

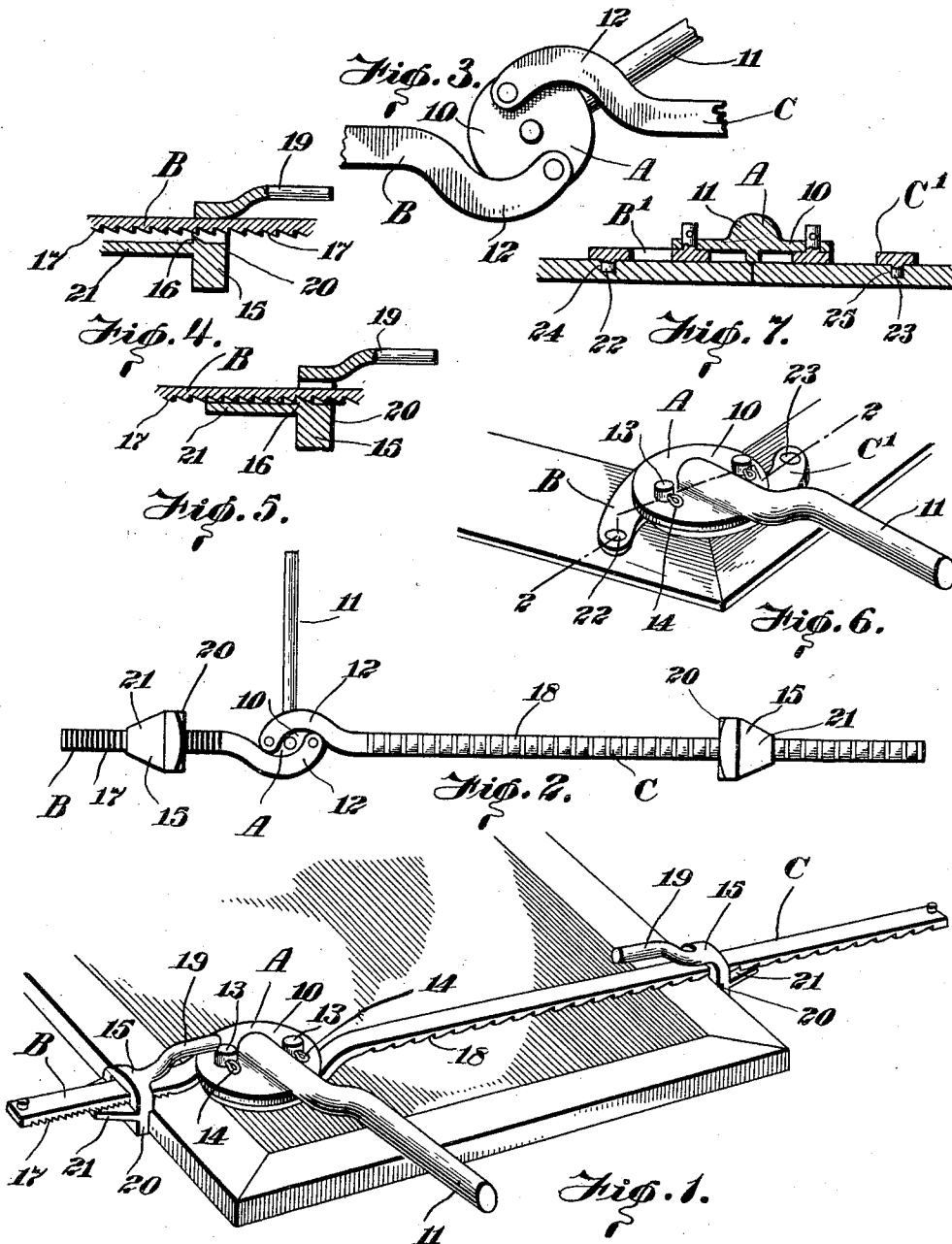
H. BROTHERHOOD.

CLAMP.

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1,005,768.

Patented Oct. 10, 1911.



WITNESSES,

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1,005,768.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY BROTHERHOOD, of the city of Ottawa, in the Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Clamps, of which the following is a specification.

My invention relates to improvements in clamps, and particularly to those of the type which may be employed for retaining the various parts of an article together during the setting of the glue, and known as a glue clamp. But it is of course evident that the clamp might be employed to other purposes without departing from the invention.

The objects of the invention are to provide a simple and effective form of clamp of few parts which may be quickly inserted on the work and turned to locking position.

Further objects are to provide such locking arrangement as will automatically tighten and remain in locked position.

Further objects are to give increased adjustability to the clamping arms so that they may be adjusted to different classes of work.

Further objects still are to enable both a rapid coarse of adjustment of the clamping arms and a fine adjustment to be made.

With these and other ends in view, the invention accordingly consists of the improved construction and arrangement of parts hereinafter described in detail in the accompanying specification and drawings.

In the drawings: Figure 1 is a perspective view of the clamp on the work. Fig. 2 is a plan view of the underside of the clamp in locked position. Fig. 3 is an enlarged plan of the locking part of the clamp in open position. Fig. 4 is a sectional detail through one of the locking dogs on the arm in disengaged position. Fig. 5 is the same view as Fig. 4 with the dog in engaged position. Fig. 6 is a perspective view of an alternative form of the clamp in position on the work. Fig. 7 is a sectional view taken along the line 2—2, Fig. 6.

