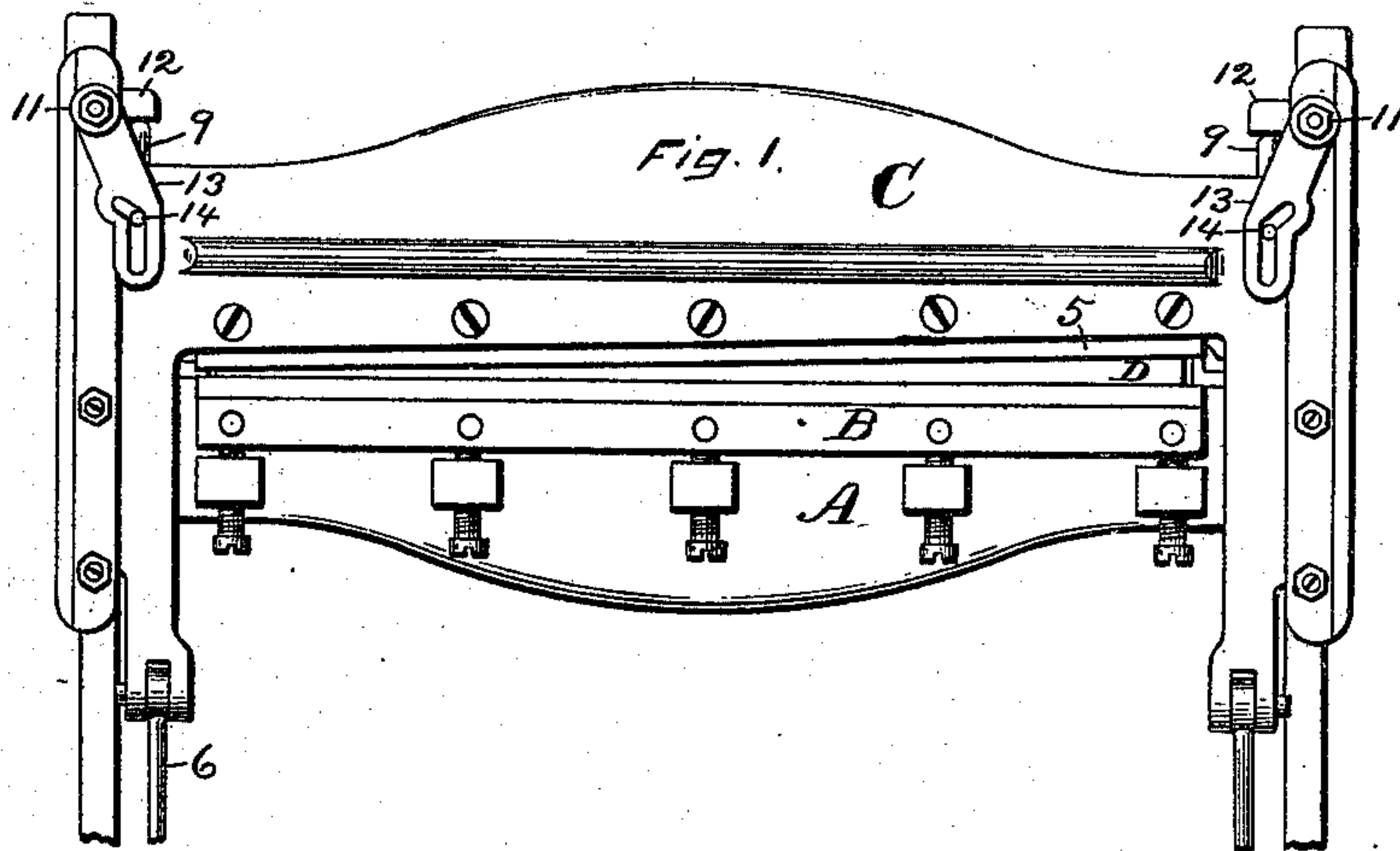
2 Sheets—Sheet 1.

H. S. GRANNIS.

HOLDING ATTACHMENT FOR TINSMITHS' SQUARING SHEARS.

No. 413,778.

Patented Oct. 29, 1889.



WITNESSES.

