A. J. BRUSSEAU.

SEWING MACHINE FOR BASE BALL COVERS.

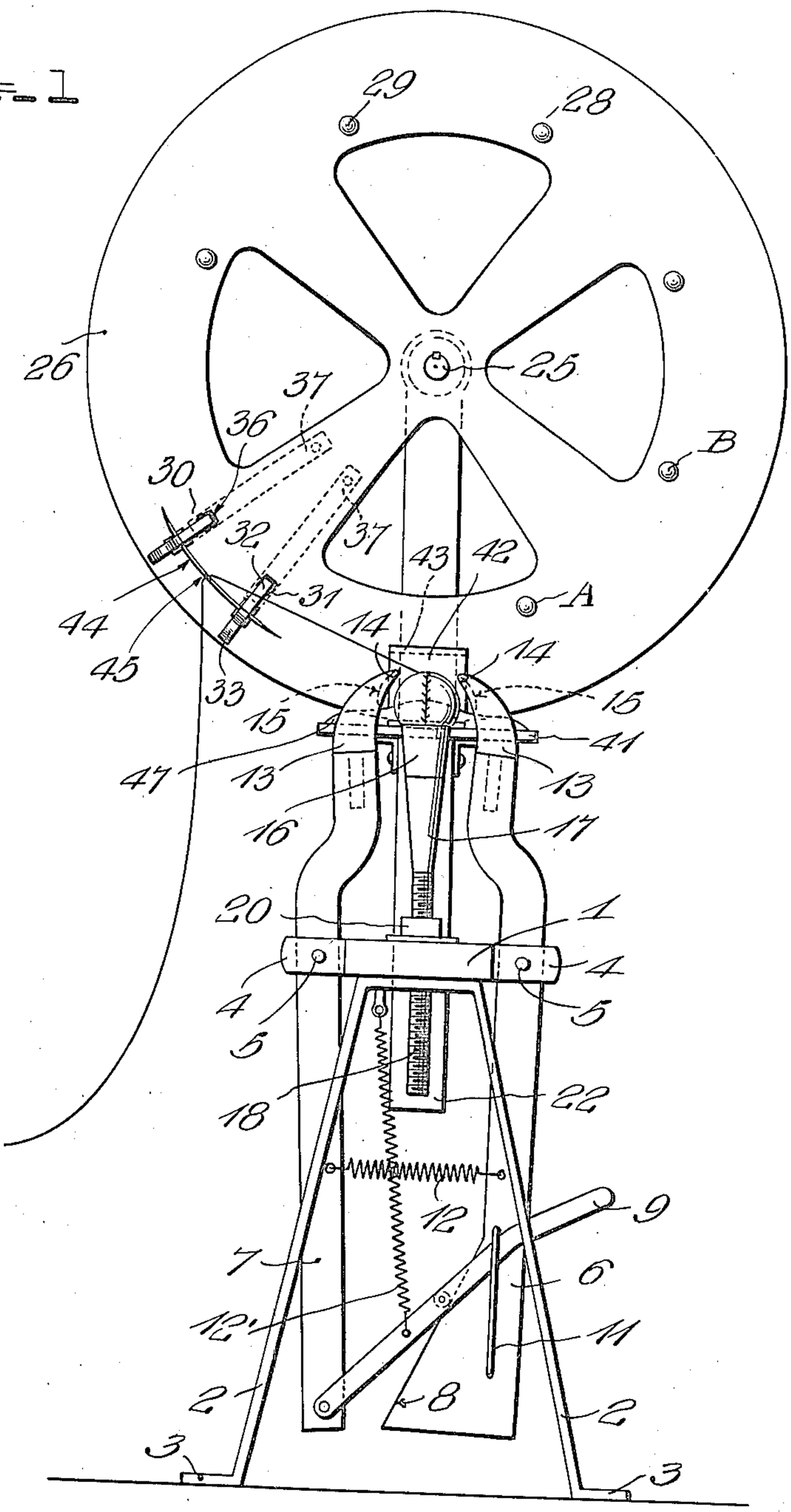
APPLICATION FILED SEPT. 17, 1914.

1,167,265.

Patented Jan. 4, 1916.

3 SHEETS—SHEET 1.

FIG. 1



Witnesses

C. Mumber

Roland T. Booth

Inventor

Adolphus J. Brusseau

By A. Brusseau & Co.

