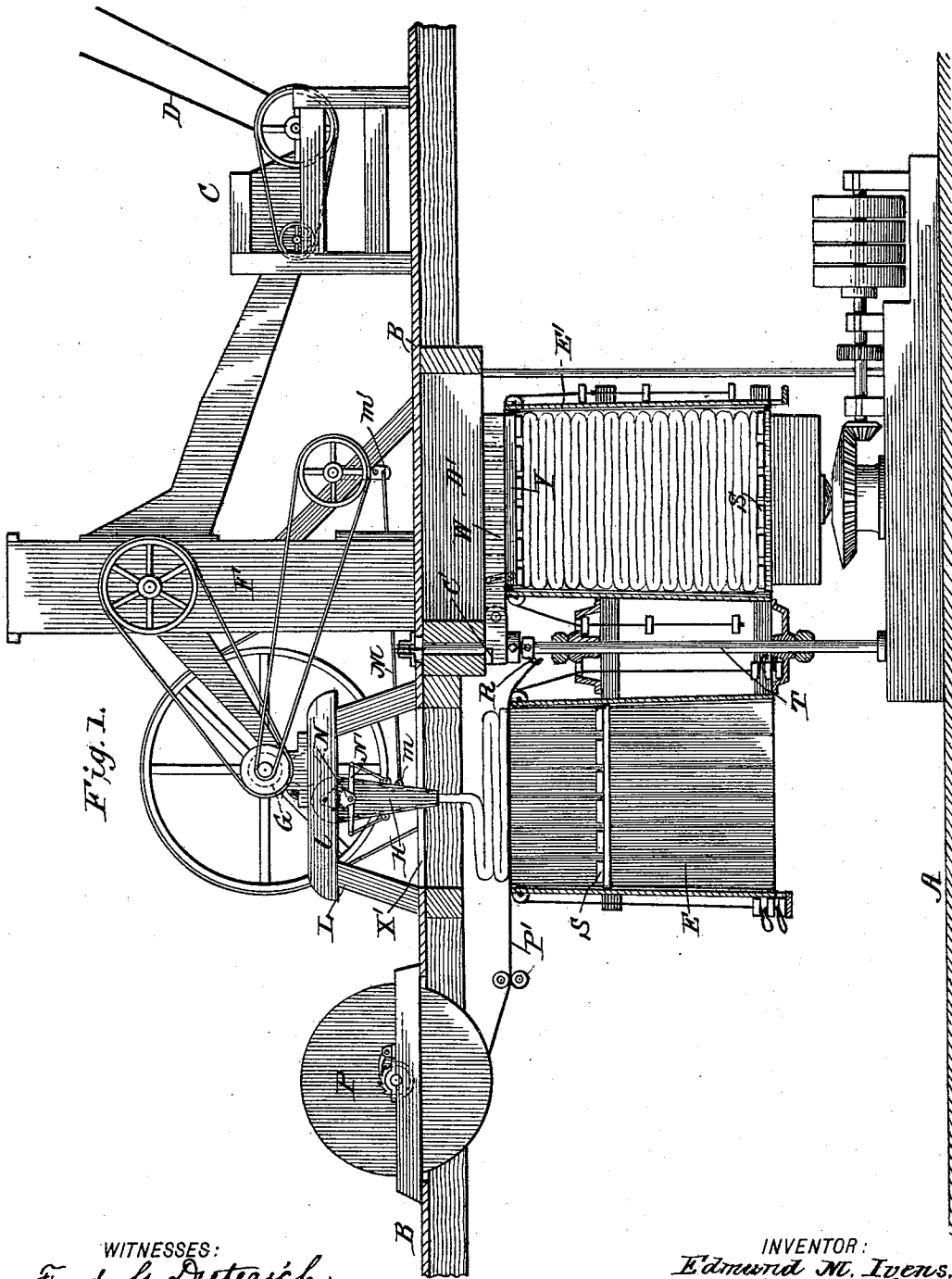


4 Sheets—Sheet 1.

No. 475,117.

Patented May 17, 1892.



WITNESSES:
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W. D. Blondel

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(No Model.)

