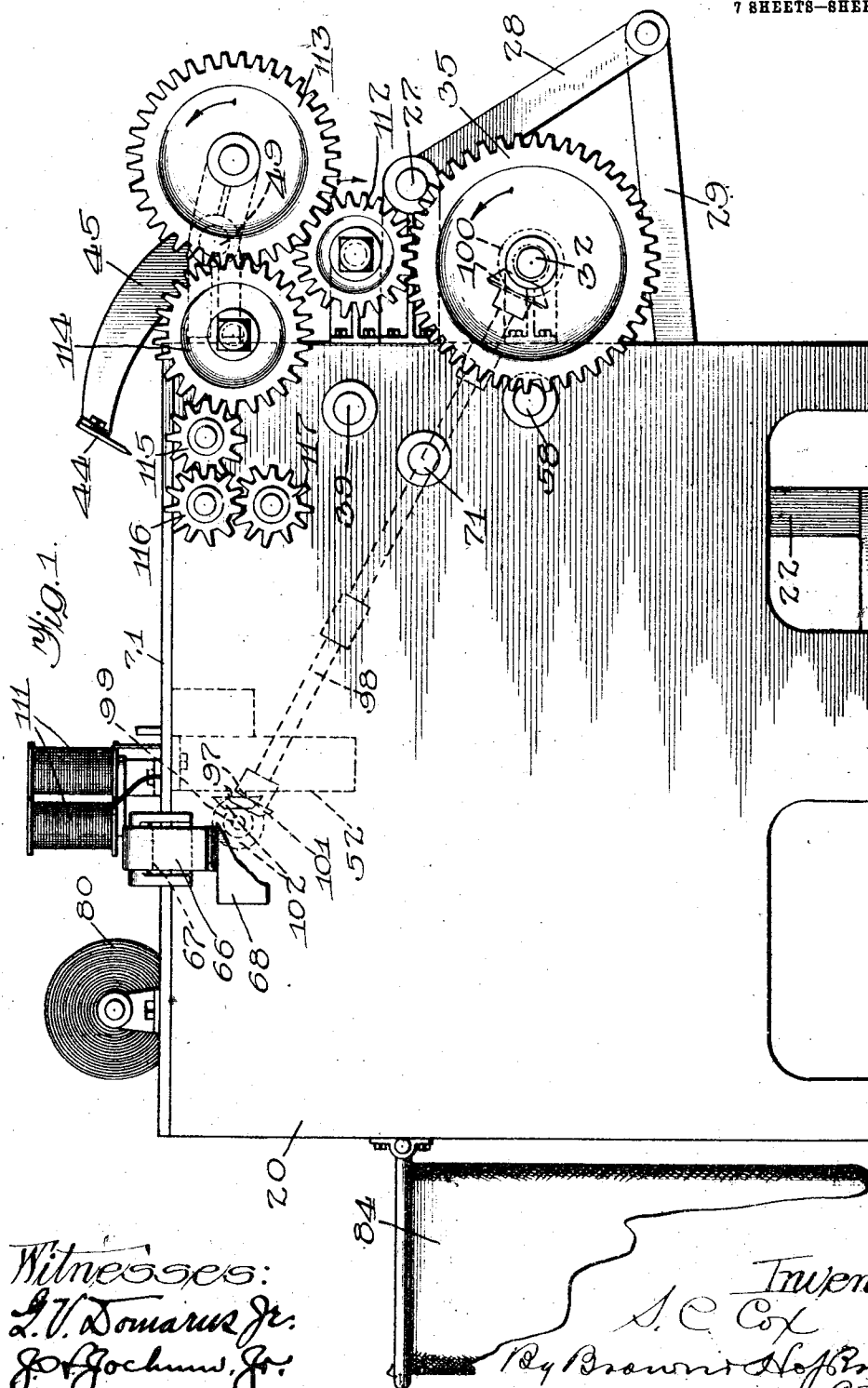


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7 SHEETS—SHEET 1.



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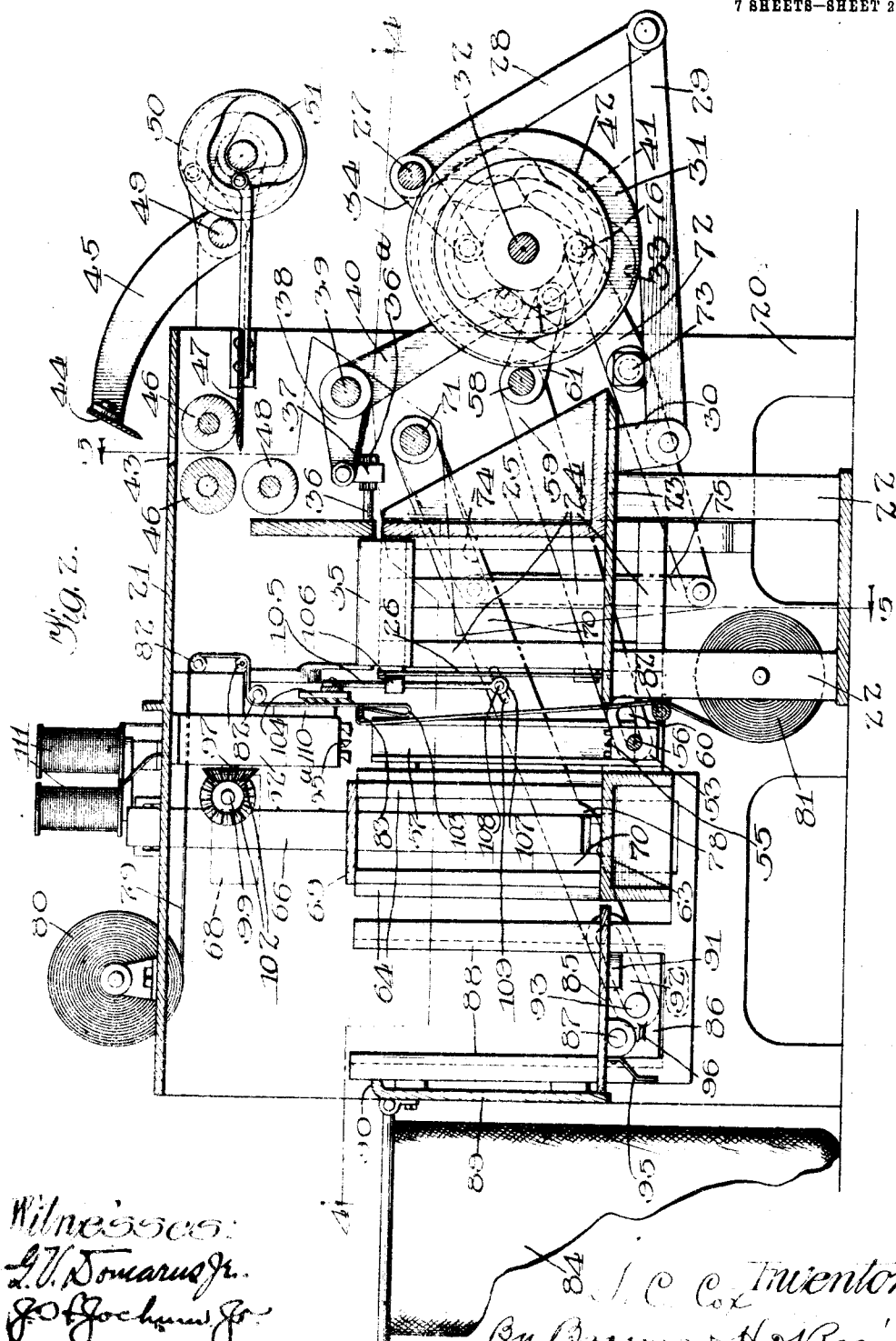
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 APPLICATION FILED DEC. 2, 1907.