Attorneys

A. J. BRUSSEAU.

SEWING MACHINE FOR BASE BALL COVERS.

APPLICATION FILED SEPT. 17, 1914.

1,167,265.

Patented Jan. 4, 1916.

3 SHEETS—SHEET 2.

FIG. 2

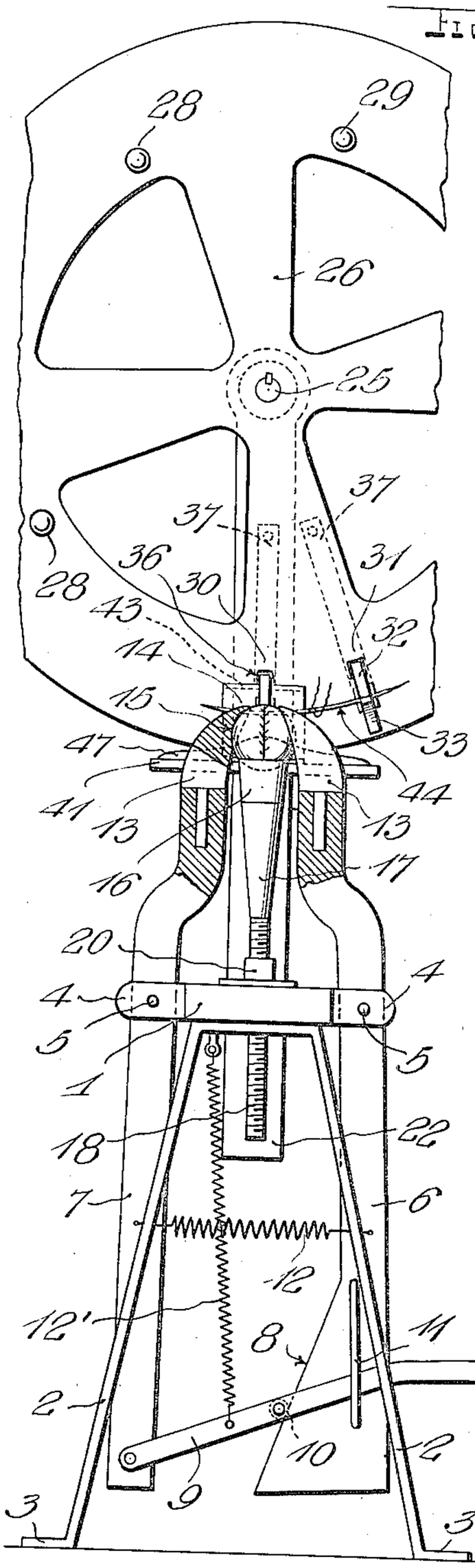
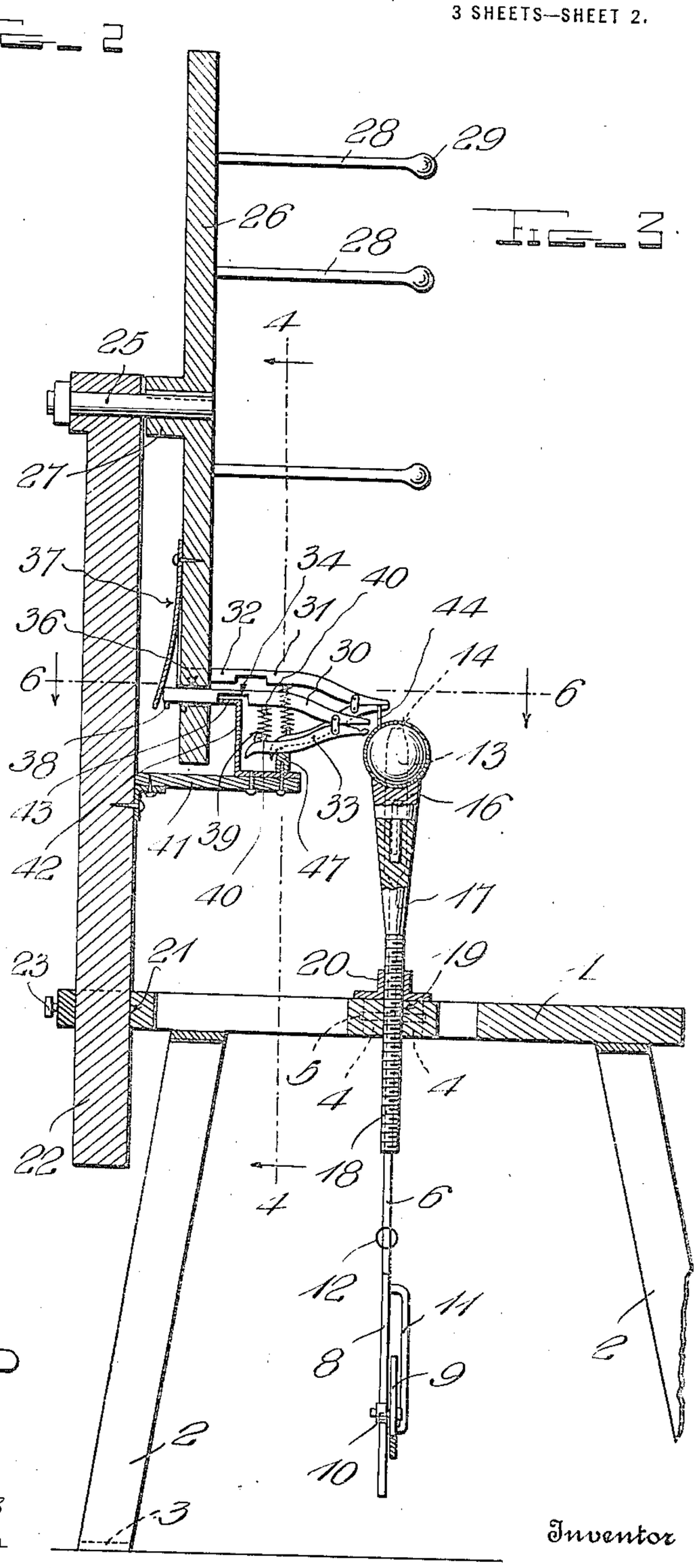


