No. 827,531. PATENTED JULY 31, 1906.

C. HORN.

REVERSIBLE SHEARS FOR CUTTING METALS.

APPLICATION FILED DEC. 2, 1905.

2 SHEETS—SHEET 1.

Fig: 1,

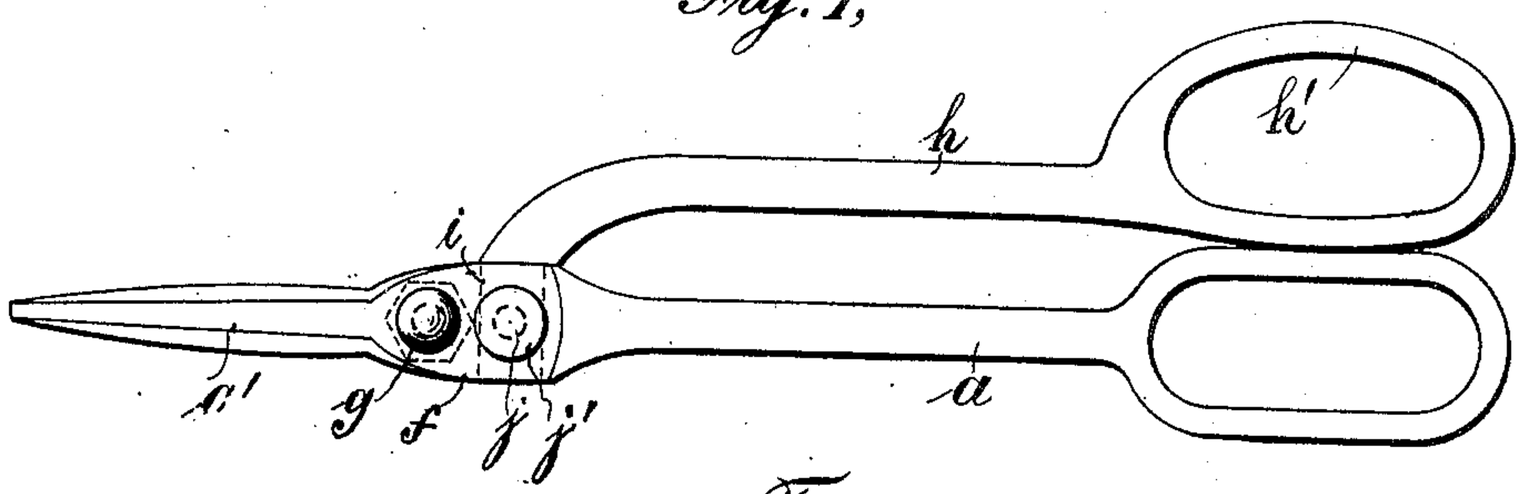


Fig: 2,

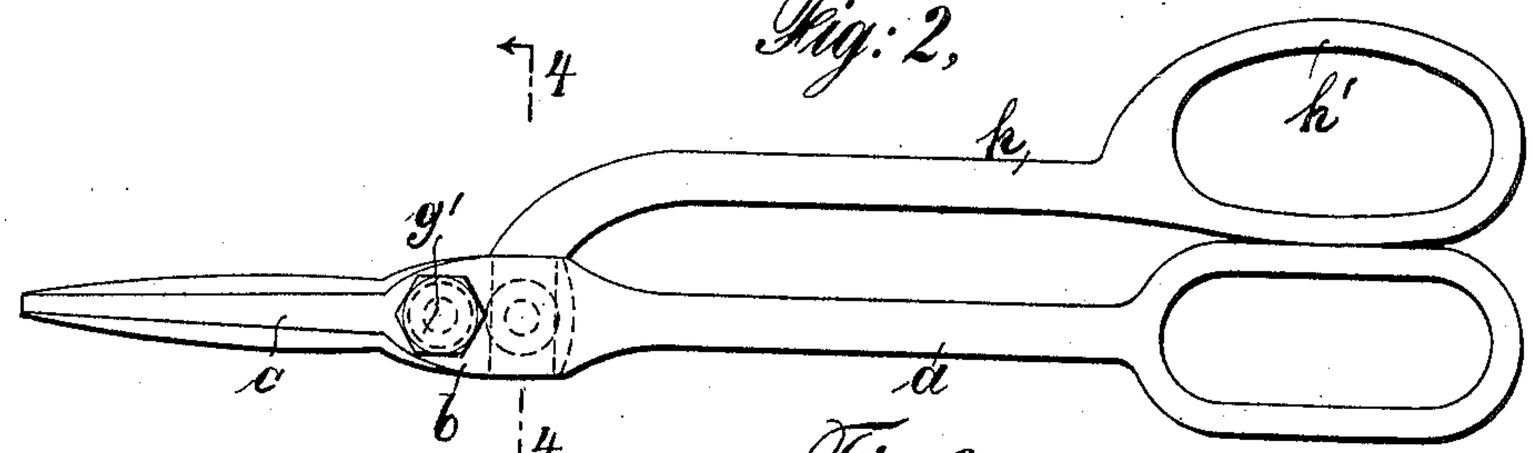
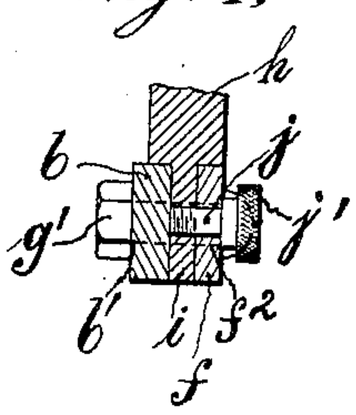


Fig: 3,

Fig: 4.