1,039,366.

Patented Sept. 24, 1912.

7 SHEETS—SHEET 2.



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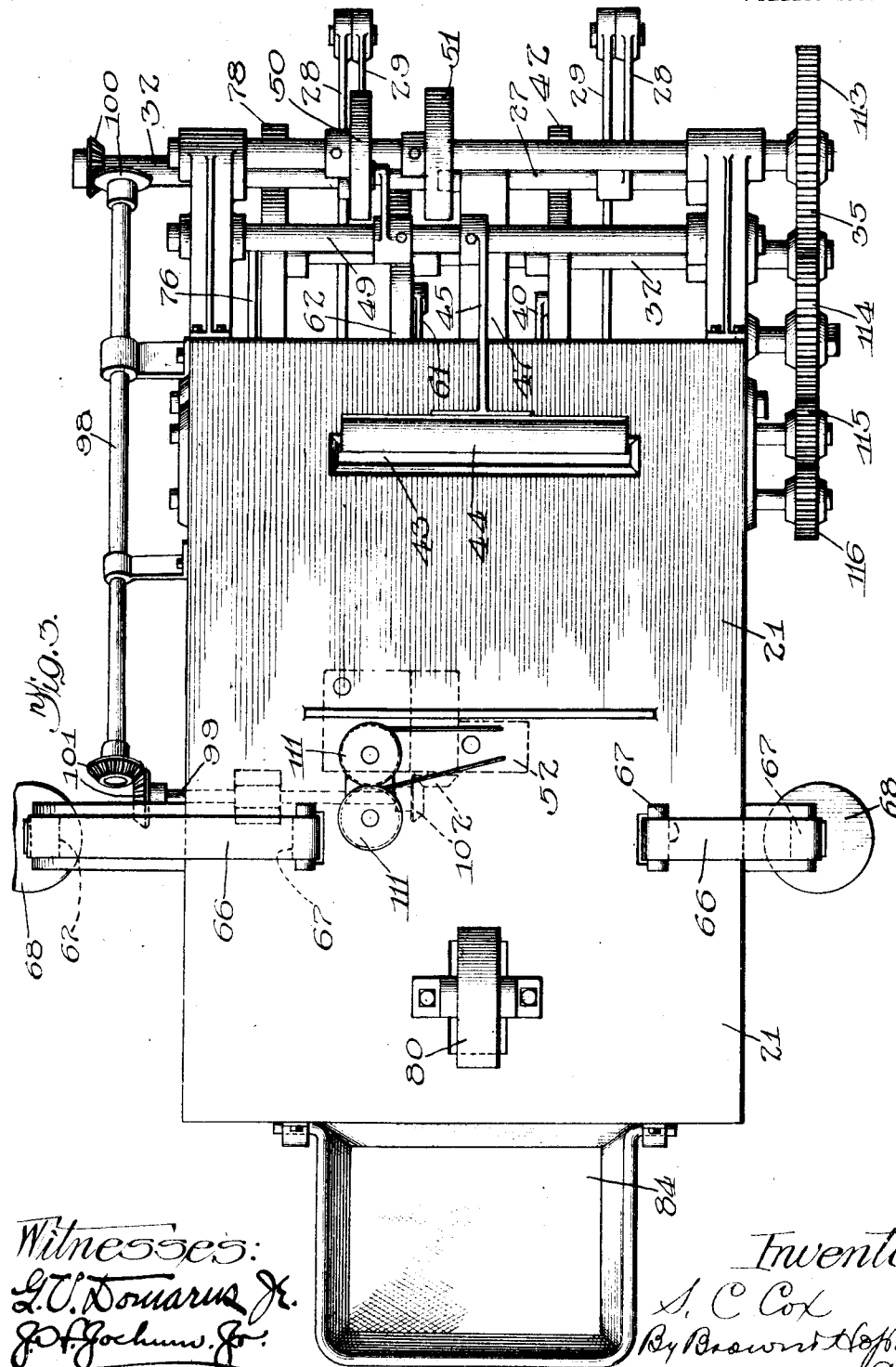
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1,039,366.

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7 SHEETS—SHEET 3.