FIG. 3



Witnesses

C. Mueller

H. Woodard

Inventor

Adolphus J. Brusseau

By H. Wilkinson & Co

Attorneys

A. J. BRUSSEAU.

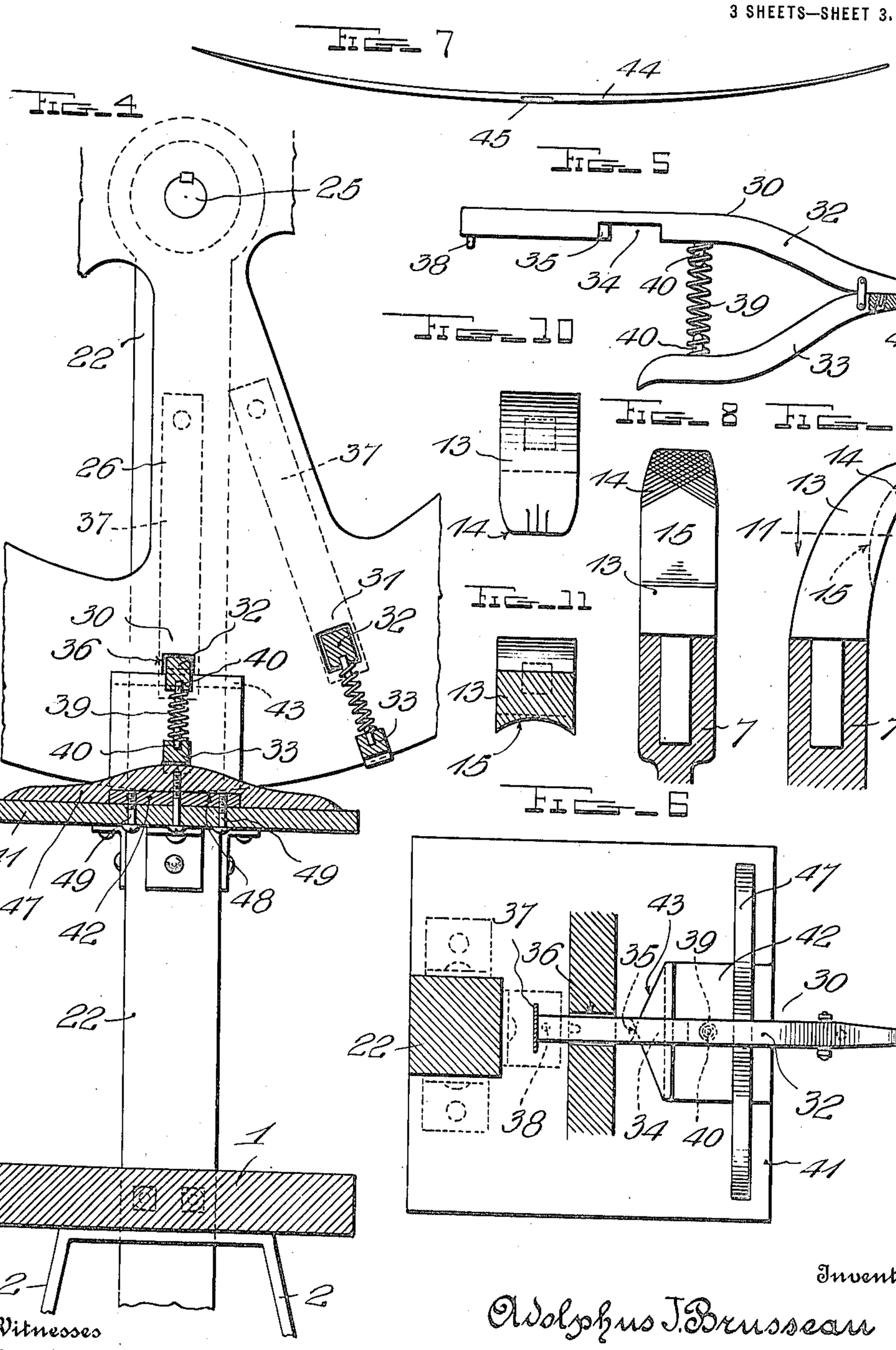
SEWING MACHINE FOR BASE BALL COVERS.

