June 5, 1934. W. T. PRISCOTT 1,962,032

YARN CLEARER

Filed May 24, 1933 2 Sheets-Sheet 1

FIG.1.

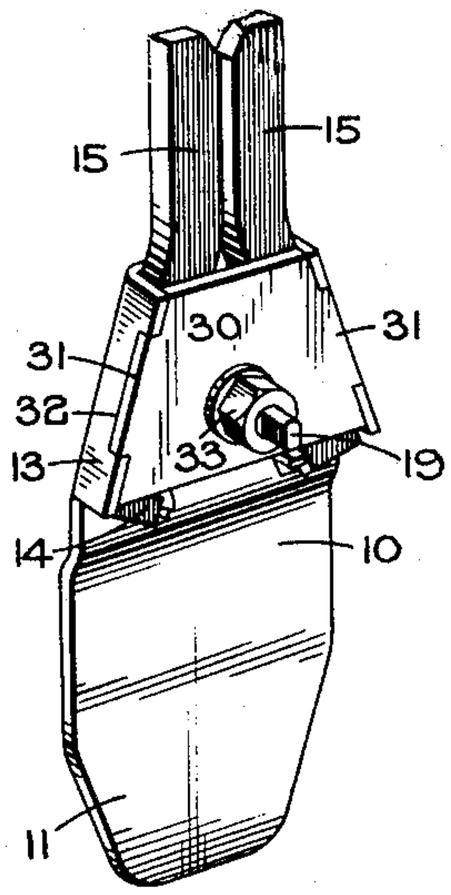


FIG.4.

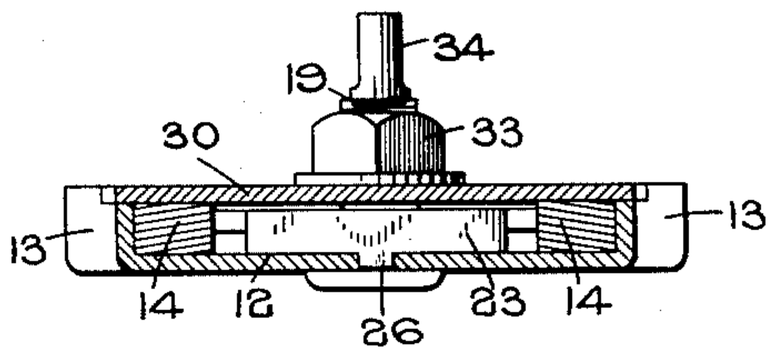


FIG.5.

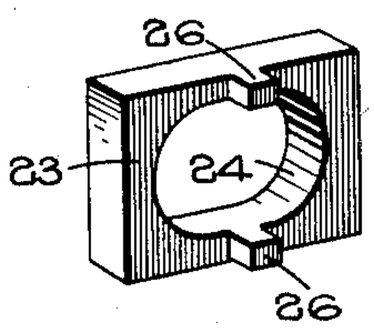


FIG.3.