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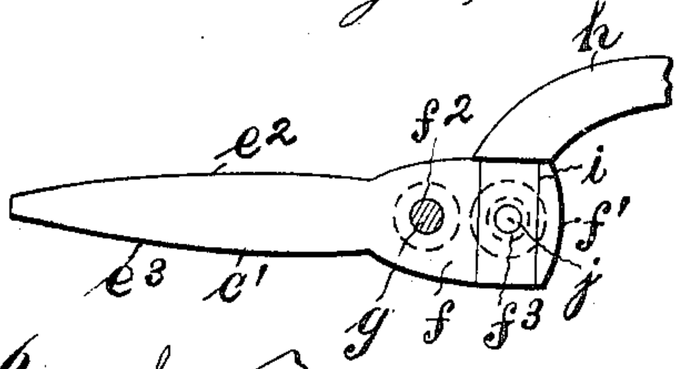

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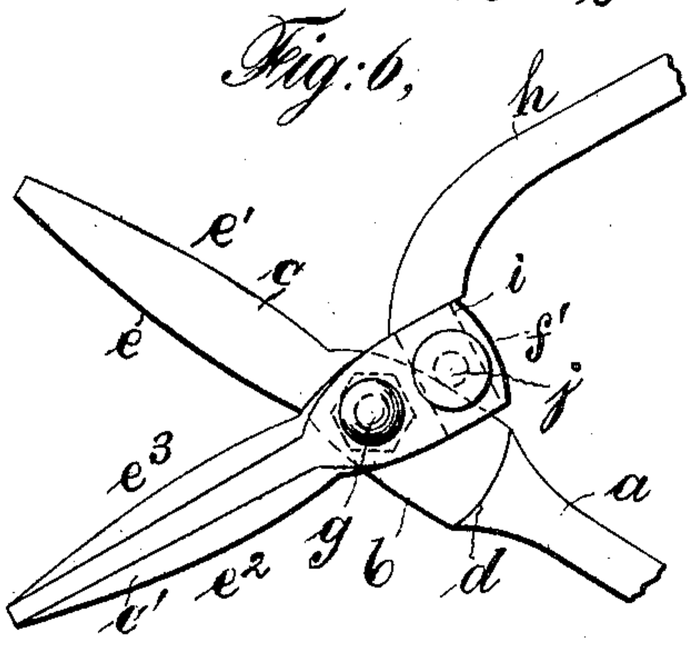


WITNESSES:

Max B. A. Doring.

Mildred A. Cole.

INVENTOR

Charles Horn

BY

L. K. Böhm

his ATTORNEY.

No. 827,531. PATENTED JULY 31, 1906.