APPLICATION FILED SEPT. 17, 1914.

1,167,265.

Patented Jan. 4, 1916.

3 SHEETS—SHEET 3.



Witnesses

C. Mumford

Roland T. Booth

Inventor

Adolphus J. Brusseau

By H. Brueseke & Co

Attorneys

UNITED STATES PATENT OFFICE.

ADOLPHUS J. BRUSSEAU, OF PLYMOUTH, NEW HAMPSHIRE, ASSIGNOR OF ONE-HALF TO WILLIAM A. KIMBALL, OF PLYMOUTH, NEW HAMPSHIRE.

SEWING-MACHINE FOR BASE-BALL COVERS.

1,167,265. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed September 17, 1914. Serial No. 862,230.

To all whom it may concern:

Be it known that I, ADOLPHUS J. BRUSSEAU, a citizen of the United States, residing at Plymouth, in the county of Grafton and State of New Hampshire, have invented certain new and useful Improvements in Sewing-Machines for Base-Ball Covers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in sewing machines for base ball covers.

The object of the invention is to produce a sewing machine for stitching together the covers of a baseball, accurately imitating hand work and which is designed for taking the first and last stitch and securing them together.

Another object is to provide a machine of this character equipped with improved means for holding the ball in position and for pulling the covers thereof together over the ball while the stitch is being taken.

In the accompanying drawings: Figure 1 is a front elevation of a machine constructed in accordance with my invention, the gripping jaws being disclosed in their open position; Fig. 2 is a similar view with parts broken away and parts in section, the gripping jaws being disclosed in their closed and operative positions and the needle in a different position from that disclosed in Fig. 1; Fig. 3 is a central vertical section through the device; Fig. 4 is a vertical section as seen on the line 4—4 of Fig. 3; Fig. 5 is an elevation of one of the needle carrying fingers, with parts thereof in section; Fig. 6 is a horizontal section as seen on the line 6—6 of Fig. 3, looking in the direction of the arrows; Fig. 7 is a detail elevation of the needle used in connection with the machine; Fig. 8 is an inner side elevation of one of the interchangeable jaws in connection with its coöperative element, the latter being disclosed in section; Fig. 9 is a side elevation thereof; Fig. 10 is a plan view of one of said jaws, and Fig. 11 is a horizontal section therethrough as seen on the line 11—11 of Fig. 9. Fig. 12 is a transverse section of the needle.

