

July 21, 1925.

J. CLARKE

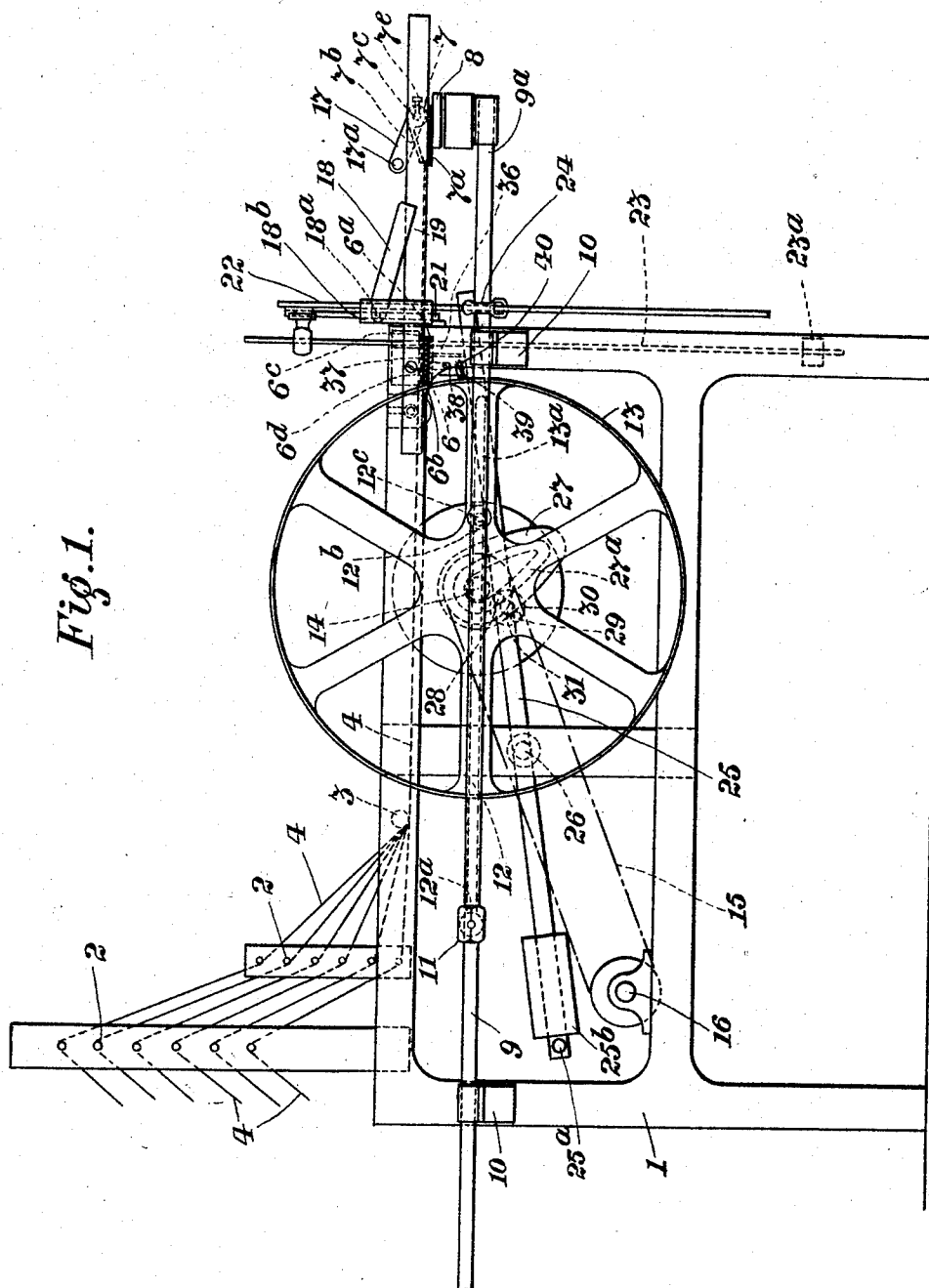
1,546,918

MACHINE FOR CUTTING CLOTH OR FABRIC

Filed Oct. 20, 1924

3 Sheets-Sheet 1

Fig. 1.