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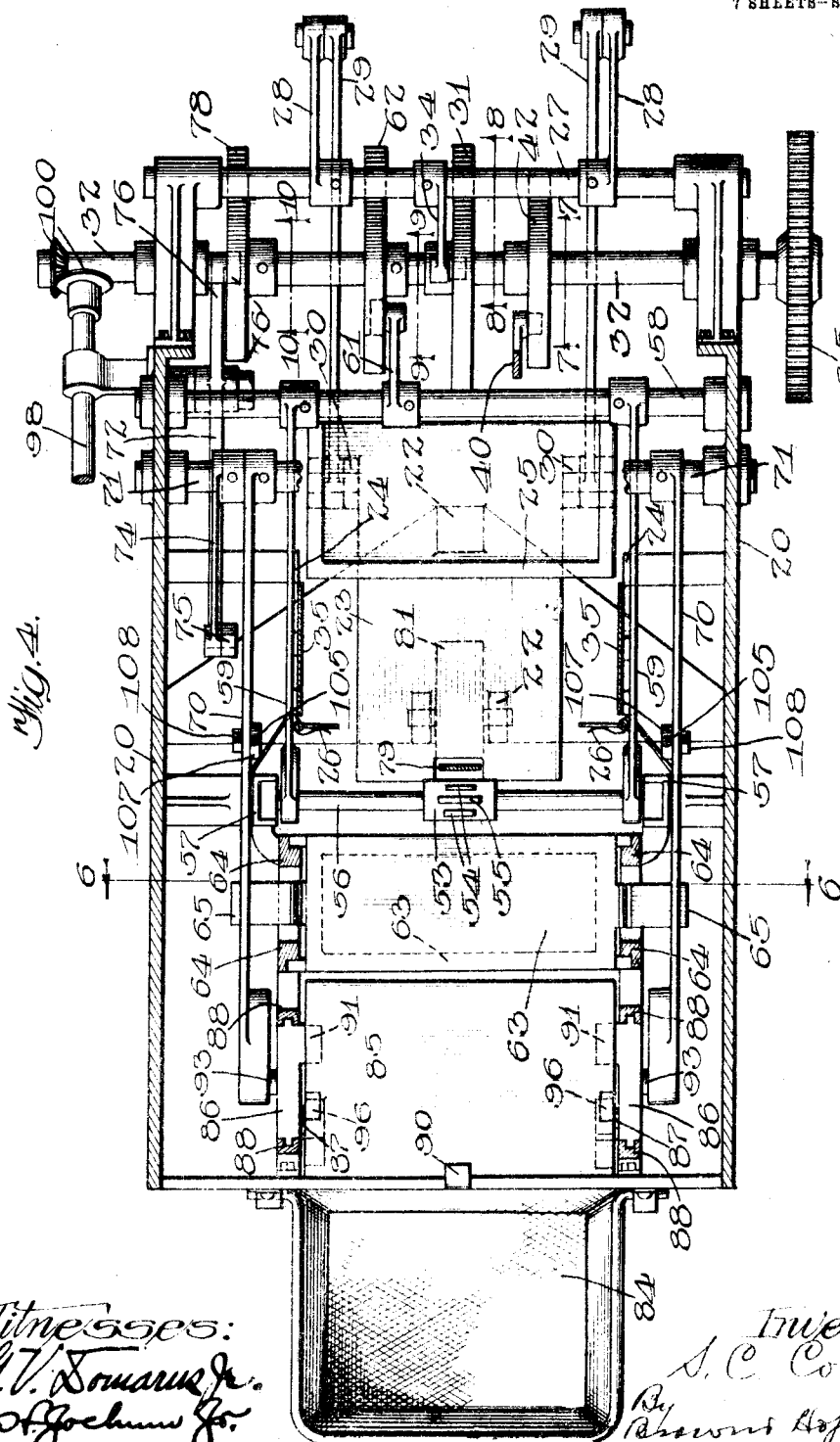
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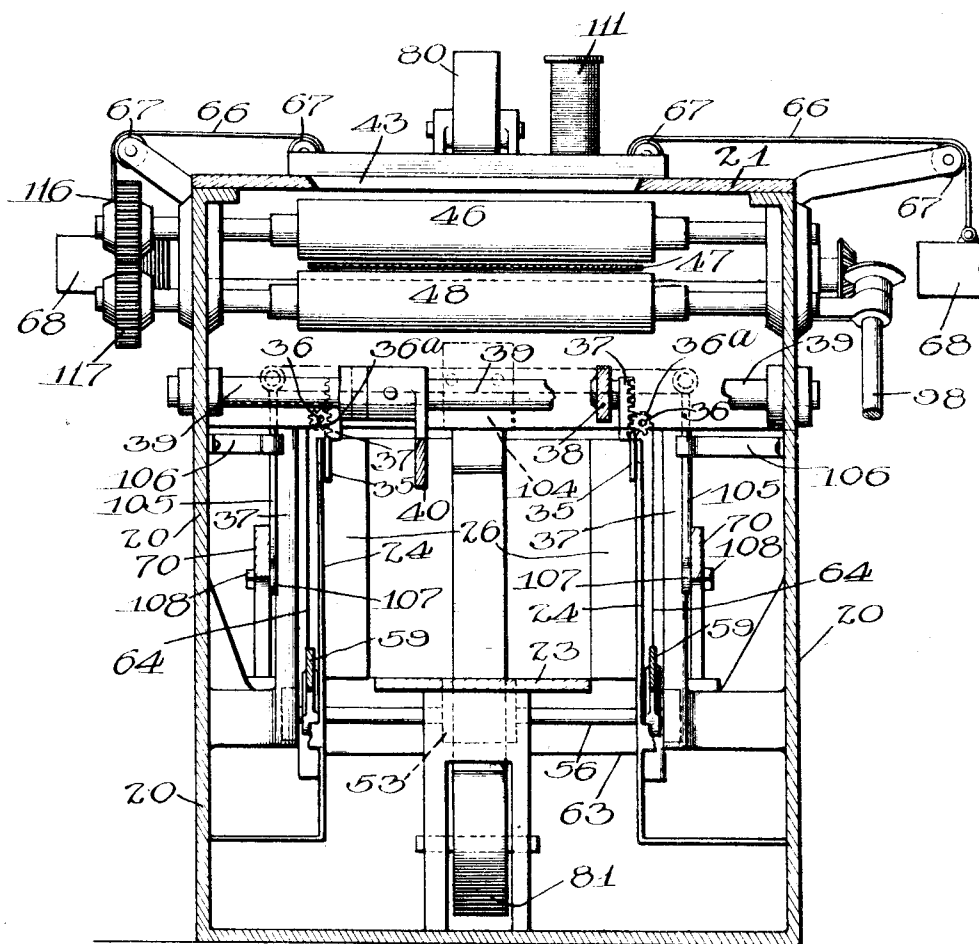
S. C. COX.
 AUTOMATIC BUNDLING MACHINE.
 APPLICATION FILED DEC. 2, 1907.

1,039,366.

Patented Sept. 24, 1912.

7 SHEETS—SHEET 5.

Fig. 5.



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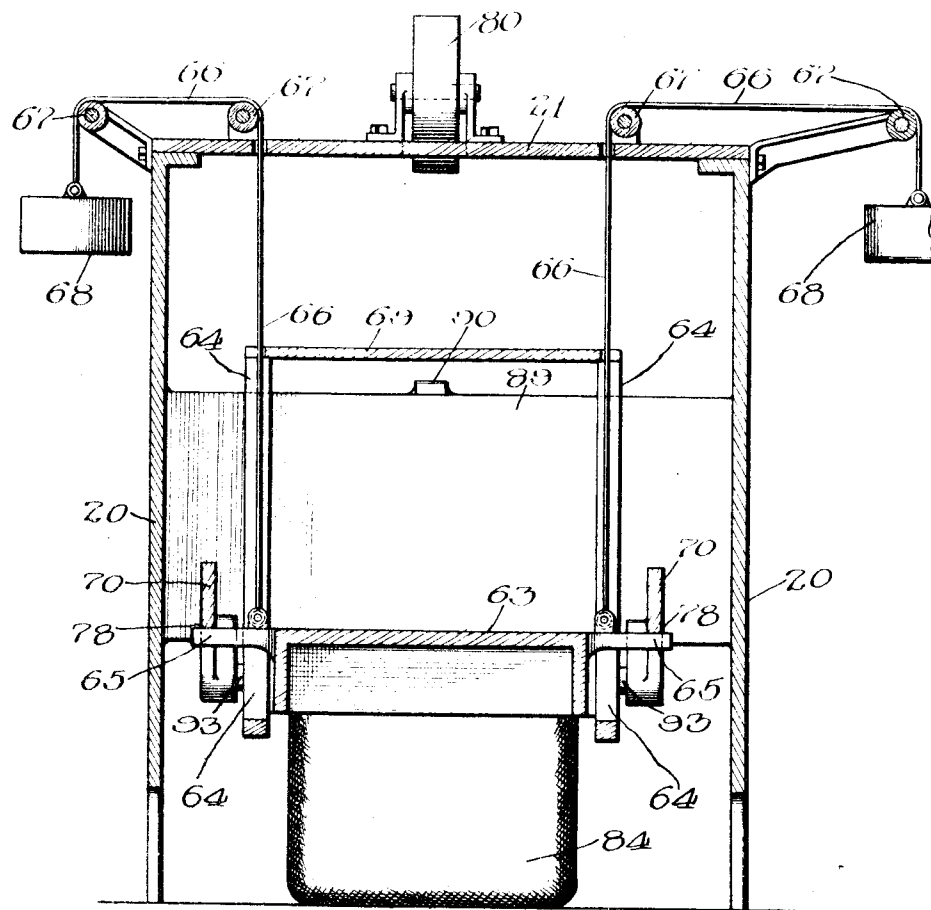
S. C. COX.
 AUTOMATIC BUNDLING MACHINE.
 APPLICATION FILED DEC. 2, 1907.

1,039,366.

Patented Sept. 24, 1912.

7 SHEETS—SHEET 6.

Fig. 6.



