

A. HARDER.
Harvester-Cutters.

No. 152,486.

Patented June 30, 1874.

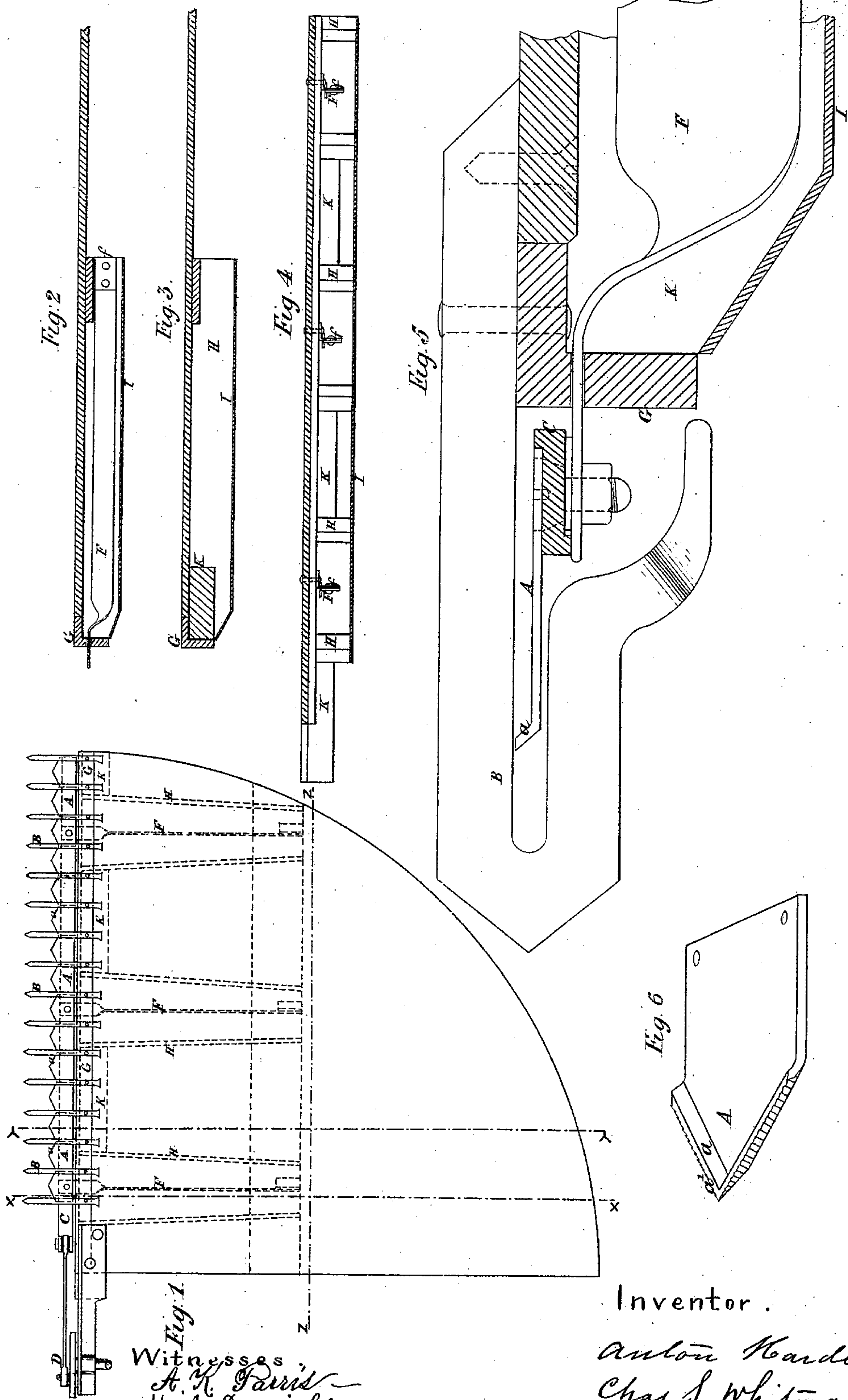


Fig. 1
Witnesses
A. H. Davis
H. A. Daniels

Inventor.