In the embodiment illustrated a baseball cover sewing machine is shown constructed of iron and comprising a stationary seat or bed plate 1, which is supported about two feet, more or less, from the floor by legs 2, two supports being here shown, but it is obvious that any desired number may be employed, said legs being provided with apertured attaching feet 3 for securing them to the floor or other supporting base. This seat 1, is preferably made of malleable cast iron in skeleton form, to render it light and is provided at its opposite edges with longitudinally spaced apertured legs 4, two of which are disposed on each side edge of the seat and are designed to receive a bolt 5. Pivotally mounted on this bolt 5 are ball gripping members 6 and 7, the gripping ends of which project some distance above the seat 1 and the lower ends of which extend below the seat and are made slightly shorter than the legs 2, to adapt their free ends to clear the floor when operated to control the gripping jaws at the upper end thereof.

The lower end of the gripping member 6 is provided on its inner edge or face with a downwardly and inwardly inclined cam face 8, with which a pivoted foot lever 9 is designed to coöperate for forcing the lower ends of said members 6 and 7 apart, thus moving their gripping ends inwardly for a purpose to be hereinafter set forth. This lever 9 is pivoted at its one end to the lower end of the gripping member 7, the same extending diagonally across the other member 6 and provided with a roller 10 for engagement with the aforesaid cam face 8. This lever is guided through a keeper 11 carried on one side of the gripping member 6, which guides and limits the upward and downward movement of said lever. This lever obviously when forced downwardly forces the lower ends of the members 6 and 7 apart to correspondingly dispose the jaws or upper ends of said members to their operative or engaging positions. In order to normally retain said jaws in their inoperative and open positions a coil spring member 12 is disposed between the lower ends of said members 6 and 7, having the end coils thereof engaged with said members. A coil spring 12′ is engaged with the lever 9 and the seat for the purpose of greatly easing the working of said lever, and allowing the operator to apply more weight on said lever when the same is in disuse. The action of the lever 9, therefore forcing the jaws to

their effective engaging positions is against the tension of the spring 12.

The ball gripping jaws 13 carried at the free upper ends of the members 6 and 7, are here shown concavo-convex in shape with reduced gripping edges 14, the concaved inner faces 15 being shaped to conform approximately to the shape of the ball to be clamped between them, and they are preferably corrugated to facilitate their engagement with the ball and hold it against slipping. These jaws 13, are preferably made removable from and adjustable on the members 6 and 7, to adapt them to be changed for fitting balls of different sizes and any suitable means may be provided for holding them in adjusted position on said members. The top or convexed faces of the jaws 13 are preferably provided with indicating marks 14′ (see Fig. 10) to show the correct distance the ball is to be moved between the stitches, whereby the stitches may be positioned equal distances apart. These gripping members 6 and 7 are preferably constructed of metal and their frictional engagement with the pivot bolt 5 is sufficient to hold them against wabbling.

In order to support the ball with a cover thereon in position, to permit said cover to be sewed on the ball, a ball supporting cup or seat 16 is provided. This seat or cup, as it may be termed in view of the construction, is removably mounted on the upper enlarged end 17 of a shank 18, said shank being threaded for the greater portion of its length and engaged with a threaded opening 19 in the bed plate 1. This shank may be of any desired length whatsoever, and the provision of the removable seat 16 permits the seats for the balls to be interchanged as found necessary according to the size thereof. The adjustability of the shank 18 with respect to the bed plate or seat 1 also compensates for the application of this device to use with respect to balls of various sizes. In order to lock the shank 18 in any adjusted position with respect to the seat or bed plate 1, a lock nut 20 is provided. This nut is engaged with the shank above the bed plate or seat 1, and may be turned home in engagement with the plate, as shown in Fig. 3 of the drawing. The ball cup or seat provided may be secured in place on the enlarged end 17 of the shank in any preferred manner.

The base plate or seat 1 projects at its front end some distance beyond the ball cup and the gripping jaws and is designed to be used as seat for the operator of the machine, permitting him to straddle said seat or bed plate and use both feet for controlling the operation of said machine. His hands will thus be free for use in manipulating the ball in the seat or cup.