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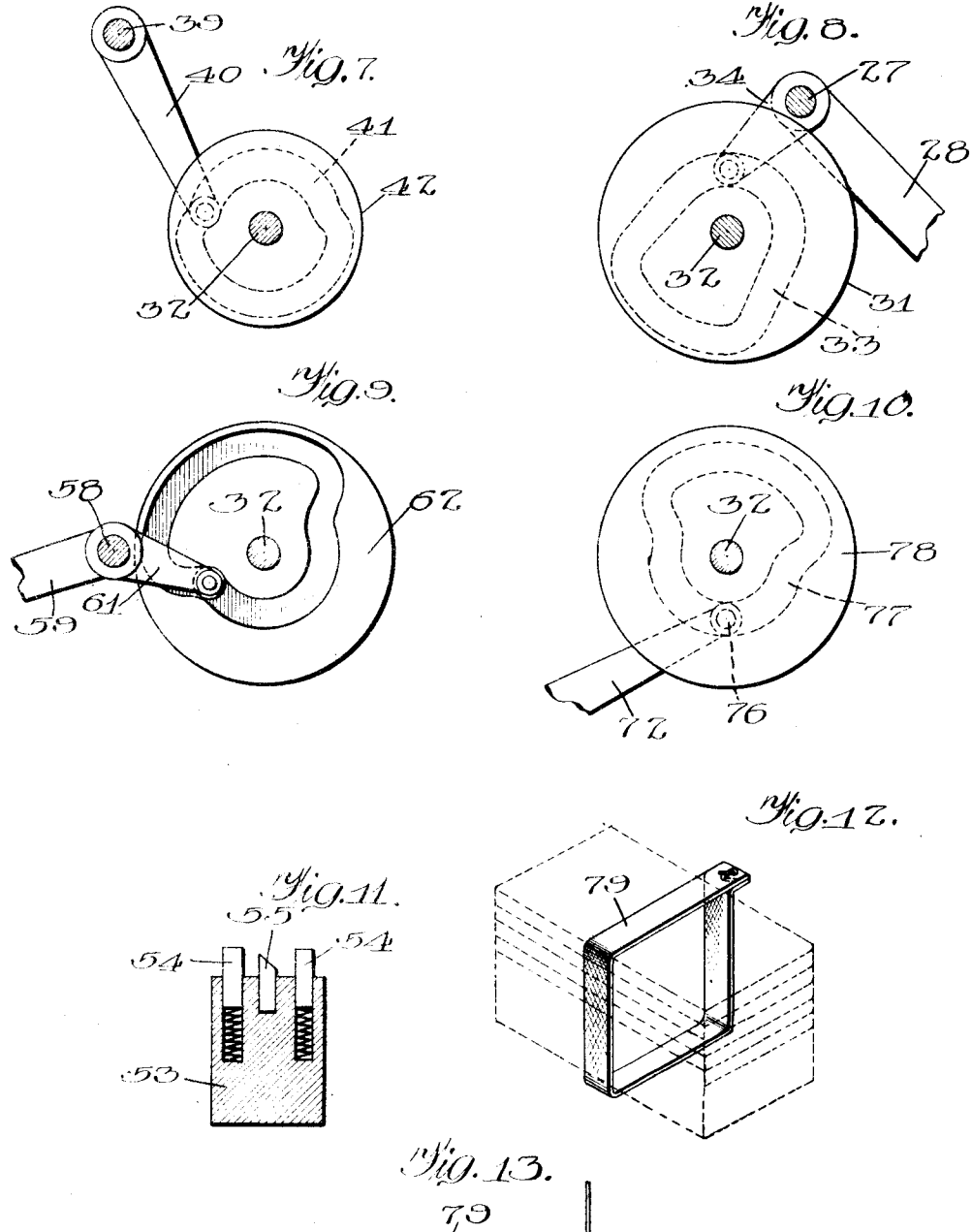
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APPLICATION FILED DEC. 2, 1907.

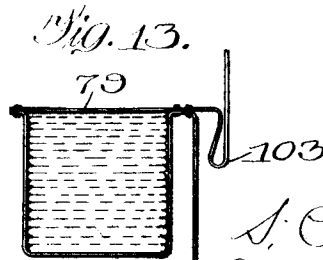
1,039,366.

Patented Sept. 24, 1912.

7 SHEETS—SHEET 7.



Witnesses:
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UNITED STATES PATENT OFFICE.

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AUTOMATIC BUNDLING-MACHINE.

1,039,366.

Specification of Letters Patent. Patented Sept. 24, 1912.

Application filed December 2, 1907. Serial No. 404,778.

To all whom it may concern:

Be it known that I, SANDFORD C. Cox, a citizen of the United States, residing at Brookline, Suffolk county, Massachusetts, have invented certain new and useful Improvements in Automatic Bundling-Machines, of which the following is a specification.

This invention relates to improvements in automatic machines for bundling newspapers and the like, and the primary object of the invention is to provide an improved machine of this character for collecting the newspapers into bundles or piles, and improved means for automatically applying a securing band or bail to the bundle.

A further object is to provide improved means for collecting and holding a supply of papers for a bundle while one bundle is being tied and improved means for releasing the supply to be delivered to the mechanism for applying and fastening the band thereto.

A further object is to provide improved means for delivering the completed bundle from the machine.

A further object is to provide an improved machine of this character, which will be simple and durable in construction and efficient and effective in operation.

To the attainment of these ends and the accomplishment of other new and useful objects, as will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings, illustrating an exemplification of the invention and in which—

Figure 1 is a side elevation of an improved machine of this character constructed in accordance with the principles of this invention. Fig. 2 is a longitudinal sectional view of Fig. 1. Fig. 3 is a top plan view. Fig. 4 is a horizontal sectional view on line 4—4 of Fig. 2. Fig. 5 is a sectional view on line 5—5 of Fig. 2. Fig. 6 is a sectional view on line 6—6 of Fig. 4. Fig. 7 is a sectional view on line 7—7 of Fig. 4. Fig. 8 is a sectional view on line 8—8 of Fig. 4. Fig. 9 is a sectional view on line 9—9 of Fig. 4. Fig. 10 is a sectional view on line 10—10 of Fig. 4. Fig. 11 is a detail sectional view of one of the stitcher members. Fig. 12 is a

detail perspective view of one of the completed bundles. Fig. 13 is a diagrammatic view showing the manner in which the band surrounds the bundle.

Referring more particularly to the drawings and in the present exemplification of the invention, the numeral 20 designates a suitable frame work for supporting the folding table 21.

Arranged below the table 21 and supported by standards 22 is a suitable hopper comprising a base or bottom 23 and side walls 24 shown more clearly in Fig. 4 of the drawings. The base or bottom 23 may be of any desired width and if desired, may terminate short of the side walls 24. A suitable plunger 25 is adapted to rest and move upon the base or bottom 23 and constitutes one of the walls of the hopper when the plunger is retracted in a manner to be set forth, and pivotally mounted adjacent the opposite end of the side walls 24 are suitable spring controlled doors 26, which form the opposite side of the hopper and are adapted to normally assume a close position with relation to the hopper. These doors may be of any desired length and are adapted to be opened against the tension of the springs by the papers when the latter are forced through that side of the hopper by the plunger 25. Any suitable means may be provided for reciprocating the plunger 25 so that the latter will slide upon the base or bottom 23 of the hopper to eject the papers. A suitable and efficient means for accomplishing this purpose comprises a rock shaft 27, which is connected to the plunger 25 through the medium of the arms 28 and links 29, one extremity of which is connected respectively to the free ends of the arms 28 and the other extremities to suitable projections 30 on the plunger 25, as shown more clearly in Figs. 2 and 4 of the drawings. A cam 31 which is mounted for rotation with a suitable shaft 32 is provided with a groove 33, in which one end of a suitable arm 34 is adapted to move, the other end of the arm being connected to the rock shaft 27, so that when the shaft 32 is rotated through the medium of the gear 35 the cam 31 will also be rotated to rock the shaft 27 and reciprocate the plunger 25.