Anton Harder by
Chas. S. Whitman atty

A. HARDER.
Harvester-Cutters.

No. 152,486.

Patented June 30, 1874.

Fig. 7

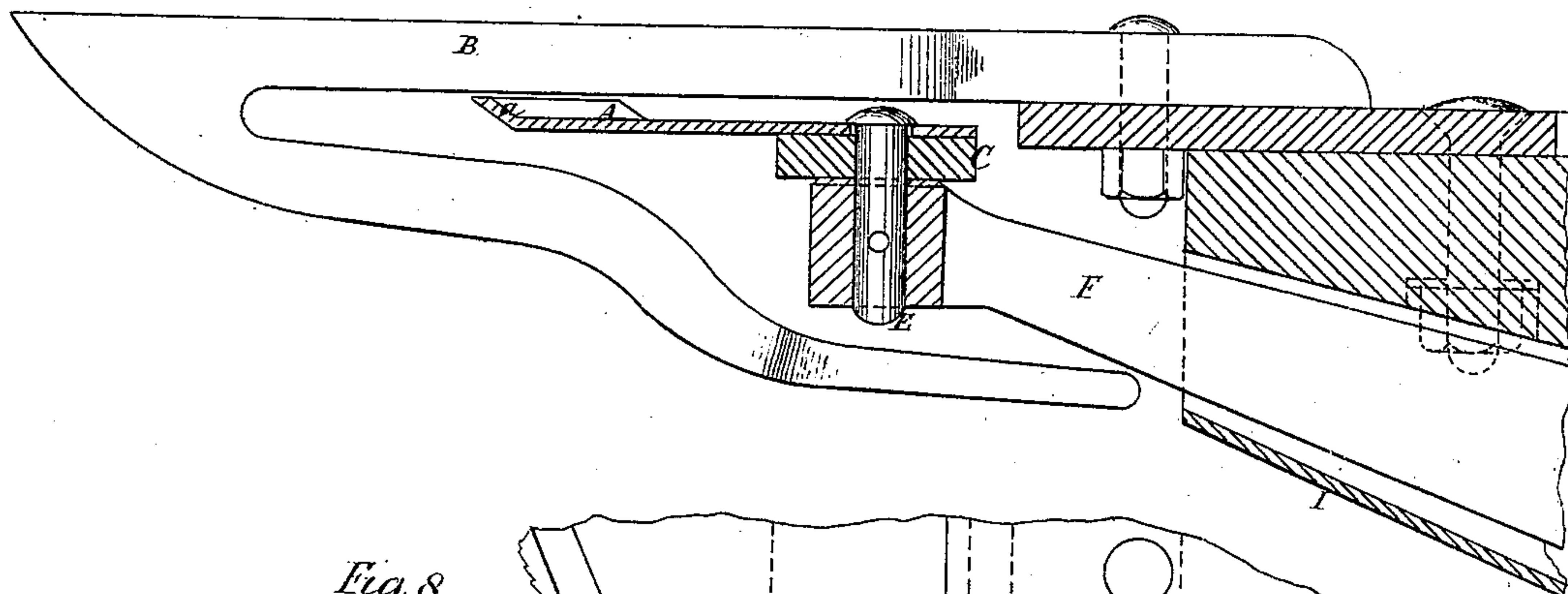
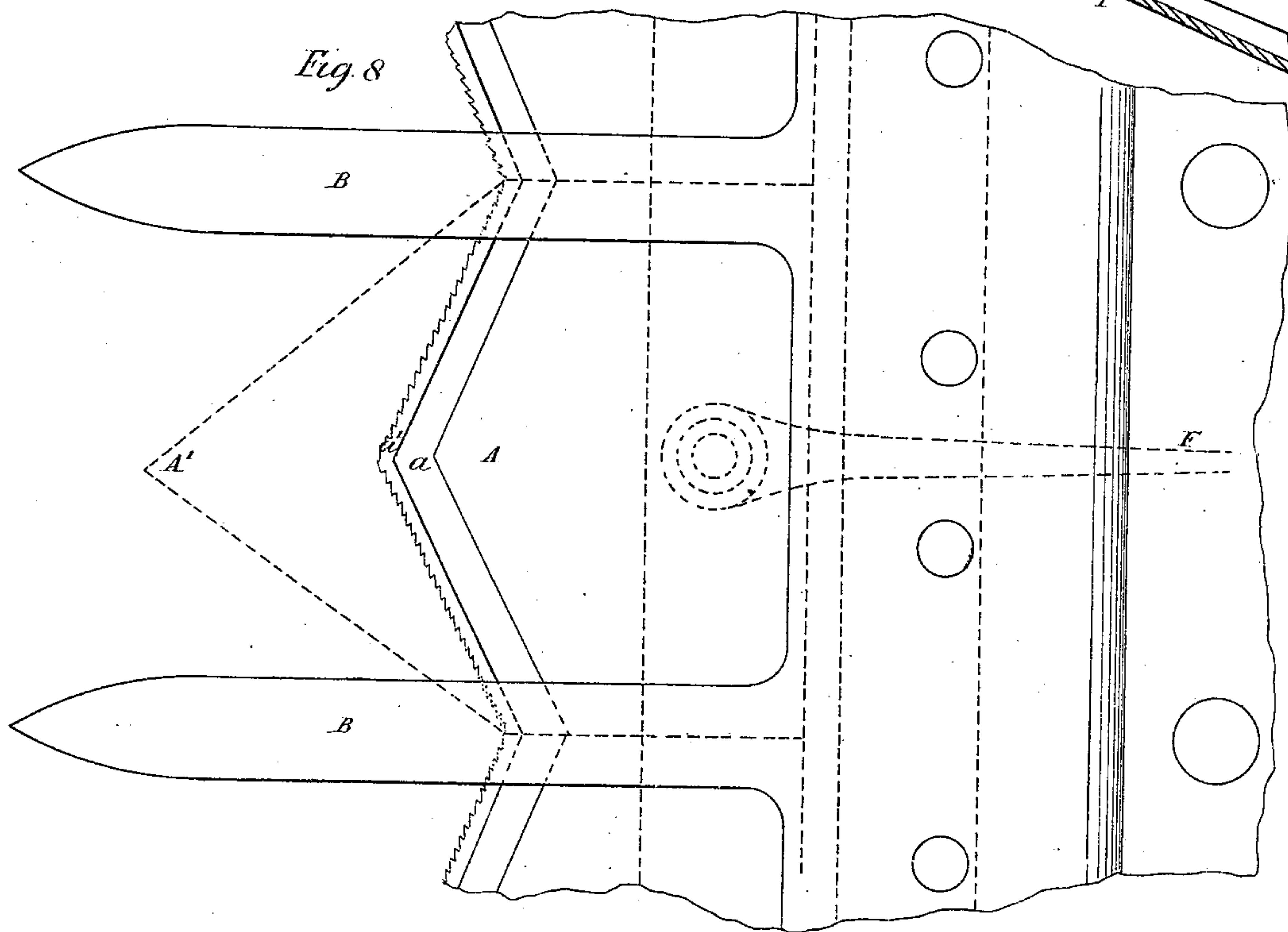