C. HORN.

REVERSIBLE SHEARS FOR CUTTING METALS.

APPLICATION FILED DEC. 2, 1905.

2 SHEETS—SHEET 2.

Fig: 7,

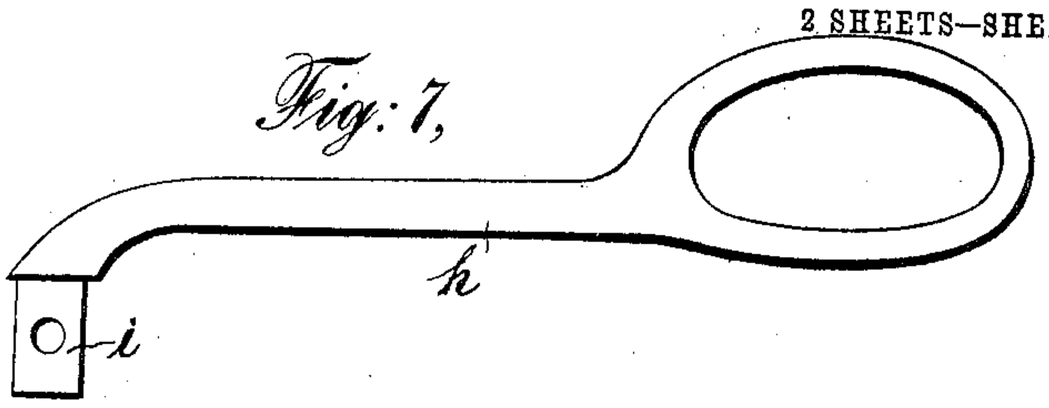


Fig: 8,

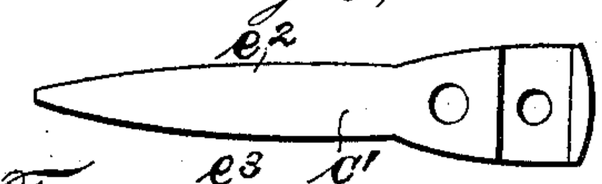


