June 8, 1943. C. J. JOHNSON 2,321,299

SHEET MATERIAL CUTTING MACHINE

Filed Feb. 11, 1942 5 Sheets-Sheet 1

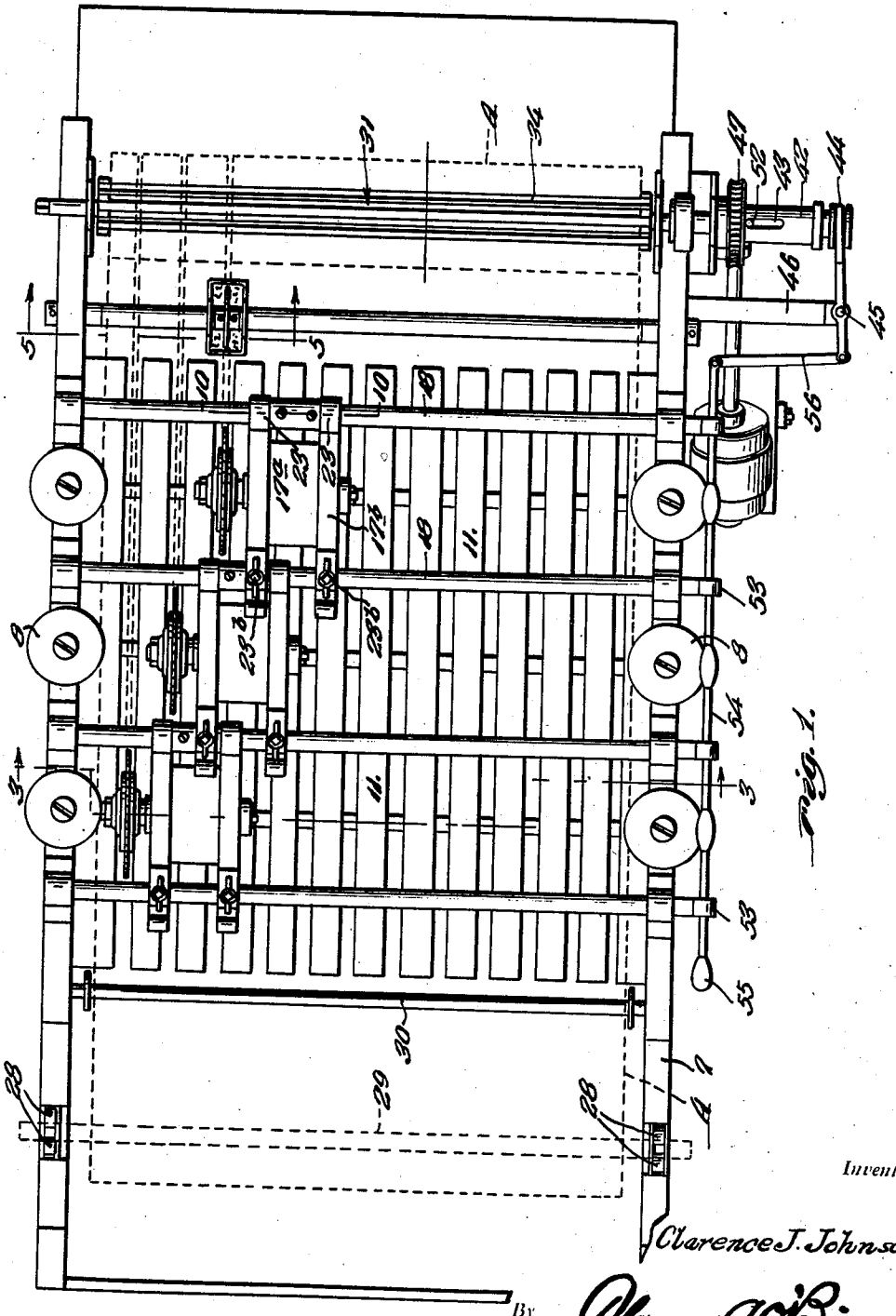


Fig. 1.