John Edwards Jr.
D. H. J. Whiting

INVENTOR,

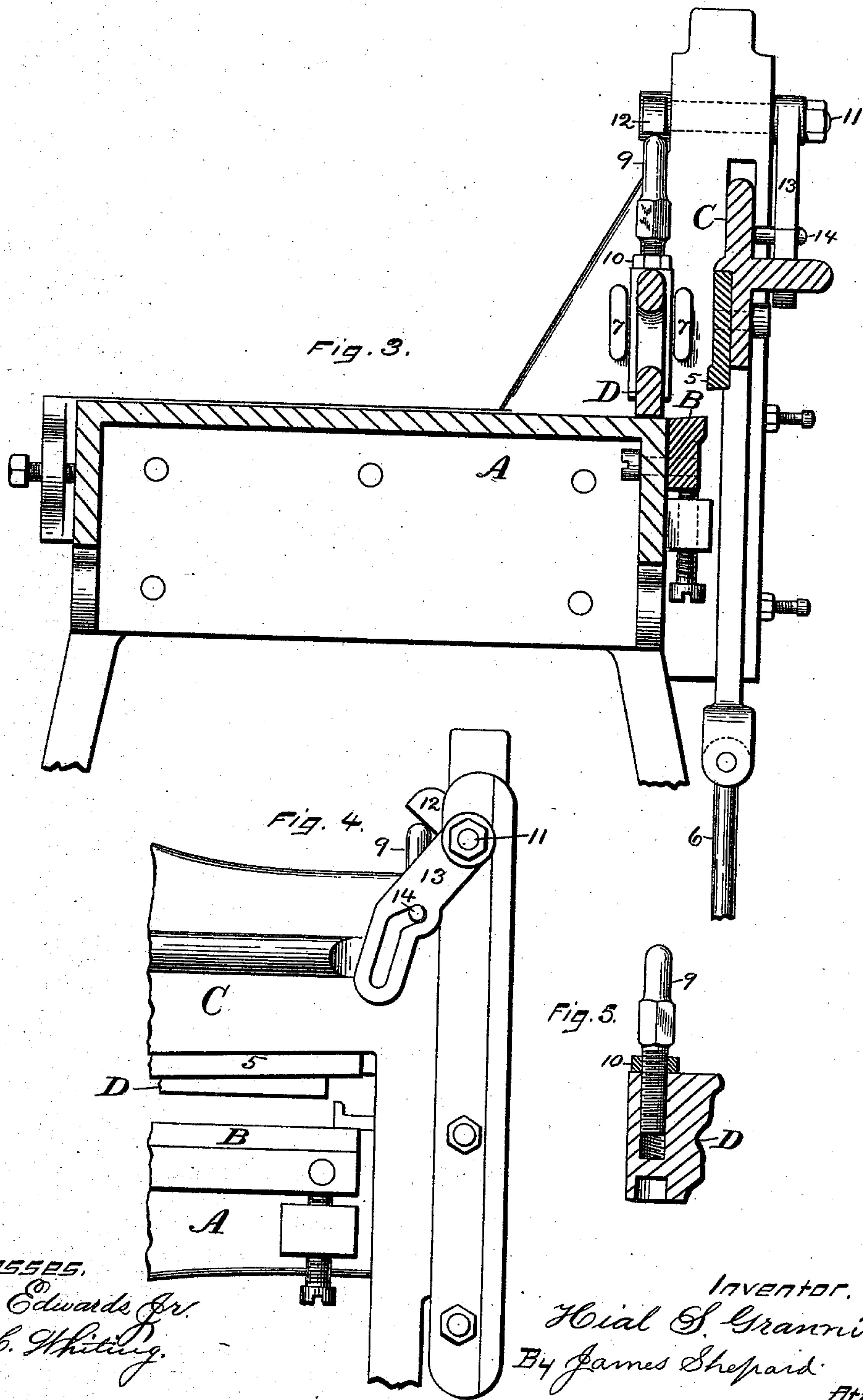
Hubert S. Grannis
By James Shepard

ATTY.

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H. S. Grannis.
By James Shepard. Att'y.

UNITED STATES PATENT OFFICE.

HIAL S. GRANNIS, OF SOUTHTON, CONNECTICUT, ASSIGNOR TO THE
PECK, STOW & WILCOX COMPANY, OF SAME PLACE.

HOLDING ATTACHMENT FOR TINSMITHS' SQUARING-SHEARS.

SPECIFICATION forming part of Letters Patent No. 413,778, dated October 29, 1889.

Application filed February 6, 1889. Serial No. 298,894. (No model.)

To all whom it may concern:

Be it known that I, HIAL S. GRANNIS, a citizen of the United States, residing at South-
ington, in the county of Hartford and State of
5 Connecticut, have invented certain new and
useful Improvements in Holding Attachments
for Tinsmiths' Squaring-Shears, of which the
following is a specification.

My invention relates to improvements in
10 holding attachments for tinsmiths' squaring-
shears; and the object of my improvement is
to automatically hold the plate firmly upon
its bed prior to the cutting action of the shears.

In the accompanying drawings, Figure 1 is
15 a rear elevation of the main portion of a tin-
smith's squaring-shears (the feet and foot-
treadle being omitted) with my improvement
attached. Fig. 2 is a front elevation, on a larger
scale, of one end of the same. Fig. 3 is a
20 transverse section on line *x x* of Fig. 2 on the
same scale. Fig. 4 is a rear elevation, on the
same scale, of one end of said shears with the
shear blade and holder in their most elevated
positions; and Fig. 5 is a partial section and
25 partial elevation, on the same scale, of one end
of the holder.