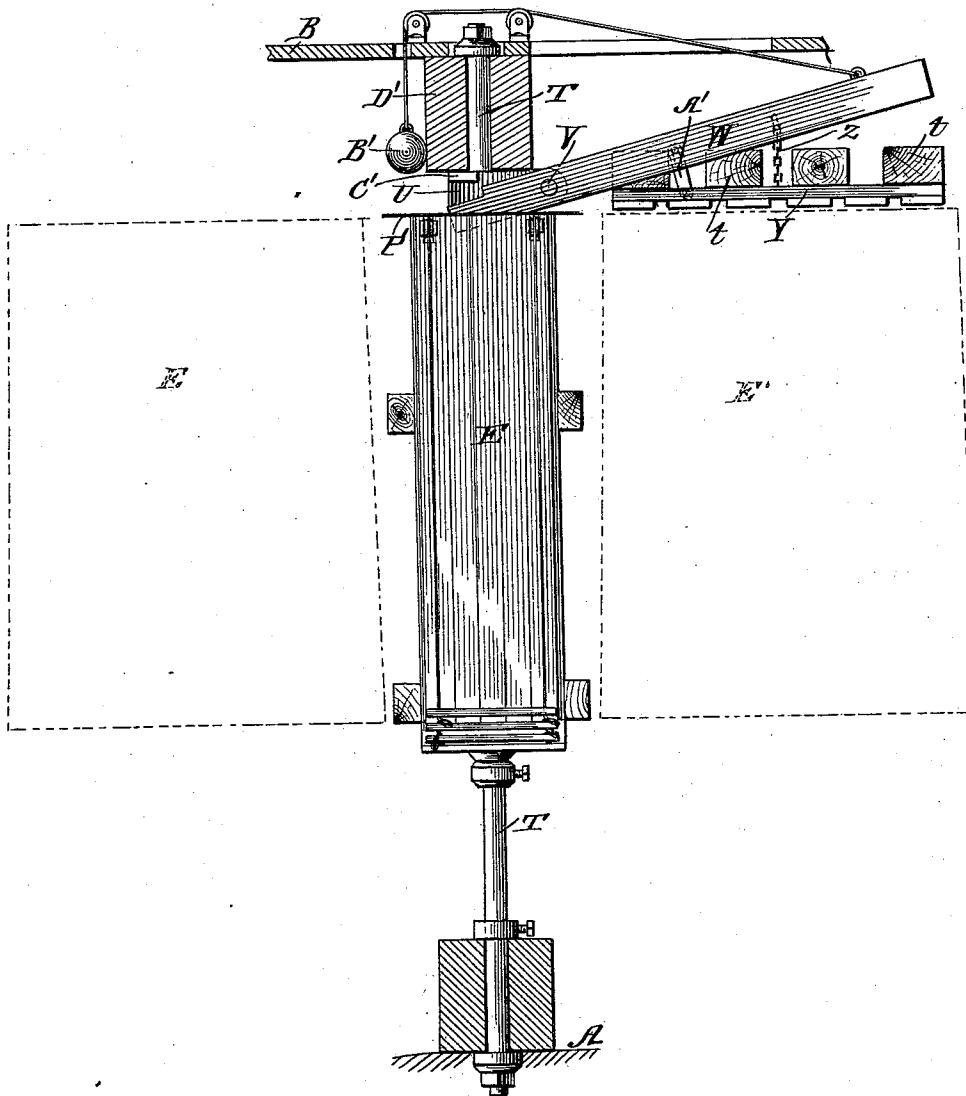
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E. M. IVENS.
APPARATUS FOR BALING COTTON.

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Fig. 2.