Fig. 8



Witnesses.

A. K. Davis.

H. A. Daniels.

Inventor.

Anton Harder

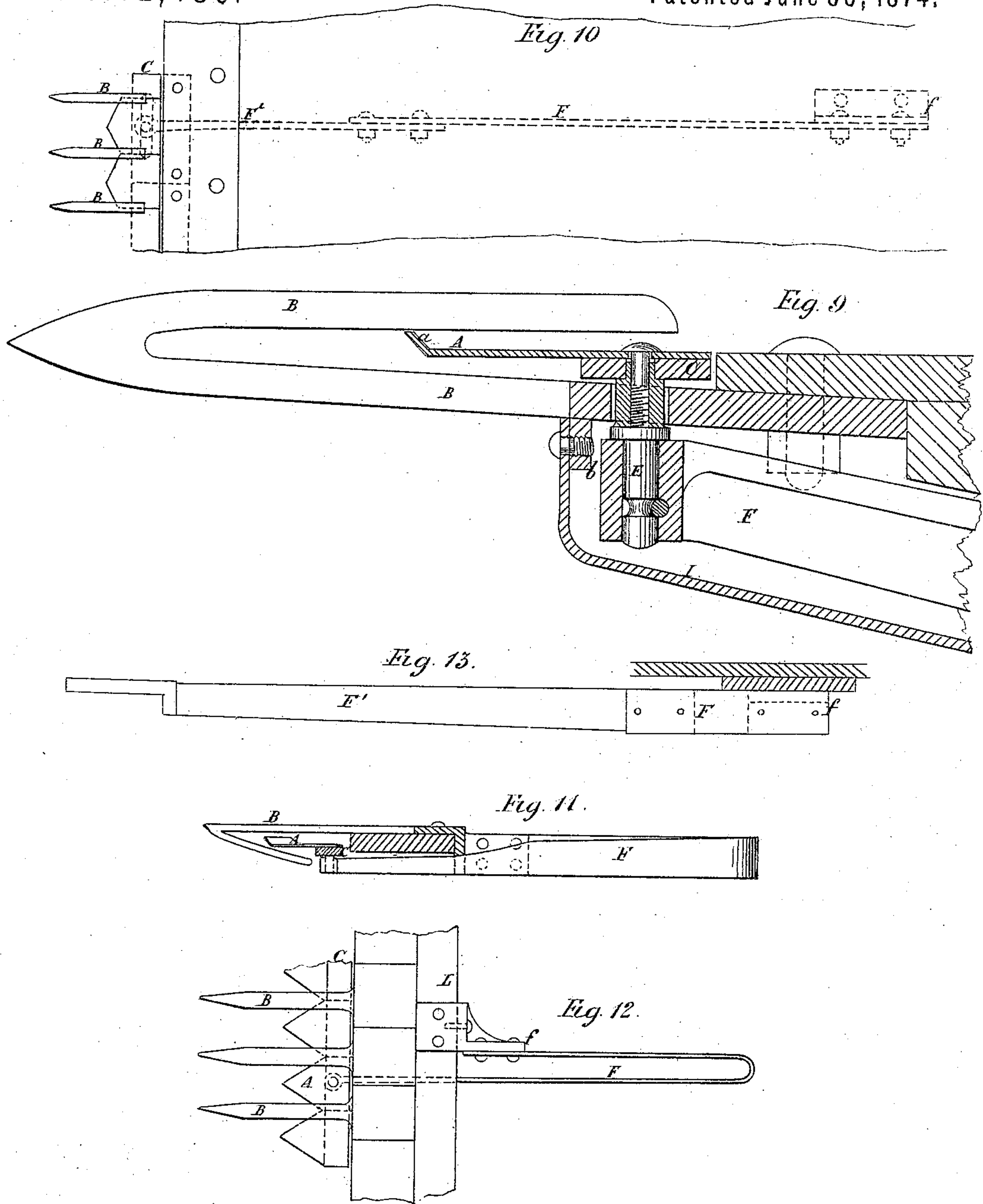
by Char. S. Whitman

Atty

A. HARDER.
Harvester-Cutters.

No. 152,486.

Patented June 30, 1874.



Witnesses .

A. G. Davis

H. A. Daniels

Inventor.

Anton Harder
by Char. S. Whitman
Att'y

UNITED STATES PATENT OFFICE.

ANTON HARDER, OF RANSEN, NEAR STEINAR ON THE ODER, GERMAN EMPIRE.

IMPROVEMENT IN HARVESTER-CUTTERS.

Specification forming part of Letters Patent No. **152,486**, dated June 30, 1874; application filed January 30, 1874.

To all whom it may concern:

Be it known that I, ANTON HARDER, of Ransen, near Steinar on the Oder, in the German Empire, have invented an Improvement in Reaping and Mowing Machines; and do hereby declare that the following description, taken in connection with the accompanying sheets of drawings hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvement, by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to secure by Letters Patent—that is to say:

My invention has reference to an improved mode of mounting the knife-bar of reaping and mowing machines, so as to dispense with the usual fixed guides, in which the knife-bar works, thus avoiding a considerable amount of friction and wear.