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SHEET MATERIAL CUTTING MACHINE

Filed Feb. 11, 1942 5 Sheets-Sheet 2

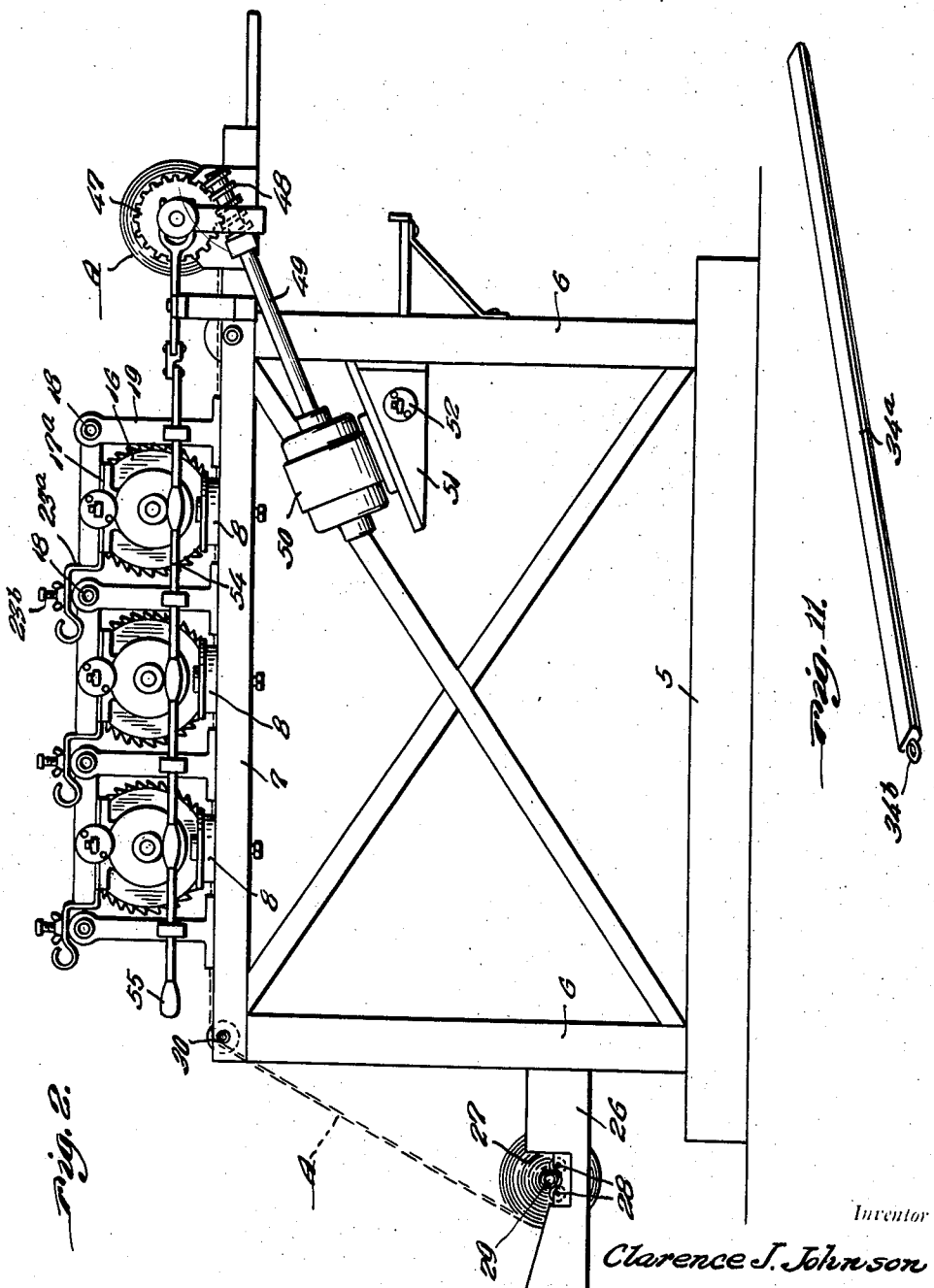


Fig. 2.

