

Nov. 19, 1929.

C. S. SIMMONDS

1,735,910

COUPLING

Filed July 7, 1926

Fig. 1

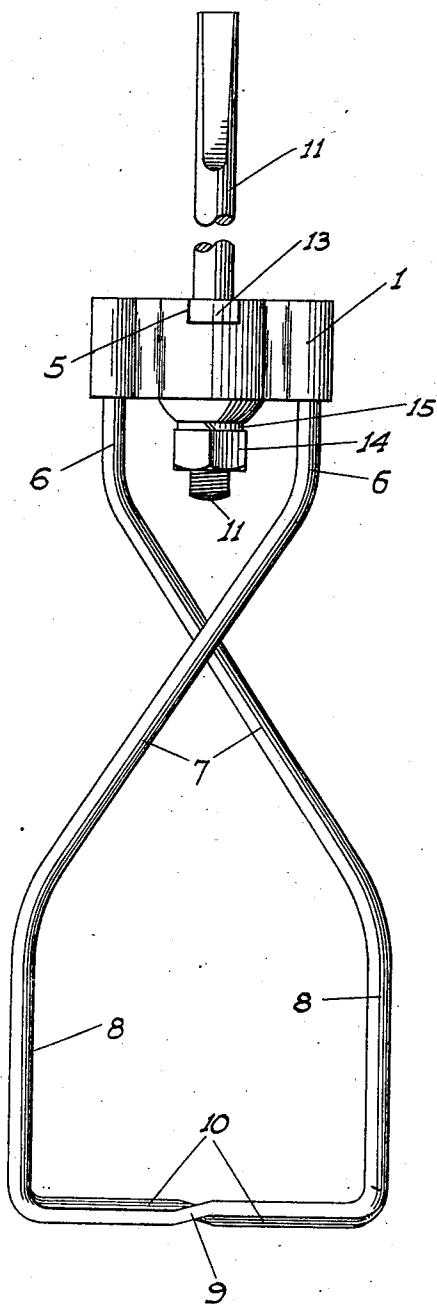


Fig. 2

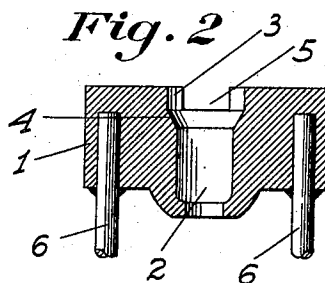


Fig. 3

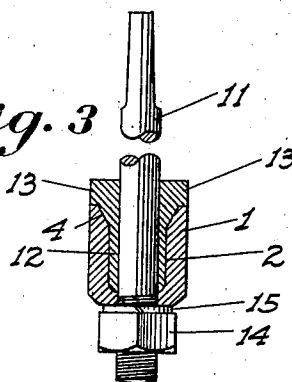
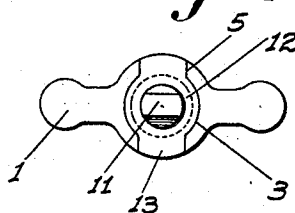


Fig. 4



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COUPLING

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This invention relates to improvements in mixing or stirring devices for use in the mixing of paint, and is particularly intended for use in connection with the paint mixing machine shown in my Patent No. 1,598,400 dated August 31, 1926.

The principal object of the invention is to provide means for enabling the mixing element to be disconnectibly attached to a driving spindle in a quick and easy manner, so that the element will be rigidly held in driving relation with the spindle, and yet one element may be quickly substituted for another of different size when the occasion demands.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a side elevation of my improved mixing element.

Fig. 2 is a longitudinal section of the mixer crosshead.

Fig. 3 is a cross section of the crosshead showing the spindle mounted therein.

Fig. 4 is a top plan view of the crosshead and spindle.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 denotes a crosshead member having a central bore 2 terminating at its upper end in an enlarged socket 3, there being a tapered portion 4 extending between the socket 3 and bore 2 therebelow. The sides of the crosshead have rectangular notches or recesses cut therein as at 5, said recesses being arranged in opposed diametrical alinement with the axis of the bore and extending from top to bottom of the socket 3 and communicating therewith.

Projecting upwardly into the crosshead an equal distance on both sides of the bore are rods 6 rigidly and permanently mounted in

place. These rods depend for a short distance in parallel relation to each other and are then bent at an acute angle to a vertical plane as at 7 so as to cross each other in vertical alinement with the bore. A certain distance beyond the intersection of the rods the latter are then bent down so as to be again parallel to each other as at 8. The portions 8 of the rods are preferably farther apart than are the upper portions farther and said partitions 8 are symmetrically disposed relative to the axis of the crosshead bore. The lower ends of the rods are connected by an integral cross arm 9 which is flattened in opposite directions on each side of the vertical center line to form mixing or stirring blades 10, these blades being set at about a 15 degree angle to a horizontal plane.

It will therefore be seen that when the mixing element is immersed in the paint and rotated, the paint will be agitated by the blades and also by the rods. Since the latter intermediate their ends approach and pass the axis of rotation of the mixing element, the paint will be stirred thereby from such axis outwardly to the line of movement of the vertical portions of the rods, thus providing for a very efficient mixing of all the paint within the sphere of action of the mixing element. This end is also attained by a very simple structure, without the use of a plurality of radial or otherwise disposed paddles or blades and with nothing to get out of order.

The driving spindle 11, to be attached to the driving mechanism of the paint mixer above identified or some similar machine, has a sleeve 12 shrunk on or otherwise rigidly fixed onto said spindle intermediate its ends. This sleeve removably fits the bore of the crosshead including the socket 3 from end to end and has opposed lugs 13 to fit the recesses 5. When the spindle sleeve is thus positioned relative to the crosshead it will be evident that the spindle can neither rotate nor move farther down on the crosshead. The spindle, which is threaded at one end is then removably secured against upward movement by a nut 14 screwed thereon below the sleeve and crosshead, a washer 15 being

preferably placed between the nut and cross-head.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

1. A coupling structure comprising a head having a straight walled central bore and a relatively short outwardly tapered seat at the upper end thereof, a spindle, a sleeve member secured on to the spindle and fitting both the straight bore and tapered seat, means detachably holding the sleeve member and head against relative longitudinal separation in one direction, and means formed with the sleeve member and head for interlocking engagement to prevent rotation of the head relative to the sleeve.

2. A coupling structure comprising a head having a straight walled central bore and a relatively short outwardly tapered seat at the upper end thereof, said head also having a recess above and to one side of the seat and open to the top of the head, a spindle, a sleeve member secured onto the spindle and fitting both the straight bore and tapered seat, a lug formed with the sleeve at its upper end and seating in the recess, and means detachably securing the sleeve and head together against relative longitudinal movement in one direction.

In testimony whereof I affix my signature.
CLYDE S. SIMMONDS.