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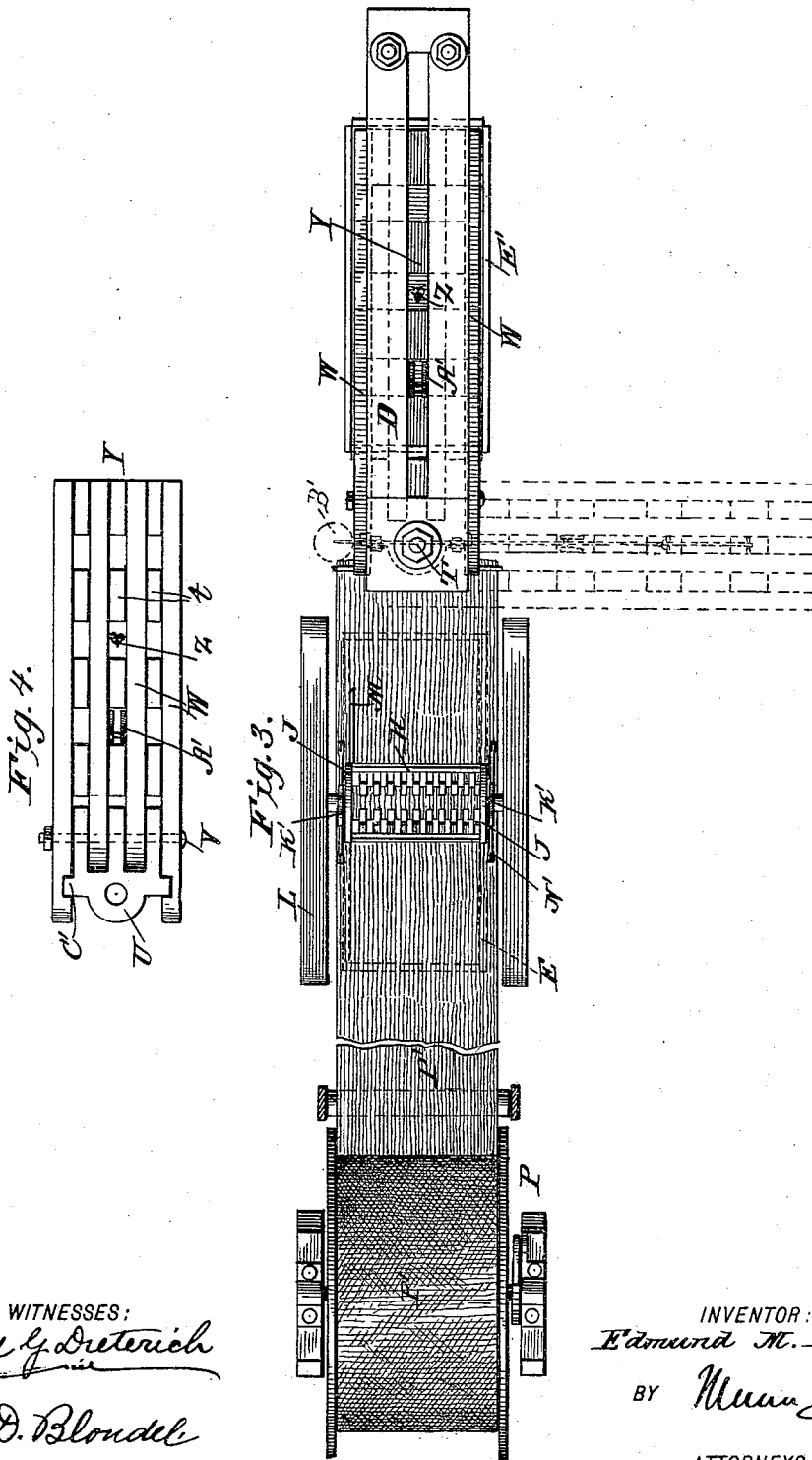
(No Model.)

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Fig. 6.