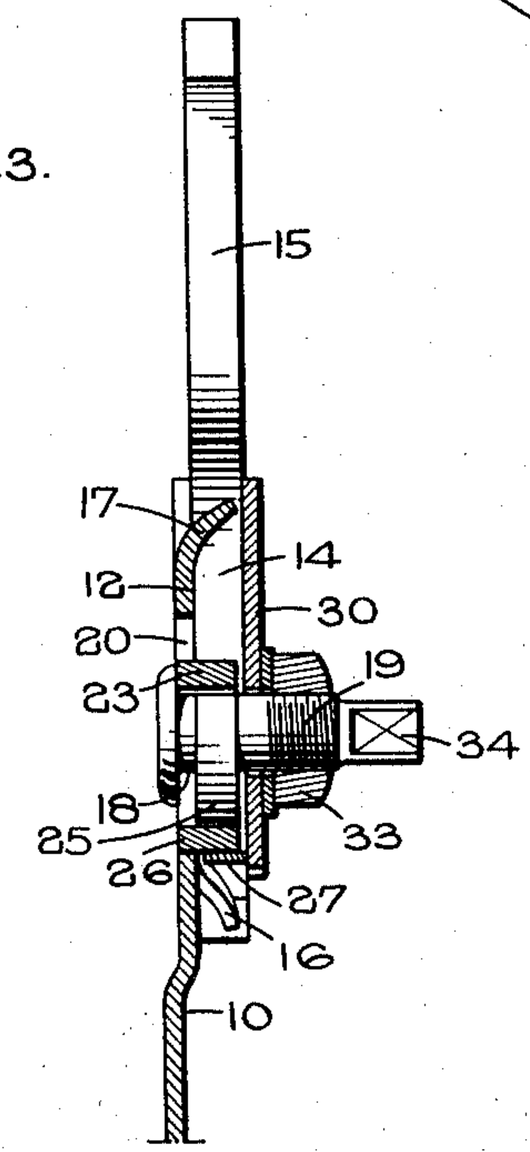
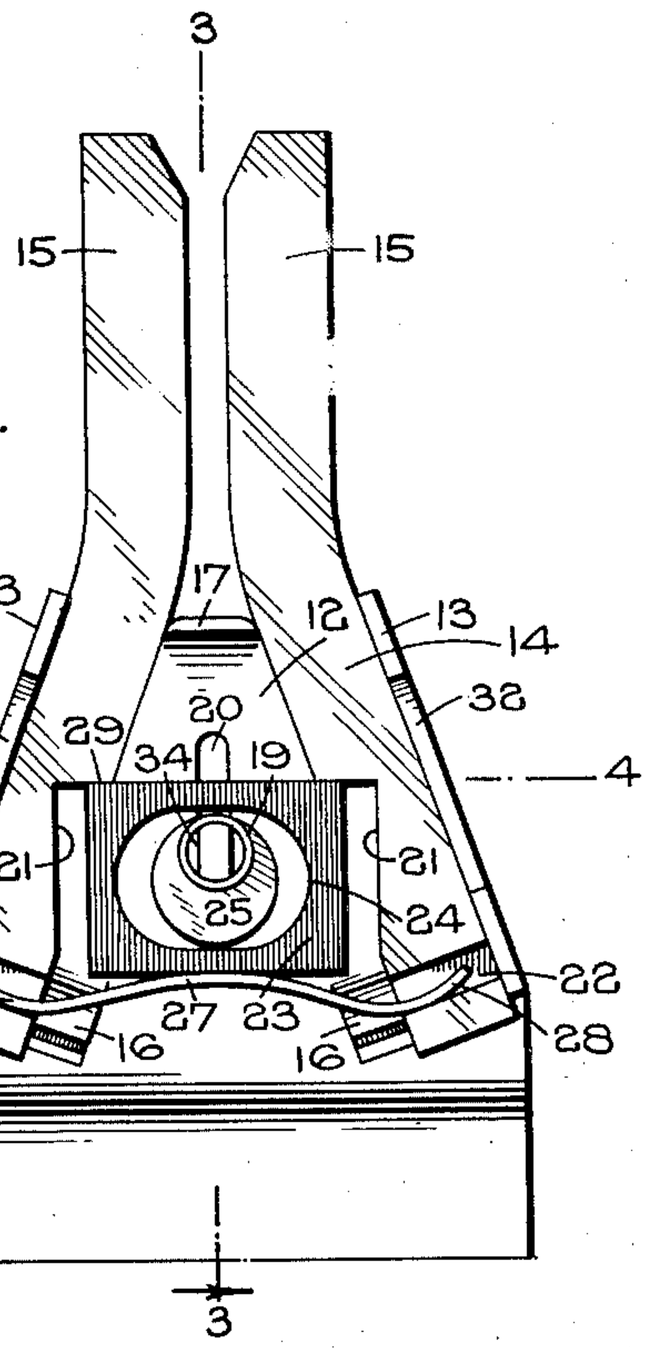


FIG.2.