Arranged above the hopper are doors or supports 35 which are pivotally mounted by one end as at 36, arranged to extend

across the top of the hopper and terminate short of each other. These doors are adapted to be moved about their points of pivotal support to fold downwardly into the hopper so that they will stand adjacent the side walls 24 thereof. Any suitable means may be provided for oscillating the doors about their pivots. A suitable and efficient means for accomplishing this purpose comprise racks 37, which engage suitable pinions 36^a attached to the doors at their respective pivots and these racks are adapted to be moved by means of suitable arms 38, to which the racks are pivoted and which are secured to a rock shaft 39. Extending from the rock shaft is an arm 40, the free extremity of which is adapted to move in a cam groove 41 of the disk 42, which is mounted for rotation with the shaft 32, so that when the shaft 39 is rocked, the racks 37 will be moved in the respective direction of movement of the arm 40 and swing the doors or supports 35 about their points of pivotal support, the racks and gears serving as means for retaining the doors or supports in their elevated position so as to project across the top of the hopper to receive the supply of papers in a manner as will be set forth.

The papers to be bundled are fed upon the folding table 21 in any desired or suitable manner so that a portion thereof will extend across the slot 43 therein and in such a position that when the folding blade 44, which is supported by the arm 45, is brought into engagement with the portion of the paper over the slot 43, the paper will be forced through the slot so as to pass between a pair of rolls 46 which are located below and in close proximity to the table. The paper will then be gripped by these rolls 46 and the folded end will be fed downwardly between the rolls so as to extend across the path of movement of a second folding blade 47. Another roll 48 is supported adjacent one of the rolls 46, preferably in front of the folding blade 47 and is adapted to cooperate with the adjacent roll 46 to receive the paper when it is forced between the rolls 46 and 48 by means of the folding blade 47. The paper will then be advanced or fed forwardly toward the hopper by the rolls 46 and 48 and folding blade 47 and deposited upon the doors or supports 35 which are locked in their elevated position in the manner already set forth and will remain in such locked position until the required number of papers have been folded and fed upon the doors or supports above the hopper, at which time the doors will be opened or lowered in the manner set forth to deposit the supply thereon into the hopper and upon the supporting base or bottom 23 thereof between the plunger 25 and the doors 26.

The folding blade supporting arm 45 may

be oscillated about its point of pivotal support 49 by means of a suitable cam 50 and the folding blade 47 may be reciprocated by means of a cam 51, these cams being so disposed with relation to each other that the folding blades will not interfere with each other during their respective movements. After the articles have been thus collected into a bundle, it is one of the objects of this invention to bind them together in a bundle by applying a binder around the bundle, and it is therefore to be understood that the use of the term "band" or "binder" in the specification and claims is intended to mean or cover any kind of an encircling device around the bundle, the ends of which are secured or fastened together. However, a simple and efficient binding device which has been found effective will be described.

Arranged adjacent the discharge end of the hopper and beyond the doors 26 is a suitable stitcher or stapler 52, which may be of the ordinary and well known construction, and cooperating with the stapler is an anvil 53 having yielding supports 54 thereon and a cutter 55 disposed between the supports, as shown more clearly in Fig. 11 of the drawings. This anvil 53 is supported by means of a bar or member 56 which extends across the discharge end of the hopper with its extremities movable in vertical guides or ways 57 which latter are of a height to permit the bar or rod 56 to be raised therein to bring the anvil 53 in close proximity to the stitcher 52.

Any suitable means may be provided for raising or moving the bar or rod 56 in its guides and a suitable and efficient means for accomplishing this purpose comprises a rock shaft 58, secured to which are arms 59, one of which is preferably located on each side of the hopper and these arms are provided with slots 60 in the free ends thereof, through which the extremities of the bar or rod 56 pass, so that when the shaft 58 is rocked the arms 59 will raise the bar or rod 56 to bring the anvil 53 into operative position, the slots 60 in the arms permitting such movement. The shaft 58 may be rocked by means of a suitable arm 61 which is secured by one extremity thereto, the free extremity thereof being adapted to move in a suitable groove in the cam 62 which is secured for rotation with the shaft 32.

Arranged beyond the stitching mechanism above referred to is a plunger or compressor 63 which is movable in suitable spaced vertical guides 64 arranged adjacent the ends thereof and extending beyond the ends of the plunger or compressor are projections 65, by means of which the plunger may be locked into position in a manner as will be set forth.

Suitable tapes or flexible members 66 are connected by one extremity to each of the

ends of the plunger or compressor. These tapes or members 66 pass over suitable pulleys 67 arranged adjacent the top of the machine, and secured to the free extremity of each of the tapes is a weight 68 which tends to normally raise the plunger or compressor 63, and cooperating with the plunger or compressor is a member 69 which extends across the machine a suitable distance above the normal position of the plunger or compressor 63 and serves as a stop for the papers to permit the plunger to compress the bundle when the plunger is released and raised by the weights 68. The normal position of the plunger or compressor 63 is such that the top thereof will be substantially flush with the top of the base or bottom 23 of the hopper so that when the papers which have been deposited in the hopper are ejected therefrom by the plunger 25 and past the doors 26, the supply will be pushed by the plunger onto the compressor or plunger 63 and beyond the stitching mechanism. The compressor or plunger may be locked in its normal position in any desired or suitable manner. A suitable and efficient means for accomplishing this purpose comprises spaced arms 70 which are located beyond the sides of the hopper, one end thereof being connected to a rock shaft 71, which is located in proximity to the shaft 32 and this shaft is adapted to be rocked in any desired or suitable manner, preferably by means of an arm or lever 72 which is pivotally supported as at 73 intermediate its extremities, one extremity thereof being connected to a suitable arm 74 on the rock shaft 71 through the medium of a connecting link 75, and the free extremity 76 of the arm 72 is adapted to move in a suitable cam groove 77 in the cam 78 which is mounted upon and for rotation with the shaft 32, as more clearly shown in Figs. 2 and 4 of the drawings. These arms 70 are preferably provided adjacent the free ends thereof with rounded depending projections or extensions 78, (shown more clearly in Fig. 2 of the drawings) which are adapted to engage and rest upon the extensions 65 of the compressor or plunger 63 to hold the plunger or compressor in its normal position and against the tension of the weights 68.

When the arms 70 are raised by the cam 77 through the medium of the connecting links and arms the weights 68 will raise the plunger or compressor 63 through the medium of the flexible members or tapes 66 toward the member 69 and when the arms 70 are lowered, the extensions or projections 78 will engage the extensions 65 to lower the plunger or compressor and lock or hold the latter in its lowered position.

A suitable band or tape 79 is fed from suitable spools or supplies 80, 81, one of which is supported adjacent the top of the

machine and the other adjacent the bottom thereof. This tape or band may be of any desired flexible material and is arranged to extend vertically across the discharge end of the hopper, preferably centrally thereof, and between the hopper and the stitching mechanism. The tape or band preferably passes through the casing of the stitching mechanism from one of the supplies and over suitable pulleys 82 and a guide 83, which latter is arranged in close proximity to the stitching mechanism, and onto the other spool.