In the drawings like characters of reference indicate corresponding parts in each figure.

Referring first to the form illustrated in Figs. 1 to 5, A represents a torque exerting member, by a turning movement of which the clamp is locked, said member comprising in the embodiment illustrated, a circu-

lar plate 10 and a handle 11. B and C represent the clamping arms which are pivoted to the underside of the plate A on opposite sides of the center, the position of said clamping arms when locked being such that the pivots of the arms will lie on opposite sides of the center of the plate 10. In order that this may be accomplished, the inner ends of the clamping arms are each formed with a curved portion 12 which is concaved toward the pivoting point of the opposite arm and thereby, forms a recess into which the extremity of the opposite arm may take when the arms are in locking position, as shown in Fig. 2. The pivotal connections between the arms and plate 10 are desirably of such a character that the arms may be quickly disengaged therefrom, and in the practical operation of the invention, it will be desirable to have a number of different lengths of arms to suit the different classes of work on which the clamp is to be employed. In the embodiment illustrated, the pivotal connection comprises pintles 13 extending through the plate 10 and retained in position by transversely extending split pins 14.

As far as the locking connection of the arms is concerned, they may be connected to the work in any suitable manner. In Figs. 1 to 5, I have illustrated an improved means for connecting them to the work. These improved means comprise locking dogs 15 slidably mounted on each arm, said dogs being in the form of straps encircling the arm and each formed on the underside with a tooth 16 adapted to engage sets of ratchet teeth 17 and 18 on the arms B and C respectively, the arrangement being such that when the dog is tilted slightly, the tooth 16 can be disengaged from the ratchet teeth 17 or 18 and the dog slid on the arm. The dog, however, is normally retained in engaged position by means of handles 19 which extend longitudinally on the arm and are adapted to overbalance the dogs to cause the tooth to be held in locking position. Said dogs are also formed on the side nearest the work with curved surfaces 20 adapted to engage the work and permit a slight rocking action of the arms without unduly marring the surface of the work to which the clamp is applied. Each dog is further formed with a plate 21 adapted when the dog is in locked position to engage the under surface of the arm B

or C and so steady the dog in position. In order to permit a very fine adjustment to be made of the dogs on the arms and without the necessity of having fine teeth on both arms, the ratchet teeth 17 are preferably placed much closer together than the teeth 18, whereby, the clamp may be roughly adjusted with the dog on the teeth 18 and finely adjusted with the dog on the teeth 17.

10 In the embodiment illustrated in Figs. 6 and 7, the torque exerting member is the same, but the arms B' and C' are connected to the work by means of pins 21 and 22 at their extremities adapted to be connected to the work by insertion into recesses 24 and 25 formed in the work, as by boring. This form of clamp may be conveniently used as a corner clamp in manufacturing door and window frames and the like, the holes being bored on the reverse side of the frame at a slightly greater distance apart than the distance which the pins 21 and 22 will be apart when the torque exerting member is turned to clamping position.

25 In both forms of the invention, the clamping arms are connected to the work in such a way that when the torque exerting member is turned, the arms will be drawn longitudinally sufficiently to firmly and effectively bind the work.

It will be seen that owing to the arrangement of the pivoting point that when the clamping member moves these points past the center of the clamping member itself, they will remain in locked position.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention within the scope of the claims constructed without departing from the spirit or scope thereof, it is intended that all matter contained in the accompanying specification and drawings shall be interpreted as illustrative and not in a limiting sense.

What I claim as my invention is:

1. A clamp comprising a torque exerting member, a pair of clamping arms pivoted

thereto, the pivoting points of the arms being so arranged that in clamped position, both of said pivoting points will lie on opposite sides of the center about which the torque exerting member turns, each of said arms having teeth formed thereon, locking dogs adjustably mounted on said clamping arms, each of said dogs comprising a strap encircling the arm and formed with a tooth adapted to engage the teeth, said dogs being formed with a forwardly projecting handle adapted to overbalance the work to cause it to hold the teeth in locking position, and a plate projecting on the opposite side of the handle and projecting in an opposite direction therefrom, said plate being adapted to engage the under surface of the arms to steady the dog in position.

2. A clamp comprising a torque exerting member, a pair of clamping arms pivoted thereto the pivoting points of the arms being so arranged that in clamped position, both of said pivoting points will lie on opposite sides of the center about which the torque exerting member turns, one of said arms having fine teeth formed thereon and the other of said arms having coarse teeth formed thereon, locking dogs adjustably mounted on said clamping arms adapted to engage the teeth thereon, said dogs comprising a strap encircling the arm and formed with a forwardly projecting handle adapted to overbalance the dog to cause them to engage the arms, and a rearwardly extending plate substantially parallel with and adapted to engage the under face of said arms to steady the arms in position, said dogs being provided with curved surfaces adapted to engage the work and permit a slight rocking action of the arms without marring the surface of the work to which the clamp is applied.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

HENRY BROTHERHOOD.

Witnesses:

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PEARLE GARROW.