Fig: 9,

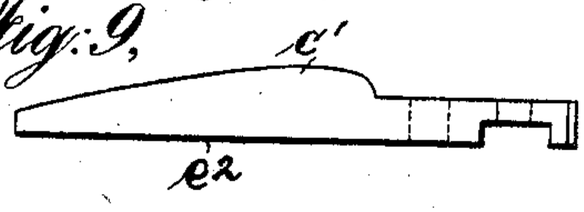


Fig: 10,

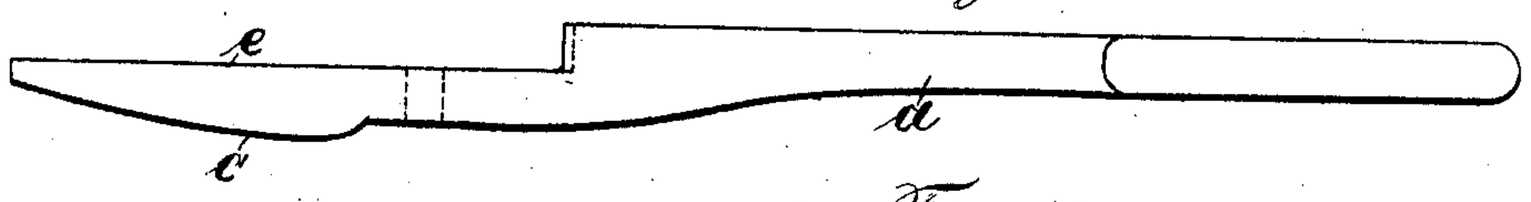


Fig: 11,

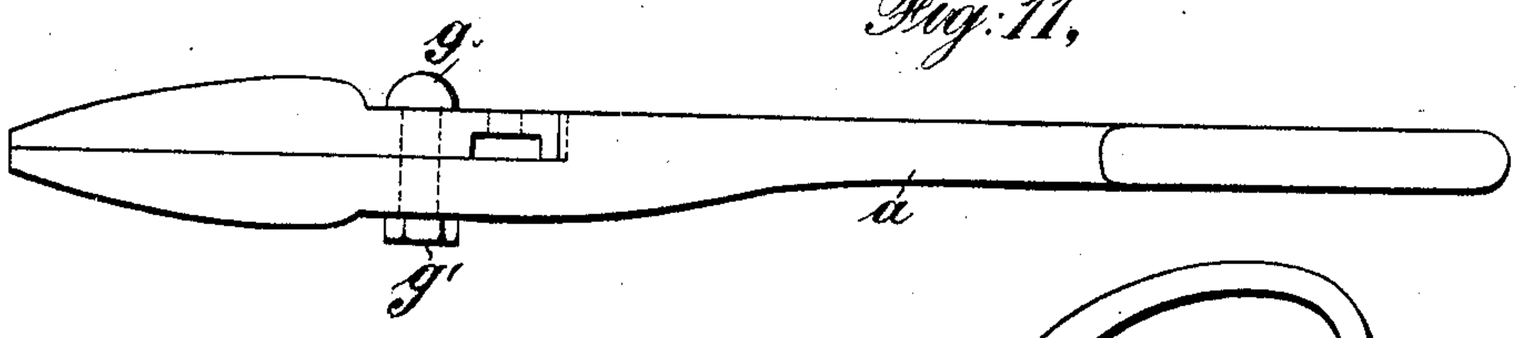
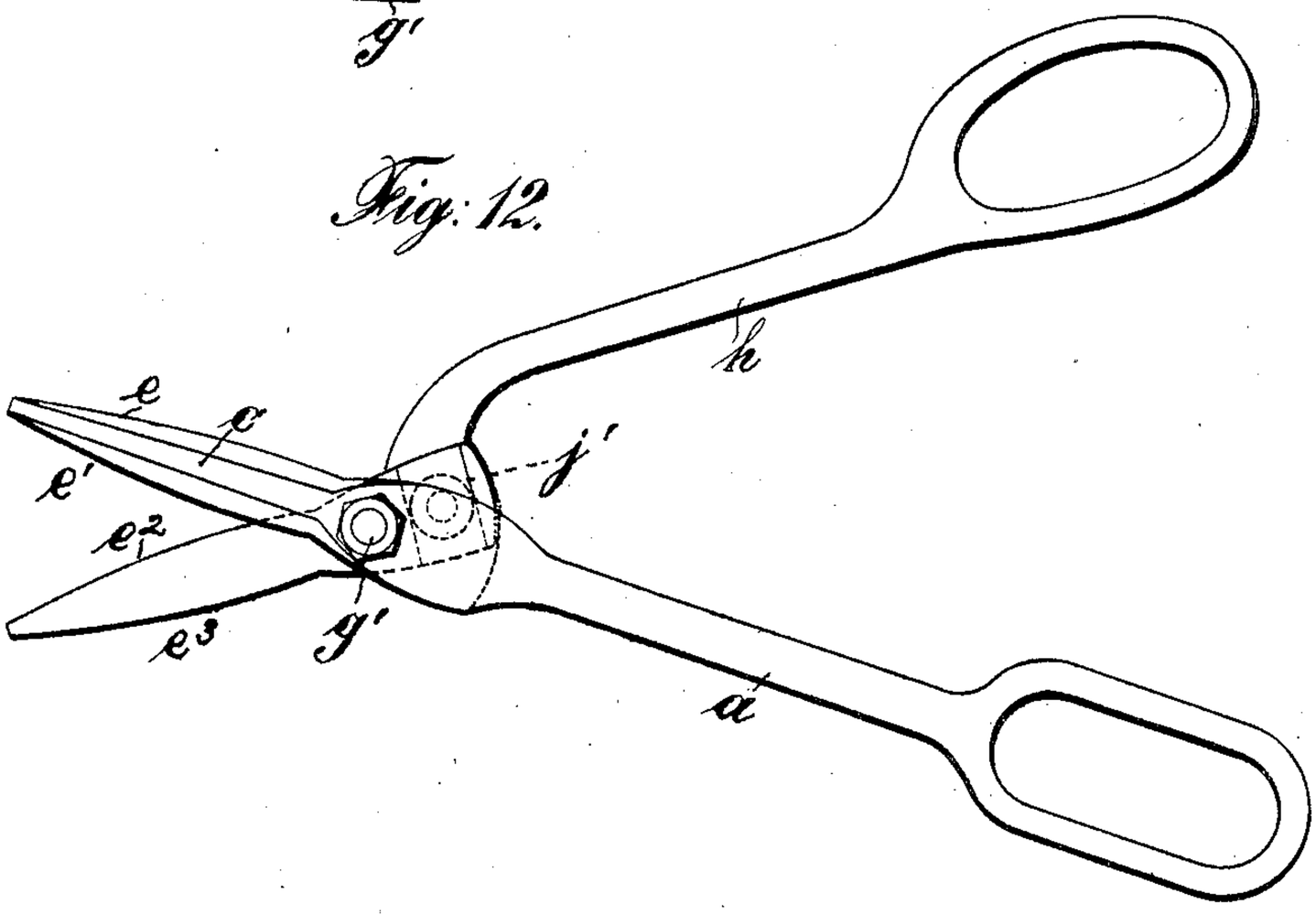