As the supply or bundle is ejected from the hopper by the plunger 25 it will engage the tape or band 79 and cause it to pass over the anvil 53 and beneath the stitcher 52, sufficient tape being paid out from the respective spools. When the bundle has reached its proper position upon the plunger or compressor 63, the plunger 25 will recede and the arm 59 will raise the anvil 53 in its guides 57 into close proximity with the stitcher 52. As the anvil 53 is raised the tape will be paid out from the spool 81 so as to bring the lower run of the tape against the upper run thereof in advance of the bundle, as shown more clearly in diagram in Fig. 13. After the anvil has assumed this position, the respective cam will raise the arms 70 to permit the plunger or compressor to be raised by the weights 68 to carry the top of the bundle in engagement with the member 69, the weights being sufficient to cause the plunger or compressor to compress the papers and hold them compressed until the adjacent portions of the tape have been stitched or secured together by the stitching mechanism 52 in the ordinary and well known manner.

The stitcher is preferably of the type to insert two staples which are spaced from each other, the supports 54 on the anvil 53 cooperating with the respective plungers to form the staple and the knife or cutter 55, being located between the supports 54, cooperates with the knife 55 on the stitcher to sever the tape between the stitches so that when the band is applied to one bundle the ends of the tape from both supplies will be connected for the next bundle. After the bail has been fastened or stitched, the anvil 53 will be lowered and the arms 70 will lower the compressor or plunger 63, together with the bundle which has already been tied. When the tension exerted by the weights 68 on the papers has been overcome the papers will expand slightly to tighten the band which has been applied to the bundle.

When the bundle has been tied, and the plunger or compressor 63 is in its normal position, as shown in Fig. 2 of the drawings, the supply which has accumulated on the shelves or doors 35 will be deposited into the hopper in advance of the plunger

and when the plunger is operated to move this supply upon the plunger or compressor 63 so that the band may be applied thereto, the advancing supply will eject or move the completed bundle from the compressor or plunger 63.

If desired, the completed bundles may be collected into a suitable receptacle, such as a sack 84 or the like. In order to accomplish this end a suitable platform or support 85 may be provided to receive the completed bundle from the compressor or plunger 63. This platform preferably extends across the machine and is mounted for pivotal movement upon suitable members 86, as at 87, and the members are arranged to travel in vertical guides or ways 88 arranged on each side of the machine, as shown more clearly in Figs. 2 and 4 of the drawings.

Arranged adjacent the rear of the platform or support 85 and extending for the entire length of the path of movement of said platform is a member 89, the upper extremity of which is preferably provided with a forwardly extending lip or projection 90 which is adapted to be engaged by the rear end of the platform or support 85 beyond the point of pivotal support 87 thereof to rock the platform about its pivot and deposit the bundle supported thereby over the member 89 and into the sack 84. The front end of the platform may be supported by means of suitable lateral projections 91 on the members 86.

Any suitable means may be provided for raising and lowering the members 86 and the platform 85, and for this purpose the arms 70 may be utilized by providing slots 92 in the extremities thereof beyond the projections 78, into which suitable lugs or extensions 93 are adapted to project so that when the arms 70 are raised or lowered to release or depress the plunger or compressor 63, the same movement thereof will respectively raise and lower the members 86 in the guides or ways 88 until the extremity of the platform 85 engages the projecting lip 90, which is arranged in the path of movement thereof, to rock the platform about its points of pivotal support 87.

If desired suitable means, such as a spring 95, may be secured to the lower face of the platform 85 and so arranged to engage a suitable projection 96 on the members 86 to assist in returning the platform 85 to its normal position after the latter has been rocked to deposit the bundle into the sack.

The driving mechanism of the stitcher may be operated in the ordinary and well known manner from a suitable shaft 97 which receives motion from the shaft 32 through the medium of shafts 98, 99, provided with meshing gears 100, 101, 102.

In order to insure that the tape or band 79 will feed from the roller 80 as the bundle is

discharged or ejected from the hopper to permit the stitches to be moved away from the stitching mechanism after one bundle has been bound, so that the next succeeding stitches will not be placed at the same point, suitable mechanism may be provided for drawing the tape from the spool 80 so that the tape will be slack, as indicated at 103. A suitable and efficient means for this purpose comprises a needle block 104 which is supported by suitable rods 105 adapted to move in suitable guide ways 106; shown more clearly in Figs. 2 and 5 of the drawings. The bars or rods 105 may be supported and operated by the arms 70. The free extremities 107 of these bars or rods 105 are connected to the arms 70 by means of pins 108, which extend into a suitable slot 109 in the arms to permit the needle block 104 to be reciprocated as the arms 70 are moved. The tape or band 79 is adapted to pass over a suitable support 110 adjacent the needle block 104 so that the needles therein will embed themselves slightly in the tape and draw the latter from the spool 80 as the needle block is lowered to form the slack portion 103. The wire is fed to the stitcher 52 from suitable spools 111, which may be supported by the frame work.

The mechanisms are so arranged and timed that the various parts will be operated at the proper time and the cams 31, 42, 62 and 77 are all mounted upon the operating shaft 32, this shaft being also used as a means for operating the stitcher as well as the folding blades 44 and 47. The feeding rolls 46 and 48 are also operated from the shaft 32 through the medium of the gear 35 and train of meshing gears 112, 113, 114, 115, 116 and 117.

In order that the invention might be fully understood by those skilled in the art, the details of the foregoing embodiment thereof have been thus specifically described, but

What I claim as new and desire to secure by Letters Patent is—

1. In a machine for the purpose described, the combination of means for collecting a supply of papers into a bundle, mechanism for applying and securing a band around said bundle bodily, and means for feeding the bundle to said mechanism, the last said means being also adapted to eject the completed bundle from the said mechanism.

2. In a machine for the purpose described, the combination of means for collecting a supply of papers into a bundle, mechanism for applying and securing a band around the bundle, means for feeding the bundle bodily to said mechanism, means for collecting the papers into another bundle while the band is being applied to the previous bundle, and means for bodily delivering the said other bundle to the said feeding mechanism.

3. In a machine for the purpose described,

the combination of means for collecting a supply of papers into a bundle, mechanism for applying and securing a band around the bundle, means for feeding the bundle thus collected bodily to said mechanism, and means operating in time with said feeding mechanism for collecting the papers into another bundle and for delivering the last said bundle thus collected bodily to the feeding mechanism.

4. In a machine for the purpose described, the combination of means for collecting a supply of papers into a bundle, a compressor, means for feeding the bundle bodily to the compressor, means for operating the compressor to compress the bundle, means for applying and securing a band around the bundle while the latter is under compression, and means operating in time with the said feeding mechanism for releasing the compressor to permit the latter to compress the bundle and for moving and locking the compressor out of operative position.

5. In a machine for the purpose described, the combination of means for collecting a supply of papers into a bundle, a compressor, means for feeding the bundle thus collected bodily to the compressor, means for operating the compressor to compress the bundle, means for applying and securing a band around the bundle while the latter is under compression, means for collecting the papers into another bundle while the band is being applied to the previous bundle, and means operating in time with the feeding means for respectively delivering the said other bundle bodily to the said feeding means and for locking the compressor against operation.

6. In a machine for the purpose described, the combination of means for collecting a supply of papers into a bundle, a compressor, means for feeding the bundle bodily to the compressor, means for operating the compressor to compress the bundle, means for applying and securing a band around the bundle while the latter is under compression, means for collecting the papers into another bundle while the band is being applied to the previous bundle, said other bundle being adapted to be shifted bodily to eject the completed bundle from the compressor.