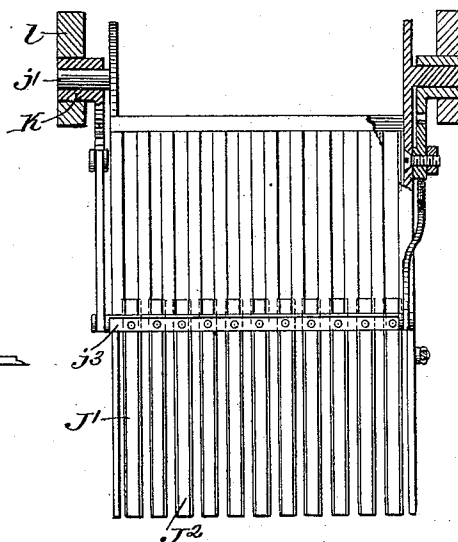
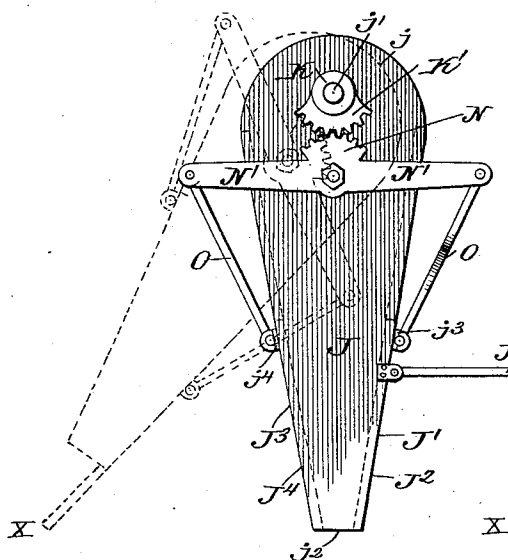
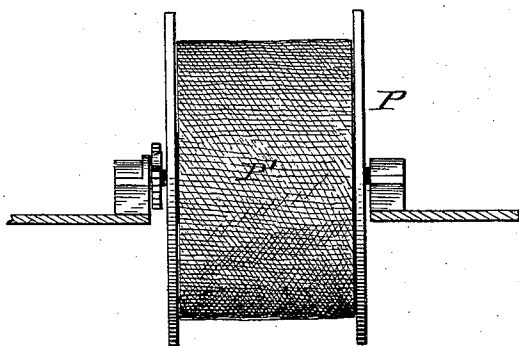


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDMUND M. IVENS, OF NEW ORLEANS, LOUISIANA.

APPARATUS FOR BALING COTTON.

SPECIFICATION forming part of Letters Patent No. 475,117, dated May 17, 1892.

Application filed July 20, 1891. Serial No. 400,166. (No model.)

To all whom it may concern:

Be it known that I, EDMUND M. IVENS, residing at New Orleans, Orleans parish, in the State of Louisiana, have invented a new and useful Apparatus for Baling Cotton, of which the following is a specification.

This invention has relation to a machine for baling cotton, the objects being to provide mechanism for baling the fiber in bales of such density as to admit of its cheap transportation and handling, and it more particularly refers to that class of baling-machines which operate to bale the cotton by what is known as the "roller process."

With other objects in view not stated, but hereinafter fully set out, my invention consists in the novel arrangement and peculiar combination of the several parts, all of which will hereinafter be fully described in the annexed specification, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of my improved baling machinery, showing it in operative condition and in connection with a cotton-gin. Fig. 2 is an end view of the rotatable cotton-box and the auxiliary platen hereinafter referred to. Fig. 3 is a top view, and Fig. 4 a top view of the auxiliary platen. Fig. 5 is an end view of the folder or lapper. Fig. 6 is a side view of the same, and Fig. 7 is an end view of the bagging-reel.

In the accompanying drawings I have shown, in Fig. 1, my invention located in a ginning mill or house in connection with an ordinary gin and also in connection with suitably-arranged compressing-rolls mechanism, through which the fiber is passed and by which it is pressed into a continuous sheet of batting, from which rolls it passes through a swinging folder or lapping device, which serves to fold the batting in sheets as it is fed to the cotton-receiving box hereinafter specifically referred to.

While for the sake of a clear understanding of the operation of my invention I have shown it in connection with a gin and bat-forming rolls, I desire it understood that I make no claim on such devices.

It is well known by those skilled in the art that cotton-bales which are primarily compressed by the ordinary plantation-press to

facilitate their transportation to a point for a final compression by the large and powerful compresses are very bulky and occupy more space than they would occupy if properly compressed at the start. This very serious objection to the rapid and cheap delivery of the bales is avoided by the roller process, which compresses the bale to the density required before it leaves the gin-house. In the use of said process, so far as I know, it is necessary to stop the ginning and bat-lapping devices every time a bale is about to be compressed, thereby causing a delay and considerably reducing the daily capacity of the baling machinery. By my invention I propose to render the operation of the ginning, bat-forming, and lapping devices continuous, whereby as the cotton in the press-box is in the act of being compressed the gin-rolls and the folder will continue in their operation, so as to accumulate a quantity of folded cotton ready to be dropped into the press-box as soon as it is again brought into position.

