

Dec. 23, 1941.

F. C. WALLACE

2,266,929

CLAMP

Filed Aug. 23, 1941

Fig. 1.

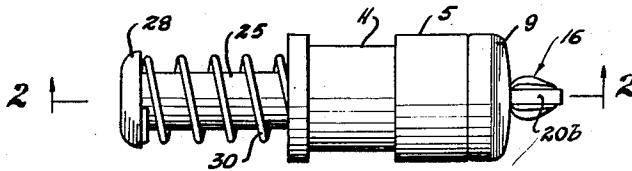


Fig. 2.

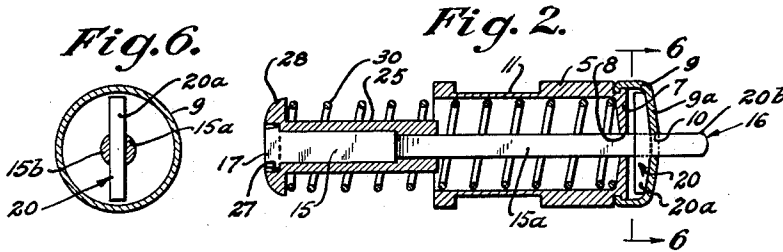


Fig. 6.

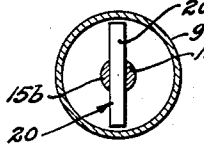


Fig. 7.

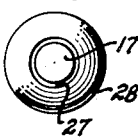


Fig. 3.

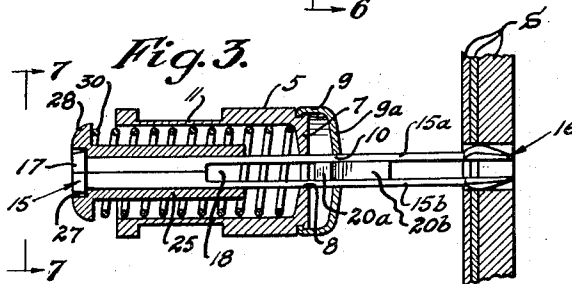


Fig. 4.

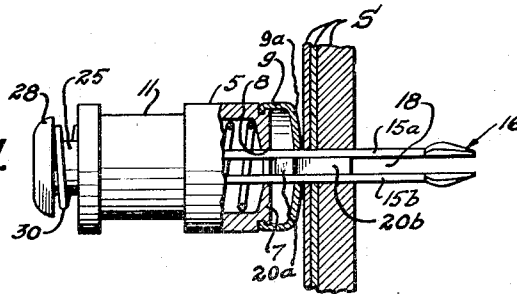
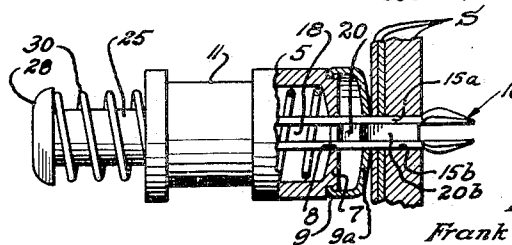


Fig. 5.



Inventor.
Frank C. Wallace.
Callahan
Attorney.

UNITED STATES PATENT OFFICE

2,266,929

CLAMP

Frank C. Wallace, Los Angeles, Calif., assignor to
Hollywood Comb Curlier, Inc., Los Angeles,
Calif., a corporation of California

Application August 23, 1941, Serial No. 408,085

10 Claims. (Cl. 85—5)

This invention relates to improvements in clamp devices for temporarily holding together, in superposed relation, perforated sheets preparatory to riveting or the like.

In my copending application, Serial Number 387,198, filed April 7, 1941, I have shown and described a clamp of this character, and this present application is a continuation in part of my said copending application.

One of the principal objects of this invention is to provide a clamp, of the character described in my said copending application, having a fully rotatable clamp pin, which prevents deformation of the clamp pin during use. For instance, the clamp described in my copending application is comprised of a cylindric body having a spring pressed split clamp pin slidably mounted longitudinally therein, there being a stationary spreader secured in the body between the segments of the split pin to spread the segments into engagement with the side wall of the registering holes in the sheets being clamped together. I have found that the spiral spring tends to cause rotation of the pin during its sliding movement with respect to the body and also workmen tend to twist or rotate such a device when applying and removing it with a clamp operating tool. Thus if the pin is secured against rotative movement, it rapidly becomes deformed or broken in use. My present improvements overcome this objection.

Another object is to further facilitate allowing the clamp pin free rotatability by means of providing a floating spreader.

How these and still further advantages of my invention are achieved will become apparent from the following explanation of a presently preferred adaptation thereof, for which purpose I shall refer to the accompanying drawing, in which:

Fig. 1 is a side elevation;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is a longitudinal section showing the clamp being inserted in aligned perforations;

Fig. 4 is a view partly in section and partly in elevation showing the clamp in an intermediate position;

Fig. 5 is a view similar to Fig. 4 but showing the device in clamping position;

Fig. 6 is a section on line 6—6 of Fig. 2; and

Fig. 7 is a view on line 7—7 of Fig. 3.

Referring now to the drawing, I show at 5 a cylindric body having an end wall 7 through which there is a central hole 8. A cap 9 is crimped onto the end of body 5, the end wall of

the cap being spaced from wall 7 and having a central hole 10. The body has a portion 11 of reduced diameter to receive a clamp applying tool not shown. A split retaining pin 13 is longitudinally slidably mounted in the body and projects at its outer end through holes 8 and 10. This pin is comprised of the sections 15a, 15b having enlarged outer ends 16 and presenting a head 17 at its opposite end. The inner surfaces of the pin sections adjacent the outer end are cut away to provide a longitudinal slot 18 so that the pin may move longitudinally with respect to the T-shaped spreader 20. This spreader includes a flat cross arm 20a which is limited against longitudinal movement by the walls 7, 9a between which it loosely fits, but is free to rotate about its transverse axis within the space between said walls. The central arm 20b projects outward through hole 10 longitudinally between pin sections 15a, 15b.