My said improvement will be readily understood on reference to the accompanying drawings, in which Figure 1 shows a plan of the platform of a reaping-machine with my improvement applied thereto. Fig. 2 shows an enlarged section on line X X, Fig. 1. Fig. 3 shows a section on line Y Y, and Fig. 4 shows a section on line Z Z. Fig. 5 shows a part full-sized section, and Fig. 6 shows a perspective view, of one of the knives.

The knives A are plates of steel with their front sides sloped in the usual form; but these sloped sides instead of being brought to an edge by beveling them like a chisel or other cutting-instrument are turned up at an obtuse angle to the plane of the blade, so as to form a lip, *a*, as shown in Figs. 5 and 6, which, being ground on its upper face, *a'*, flat and parallel to the plane of the blade, presents a cutting-edge that can work close against the fingers B, and thereby shear the stalks of crop presented to it. The knives A are fixed, in the usual manner, on the bar C, which is caused to reciprocate by any known means—as, for example, by a crank and connecting-rod, as shown at D, Fig. 1—but the bar C, instead of working in guides, as in machines of present construction, is, according to my invention, pivoted by pins or screws E to the extremities

of elastic bars F, extending under the platform, and fixed at their farther ends thereto or to brackets *f* projecting down therefrom. The elastic bars F are preferably made of steel; but they may be of other more or less elastic metal or alloy, and they are fixed with their greater dimensions or depth standing vertically, so that while they are stiff enough vertically to support the knife-bar C and its knives A, they act as springs laterally, allowing the play of the knife-bar to and fro in its reciprocating movement. In the arrangement of such springs, as shown at Figs. 1 to 5, the front ends of the bars are bent flat, and pass through slots in an angle-iron facing, G, to the platform. H H are wood ribs on each side of the springs, serving both to strengthen the platform and as a means of attachment for the thin sheet-metal or wood covering I, inclosing the springs on the under side, so as to protect them against injury by stones. K are wood blocks between the ribs H, to which the angle-iron facing G is fixed.

Fig. 7 shows a section, and Fig. 8 a plan, of another mode of forming the front ends of the springs F. They are in this case forged with a socket at the end, for receiving the pin E, on which the knife-bar pivots.

In both the before-described arrangements the lower ends of the fingers B are by preference flattened out, as indicated, so as to cover and protect the ends of the springs and the knife-bar.

Fig. 9 shows a section, and Fig. 10 a part plan, of another modification, in which the fingers B are fixed below the knife-bar, instead of above it, as in the previous arrangements. In this case the pin E pivots in the socket of the spring F, and passes through a slot formed in the flange of the fingers, as shown, two fingers being formed in one piece, as indicated at Fig. 10, to admit of this arrangement. The socket and front end F' of the spring may be made of a separate piece of gun-metal or malleable cast-iron, fixed to the spring, as shown at Fig. 10; or the spring bars or bearers may be constructed as shown in side elevation at Fig. 13, where F' is a rigid bar or bearer of cast-iron or other metal, connected by a short spring, F, to the bracket *f*. I, Fig. 9, is the

sheet-metal casing inclosing the springs, secured in front to lugs *b* on the fingers *B*.

Fig. 11 shows a section, and Fig. 12 a plan, of another modification, more particularly applicable to mowing-machines having no platform or a platform of very small extent. In this case the back ends of the springs *F* are bent round and returned toward the front, where they are secured to brackets *f*, fixed to the narrow platform *L*.

It will be seen that by supporting the knife-bar by means of springs or spring-bearers, as before described, I avoid all the friction caused by the reciprocation of the knife-bar in fixed guides, which friction, particularly when the guides become clogged with grit, is so great

as to require considerable power for imparting the necessary rapid motion to the knife-bar.

Having thus described the nature of my invention, and in what manner the same is to be performed, what I claim is—

The spring bars or bearers, forming the only support for the knife-bar of reaping and mowing machines, substantially as herein described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses this 6th day of December, 1873.

ANTON HARDER.

Witnesses:

HERMANN KREISMANN,
BERTHOLD ROE.