In the particular construction of my improved baling devices I employ a press-box or frame formed with a pair of cotton-receiving chambers, which box is held to rotate about a fixed spindle, such chambers being arranged to alternately form a receiving and a compressing chamber, the particular construction of such rotatable press-box and the compressing devices being, except in such details as will be hereinafter fully set forth, precisely of the same construction as that shown and described in another application filed by me May 9, 1891, Serial No. 392,240.

In the drawings, A indicates the floor of the ginning-mill, and above the same is the usual platform or second floor B, upon which is mounted the cotton-gin C, operated by the drive-belt D, as shown, said gin being connected by a conveyer with a condensing-chamber F of any improved construction, which connects with the pressure-rolls G, which serve to press the loose cotton into batting, which is discharged from said rolls G through a folder or lapping device H through an opening X' in the floor B into the cotton-receiving box presently referred to.

The folder or lapping device, which is most clearly illustrated in Figs. 5 and 6, the construction of which forms an essential part of

my present invention, consists of an oblong frame J, formed at its upper end with ears j , to which are connected stud-bolts j' , which form the pivots on which the frame is supported, such bolts being journaled in apertured hubs K, fixedly held in the side beams l of the supporting frame or table L. The sides of the frame J converge, so as to form a contracted discharge-mouth j^2 .

M indicates a connecting-rod, which is pivotally connected with the oscillating folder-frame at m and at m' to the driving mechanism, as shown. To provide means for keeping the discharge end of the folder always in a parallel or horizontal line with and just over the bale of cotton being folded, so as not to drop the cotton any greater distance at one point than is necessary and always at approximately the same distance from the top of bale-box, whereby to preserve the density of cotton intact after it has passed the compressing-rolls, I form the sides J' J^3 of slatted portions, as shown, and in such slatted sides are held, preferably by tongue-and-groove connections, movable slatted sections J^2 J^4 , which sections are arranged to be alternately moved in or out as the folder is oscillated, so as to form extensions for the said sides. Thus should the folder be swung in the direction indicated by dotted lines in Fig. 5 the section J^2 in the side J' will gradually move out, so as to keep the lower or discharge end on the horizontal plane indicated by the dotted line X. It will be also observed that as the telescopic section J^2 is moved downward or outward, as stated, the opposite section J^4 will be drawn upward in the side J^3 . Now when the folder is drawn in a reverse direction the section J^2 will be gradually drawn inward and the other section downward until the folder assumes its vertical position, when the lower ends of the sections J^2 J^4 will be in the same plane with the bottom of the folder-frame, and as it proceeds on a reverse movement the section J^4 will be pushed outward and the section J^2 pulled inward. To render the operation of the sections J^2 J^4 simple and automatic, I utilize the oscillating movement of the folder as the power for operating them. Any suitably-arranged rack or gear mechanism may be employed for the purpose stated; but I prefer to use the mechanism shown, which consists in providing a fixed segmental gear K' , formed integral with the hubs K, with which engage segmental gears N, pivotally secured to the ends of the frames J, such gears being formed integral with the transverse lever-arms N' , the outer ends of which are connected by the pivoted rods O with cross-bars j^3 j^4 on the telescopic sections J^2 J^4 . By this construction it will be observed that as the folder is oscillated in the manner before stated the gear N, engaging the fixed segment, will turn on its pivot and cause the lever-arms N' to be swung, so as to pull and push the sections J^2 J^4 in the reverse directions stated.

In my other patent referred to, as well as in other similar machines now in use, the construction of the several parts is such that after a sufficient quantity of cotton has been folded into the press-box the folder and ginning devices are temporarily stopped while the folded cotton is being pressed. To save this waste of time and loss of capacity, I arrange for continuously operating such parts. To this end I provide the means most clearly shown in Fig. 1 of the drawings, by reference to which it will be seen that adjacent to one edge of the feed-opening X' is supported a bagging-reel P, upon which is reeled the bagging P' of the proper width to incase the sides of the lower half of the finished bale.