7. In a machine for the purpose described, the combination of means for collecting a supply of papers into a bundle, a compressor, means for feeding the bundle bodily to the compressor, means for operating the compressor to compress the bundle, means for applying and securing a band around the bundle while the latter is under compression, means for collecting the papers into another bundle while the band is being applied to the previous bundle, means operating in time with the feeding mechanism

for delivering the said other bundle bodily to the feeding means, means for releasing the completed bundle and means operatively related to the last said means for receiving the bundle from the compressor and delivering it from the machine.

8. In a machine for the purpose described, the combination of a support, means for collecting the papers to form a bundle, means for delivering said bundle to the support, a strip of flexible material adjacent the support and extending across the path of movement of the bundle, means for moving the bundle bodily from the support and against the said strip and stitching mechanism including means for placing a portion of the strip around the bundle and adjacent another portion thereof, said stitching mechanism being adapted to secure the adjacent portions of the strip.

9. In a machine for the purpose described, the combination of a support, means for collecting the papers to form a bundle, means for delivering the bundle upon the support, a strip of flexible material adjacent the support and extending across the path of movement of the bundle, means for moving the bundle bodily from the support and against the said strip, stitching mechanism including means for placing a portion of the strip around the bundle and adjacent another portion thereof, said stitching mechanism being adapted to secure the adjacent portions of the strip, and means for cutting the strip intermediate the stitches.

10. In a machine for the purpose described, the combination of a support, means for successively piling the papers to form a bundle, means for delivering said bundle to the support, a binding strip adjacent the support and arranged across the path of movement of the bundle, a compressor beyond the strip, means for moving the bundle bodily from the support against the strip and into the compressor to cause the strip to partially surround the bundle, means for operating the compressor to compress the bundle, and stitching mechanism including means for placing a portion of the strip against another portion thereof and across the unsurrounded portion of the bundle, and said mechanism being adapted to secure the adjacent portions of the strip to bind the bundle.

11. In a machine for the purpose described, the combination of a support, means for collecting the papers to form a bundle, means for delivering said bundle upon the support, a binding strip adjacent the support and arranged across the path of movement of the bundle, a compressor beyond the strip, means for moving the bundle bodily from the support against the strip and into the compressor to cause the strip to partially surround the bundle, means for operating

the compressor to compress the bundle, stitching mechanism including means for placing a portion of the strip against another portion thereof and across the unsur-

5 rounded portion of the bundle, and said mechanism being adapted to secure the adjacent portions of the strip to bind the bundle, and means for severing the strip intermediate the ends of its securing connection.

10 12. In a machine for the purpose described, the combination of a support, means for collecting the papers to form a bundle, means for delivering said bundle to the support, a binder strip adjacent the support

15 and extending across the path of movement of the bundle, a compressor, means for feeding the bundle bodily from the support and into the compressor to cause the strip to partially surround the bundle, stitching mechanism

20 including means for placing a portion of the strip adjacent another portion thereof to cause the strip to completely surround the bundle, said mechanism being adapted to secure the adjacent portion of the strip

25 together, means for collecting a supply of papers into another bundle while the previous bundle is being bound, and means for operating the last said means to deliver the bundle to the support.

30 13. In a machine for the purpose described, the combination of a support, means for collecting the papers to form a bundle, means for delivering the bundle to the support, a binder strip adjacent the support and

35 extending across the path of movement of the bundle, a compressor, means for feeding the bundle bodily from the support and into the compressor to cause the strip to partially surround the bundle, stitching mechanism

40 including means for placing a portion of the strip adjacent another portion thereof to cause the strip to completely surround the bundle, said mechanism being adapted to secure the adjacent portion of the strip together, means for collecting a supply of

45 papers into another bundle while the previous bundle is being bound, and means for operating the last said means to deliver the bundle to the support, the last said bundle being adapted to eject the completed bundle

50 from the compressor.

14. In a machine for the purpose described, the combination of a support, means for collecting the papers to form a bundle,

55 means for delivering said bundle to the support, a binder strip adjacent the support and extending across the path of movement of the bundle, a compressor means for feeding the bundle bodily from the support and into

60 the compressor to cause the strip to partially surround the bundle, stitching mechanism including means for placing a portion of the strip adjacent another portion thereof to cause the strip to completely surround the

65 bundle, said mechanism being adapted to se-

cure the adjacent portions of the strip together, means for collecting a supply of papers into another bundle while the previous bundle is being bound, means for operating

70 the last said means to deliver the bundle to the support, the last said bundle being adapted to eject the completed bundle from the compressor, and means for receiving the ejected bundle and delivering it from the machine.

15. In a machine for the purpose described, the combination of a hopper, having an open side, a yielding member adjacent said side to form an abutment, a

80 plunger normally adjacent the opposite side of the hopper, means for collecting a supply of papers above the hopper to form a bundle, means for delivering the bundle into the hopper between the plunger and the said

85 abutment, mechanism for applying and securing a band around the bundle, and means for operating the plunger to eject the bundle from the hopper and past the said abutment for feeding the bundle to the band applying mechanism.

16. In a machine for the purpose described, the combination of a hopper adapted to receive a supply of papers to form a bundle, a yielding abutment forming one

95 side thereof, a plunger movable in the hopper, a binding strip arranged beyond the abutment and across the path of movement of the bundle from the hopper, means for ejecting the bundle from the hopper past

100 the abutment and against the strip to cause said strip to partially surround the bundle, and stitching mechanism for fastening the band, said mechanism including means for causing the band to entirely surround the bundle.

17. In a machine for the purpose described, the combination of a hopper adapted to receive a supply of papers to form a bundle, a yielding abutment forming one

110 side thereof, a plunger movable in the hopper, a binding strip arranged beyond the abutment and across the path of movement of the bundle from the hopper, means for ejecting the bundle from the hopper past

115 the abutment and against the strip to cause said strip to partially surround the bundle, stitching mechanism for fastening the band, said mechanism including means for causing the band to entirely surround the bundle, a

120 support, means for collecting the papers upon the support to form another bundle while the band is being applied to another bundle, and means for operating the support to deliver the bundle thereon into the hopper.

18. In a machine for the purpose described, the combination of a hopper adapted to receive a supply of papers to form a bundle, a yielding abutment forming one

130 side thereof, a plunger movable in the hop-

per, a binding strip arranged beyond the abutment and across the path of movement of the bundle from the hopper, means for ejecting the bundle from the hopper past the abutment and against the strip to cause said strip to partially surround the bundle, and stitching mechanism for fastening the band, said mechanism including means for causing the band to entirely surround the bundle, the last said bundle being adapted to eject the completed bundle as it is fed to the stitching mechanism.

19. In a machine for the purpose described, the combination of a hopper adapted to receive a supply of papers to form a bundle, a yielding abutment forming one side thereof, a binding strip arranged beyond the abutment and across the path of movement of the bundle from the hopper, a compressor adjacent the strip, means for feeding the bundle from the hopper past the abutment and into the compressor to cause the strip to partially surround the bundle, stitching mechanism for fastening the strip including means for placing the strip completely around the bundle, means for collecting the supply of papers into another bundle while the first bundle is being bound, and means for operating the last said means to deliver the last said bundle into the hopper.

20. In a machine for the purpose described, the combination of a hopper adapted to receive the folded papers to form a bundle, a yielding abutment forming one side thereof, a binding strip arranged beyond the abutment and across the path of movement of the bundle from the hopper, a compressor adjacent the strip, means for feeding the bundle from the hopper past the abutment and into the compressor to cause the strip to partially surround the bundle, stitching mechanism for fastening the strip including means for placing the strip completely around the bundle, means for collecting the supply of papers into another bundle while the first bundle is being bound, and means for operating the last said means to deliver the last said bundle into the hopper.