Fig. 11.

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SHEET MATERIAL CUTTING MACHINE

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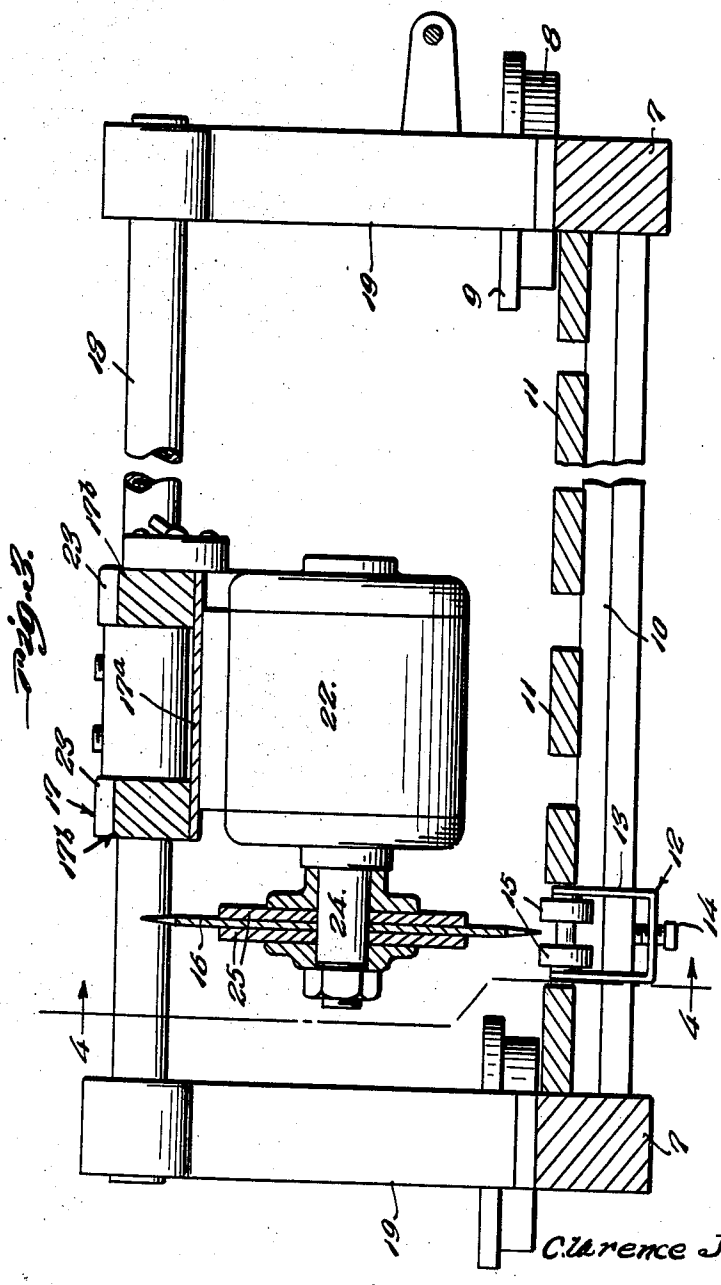
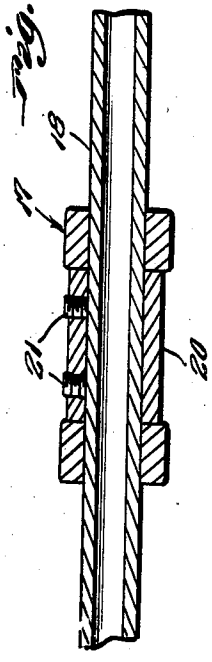


Fig. 10.