WITNESSES
Agnes Morrison Watt
G. Marshall Mackenzie

per Joseph B. Clarke INVENTOR.
Ed. J. M. Parker ATTORNEY.

July 21, 1925.

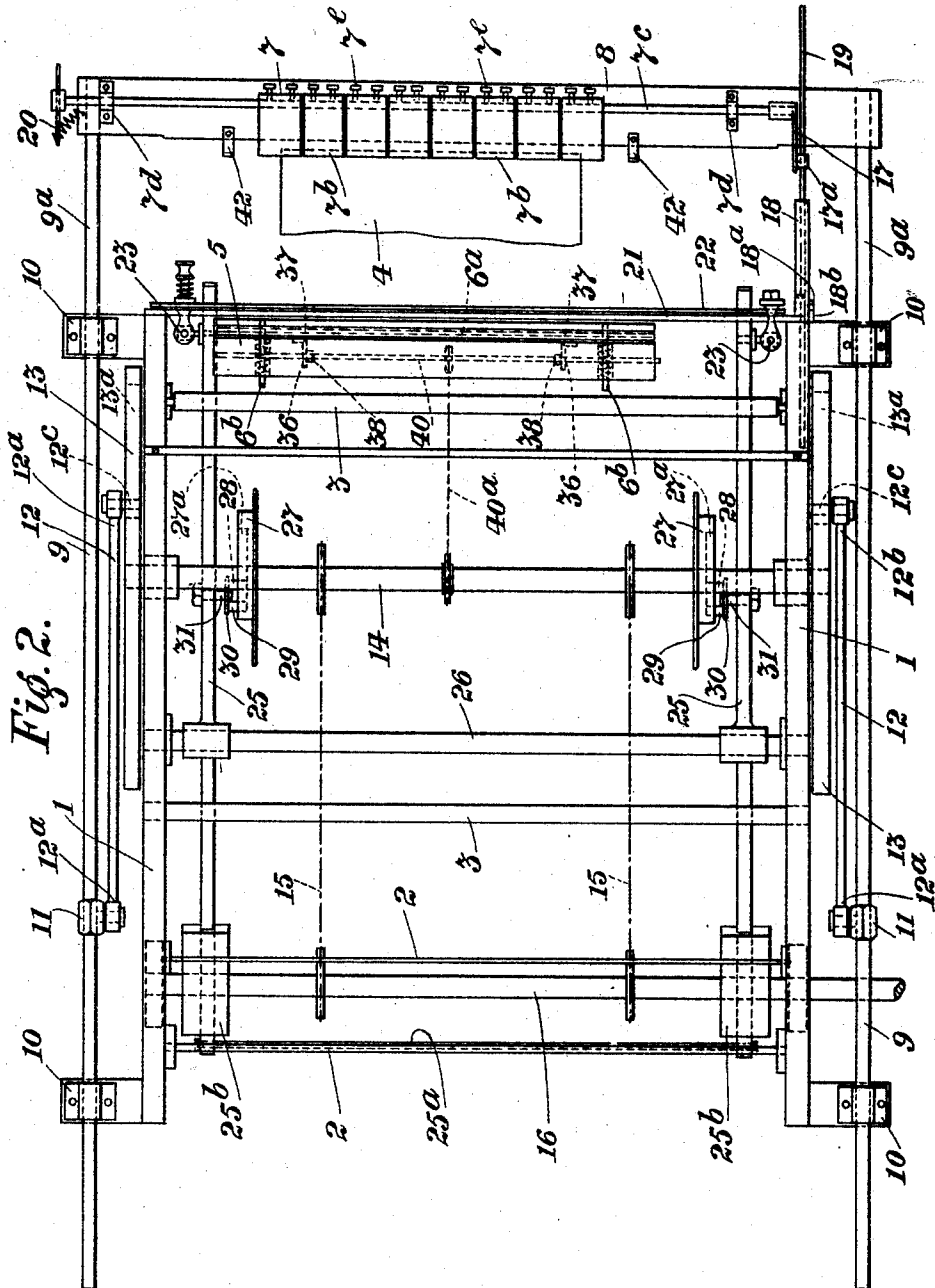
J. CLARKE

1,546,918

MACHINE FOR CUTTING CLOTH OR FABRIC

Filed Oct. 20, 1924

3 Sheets-Sheet 2



WITNESSES.
Agnes W. Morrison W. att.
G. Marshall Mackenzie.