Fig: 12.



WITNESSES

Max B. A. Döring.

Rose J. Neufield.

INVENTOR

Charles Horn,

BY L. K. Böhm,

ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES HORN, OF NEW YORK, N. Y.

REVERSIBLE SHEARS FOR CUTTING METALS.

No. 827,531. Specification of Letters Patent. Patented July 31, 1906.

Application filed December 2, 1905. Serial No. 289,941.

To all whom it may concern:

Be it known that I, CHARLES HORN, a citizen of the United States of America, and a resident of the borough of the Bronx, New York city, in the county and State of New York, have invented certain new and useful Improvements in Reversible Shears for Cutting Metals, of which the following is a specification.

This invention has reference to shears, and pertains particularly to a novel construction of shears used for cutting sheet metal, such as sheet-steel, sheet-iron, copper-sheeting, &c. The shears pertain to that type of metal-cutting shears which are reversible and have four cutting edges.

The invention further consists in the combination of parts. One of the handles is adapted to be inserted and secured on the top and bottom of the shears, whereby alternately the upper pair or the lower pair of cutting edges are used and accordingly the cheeks with cutting edges reversed, as will be fully explained farther down. By virtue of this construction I have provided a double pair of shears with the same amount of material as is required for one single pair of shears in other constructions.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents in side elevation a pair of shears which embody my invention. Fig. 2 illustrates same with one handle in another position. Fig. 3 is a top plan view of Fig. 2. Fig. 4 is a cross-section on line 4 4 of Fig. 2. Fig. 5 is a section on line 5 5 of Fig. 3. Fig. 6 shows the shears opened when in the position shown in Fig. 1 with the handles broken away. Fig. 7 is a side view of the separate curved handle. Fig. 8 is an inner side view of a blade adapted to receive the curved handle. Fig. 9 is a top plan view of same. Fig. 10 is a top plan view of the straight handle with blade integral therewith. Fig. 11 is a top plan view of the shears with the curved handle removed, and Fig. 12 shows the opened shears in a reversed position to that shown in Fig. 6.

Similar characters of reference denote like parts in all the figures.

The shears are preferably made of tool or shear steel. In some instances when shears are required for cutting solely copper or aluminium sheeting then same may be made of machine-steel with hardened edges.

My novel shears consists, essentially, of three parts. There is a straight handle, with jaw and cheek, which latter has two cutting edges—one on each side. The second part is a jaw with cheek, which also has two cutting edges, a rectangular recess, and two circular openings in said jaw. These two parts are permanently secured together by means of a coupling-bolt. The third part consists of a curved handle, which has a downward rectangular extension that fits into the recess above mentioned and may be inserted therein from both sides. The downward extension of the curved handle has a threaded opening which coincides with one opening in the jaw of the second part. The curved handle is secured in the recess by means of a screw which may be removed and inserted by hand when it is desired to reverse the shears.

