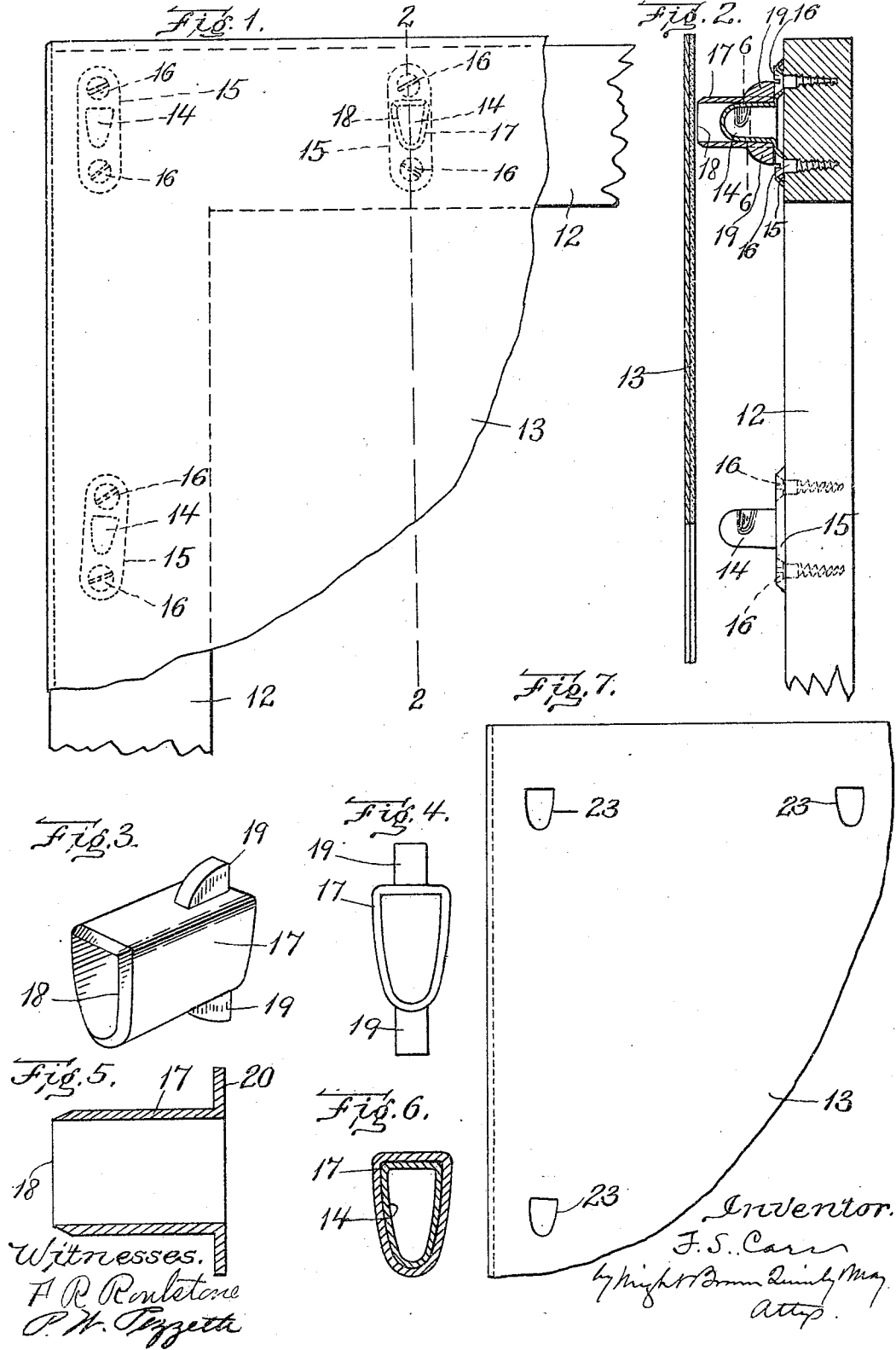


F. S. CARR.
 MEANS FOR FORMING SOCKET HOLES IN CARRIAGE CURTAINS, &c.
 APPLICATION FILED APR. 19, 1909.

949,883.

Patented Feb. 22, 1910.



UNITED STATES PATENT OFFICE.

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MEANS FOR FORMING SOCKET-HOLES IN CARRIAGE-CURTAINS, &c.

949,883.

Specification of Letters Patent.

Patented Feb. 22, 1910.

Application filed April 19, 1909. Serial No. 490,729.

To all whom it may concern:

Be it known that I, FRED S. CARR, of Brookline, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Means for Forming Socket-Holes in Carriage-Curtains, &c., of which the following is a specification.

This invention relates to detachable curtains or flexible side pieces of sheet material, such as are used to form parts of vehicle body covers. A curtain of this character is provided with a plurality of sockets arranged in close proximity to its edges, these sockets being adapted to engage studs correspondingly located on the frame work which supports the curtain when in use. The studs and sockets constitute members of so-called stud and socket fasteners, which are well-known articles of manufacture. The studs are usually oblong in cross section, and usually have an elliptical or an approximately triangular cross section. Each stud is attached to the frame work usually by means of screws inserted in orifices formed on the flanged base of the stud. In attaching the studs to the frame work, the workman is liable to so locate the studs that the major axes of their cross sections will not be exactly parallel, some being inclined relatively to others. It is desirable to form the sockets in the curtain of such size that they will closely fit the studs without moving loosely crosswise of the studs, and that said sockets correspond in form to the cross sections of the studs. It is desirable that the major axes of the sockets conform accurately to the major axes of the cross sections of the studs.