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YARN CLEARER

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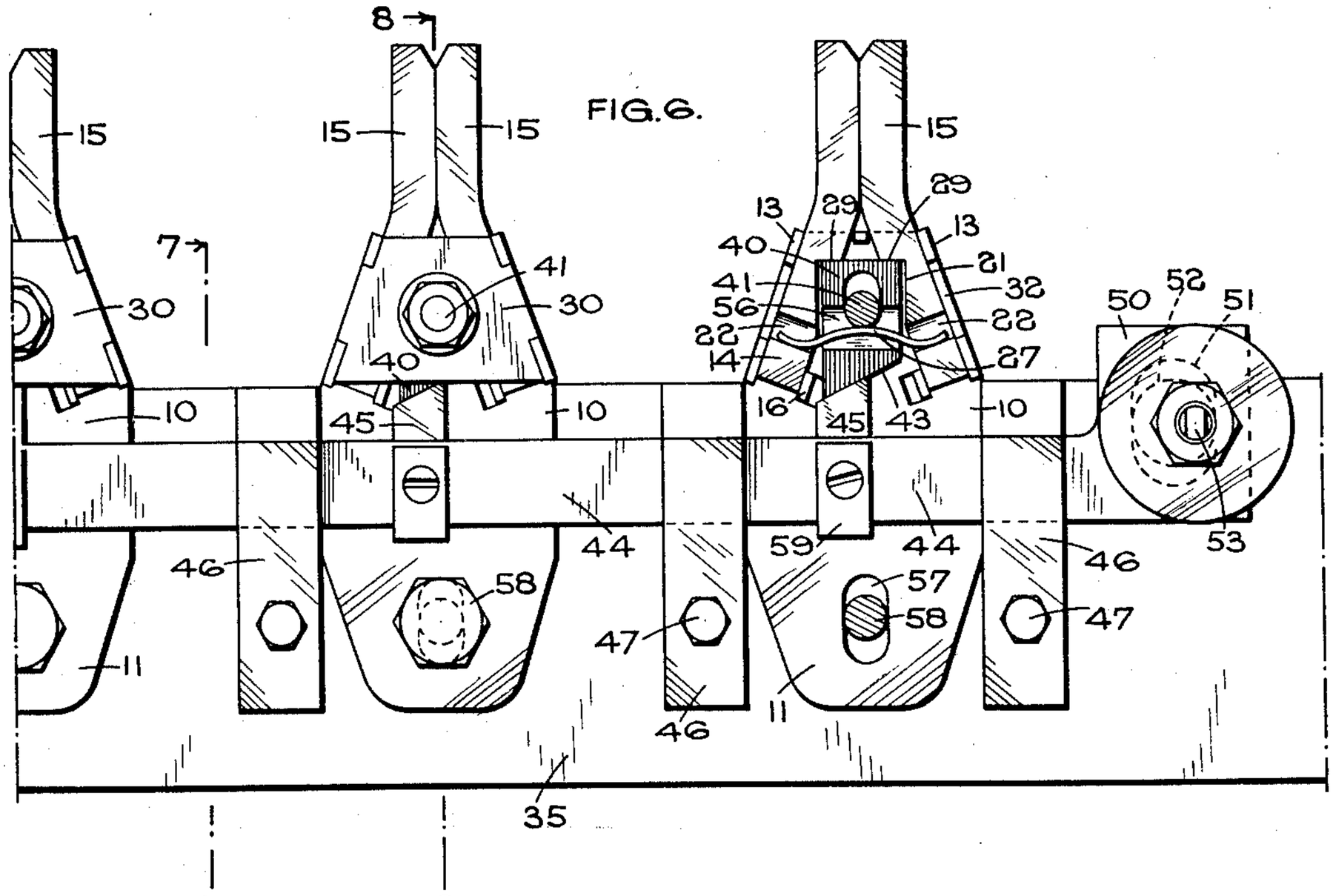

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FIG.7.