21. In a machine for the purpose described, the combination of a hopper, a support arranged above and adapted to project across the top of the hopper, means for feeding a supply of papers to said support to form a bundle, means for adjusting said support to deliver the bundle into the hopper, mechanism for applying and securing a band around the bundle, and means for feeding the bundle from the hopper to the said mechanism, the adjusting mechanism for the support being adapted to hold the latter in a position to receive the papers thereon while the band is being applied to another bundle.

22. In a machine for the purpose described, the combination of a hopper, pivotally mounted supports arranged above and extending toward each other across the hopper, means for feeding a supply upon the supports to form a bundle, means for swinging the supports about their pivots and into the hopper to deliver the bundle thereon to the hopper, mechanism for applying and securing a band around the bundle, and means for feeding the bundle from the hopper to the band applying mechanism, the support operating means being adapted to hold the supports in position to receive the papers thereon while a band is being applied to another bundle.

23. In a machine for the purpose described, the combination of a support adapted to receive a supply of papers to form a bundle, a binding strip arranged adjacent the support and across the path of movement of the bundle therefrom, means for feeding the strip to form a slack portion therein, means for moving the bundle from the support and against the strip to take up the slack and to cause the strip to partially surround the bundle, and stitching mechanism for fastening the band, including means for causing the band to completely surround the bundle.

24. In a machine for the purpose described, the combination of a support, adapted to receive a supply of papers to form a bundle, a binding strip arranged adjacent the support and across the path of movement of the bundle therefrom, means for feeding the strip to form a slack portion therein, means for moving the bundle from the support and against the strip to take up the slack and to cause the strip to partially surround the bundle, stitching mechanism for fastening the band, including means for causing the band to completely surround the bundle, means for collecting the papers into another bundle while one bundle is being bound, and means for delivering said bundle to the support after the first said bundle is bound.

25. In a machine for the purpose described, the combination of a support adapted to receive a supply of papers to form a bundle, a binding strip arranged adjacent thereto and across the path of movement of the bundle therefrom, means for moving the bundle from the support and against the band to adjust the latter to cause the same to partially surround the bundle, stitching mechanism for fastening the band including means for causing the band to completely surround the bundle and also means for severing the connected portions intermediate the fastening, and positive means for adjusting the band to permit the previous fastening to be moved away from the stitching mechanism.

26. In a machine for the purpose de-

scribed, the combination of a support adapted to receive a supply of papers to form a bundle, a binding strip arranged adjacent thereto and across the path of movement of the bundle therefrom, means for moving the bundle from the support and against the band to adjust the latter to cause the same to partially surround the bundle, stitching mechanism for fastening the band including means for causing the band to completely surround the bundle and also means for severing the connected portions intermediate the fastening, and means operating in advance of the bundle moving mechanism for adjusting the band to permit the previous fastening to be moved away from the stitching mechanism.

27. In a machine for the purpose described, the combination of a support adapted to receive a supply of papers to form a bundle, a binding strip arranged adjacent thereto and across the path of movement of the bundle therefrom, means for removing the bundle from the support to adjust the band to cause the latter to partially surround the bundle, stitching mechanism for fastening the band including means for causing the band to completely surround the bundle, and also means for severing the band intermediate its fastening, and means for moving the band a sufficient distance to permit the previous fastening to be moved away from the stitching mechanism.

28. In a machine for the purpose described, the combination of a support adapted to receive a supply of papers to form a bundle, a binding strip arranged adjacent thereto and across the path of movement of the bundle therefrom, means for removing the bundle from the support to adjust the band to cause the latter to partially surround the bundle, stitching mechanism for fastening the band including means for causing the band to completely surround the bundle and also means for severing the band intermediate its fastening, and means for causing a slack in the band adjacent the stitching mechanism, whereby the next succeeding bundle will move the point of the previous fastening of the band away from the stitching mechanism.

29. In a machine for the purpose described, the combination of a support adapted to receive a supply of paper to form a bundle, a binding strip arranged adjacent thereto and across the path of movement of the bundle therefrom, means for moving the bundle from the support and against the band to adjust the latter to cause the same to partially surround the bundle, stitching mechanism for fastening the band including means for causing the band to completely surround the bundle and intermediate the fastening, a needle block adapted to engage the band, and means for operating the block

to adjust the band, whereby the next succeeding bundle will move the previous fastening of the band away from the stitching mechanism.

30. In a machine for the purpose described, the combination of a support adapted to receive a supply of papers to form a bundle, a binding strip arranged adjacent thereto and across the path of movement of the bundle therefrom, a compressor for compressing the bundle, means for moving the bundle from the support, against the band and into the compressor, stitching mechanism for securing the band around the bundle, means for receiving the completed bundle from the compressor and ejecting from the machine, and a common means for operating all of said parts.

31. In a machine for the purpose described, the combination of a support adapted to receive a supply of papers to form a bundle, a binding strip arranged adjacent thereto and across the path of movement of the bundle therefrom, a compressor for compressing the bundle, means for moving the bundle from the support, against the band and into the compressor, stitching mechanism for securing the band around the bundle, means for receiving the completed bundle from the compressor and ejecting it from the machine, means for collecting the papers into another bundle while the band is being applied to the first bundle, means for delivering the bundle to the support and a common means for operating all of said parts.

32. In a machine for the purpose described, the combination of means for collecting a supply of papers into a bundle, means for applying and securing a band around the bundle, a receiver for the completed bundle, means for shifting the receiver to deliver the completed bundle from the machine, and a common means for operating all of the parts.

33. In a machine for the purpose described, the combination of means for collecting a supply of papers into a bundle, means for applying and securing a band around the bundle, means for operating said parts, a pivoted support adapted to receive the completed bundle, and means for moving the support about its pivot to deliver the bundle from the machine.

34. In a machine for the purpose described, the combination of means for collecting a supply of papers into a bundle, means for applying and securing a band around the bundle, means for operating said parts, an adjustable and pivotally mounted support adapted to receive the completed bundle, means for adjusting the support, and means adapted to move the support about its pivot to deliver the bundle from the machine.

35. In a machine for the purpose described, the combination of means for collecting a supply of papers into a bundle, mechanism for applying and securing a band
5 around said bundle, and means for feeding the bundle bodily to said mechanism, the last said means being also adapted to eject the completed bundle from the said mechanism.

10 36. In a machine for the purpose described, the combination of means for collecting a supply of papers or the like into a bundle, means for applying a binder around the articles thus collected for binding them together, and means for feeding
15 the bundle bodily to the binder applying mechanism.

37. In a machine for the purpose described, the combination of means for collecting a supply of papers or the like into a
20 bundle, means for applying a binder around

the articles thus collected for binding them together, and means for feeding the bundle bodily to the binder applying mechanism.

38. In a machine for the purpose described, the combination of means for collecting a supply of articles into a bundle, means for applying to the articles thus collected a binder to secure the articles together, a receiver for the completed bundle,
25 and means for shifting the receiver to deliver the completed bundle from the machine.

In testimony whereof I have signed my name to this specification, in the presence of
35 two subscribing witnesses, on this 23rd day of November, A. D. 1907.

SANDFORD C. COX.

Witnesses:

CHARLES H. SEEM,
FRANCIS A. HOPKINS.