The inner end of the pin 15 is rotatably mounted in sleeve 25, the head of the pin being countersunk and fitting loosely in the recess 27 provided in the headed end 28 of the sleeve. A coil spring 30 is mounted in body 5 around the pin, seating at its inner end against end wall 7 and at its outer end against head 28 of the sleeve.

In operation, my clamp is used as follows: First, by means of a suitable tool, the pin is pushed inwardly of the body against the spring to the position of Fig. 3. In this position, the enlarged ends 16 are spaced outwardly from the spreader a sufficient distance to enable the outer ends of the pin sections 15a, 15b to be flexed towards each other to enable the enlarged ends to pass through the aligned holes provided in a plurality of superposed sheets S to the position of Fig. 4. When the inward pressure on the inner end of the pin is then released, the spring 30 slides the pin in the opposite direction, bringing it to the position of Fig. 5, where it is resiliently held with the pin ends 16 compressing the sheets S against the end wall 9a of the cap 9, thus holding the sheets together and the holes in alignment. To remove the clamp, the clamp operating tool is again applied to compress spring 30 and slide the pin to the position of Fig. 4 and the enlarged ends 16 may be then withdrawn through the holes in the sheets.

One of the particular advantages of this construction resides in the fact that the pin as well as the spreader is free to rotate with respect to the body to prevent the pin being twisted or distorted by virtue of the normal twisting movement which a workman uses to apply and remove the

clamp or by virtue of the rotative action of the spring 30 upon being compressed and expanded.

The broad concept of my invention, as defined by the appended claims, of course may be carried out in structures varying from that herein specifically described, so that the details which I have hereinbefore employed to illustrate an adaptation of my invention are not to be taken as limitative.

I claim:

1. A clamp device of the class described, including a housing, a retaining member slidably mounted in the housing and having legs slidable through and rotatable with respect to the housing, and a spreader rotatably carried by the housing between said legs whereby to space the legs apart.

2. A clamp for temporarily holding together perforated sheets in superposed relation, including a housing having a base adapted to rest against the outermost of the sheets, a hole through the base, a retaining member slidably and rotatably mounted in the housing and having legs slidable through the hole whereby to be inserted through registering perforations in the sheets, and a spreader carried by the housing and positioned between the legs, said spreader being rotatable with respect to the housing upon rotation of the legs.

3. A clamp for temporarily holding together perforated sheets in superposed relation, including a housing having a base adapted to rest against the outermost of the sheets, a hole through the base, a retaining member slidably mounted in the housing and having legs slidable through and rotatable with respect to the hole whereby to be inserted through registering perforations in the sheets, and a spreader carried by and rotatable with respect to the housing, said spreader extending between the legs whereby to space them apart.

4. The device of claim 3 which includes means limiting longitudinal movement of the spreader with respect to the legs.

5. The device of claim 3 which includes stop means limiting longitudinal movement of the spreader with respect to the housing.

6. A clamp for temporarily holding together perforated sheets in superposed relation, including a housing having a base adapted to rest against one of the sheets, a hole through the base, a sleeve longitudinally movably mounted in the housing and a retaining member rotatably mounted in the sleeve, said retaining member having legs slidable through the hole whereby to be inserted through registering perforations in the sheets.

7. The device of claim 6 which includes a spreader rotatably carried by the body and positioned between the legs whereby to space the legs apart.

8. A clamp for temporarily holding together perforated sheets in superposed relation, including a housing having a base adapted to rest against one of the sheets, a hole through the base, an elongated sleeve longitudinally movably mounted in the housing, said sleeve having a headed end provided with a central recess, a retaining member rotatably mounted in the sleeve and having legs slidable through the hole whereby to be inserted through registering perforations in the sheets, said retaining member having a head rotatably mounted in the recess, and a coil spring mounted longitudinally in the housing around the sleeve, said spring seating at one end against the housing and at its other end against the headed end of the sleeve whereby to resiliently urge said legs inwardly of the housing through said hole.

9. A clamp for temporarily holding together perforated sheets in superposed relation, including a housing having a base, a hole through the base, a cap secured on and in spaced relation to the base, said cap being adapted to rest against the outermost of the sheets, a hole through the cap in register with the hole in the base, a retaining member slidably mounted in the housing and having legs slidable through and rotatable with respect to the holes whereby to be inserted through registering perforations in the sheets, and a spreader rotatably mounted between the base and cap, said spreader having a portion extending between the legs to space them apart.

10. A clamp for temporarily holding together perforated sheets in superposed relation, including a housing having a base, a hole through the base, a cap secured on and in spaced relation to the base, said cap being adapted to rest against the outermost of the sheets, a hole through the cap in register with the hole in the base, a retaining member slidably mounted in the housing and having legs slidable through and rotatable with respect to the holes whereby to be inserted through registering perforations in the sheets, and a spreader between the legs, said spreader comprising a T-shaped plate having its cross portion floatably mounted between the base and cap and its medial portion extending longitudinally between the legs and outwardly through the hole in the cap.

FRANK C. WALLACE.

DISCLAIMER

2,266,929.—*Frank C. Wallace*, Los Angeles, Calif. CLAMP. Patent dated December 23, 1941. Disclaimer filed November 25, 1944, by the assignee, *Herman H. Hellbush*.

Hereby enters this disclaimer to claims 1 to 5, inclusive, of said patent.
[*Official Gazette December 19, 1944.*]