My invention has for its object to enable the socket holes in the curtain to correspond accurately with the positions of the studs, so that the socket holes may be formed to accurately fit the studs without loose motion thereon, the holes conforming to any and all transverse inclinations of the studs, so that whatever may have been the irregularities in the locations of the studs due to carelessness of the workmen, the sockets will accurately fit the studs in each instance.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming

a part of this specification,—Figure 1 represents a side elevation showing a portion of the fixed curtain-supporting frame work provided with a series of stud members, and a portion of a curtain temporarily supported in front of the stud members preparatory to the operation of forming the socket holes in the curtain. Fig. 2 represents a section on line 2—2 of Fig. 1. Fig. 3 represents a perspective view of the cutting die shown in Figs. 1 and 2. Fig. 4 represents a rear end elevation of the die shown in Fig. 3. Fig. 5 represents a longitudinal section of a cutting die having a differently formed base. Fig. 6 represents a section on line 6—6 of Fig. 2. Fig. 7 represents a side view of the portion of the curtain shown in Fig. 1, after the stud-receiving holes have been formed therein.

The same reference characters indicate the same parts in all the figures.

In the drawings,—12 represents a frame work which may be of any suitable form and construction adapted to support a flexible side piece or curtain 13 of sheet material. To the frame 12 are affixed a series of studs 14, each adapted to engage a socket formed for its reception in the curtain. Each stud is provided with a flanged base 15 attached by screws 16 to the frame. The studs may be of any suitable form and construction, those here shown being of the general form set forth in Letters Patent of the United States, No. 872,796, granted to me December 3, 1907, the form of the stud in cross section being substantially triangular.

My invention may be practiced in connection with studs of other form, for example, studs of elliptical form in cross section, as shown in Letters Patent of the United States, No. 874,083, dated December 17, 1907. I have here represented the stud and its flanged base as made hollow and of sheet metal, but it is obvious that a solid stud, such as is shown in the patents above mentioned, may be used.

17 represents a hollow cutting die adapted to be placed upon a stud 14, the interior of the die being formed to conform closely to the cross section of the stud, and the outer end of the die being provided with a continuous cutting edge 18 adapted to form a socket hole corresponding accurately to the cross section of the stud. The length of the die is such that when its inner end or base

bears on the base flange of the stud, the cutting edge will project considerably beyond the outer end of the stud, as shown in Fig. 2.

5 A curtain to be provided with socket holes is temporarily suspended in any suitable way adjacent to the series of studs, and just outside their outer end, as indicated in Figs. 1 and 2. The operator then applies the cutting die 17 successively to the different studs of the series and while it is in place on each stud forces the curtain against the cutting edge of the die by means of a mallet or other suitable device, thus causing the die to cut a socket hole in the curtain. This operation is repeated with every stud, so that at the close of the operation, the curtain is provided with socket holes corresponding exactly in number and position with the studs, the direction of the major axes of the socket holes corresponding exactly in each case with the direction of the major axis of the stud which the hole is to receive. This will be better understood by reference to Fig. 1, where the right hand upper stud and the lower stud are shown with the major axes of their cross sections oppositely inclined, the other stud being shown with the major axis of its cross section vertical.

It will be seen that the cutting die applied to each of the studs represented will conform accurately to the position of the stud, and will cause the major axes of the socket holes formed in the curtain to have the same variations as those of the studs.

35 The cutting die shown in Figs. 1, 2, 3, and 4 is provided with ears or wings 19 which are adapted to bear on the attaching screws 16, and thus prevent the pressure exerted on the die during the cutting operation from indenting the sheet metal base flange 15. When the die is used with a stud having a

solid base flange, the ears 19 may be omitted, or the die may have a continuous flange 20 at its inner end, as shown in Fig. 5.

In Fig. 7, I show the curtain 13 provided with stud-receiving holes 23 conforming to the peculiarities of position of the studs shown in Fig. 1.

I claim:

1. The combination of a supporting structure, a series of studs attached thereto, and a cutting die which conforms internally to the cross-sectional form of the studs, and is adapted to be removably applied thereto, said die having means for conforming its position to the positions of the respective studs, whereby a series of holes may be formed in a carriage curtain, said holes coinciding accurately with the studs.

2. A hollow cutting die adapted to form a stud-receiving hole in a carriage curtain or the like, and formed internally to fit the cross section of the stud, the length of the die being greater than that of the stud, so that when the inner end of the die rests on the base of the stud, the cutting edge of the die is projected from the outer end of the stud.

3. A hollow cutting die adapted to form a stud-receiving hole in a carriage curtain or the like, and formed internally to fit the cross section of the stud, the inner end of the die being enlarged in area to have an extended bearing on the base of the stud, and the length of the die being greater than that of the stud.

In testimony whereof I have affixed my signature, in presence of two witnesses.

FRED S. CARR.

Witnesses:

C. F. BROWN,
P. W. PEZZETTI.