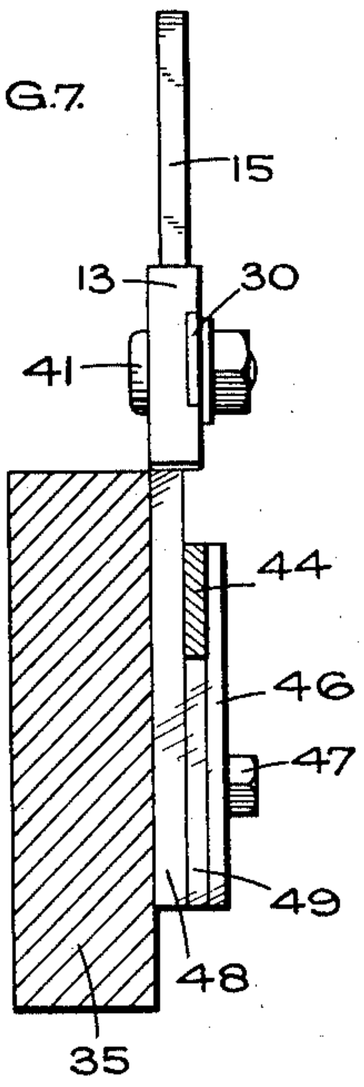

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FIG.8.

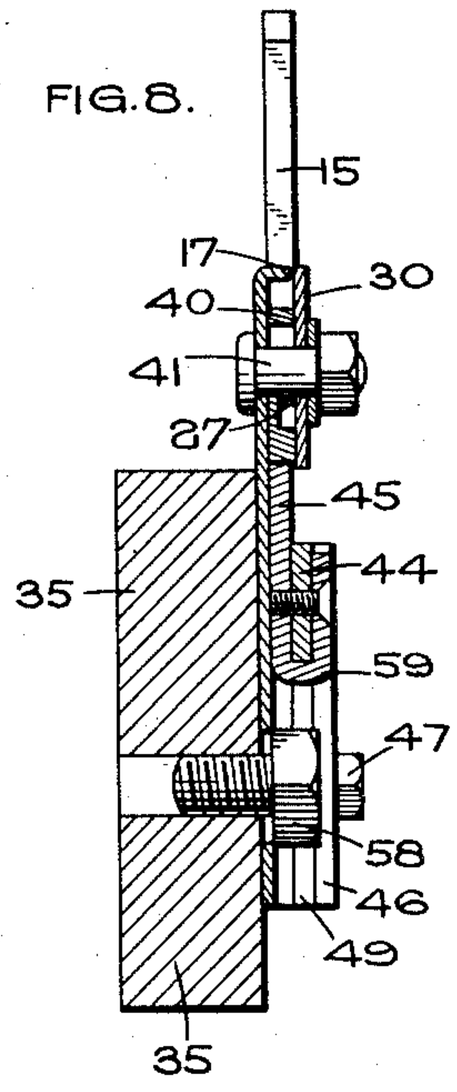
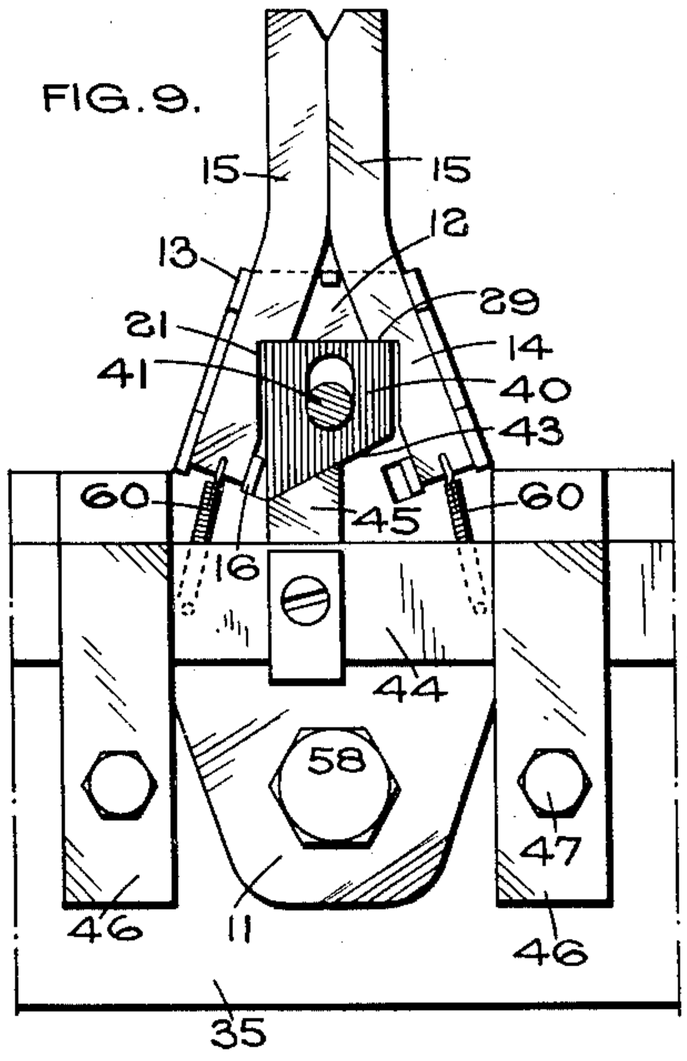