Mounted in an opening 21 formed in the seat or bed plate 1, adjacent the opposite end thereof is an upright supporting bar 22 which is adjustably held in position by means of set screws 23. This bar supports the operating parts of the machine as will be hereinafter more particularly set forth. The upper end of this bar 22 is designed to form a bearing which rotatably supports therein a stub shaft or the like 25 and carried on this stub shaft is an actuating wheel 26 of large diameter. This wheel is spaced somewhat from the face of the bar 22 by means of a collar 27 formed thereon. Arranged concentrically on the inner face of said wheel and projecting therefrom are a plurality of thread carriers 28. These thread carriers are in effect bars or rods, the outer ends of which are enlarged as shown at 29 to provide knobs or the like. Said carriers are designed to support and hold the thread when the machine is operating as will be hereinafter and more particularly set forth. Also carried on this wheel 26 are a pair of needle supporting fingers 30 and 31 which project laterally from the inner face thereof. These fingers are here shown in the form of fulcrumed gripping elements or jaws having rearwardly extending, outwardly diverging handle members 32 and 33, the handle 32 being longer than the handle 33 and provided on its inner face with a recess 34 disposed near its free end. The one end wall of this recess 34 is shaped to provide a cam-like portion 35 for a purpose to be hereinafter and more particularly set forth.

The longer arm 32 of each of the members 30 and 31 is preferably square in cross section and slidably received in an opening 36 in the wheel 26. The openings 36 which receive the portions 32 of said fingers are so spaced as to space said fingers at reasonable distances apart and said openings are arranged on the same arc struck from the axis of the wheel. As stated these portions 32 of the finger are slidably arranged in the openings 36 of the wheel and in order to force said fingers to their extended positions leaf springs 37 are provided on the rear face of the wall 26 which engage the rear ends of said portions 32, as clearly shown in Fig. 3 of the drawings. Of course these fingers can be forced inwardly against the tension of the said springs, as also shown in Fig. 3 of the drawings. Depending lugs or the like 38, are provided on the free ends of said portions 32 of the fingers to limit the outward sliding movement of said fingers with respect to the wheel. Disposed between the arms 32 and 33 of said fingers 30 and 31 are the coil springs 39 which are here shown with the end coils encircling studs 40 which project inwardly from said arms to guide and retain said springs in proper position. These springs retain the gripping jaws of

the fingers firmly in closed position between which the needle for sewing the ball covers is designed to be clamped.

In order to operate the fingers as the wheel 26 is placed in operation so that the needle (not yet described) may be properly engaged with the cover I provide what may be termed a shifting table 41. This shifting table is in effect a shelf-like support which is mounted on the bar 22 in a plane just below the periphery of the wheel 26, as clearly shown in Figs. 3 and 4 of the drawings. Mounted on this shifting table 41 adjacent its outer end is an angular bracket or the like 42, the upper angular end of which is received in the recesses 34 of the fingers 30 and 31 as the wheel 26 is rotated or oscillated as the case may be. The extreme outer edge of the angular portion of the bracket 42 just referred to and indicated in the drawings as 43, is designed to form a cam or the like for coöperation with the cam-like walls 35 of the recesses 34. This cam-like portion 43 tapers smaller toward its ends, having its widest portion disposed midway of the length thereof, so that in the operation of the device said fingers will be forced rearwardly or inwardly against the tension of the springs 37 as the cam faces 35 engage the midway points of the cam portions 43. These fingers are retracted inwardly in this manner in order to withdraw the gripping jaws thereof out of the path of the ball to be covered as each end of the needle has performed its duty, which operation will be hereinafter and more particularly set forth. It will be understood that as soon as the faces 35 of the fingers pass the central portion of the cam 43 said fingers will be returned to their initial and forward positions whereby the gripping jaws thereof will be operatively positioned relative to the ball.

The needle which is used in this machine is indicated in the drawing as 44, the same being triangular in cross section and provided with a central eye 45. This needle is adapted to be carried by the jaws 31 and one jaw of each of said fingers is provided with a V-shaped groove 46 as indicated in Fig. 5 of the drawings, to snugly receive said needle in place therebetween. This needle is curved to correspond with the arc in which it is adapted to swing as the wheel 26 is placed in operation.

The gripping jaws of the fingers 30 and 31 are adapted to be opened and closed as the device is operated to permit the needle to make the proper stitches in the cover of the ball. In carrying out this idea, a jaw opening cam 47 is provided on the upper face of the shifting plate 41 adjacent its outer end, as clearly shown in Figs. 4 and 6 of the drawings. This cam is disposed in a plane in advance of the plane of the cam 43 and is screwed in place in any preferred manner. The same is, however, provided with a slot or channel 48 in the lower edge of the central portion thereof to receive therethrough the lower angular portion of the bracket 42. This bracket, is held in place with respect to the shifting plate 41 and the cam 47, by means of set screws 49 which extend upwardly through said shifting plate and through the lower angular portion of said member 42, as clearly shown in Fig. 4 of the drawings.