per

Joseph Clarke INVENTOR.
H. D. Thompson ATTORNEY

July 21, 1925.

1,546,918

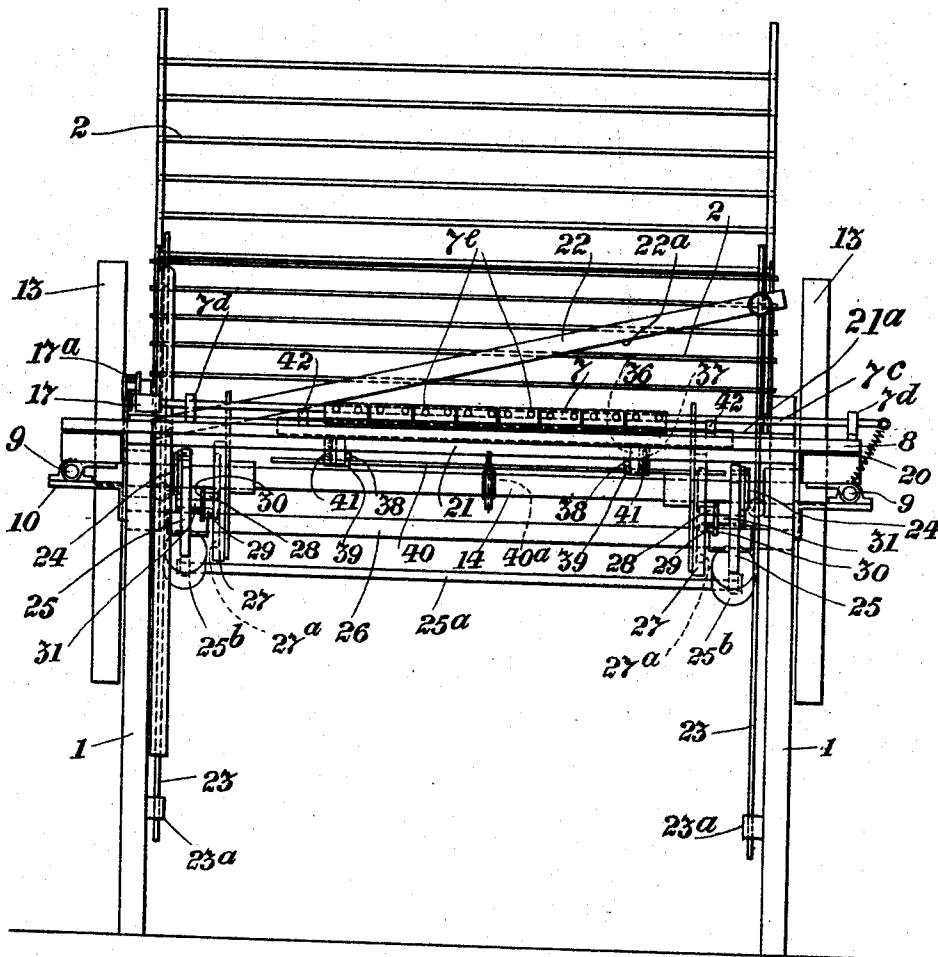
J. CLARKE

MACHINE FOR CUTTING CLOTH OR FABRIC

Filed Oct. 20, 1924.

3 Sheets-Sheet 3

Fig. 3.



WITNESSES.
Agnes M. Harrison, atty.
B. Marshall MacKelmie.

per

Joseph Clarke INVENTOR
J. D. [Signature] ATTORNEY

UNITED STATES PATENT OFFICE.