FIG.9.



William Thomas Priscott
INVENTOR
By Otto Munk
his ATT'Y.

Patented June 5, 1934

1,962,032

UNITED STATES PATENT OFFICE

1,962,032

YARN CLEARER

William Thomas Priscott, Studley, England, assignor to The English Needle and Fishing Tackle Company, Limited, Studley, England, a company of Great Britain

Application May 24, 1933, Serial No. 672,581
In Great Britain May 26, 1932

18 Claims. (Cl. 28—70)

This invention relates to a yarn clearer of the type wherein two jaws are provided between adjacent edges of which a narrow parallel space is formed through which the yarn passes, one or both of the jaws being mounted adjustably so that the width of the space, while remaining parallel, can be altered as desired.

The object of the present invention is primarily to reduce the cost of manufacture, whilst a further object is to simplify the operation of making an adjustment.

Referring to the drawings:—

Figure 1 is a perspective view of one form of yarn clearer constructed in accordance with the present invention.

Figure 2 is a front elevation of same to an enlarged scale with the cover plate removed.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a perspective view of a detail.

Figure 6 is a front elevation of a modification.

Figure 7 is a section on line 7—7 of Figure 6.

Figure 8 is a section on line 8—8 of Figure 6.

Figure 9 is a front elevation of a slight modification.

In the construction illustrated in Figures 1 to 5 of the accompanying drawings, the device comprises a body which may be made as a sheet metal pressing, this body consisting of a plate 10 having a lug 11 at one end whereby it may be attached to the machine upon which it is to be used, and having at its other end a hollow portion 12 which is to contain those parts 14 of the jaws 15 which are to be housed in the body.

This hollow portion is formed with converging sides 13 by raising up the edges of the sheet metal plate 10.

The said raised edges 13 serve to guide the outer edges of the parts 14 of the jaws, and for guiding the inner edges of the jaw parts 14, the body 10 is provided with two partially severed tongues of metal 16 which are raised up so that their edges engage the inner edges of the said jaw parts adjacent the lower end thereof. A further partially severed tongue 17 is bent to extend between the inner edges of the parts 14 at the upper end of the body.

The body is further provided with a hole 18 for receiving an actuating pin 19, this hole 18 being disposed substantially centrally in the hollow portion 12. Adjacent this hole a slot 20 is provided, this slot extending along the line bisecting the angle between the converging sides 13 of the part 12.

The jaws consist of a strip of metal having two arms 14 and 15 arranged at an obtuse angle to one another.