The shears proper may be of any ordinary
construction, and consist of a frame mounted
upon suitable legs and provided with a bed
30 A, to which a stationary shear-blade B is at-
tached, and a slide or gate C, carrying a mov-
ing shear-blade 5, said slide or gate being de-
pressed by means of a suitable treadle, (not
shown,) which treadle is connected to said
35 slide by means of the rods 6 6, all as in the
ordinary squaring-shears, and therefore not
requiring a more definite description.

I provide a vertically-moving holder D,
which is guided at each end by suitable guid-
40 ing-lugs 7 7, and which is thrown upwardly
by means of a spiral spring at each end, one
of which springs 8 is shown in Fig. 2. Pro-
jecting upwardly from each end of the holder
D is an adjustable bearing-stud 9, screw-
45 threaded at its lower end, which lower end fits
into a threaded hole in the upper edge of said
holder, as shown in Fig. 5. A lock-nut 10 is
provided for securing this adjustable stud
when adjusted. At each end of the machine
50 there is a rock-shaft 11, the front end of which

has a rocker-arm 12, whose under face bears
against the upper end of the adjusting-stud 9.
The rear end of this rock-shaft has a slotted
arm 13, the slot being angular in form, as
shown in Figs. 1 and 4. The sliding gate C 55
carries a pin or stud 14, which fits the slot in
said slotted arm 13, and by the vertical move-
ment of said pin operates said slotted arm to
work the rock-shaft. When the slide or gate
C is in its most elevated position, the pin 14 60
will be at the upper end of the angular slot
in the slotted arm 13, thereby throwing the
ends of the rocker-arms 12 at the opposite end
of the rock-shaft 11 into their most elevated
position, as shown in Fig. 4, thereby releasing 65
the holder D, so that its springs 8 lift said
holder from the bed A and permit a sheet of
metal to be inserted between the shear-blades
for cutting, as in the ordinary machine.

When the sheet of metal has been brought 70
into position to bring the proper point for cut-
ting between the shear-blades, the slide or
gate C is depressed in the ordinary manner,
when the pin 14, moving in the upper portion
of the slotted arm 13, which portion extends 75
at an angle to the path of said pin, causes
said arm and rock-shaft 11 to rock in the di-
rection to depress the ends of the rocker-arms
12, which, bearing upon the upper ends of the
adjustable bearing-studs 9, force the holder 80
D downward upon the metal and firmly clamp
it between said holder and the bed A. The
pin then passes into the vertical portion of
the slot in the slotted arm, which is coinci-
dent with the path of the pin 14, as shown in 85
Fig. 1, and the gate C continues its downward
movement without any tendency to move the
holder D, merely holding it in place as the
moving shear-blade descends to cut the metal.
The slot in the slotted arm 13 is so formed 90
that the holder D impinges upon the metal to
hold it before the shear-blade has descended
far enough to begin its cutting action. The
bearing-studs 9 are made adjustable, in order
to enable the throw of the holder D to be regu- 95
lated, so that it shall properly pinch any given
thickness of metal or other material being cut
when the pin 14 is within the vertical portion
of the slot in the slotted arm 13.

I am aware that prior patents for shearing- 100

machines show a holder adapted to pinch and hold the work while it is being cut, said holders being forced in one direction by springs and in the other direction by cams or cranks on the shaft that operates the slide, and the same are hereby disclaimed.

I claim as my invention—

1. In a squaring-shear, the combination of the shear-slide, the holders, the rocker-arm, mechanism connected with said shear-slide for operating said rocker-arm, and the adjustable studs 9 intermediate said rocker-arm and holder, substantially as described, and for the purpose specified.

2. The combination of the bed, slide, and blades of a tinsmith's squaring-shears with the pin 14, attached to said slide, the angularly-slotted arm 13, rock-shaft 11, rocker-arm 12, the adjustable bearing-studs 9, and the holder D, substantially as described, and for the purpose specified.

3. The combination of the bed, slide, and blades of a tinsmith's squaring-shears with the pin 14, attached to said slide, the angularly-slotted arm 13, rock-shaft 11, rocker-arm 12, and the holder D, substantially as described, and for the purpose specified.

4. In a squaring-shear having a holder and operating mechanism, the combination of the slide or gate C, bearing the pin 14, and the slotted arm 13, the slot of which has one portion extending at an angle to the path of said pin and another portion coincident with the path of said pin, whereby the angular portion operates the slide and the coincident portion acts to hold the slide, substantially as specified.

5. The combination of the slide, the bed, the holder D, springs for lifting said holder, and mechanism intermediate said holder and slide for depressing said holder through the movement of said slide, substantially as described, and for the purpose specified.

6. The combination of the slide, the bed, the holder D, the adjustable studs 9, mounted on said holder, and mechanism intermediate said slide and studs for pressing upon the ends of the latter to depress said holder through the movement of said slide, substantially as described, and for the purpose specified.

HIAL S. GRANNIS.

Witnesses:

ELBERT O. MOORE,
AUGUSTINE M. LEWIS.