JOSEPH CLARKE, OF BELFAST, IRELAND.

MACHINE FOR CUTTING CLOTH OR FABRIC.

Application filed October 20, 1924. Serial No. 744,854.

To all whom it may concern:

Be it known that I, JOSEPH CLARKE, of Belfast, Ireland, a subject of the King of Great Britain and Ireland, have invented certain new and useful Improvements Relating to Machines for Cutting Cloth or Fabric, of which the following is a specification.

This invention relates to the cutting of webs of cloth in the manufacture of articles such as handkerchiefs, or other articles.

According to my invention I provide an improved machine for cutting fabrics from the web or from the piece, into pieces of the required size, or sizes. The machine comprises a support for the web, or piece of cloth or fabric, the cloth or fabric being taken from the web, or piece, preferably over and under suitable tensioning rollers, or equivalent, into position where the leading edge of the web or piece can be gripped by a suitably constructed clamp or clamps adapted to be reciprocated and adapted to close on the leading edge of the cloth to grip same before moving in the same direction as the cloth, and the amount of movement in said direction being regulated by adjustment of the means for reciprocating the clamp. At the end of said forward movement scissors, or a knife, or knives, is, or are, operated, preferably automatically and through the medium of the driving means which effects the motion of the clamp member so as to cause the cutting device to operate when the limit of forward movement of the clamp member has been reached, thereby cutting off a portion from the web or piece of the desired length. When the cutting operation is completed means come into operation to open the clamp and release the cut portion of the web or piece therefrom so that it can fall down or otherwise be moved clear of the clamp which then returns to repeat the operation as described.

The invention will now be described with reference to the accompanying drawings whereon:—

Fig. 1 is a side elevation of the cloth cutting machine constructed in accordance with the invention and showing the cloth gripped by the clamp ready for the cutting operation.

Fig. 2 is a plan view corresponding to Fig. 1.

Fig. 3 is a front elevation of the machine. Referring to the drawings:—

The machine comprises a frame 1 having guide bars 2 and guide rollers 3 over which the cloth 4 passes to the front of the machine where it passes between bars 5 and 6 into position where the leading edge of the web or piece is adapted to be gripped by a clamp 7. The clamp 7 is supported on a bar 8 which is secured to the ends 9^a of rods 9 slidable in brackets 10 on the frame 1. Provided on the rods 9 are sleeves 11 to which the ends 12^a of connecting rods 12 are connected, the other ends 12^b of said connecting rods 12 being connected with crank pins 12^c which engage and can be adjustably secured in slots 13^a in wheels 13 supported on a shaft 14 carried by the frame 1. This construction permits of adjustment of the throw of the crank pin 13^a relatively to the shaft 14 so that it is possible to adjust the amount of reciprocating movement given through the connecting rods 12 to the sliding rods 9 and thereby regulating the amount of forward movement of the cloth or fabric at each reciprocation of the gripping means and before each cutting operation as hereinafter described.

The drive of the shaft 14 is effected by chain gearing 15 from a driving shaft 16. The clamp member 7 comprises a bottom jaw 7^a secured to the bar 8 and upper jaws 7^b adjustably mounted on a spindle 7^c which is carried in bearings 7^a secured on the bar 8. Each of the upper jaws 7^b is turnable on the spindle 7^c and is held thereon by screw members 7^e. This arrangement permits of the upper jaws 7^b being adjusted so that when hemmed cloth or cloth of varying thicknesses is being cut by the machine it can be gripped evenly from one side to the other. One end of the spindle 7^c is connected with a lever 17 having a projection 17^a thereon, adapted, when the clamp 7 is being moved towards the leading edge of the cloth to grip same, to engage an inclined member 18 which normally rests on a bar 19 secured to the frame 1 so that when the projection 17^a of the lever 17 is moved up the inclined member 18, the spin-