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SHEET MATERIAL CUTTING MACHINE

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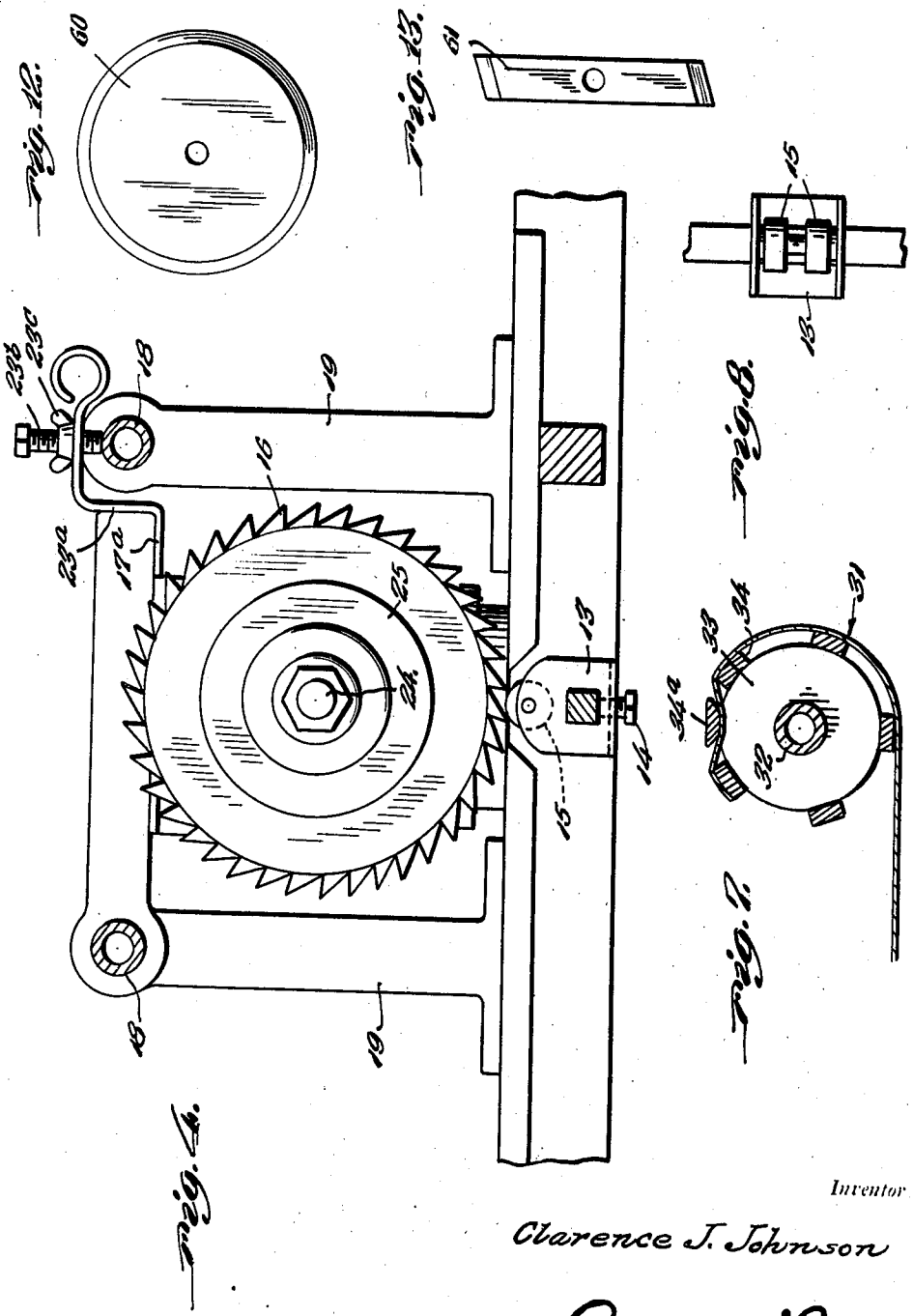


Fig. 2.

Fig. 3.