The arm 14 of each jaw is located within the hollow part of the body as above described and slides in contact with the converging sides 13 thereof, while the other arms 15 of the two jaws project from the body and have their inner edges, which are adjacent, parallel to each other. It is between these edges that the yarn is to pass, and the distance between these edges is made adjustable by sliding the two jaws within the body.

The arms 14 of the jaws are notched at 21 upon their inner sides and also upon their faces at 22 and engaging in the notches 21 is an operating block 23 provided with a central opening 24 engaging over an eccentric 25 mounted on the actuating pin 19. On the back of the operating block is a pair of lugs 26 which engage in the slot 20 so that the block 23 is constrained to move along the line bisecting the angle between the converging sides of the body.

The actuating pin 19 passes through the body from back to front and upon it is fixed the eccentric 25 engaging in the opening 24 in the operating block 23, while the operating block 23 engages in the notches 21 in the inner edges of the arms 14 of the jaws.

A plate spring 27 is provided acting upon the operating block 23 and having its ends 28 engaging in the recesses 22 in the faces of the arms 14, this spring serving to keep the operating block 23 in contact with the shoulders 29 formed by the notching of the inner edges of the jaws.

The body is completed by a front plate 30 having projections 31 at its edges engaging in slots 32 in the raised edges 13 of the main part of the body, and the actuating pin extends through this front plate which is retained in position by a nut 33 screwing on to the threaded projecting end of the actuating pin.

The operating block 23 is preferably made slightly thinner than the jaws, and the slots 32 are also cut somewhat deeper than the thickness of the jaws so that when the front plate 30 is placed in position and the nut 33 is tightened, the jaws are gripped positively by the front plate, and are so retained in any adjusted position.

The end of the actuating pin is provided with one or more flats 34 so that it can readily be turned by a suitable key after the nut 33 has been loosened.

In operation if the actuating pin 19 is turned, the operating block 23 is moved to cause the jaws to slide along the inclined guides 13 so that

the adjacent edges of the parts 15 of the jaws recede from each other or move towards each other to adjust the gap.

The attachment portion of the body is cranked or bent backwardly from the main part of the body so that the latter will be brought clear of any surface to which the attachment portion is secured.

In the construction illustrated in Figures 6 to 8 a number of bodies are secured to a common bar 35, a pair of jaws being provided for each body and each pair of jaws co-operating to form a yarn slot.

Each jaw is formed with two arms 15 and 14, the former projecting from the body as in the construction illustrated in Figures 1 to 5 and the arms 14 being mounted within the body and co-operating with the converging sides 13 and pressed-up lugs 16 as described with reference to Figures 1 to 5.

Each arm 14 is notched at 21 on its inner edge and for each pair of jaws there is provided a sliding operating member 40 mounted for sliding movement on a pin 41 securing the cover plate 30 in position on the body.

Each operating member is formed at its lower edge with an inclined side 43 and all the pairs of jaws are moved simultaneously by means of a common actuating bar 44 provided with a cam 45 for each operating member, the cam having an inclined side corresponding with the inclined side 43 of the member 40.

The actuating bar 44 is guided by plates 46 secured to the bar by means of studs 47, a packing piece 48 and distance pieces 49 being inserted between the bar 35 and each plate 46 to provide the necessary spacing.

The actuating member 44 is provided at one end with an extension 50 slotted at 51 to accommodate an eccentric 52 provided on the actuating pin 53.

When the eccentric is rotated by means of the non-circular end of the pin 53, the actuating member 44 is moved in its guides and the yarn slot between each pair of jaw arms 15 is adjusted to the desired degree.

The jaws are only moved positively by the cam and operating member in one direction and in order to provide for return movement and to take up any looseness a spring 27 is inserted in a slot 22 in the face of each jaw and in a slot 56 in the face of the member 40. This spring engages at its centre with the pin 41 and at its ends with the arms 14 and thus presses the jaws and so the operating member 40 against the cam and provides the necessary return movement when the bar 44 is retracted.