By arranging the bagging devices as shown the operator after the folded bale is swung from under the opening X' immediately pulls the end of the bagging over the opening X' and fastens the said end to the hook R. A ratchet-and-pawl mechanism on the reel-shaft serves to keep the said bagging taut. Now during the time in which the box is turned and the bale is being compressed and removed the folder will operate to fold the cotton onto the bagging, folding, as it were, the base of the bale. When the empty box has been returned under the opening X' , the bagging is cut and it and the folded cotton will fall onto the follower S in the bale-box. If desired, the relation of the folder and the bagging devices and the cotton-box may be such that an entire bale may be folded onto the bagging and it and the bagging dropped into the said box. As before stated, in baling cotton by the roller process the top of the bale is softer than the bottom. To provide means for partially pressing the said top portion of the bale, I employ an auxiliary platen, which is most clearly illustrated in Figs. 2 and 4, by reference to which it will be seen that upon the king-post T a casting U is mounted in turn, to which is hinged at V a series of bars W, from which the platen-frame Y is suspended by the chain Z and guide-links A' , all of which is balanced by a counter-weight B' , arranged as shown.

By reference to Fig. 2 it will be observed that the arms W are held elevated, which lifts the platen up to a point above the path of the rotatable press-box. Now after the bale has been folded and the box is turned to bring said bale over the presser and the said box is turned to the position shown in dotted lines the operator releases the balance-weight, which allows the platen to fall on top of the bale and force the cotton a foot or more down into the box. The arms W in lowering will fold down on top of the platen flush with its transverse bars t , the downward movement of the entire platen devices being limited by the rear ends of the arms engaging the stops C' on the main casting, the whole being then in a position to be swung in under the fixed platen or cross-head D' . To provide for the easy operation of the said

auxiliary platen, the walls of the press-boxes E E' are made tapering from bottom to top, which relieves the descending follower from all friction caused by the increase in width and length of the bale in the cotton-box by weight of cotton being gradually added by the folder.

Having thus described my invention and in a general way stated the operation thereof, a detailed description of the complete operation thereof is deemed unnecessary.

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

1. In a baling apparatus of the class described, the combination, with a continuously-operated folder or lapping device and a compressing-platen, of a rotatable press-box having dual chambers arranged to alternately receive the cotton from the lapper and carry it over the compressing-platen, and means for temporarily receiving the cotton from the folder when the cotton-box is from under said folder, substantially as and for the purposes described.

2. The combination, with the main frame and the rotatable cotton-box held thereon, of a rotatable auxiliary platen held on the main frame normally above the said cotton-box and adapted to be lowered therein onto the cotton and to swing with said box under the fixed platen or cross-head of the main frame, substantially as and for the purpose described.

3. In a baling mechanism essentially as described, the auxiliary platen consisting of the main casting U, the bars W, hinged thereto,

the platen-frame Y, suspended from said bars, and the counterbalance devices, substantially as and for the purposes described.

4. In a baling mechanism of the class described, an oscillating lapper or folder frame formed with extensible side sections, substantially as and for the purpose described.

5. In a baling mechanism of the class described, a folding or lapping frame consisting of the fixed end pieces pivotally connected at their tops to a supporting-frame, slatted telescopic side sections, and means for oscillating said frame and alternately and automatically increasing or diminishing the length of said side sections as the frame is oscillated, substantially as and for the purpose described.

6. In a mechanism for the purpose stated, a lapper or folding device consisting of an oscillating frame formed of the pivoted end pieces, the slatted sides, the telescopic slatted extensions J² J⁴, the frame-supports for said lapper-frame, fixed gears held on said frame, the laterally-projected arms pivoted to the said end pieces, pitman connections between said arms and the telescopic sections J² J⁴, gear connections between said arms and the fixed gears on the frame, and means for oscillating the said lapper-frame, whereby the lateral arms will be swung and serve to move the sections J² and J⁴, as stated, and for the purpose specified.

EDMUND M. IVENS.

Witnesses:

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CHAS. BRILL.