Fig. 8.

Fig. 9.

Fig. 4.

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SHEET MATERIAL CUTTING MACHINE

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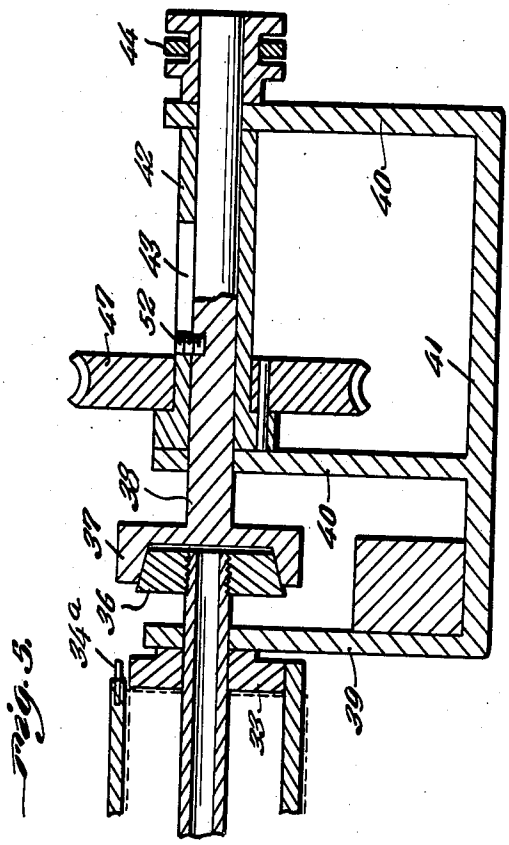


Fig. 5.

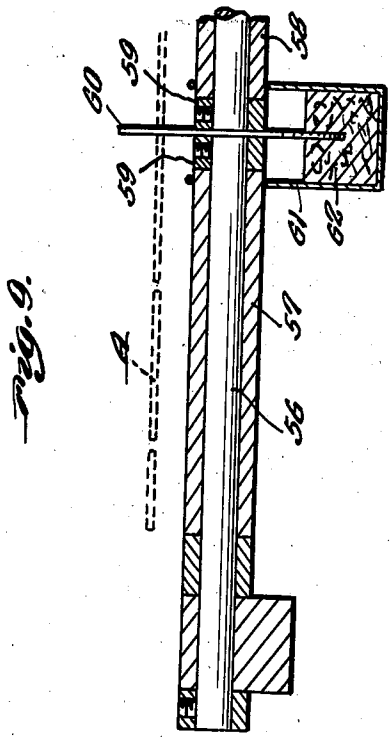


Fig. 8.

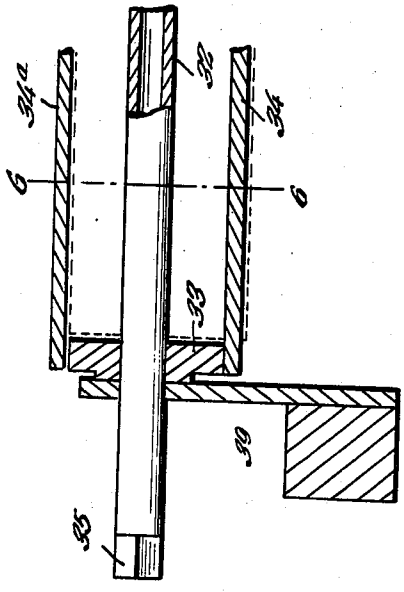


Fig. 6.

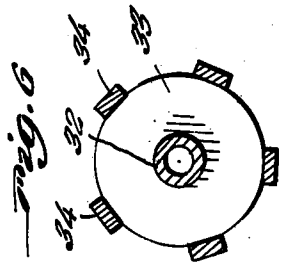


Fig. 9.

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UNITED STATES PATENT OFFICE

2,321,299

SHEET MATERIAL CUTTING MACHINE

Clarence J. Johnson, New Brunswick, N. J.