The initial positions of the bodies on the bar 35 are adjusted by providing a slot 57 in each attachment portion 11, the body being secured to the bar by means of a securing screw or stud 58 passing through this slot.

The bodies are adjusted so that the yarn slots are equal initially and any subsequent adjustment by means of the actuating bar 44 provides equal adjustments of all the yarn slots.

Any number of bodies may be provided on the bar 35, the actuating member having a corresponding number of cams 45 and having, if desired, an eccentric at each end for adjustment purposes.

Each cam 45 is formed separately of the bar 44 and is formed with a lower end 59 of hook-like form extending at the back of, and also at the front of the bar 44, being secured thereto by means of a screw. If desired, however, each cam may be integral with the bar 44 and comprise an inclined sided projection at one edge of the bar.

In the modification illustrated in Figure 9, an alternative form of spring return is provided for the jaws, this comprising separate springs 60, each extending between the end of the arm 14 of one jaw and a pin or projection on the attachment portion 11 of the body. The thickness of the portions of the cams behind the bar 44 provides sufficient spacing to accommodate the ends of the springs 60.

What I claim then is:—

1. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, opposite sides of said body converging towards one another, said converging sides forming guides for one arm of said jaws, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, and means for moving the jaws relative to one another in said guides to adjust the width of said yarn slot.

2. A yarn clearer comprising two jaws forming a parallel sided yarn slot, a body in which said jaws are mounted, opposite sides of said body converging towards one another, each of said converging sides forming a guide for the outer edge of one of said jaws, lugs on said body spaced from said converging side to guide the inner edge of said jaw, and means for moving the jaws relative to one another in said guides to adjust the width of said yarn slot.

3. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, opposite sides of said body converging towards one another, each of said converging sides forming a guide for the outer edge of one arm of one of said jaws, lugs on said body spaced from said converging side to guide the inner edge of said arm, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, and means for moving the jaws relative to one another in said guides to adjust the width of said yarn slot.

4. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, opposite sides of said body converging towards one another, each of said converging sides forming a guide for the outer edge of one arm of one of said jaws, lugs pressed from said body to engage the inner edge of said arm, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, and means for moving the jaws relative to one another in said guides to adjust the width of said yarn slot.

5. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, opposite sides of said body converging towards one another, said converging sides forming guides for one arm of said jaws, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, and an operating member engaging both of said jaws and movable to adjust said jaws simultaneously.

6. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, opposite

sides of said body converging towards one another, said converging sides forming guides for one arm of said jaws, shoulders on each of said arms, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, and an operating member engaging said shoulders and slidably mounted in said body to move said jaws simultaneously.

7. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, opposite sides of said body converging towards one another, said converging sides forming guides for one arm of said jaws, shoulders on each of said arms, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, an operating member engaging said shoulders, an actuating pin rotatably mounted in said body, and an eccentric mounted on said pin, said eccentric co-operating with said operating member to move said jaws simultaneously in said body.

8. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, opposite sides of said body converging towards one another, said converging sides forming guides for one arm of said jaws, shoulders on each of said arms, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, an operating member engaging said shoulders, lugs on said operating member, said body having a slot in which said lugs engage to constrain the operating member to sliding movement in a line bisecting the angle between said converging sides, an actuating pin rotatably mounted in said body, and an eccentric mounted on said pin, said eccentric co-operating with said operating member to move said jaws simultaneously in said body.

9. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, opposite sides of said body converging towards one another, said converging sides forming guides for one arm of said jaws, shoulders on each of said arms, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, an operating member engaging said shoulders and slidably mounted in said body to move said jaws simultaneously, a cover plate for said body and a clamping nut on said actuating pin to clamp the cover plate on to said jaws in an adjusted position.

10. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, opposite sides of said body converging towards one another, each of said converging sides forming a guide for the outer edge of one arm of one of said jaws, a shoulder on the inner edge of each of said arms, an operating member engaging said shoulders, lugs on said body spaced from said converging side to guide the inner edge of said arm, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, lugs on said operating member, said body having a slot in which said lugs engage to constrain the operating member to sliding movement in a line bisecting the angle between said converging sides, an actuating pin rotatably mounted in said body, and an eccentric mounted on said pin, said eccentric co-operating with said operating member to move said jaws simultaneously in said body, a cover plate for said body and a clamping nut on said actuating pin to clamp the cover plate on to said jaws in an adjusted position.

11. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, opposite sides of said body converging towards one another, said converging sides forming guides for one arm of said jaws, a shoulder on the inner edge of each of said arms, an operating member engaging said shoulders, a further shoulder on the face of each of said arms, a spring engaging between said shoulder and said operating member, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, lugs on said operating member, said body having a slot in which said lugs engage to constrain the operating member to sliding movement in a line bisecting the angle between said converging sides, an actuating pin rotatably mounted in said body, an eccentric mounted on said pin, said eccentric co-operating with said operating member to move said jaws simultaneously in said body, a cover plate for said body, and a clamping nut on said actuating pin to clamp the cover plate on to said jaws in an adjusted position.

12. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, mutually converging guides in said body, one arm of each of said jaws engaging in one of said guides, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms and an operating member engaging both of said jaws and movable to adjust said jaws simultaneously.

13. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, mutually converging guides in said body, one arm of each of said jaws engaging in one of said guides, shoulders on each of said arms, an operating member engaging said shoulders, an actuating pin rotatably mounted in said body, and an eccentric mounted on said pin, said eccentric co-operating with said operating member to move said jaws simultaneously in said body and the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms.

14. A yarn clearer comprising two jaws, each having two arms at an angle to one another, a body in which said jaws are mounted, mutually converging guides in said body, one arm of each of said jaws engaging in one of said guides, shoulders on each of said arms, an operating member engaging said shoulders, lugs on said operating member, said body having a slot in which said lugs engage to constrain the operating member to sliding movement in a line bisecting the angle between said converging sides, an actuating pin rotatably mounted in said body, an eccentric mounted on said pin, said eccentric co-operating with said operating member to move said jaws simultaneously in said body and the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms.

15. A yarn clearer comprising jaws arranged in pairs, each pair of jaws forming a parallel sided yarn slot, a body for each pair of jaws, mutually converging guides in said body for said jaws, an operating member for each pair

of jaws, means on each jaw of said pair for engaging said operating member and an actuating member for moving said operating members simultaneously to adjust said pairs of jaws in said guides.

16. A yarn clearer comprising jaws arranged in pairs, each jaw having two arms at an obtuse angle to one another, a body for each pair of jaws, mutually converging guides in said body, one arm of each of said jaws engaging in one of said guides, shoulders on each of said arms, an operating member engaging said shoulders, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms and an actuating member for moving said operating members simultaneously to adjust said pairs of jaws in said guides.

17. A yarn clearer comprising jaws arranged in pairs, each jaw having two arms at an obtuse angle to one another, a body for each pair of jaws, mutually converging guides in said body, one arm of each of said jaws engaging in one of said guides, shoulders on each of said arms, an operating member engaging said shoulders, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, an actuating member, a cam on said actuating member for each of said operating members, and means for moving said actuating member to adjust simultaneously said pairs of jaws through said cams and said operating members.

18. A yarn clearer comprising jaws arranged in pairs, each jaw having two arms at an obtuse angle to one another, a body for each pair of jaws, mutually converging guides in said body, one arm of each of said jaws engaging in one of said guides, shoulders on each of said arms, an operating member engaging said shoulders, the remaining arm of each jaw projecting from said body, to form a parallel sided yarn slot between adjacent edges of the arms, an actuating member, a cam on said actuating member for each of said operating members, and an eccentric for moving said actuating member to adjust simultaneously said pairs of jaws through said cams and said operating members.

WILLIAM THOMAS PRISCOTT.