die 7^c will be turned and will open the jaws
 of the clamp 7 against the action of a spring
 20 connected with the other end of the
 spindle 7^c. The normally inclined member
 18 is pivoted at 18^a to a member 18^b and
 when the projection 17^a of the member 17
 is moved up the inclined member 18 to the
 top thereof it will fall down on to the bar
 19 and cause the clamp 7 to be closed by
 the action of the spring 20. The inclined
 member 18 will then rest on the projection
 17^a of the lever 17 during the return move-
 ment of the clamp 7. The cutting of the
 cloth is effected by means of cutting mem-
 bers 21 and 22 having cutting edges 21^a and
 22^a. The cutting member 21 is arranged
 parallel with the clamp 7 and is secured to
 the frame 1 at each side thereof. The cut-
 ting member 22 is arranged at an angle to
 the cutting member 21 and it is connected at
 each end thereof with rods 23 slidable in
 bearings 23^a and connected, through the me-
 dium of links 24, with levers 25 pivotally
 supported on a spindle 26 carried by the
 frame 1. The levers 25 are connected with
 one another at their back ends by a rod 25^a
 and they are provided with counter balanc-
 ing weights 25^b. The movements of the le-
 vers 25 are controlled by cams 27 of the shaft
 14, the inner paths 27^a of the cams 27 being
 engaged by rollers 28 and the outer profile
 surfaces of the cams being engaged by rollers
 29, the rollers 28 and 29 being connected
 with discs 30 on pins 31 connected with the
 levers 25. The discs 30 are free to turn
 on the pins 31 so that when the rollers
 28 travel round the narrow portion of the
 cam this freedom will permit the rollers
 28 to lag and thus avoid a sharp move-
 ment thereof which might cause knock-
 ing or jarring of the mechanism.
 The bars 5 and 6 are supported by mem-
 bers 36 slidable in brackets 37 secured to
 the cutting member 21. The members 36
 are provided with projections 38 adapted to
 be engaged by cams 39 on a spindle 40
 driven from the shaft 14 by a chain 40^a and
 carried by the brackets 37. An angle bar 6^a
 arranged parallel and in alignment with the
 bar 6 is connected with pins 6^b which pass
 through the bar 6. The front edge 6^c of
 the angle bar 6^a normally rests against the
 top of the cutting member 21 and the ar-
 rangement is such that the cams 39 on the
 spindle 40 will, through the projections 38
 on the bars 36 raise the latter against the
 action of springs 41 and the angle bar 6^a
 and so raise the bars 5 and 6 and angle bar
 6^a will be moved over and rest on the top of
 the cutting member 21 by the action of
 springs 6^d and will support the cloth or
 fabric so that it can be gripped by the clamp
 when the latter returns and at the same time
 as the clamp 7 closes on the cloth the angle
 bar 6^a will be pushed clear of the cutting

member 21 by projecting members 42 se-
 cured to the bar 8. The angle bar 6^a and
 bars 5 and 6 will then, by the action of the
 springs 41, return to their normal positions
 ready for the next operation.

The arrangement is such that when the
 clamp 7 has gripped the leading edge of
 the cloth or fabric as hereinbefore described
 it will be moved forward to its predeter-
 mined distance controlled by the crank pins
 12^c and sliding rods 9 and when the limit
 of the forward movement of the clamp is
 reached the cams 27 will move the levers 25
 downwardly taking with them the rods 23
 and cutting member 22 thereby cutting the
 fabric, after which operation the clamp 7
 will commence its backward movement and
 as soon as the projection 17^a of the mem-
 ber 17 bears on the inclined member 18 the
 clamp 7 will be opened and the cut ma-
 terial released therefrom. At the same time
 the angle bar 6^a will be pushed over the cut-
 ting member 21 as hereinbefore described to
 support the leading edge of the cloth whilst
 it is being gripped by the clamp member 7
 when the forward movement of the clamp
 will again commence to repeat the opera-
 tions described.