Application February 11, 1942, Serial No. 430,451

2 Claims. (Cl. 164—65)

This invention relates to new and useful improvements in cutting apparatus and more particularly to a machine for cutting sheet materials such as tar paper into strips that may be used subsequently in the lining of shipping boxes or crates and for other purposes.

The principal object of the present invention is to provide a sheet material cutting machine of the character stated which in operation may be utilized in cutting a roll of material into a plurality of strips.

Another important object of the invention is to provide a machine of the character stated wherein the parts are so constructed and arranged as to permit ready adjustment of parts to insure cutting of work to the desired dimensions.

Other important objects and advantages of the invention will become apparent to the reader of the following description.

In the drawings:

Figure 1 represents a top plan view of the machine.

Figure 2 is a side elevational view.

Figure 3 is a fragmentary detailed sectional view taken substantially on the line 3—3 of Figure 1 with the cutter shown in section.

Figure 4 is a sectional view taken substantially on the line 4—4 of Figure 3.

Figure 5 is an enlarged sectional view taken substantially on the line 5—5 of Figure 1.

Figure 6 is a sectional view taken substantially on the line 6—6 of Figure 1.

Figure 7 is a cross sectional view similar to that of Figure 6 with several of the bars removed.

Figure 8 is a fragmentary top plan view of one of the cutter guides.

Figure 9 is a fragmentary detailed sectional view disclosing the divider disk.

Figure 10 is a sectional view taken substantially on the line 10—10 of Figure 1.

Figure 11 is a perspective view of the removable reel bar.

Figure 12 is a side elevational view of a circular type of cutter without serrations.

Figure 13 is a bar type of cutter which can be used under certain conditions in place of the cutter shown in Figure 12 and in Figure 4.

Referring to the drawings wherein like numerals designate like parts, it can be seen that the machine has a base 5 and corner uprights 6. The uprights 6 support a pair of parallel frame members 7, 7 on which sheet paper guide rolls 8 are mounted in a desired number, each of these guide rolls 8 having a peripheral flange 9 at its upper portion to prevent the displacement of the corresponding edge of a sheet therefrom.

Supported by cross members 10 between the frame members 7 are longitudinally disposed and slightly spaced slats 11 which are sufficiently spaced apart to accommodate guide units generally referred to by numeral 12. Each of these guide units 12 comprises a U-shaped frame 13 having a set screw 14 adapted to regulate the same with respect to an overlying cutter, the frame 13 having a shaft mounted therein carrying a pair of rolls 15, 15 downwardly between which operates the corresponding cutter disk 16.

As can be seen in Figure 1, there is a plurality of cutter units, each of which is generally referred to by numeral 17, and each includes a cutter disk 16 having teeth at its periphery and smooth sides. It will here be observed that the rollers 15, 15 are just above flush with the tops of the slats 11 and the cutting action on a roll sheet A is of course between these rollers 15, 15.

The units 17 each consists in construction of a plate 17a which has parallel bars 17b secured to the top side thereof and to the bottom side of the plate 17a is secured an electric motor 22. A pair of adjacent ends of the bars 17b are provided with bearings 23 which embrace a corresponding cross bar 18 supported at the upper ends of posts 19 which are mounted on the frame members 7. The remaining ends of the bars 17b abut offset leg members 23a of the plate 17a and overlap the next bar 18 in the manner shown in Figure 4. Feedable down through the offset plate portions 23a are set screws 23b each equipped with a jamb nut 23c. Obviously, the use of these set screws 23b is to regulate the position of the corresponding cutter 16 with respect to its guide 12.

The motor 22 has an armature shaft 24 on which one of the cutter disks 16 is mounted between plates 25, 25.

Brackets 26 extend from the uprights 6 at one end of the machine and each bracket 26 has a cut away portion 27 in which are mounted a pair of rollers 28, 28 and these rollers support the ends of a shaft 29 on which is a roll of tar paper or the like 18. This tar paper sheet 18 is trained over a guide shaft 30 bridging a pair of opposed ends of the frame members 7, 7.