The cam 47 is provided with a raised central portion positioned approximately opposite the widest portion of a cam 43 but in a plane below the latter so as to engage the shorter arms 33 of the fingers 30 and 31 as the wheel is turned. In this manner said arms 33 of the fingers are moved inwardly against the tension of the springs 39, thus opening the needle clamping jaws at the front ends of said fingers, which permits each finger to move rearwardly in the respective aperture 36 on the wheel without carrying the needle therewith. These fingers are adapted for alternate operation in this manner so that at all times said needle is securely carried by a finger in the gripping jaws thereof. As the wheel rotates, one finger passes toward the ball mounted in the support therefor, the jaws open to receive the needle and said finger moves forward under the motion of its spring 37 on the rear face of the wheel until the gripping jaws thereof engage said needle. At this point the shorter arm 33 of the finger passes off the cam 47 and the jaws under the tenson of the spring 39 grip the needle. As soon as this operation has been completed by the one finger, the other finger starts on the same operation.

In the operation of this machine which is quite simple and at all times under the control of the operator, the ball to be covered is first placed with the covering wrapped thereon in the ball cup or support 16 and the gripping jaws 13 are engaged therewith by depressing the foot lever 9. The needle 44 is then threaded and placed between the gripping jaws of the fingers 30 and 31, whereupon power is applied to the wheel 26 for properly turning the latter. Upon the turning of this wheel, the first stitch is taken in the ball through the opening of the seam parallel with the direction of said seam, and the wheel is turned until the thread passes nearly to the floor, whereupon the power is reversed and as the wheel reverses, the thread carried by the needle drops toward the floor. The needle returns back and takes another stitch in the ball close to the other stitch by the motion of the wheel in the opposite direction to which it moved to take the first stitch in the ball. This ties the thread. Then the operator

turns the ball to a position at right angles to the first position and the first stitch through the covering is ready to be made. The wheel is then reversed and this first stitch in the cover is made and the stitch is drawn taut. The motion of the wheel and needle is again reversed and simultaneously the operator moves the ball to its proper position for the next stitch, it being of course understood that in moving the ball, the gripping jaws have been first loosened to admit of this movement. The proper positioning of the ball for the last mentioned stitch is readily determined through the medium of the scale or the like, which is provided on the upper faces of the jaws 13 as heretofore described.

After positioning the ball properly, the jaws are clamped firmly in engagement by the depression of the lever 9 and the continued turning of the wheel causes the needle to take the second stitch and draw the thread tightly through the covering. In this operation the thread carriers are also effective as described herebelow. Assuming that the needle has passed through the cover, moving clockwise, and has moved far enough to enable one thread carrier, which might be designated for convenience as A, to be directly over the stitch, the thread in this position is beneath said carrier A just rearward of the knob thereon. If, now, the wheel continues its motion until the next thread carrier, which for convenience might be designated as B, is directly over said stitch, the wheel moving forward permits the first mentioned thread carrier to engage and support the thread. This is true in view of the upward motion of the needle pulling the thread against the first mentioned carrier which in turn moves upward, pulling the thread against the second mentioned carrier. This operation is repeated by each thread carrier until the stitch is pulled taut. As the wheel is reversed to make the next stitch, the thread is allowed to drop toward the floor, as mentioned above, so that when the needle is about ready to take the next stitch, the thread is hanging entirely free and ready to be drawn through the cover. The operation as described above may be continued until the last stitch is taken which secures the covering on the ball.

It will be understood from the foregoing that the motion of the wheel may be either fast or slow as desired, and the amount of strain on the thread is entirely under the control of the operator. While only one needle is shown in the drawing it will be understood that two or more may be provided if found necessary.

From the foregoing it will be seen that I have provided a simple, comparatively inexpensive and efficient means for carrying out the objects of the invention and while I have particularly described the elements best adapted to perform the functions set forth, it is obvious that various changes in form, proportion and in the minor details of construction, may be resorted to within the scope of the appended claims, without departing from the spirit or sacrificing any of the principles of the invention.