Having now fully described my inven-
 tion what I claim and desire to secure by
 Letters Patent is:—

1. A machine for cutting material com-
 prising a support for the material adapted
 to be given an upward and forward move-
 ment, means for tensioning the material, a
 clamp consisting of a lower jaw and a num-
 ber of upper jaws independently adjust-
 able along and around a spindle, the
 said clamp being held closed by means of a
 spring and being opened by the engagement
 with an inclined member of an arm con-
 nected to the said spindle carrying the up-
 per jaws, rods, connected to the said clamp,
 slidably mounted on the machine frame and
 adapted to be reciprocated by means of con-
 necting rods operated by crank wheels,
 means for regulating the amount of recipro-
 cating movement of the gripping means, a
 cutting device, means for operating the said
 device so that at the end of the forward
 movement of the gripping means a portion
 of desired length is cut off from the ma-
 terial.

2. A machine for cutting material com-
 prising a support for the material adapted
 to be given an upward and forward move-
 ment, means for tensioning the material, a
 clamp consisting of a lower jaw and a num-
 ber of upper jaws independently adjustable
 along and around a spindle, the said clamp
 being held closed by means of a spring and
 being opened by the engagement with an
 inclined member of an arm connected to the
 said spindle carrying the upper jaws, rods,
 connected to the said clamp, slidably mount-

ed on the machine frame and adapted to be reciprocated by means of connecting rods operated by crank wheels, radial slots in the said wheels, in which slots crank pins for engaging the said connecting rods are adjustably fitted, a cutting device, means for operating the said device so that at the end of the forward movement of the gripping means a portion of desired length is cut off from the material.

3. A machine for cutting material, comprising upper and lower bars for supporting the material therebetween, an angle bar, on the lower of the said bars, normally resting against the edge of the lower cutting member of the machine and adapted to be moved upward and forward along with the said upper and lower bars to cover the said cutting edge, means for tensioning the material, a clamp comprising upper and lower jaws held together by a spring and adapted to be opened by the engagement with an inclined member of an arm connected to the upper jaws, rods, connected to the said clamp, and adapted to be reciprocated by means of connecting rods operated by crank wheels, radial slots in the said wheels, in which slots crank pins for engaging the said connecting rods are adjustably fitted, a lower cutting member secured to the machine frame, an upper cutting member arranged at an angle to the said lower member and adapted for vertical movement towards and away from the said lower member by cam means for the purpose of cutting the material.

4. A machine for cutting material comprising an upper and lower bar arranged to form therebetween a support for the material, means for tensioning the material, a clamp comprising a lower jaw and a number of upper jaws independently adjustable along and around the spindle, the said clamp being held closed by means of a spring and being opened by the engagement with an inclined member of an arm connected to the said spindle carrying the upper jaws, rods connected to the said clamp,

and adapted to be reciprocated by means of connecting rods operated by crank wheels, radial slots in the said wheels, in which slots crank pins for engaging the said connecting rods are adjustably fitted, a lower cutting member secured to the machine frame, an upper cutting member arranged at an angle to the said lower member and adapted for vertical movement towards and away from the said lower member by cam means for the purpose of cutting the material.

5. A machine for cutting material comprising upper and lower bars for supporting the material therebetween, an angle bar, on the lower of the said bars, normally resting against the edge of the lower cutting member of the machine and adapted to be moved upward and forward along with the said upper and lower bars to cover the said cutting edge, means for tensioning the material, a clamp comprising a lower jaw and a number of upper jaws independently adjustable along and around a spindle, the said clamp being held closed by means of a spring and being opened by the engagement with an inclined member of an arm connected to the said spindle carrying the upper jaws, rods connected to the said clamp, and adapted to be reciprocated by means of connecting rods operated by crank wheels, radial slots in the said wheels, in which slots crank pins for engaging the said connecting rods are adjustably fitted, a lower cutting member secured to the machine frame, an upper cutting member arranged at an angle to the said lower member and adapted for vertical movement towards and away from the said lower member by cam means for the purpose of cutting the material.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH CLARKE.

Witnesses:

ANDREW HAMILTON,
HARVEY WALTER ALLSOP.