At this point, it will be observed that the opposite end of the machine from the shaft 30 is provided with a reel structure generally referred to by numeral 31 and this is made up of an elongated shaft 32 having end disks 33 and bars 34 bridging the same, it being observed that one end of the shaft 32 is squared as at 35 to accommodate

a crank or other manually operative member, while the other end of the shaft **32** has a clutch element **36** operative within a clutch element **37** carried by a countershaft **38**. It can also be seen that in addition to the bars **34** which are secured to the disks **33**, there is a slide bar **34***a*, the same having its side opposed to the reel proper of transverse curvature. One end of this slide bar **34***a* is provided with an eye **34***b* or like member which can facilitate removal of the bar from a roll formed on the reel. In starting the strips on the reel **31**, the slide bar **34***a* is first greased and laid on the free edge portion of the strips between a pair of bars **34**. The paper is then wound on the reel, the slide bar **34***a* serving to define a false carrier bar for the roll of papers, so that when it is desired to remove the roll or rolls of papers from the reel, the slide bar **34** can be engaged at the eye **34***b* and pulled out from the roll with the result that the roll will then be sufficiently loose on the reel to permit easy removal from the reel.

The shaft **32** is journaled through uprights **39**, **39**, while the shaft **38** is journaled through uprights **40**, **40** located on a side bracket **41**.

Interposed between the uprights **40**, **40** is a sleeve **42** having a slot **43** therein and extending through this sleeve **42** and through the uprights **40**, **40** is the counter shaft **38** which has its outer end circumferentially grooved to accommodate the tines of a throw fork **44** which is swingably mounted as at **45** on an arm **46** projecting laterally from one of the frame members **7**.

A gear **47** is secured to the barrel **42** and has a worm **48** in mesh therewith, this worm being located on a drive shaft **49** driven by an electric motor **50** supported by a bracket or platform **51** and on this platform is a switch **52** for controlling said motor **50**.

As can be seen in Figure 5, a set screw **53** is disposed through the slot **43** and into the countershaft **38** so that there will be positive connection between the sleeve **42** and the shaft **38** while allowing clutch action of the shaft **38** with respect to the shaft **32** when the throw yoke **44** is operated.

As can be seen in Figure 1, a plurality of guide eyes **53** is provided on one side of the machine through which a control rod **54** is disposed, this rod having a handle **55** at one end and being connected at its opposite end by a pivotal link **56** to the clutch control yoke **44**.

For separating the cut strips from the sheet proper, a shaft **56** is mounted slightly under and inwardly of the reel **31** and has an arrangement of sleeves **57**, **58** thereon for properly fixing the location of collars **59**, **59** between which a separating disk **60** is mounted, this disk operating in a container **61** below the shaft **56** and through a liquid saturated deposit **62**. Thus the strip adjacent to the sheet proper is prevented in any way from sticking or binding to the sheet proper as it is rolled onto the reel **31**.

In place of the serrated type of blade shown in Figure 4, a circular blade such as is shown in Figure 12 and denoted by the numeral **60** can be employed, or under certain circumstances a bar type of cutter such as is denoted by numeral **61** in Figure 13 can be utilized.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:

1. A sheet stripping machine comprising a frame, a bed for the frame, elevated cross bars supported by the frame, a carriage, said carriage having one end rockably supported on one cross bar and provided with a yieldable extension for disposition over an adjacent cross bar, and a screw member feedable through the yieldable extension and adapted to rest on the last-mentioned cross bar, a motor depending from the carriage and a cutter operated by the motor.

2. A sheet stripping machine comprising a slotted bed, a cutter mounted above the bed, a U-shaped frame vertically adjustable in a selected slot of the bed and provided with a pair of closely spaced rollers mounted therein and between which the cutter operates in slitting a sheet.

CLARENCE J. JOHNSON.