I claim as my invention:

1. A machine for sewing base ball covers comprising a supporting structure, ball clamping jaws mounted thereon, means for forcing said jaws into gripping engagement with a ball, a ball support mounted between said jaws, a wheel mounted to turn in a plane at right angles, to the plane of said jaws, needle gripping fingers carried by said wheel and means for actuating said fingers to alternately grip and release a needle.

2. A machine for sewing baseball covers comprising a supporting structure, ball clamping jaws mounted thereon, means for forcing said jaws into gripping engagement with a ball, a ball support mounted between said jaws, a wheel mounted to turn in a plane at right angles, to the plane of said jaws, needle gripping fingers carried by said wheel, and cam controlled actuating means for alternately opening and closing said fingers.

3. A machine for sewing base ball covers comprising a supporting structure, ball clamping jaws mounted thereon, means for forcing said jaws into gripping engagement with a ball, a ball support mounted between said jaws, a wheel mounted to turn in a plane at right angles, to the plane of said jaws, needle gripping fingers carried by said wheel, cam controlled actuating means for alternately opening and closing said fingers, cam controlled means for retracting said fingers, and resilient means for projecting said fingers.

4. A machine for sewing base ball covers comprising a supporting structure, ball clamping jaws mounted thereon, means for forcing said jaws into gripping engagement with a ball, a ball support mounted between said jaws, a wheel mounted to turn in a plane at right angles, to the plane of said jaws, needle gripping fingers carried by said wheel, and each of said fingers comprising a pair of fulcrumed jaws having longitudinally projecting actuating arms, one of said actuating arms, having a recess in its inner face, means for forcing said arms normally apart, and a cam for engaging said recesses to retract said fingers.

5. A machine for sewing base ball covers comprising a supporting structure, ball clamping jaws mounted thereon, means for forcing said jaws into gripping engagement with a ball, a ball support mounted between said jaws, a wheel mounted to turn in a

plane at right angles, to the plane of said jaws, needle gripping fingers carried by said wheel, means for actuating said fingers to alternately grip and release a needle, each of said fingers comprising a pair of fulcrumed jaws having longitudinally projecting actuating arms, one of said actuating arms, having a recess in its inner face, means for forcing said arms normally apart, and a cam for engaging said recesses to retract said fingers positioned for alternate engagement by said finger arms to successively retract said fingers.

6. A machine for sewing base ball covers comprising a supporting structure, ball clamping jaws mounted thereon, means for forcing said jaws into gripping engagement with a ball, a ball support mounted between said jaws, a wheel mounted to turn in a plane at right angles, to the plane of said jaws, needle gripping fingers carried by said wheel means for actuating said fingers to alternately grip and release a needle, each of said fingers comprising a pair of fulcrumed jaws having longitudinally projecting actuating arms, one of said actuating arms, having a recess in its inner face, means for forcing said arms normally apart, a cam for engaging said recess to retract said fingers positioned for alternate engagement by said finger arms to successively retract said fingers, and means for projecting said fingers after retraction.

7. A machine for sewing base ball covers comprising a supporting structure, ball clamping jaws mounted thereon, means for forcing said jaws into gripping engagement with a ball, a ball support mounted between said jaws, a wheel mounted to turn in a plane at right angles to the plane of said jaws, needle gripping fingers carried by said wheel, means for actuating said fingers to alternately grip and release a needle, each of said fingers comprising a pair of fulcrumed jaws having longitudinally projecting actuating arms, one of said actuating arms, having a recess in its inner face, means for forcing said arms normally apart, a cam for engaging said recesses to retract said fingers, and a cam for engaging one of said finger arms for opening the jaws of said finger at predetermined intervals.

8. A machine for sewing base ball covers comprising a supporting structure, ball clamping jaws mounted thereon, means for forcing said jaws into gripping engagement with a ball, a ball support mounted between said jaws, a wheel mounted to turn in a plane at right angles, to the plane of said jaws, needle gripping fingers carried by said wheel, means for actuating said fingers to alternately grip and release a needle, said wheel having spaced apertures therein, needle grippers having an arm slidably mounted in said apertures, means for retracting said gripper arms in said apertures, and means on said wheel for projecting them.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ADOLPHUS J. BRUSSEAU.

Witnesses:

WALTER M. FLINT,

MARGARET B. BOLAND.