In the drawings, a represents the lower straight handle, which extends into a broad jaw b. (See Fig. 2.) The jaw b forms in the front the strengthened cheek c, which bulges outwardly and forms a straight surface on the inside. The two inner edges e e' are both adapted for cutting metal. On the rear end of the jaw where the handle ends there is a curved surface d. In the front of the jaw there is a circular opening b'. All the described parts are made of one piece of metal and integral with each other.

The second part of the shears consists of a jaw f, which extends into the cheek c', which is of the same shape as the cheek c. When the shears are closed, the inner edges of both cheeks cover each other exactly. The cheek c' likewise is provided with two cutting edges e^2 e^3. The jaw f of the second part has a rectangular recess in its rear part and a curved rear edge, which is of same shape as the curved end portion of the straight handle a. The jaw f has an opening f^2 in its front portion which coincides with the opening b' in the front portion of the jaw b of the straight handle. In the rear portion of the jaw f there is a second opening f^3 in the reduced portion of the jaw right in the center where the recess is cut out. The two parts so far described are permanently secured together by a coupling-bolt g, which is threaded and has a nut g' at the other side. The bolt g runs through the openings b' and f^2, which are located in the front portions of the respective jaws. The bolt is so secured as to allow of the movement of the second part.

The third essential part is the curved handle h, which has the handle proper, h', for the

insertion of the thumb upwardly arranged, as shown in Figs. 1 and 2. In the front of the handle where same is curved there is a downward extension *i*, which forms a rectangular oblong and has a threaded opening in its middle portion. This handle extends exactly into the recess of the second portion and is secured therein by means of a screw *j*, which has a knurled head *j'* and may be inserted and removed by hand. The handle *h* when inserted in the recess, as shown in Figs. 1 and 6, will make the edges *e* e^3 the cutting edges, and the cheek *c* is on the right side of the cutter and goes up during the operation of cutting. When the handle *h* is now removed and inserted at the other opening of the recess, then the shears are in the position shown in Fig. 2, and the edges *e'* e^2 are now the cutting edges. In this instance the cheek *c* is on the left side of the cutter and goes upward during the operation of cutting. It will be noted that the handle *h* is always on the top, this being the preferred way of using the shears.

In the described manner I have provided metal-cutting shears which are reversible and have four cutting edges that are used alternately, whereby the shears actually represent two pairs of shears, while in fact material for one pair of shears only has been used.

The shears may be made of any required size. They may be small, so that they are conveniently carried in a tool-chest, or they may be large and permanently secured to a support or working table in the factory.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. Shears for cutting metal sheeting comprising essentially three parts, a straight handle, a jaw on the front end of said handle, a cheek on said jaw having two cutting edges, a second jaw, a rectangular recess therein, a cheek formed on the front end of said second jaw, two cutting edges on said second cheek, both parts being permanently joined, and a curved handle adapted to be secured on the second jaw in said recess from both sides, whereby the shears are made reversible.

2. Shears for cutting metal comprising essentially three parts, a handle, a jaw on the front end of same, and having an opening, a cheek on the jaw having two cutting edges, all made in one piece and integral with each other, a second jaw having two circular openings, and a rectangular recess in its rear portion, a cheek on the front end of said second jaw having two cutting edges, both parts being permanently secured by means of a coupling-bolt, and a curved handle having an oblong rectangular extension which is adapted to be inserted in the recess of the second jaw from both sides, and secured therein by a screw, whereby the shears are made reversible so that the two pairs of cutting edges may be used.

3. In shears for cutting metal, two handles one of which is separable from the other, a jaw on the front end of one handle having an opening, a cheek on said jaw having two cutting edges, all made in one piece, and integral with each other in combination with a second jaw having an opening, a cheek formed on the front of said second jaw, and two cutting edges on said second cheek, both parts being permanently joined by means of a coupling-bolt.

4. In shears for cutting metal sheeting a separate handle a jaw on said handle, two circular openings therein, a rectangular recess in its rear portion, and a cheek formed on the front end of the jaw, and having two cutting edges.

5. In shears for cutting metal sheeting a curved separate handle, an oblong rectangular extension on its front part, and an opening in said extension.

Signed at New York, N. Y., this 29th day of November, 1905.

CHARLES HORN.

Witnesses:
LUDWIG K. BÖHM,
JAMES J. ASTARITA.