

C. A. PHILLIPS & F. C. SHERWOOD.
BAG BUNDLING MACHINE.
APPLICATION FILED FEB. 3, 1911.

1,109,781.

Patented Sept. 8, 1914.
2 SHEETS-SHEET 1.

Fig. 1-

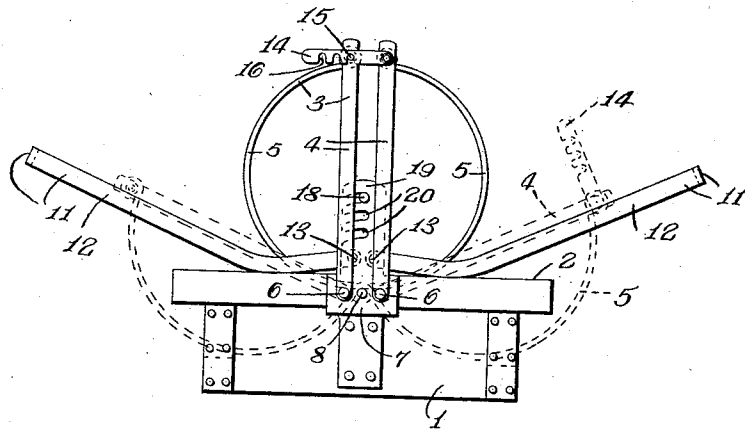
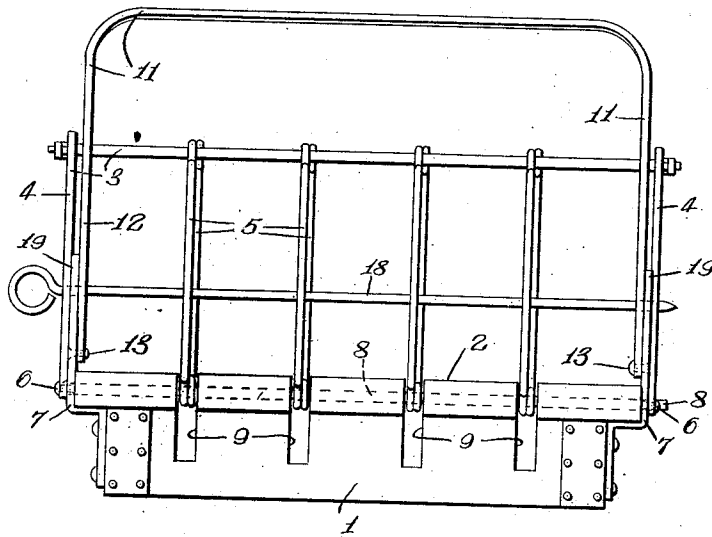


Fig. 2-



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Fig-4-

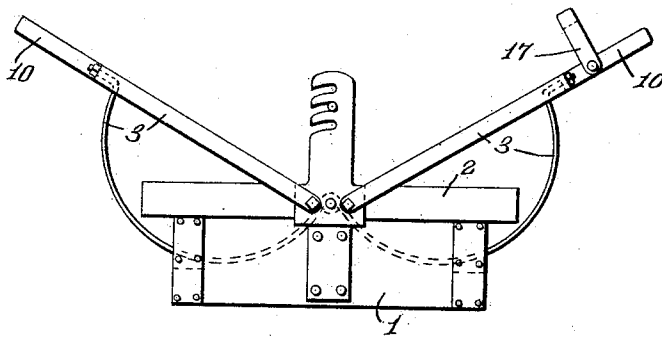
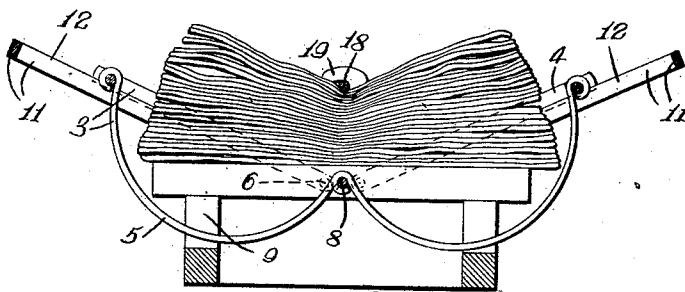


Fig-3-



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UNITED STATES PATENT OFFICE.

CHARLES A. PHILLIPS AND FRED C. SHERWOOD, OF MANLIUS, NEW YORK; SAID
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BAG-BUNDLING MACHINE.

1,109,781.

Specification of Letters Patent.

Patented Sept. 8, 1914.

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To all whom it may concern:

Be it known that we, CHARLES A. PHILLIPS and FRED C. SHERWOOD, of Manlius, in the county of Onondaga and State of New York, have invented a certain new and useful Bag-Bundling Machine, of which the following is a specification.

Our invention has for its object a particularly simple and efficient machine for bundling flat articles as bags; and it consists in the combinations and constructions hereinafter set forth and claimed.

In describing this invention reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figures 1 and 2 are, respectively, end and side elevations of one form of this machine. Fig. 3 is a sectional view illustrating the folding of the bags. Fig. 4 is an end elevation of a slightly modified form of the machine shown in Figs. 1 and 2.

This machine for bundling flat articles comprises, generally, opposing clamping elements for folding the side portions of such articles, and means for holding the intermediate portions thereof during the folding operation.

The clamping elements and the means for holding the intermediate portions of the articles are preferably supported on a suitable base, but obviously the base, if desired, may be dispensed with.

In the illustrated embodiment of our invention 1 is the base having a table 2 on which the articles to be bundled are placed one upon the other, as indicated in Fig. 3. 3 are the opposing clamping elements pivoted to the base and each usually comprising a frame including end bars 4 and a lengthwise bar connecting the end bars and extending parallel to the pivotal axes of the clamping elements, each clamping element also comprising parts as 5 spaced apart in a direction lengthwise of the frame and extending in a direction parallel to the end bars, said parts being secured to the lengthwise bars.

The end bars are pivoted at 6 to metallic reinforcing plates 7 fixed to the ends of the base, and the pivots 6 of one frame are preferably spaced apart from the pivots of the other frame so that the clamping elements move about different axes. However, if desired the axes of both clamping elements

may be coincident. Preferably these parts 5 are bails constructed to permit the side portions of the bags or other articles to bulge during the folding operation and as here shown these parts 5 are substantially semi-cylindrical or bow shape in form and each bail of each frame is secured at one end to the lengthwise bar of the frame and is pivoted at its other end to a rod 8 located near the pivot points of the clamping elements and extending beneath the table and secured at its ends in the plates 7, this rod being common to the bails of both clamping jaws. During the movement of the clamping elements 3, the bails 5 move in slots 9 formed in the table 2 so that the articles can be placed flat on the table prior to the folding operation.

The clamping elements 3 may, as seen in Fig. 4, be provided with handles 10 rigid therewith but as such handles are in the way when tying the bundles of bags we preferably use operating members or handles 11, as seen in Figs. 1 and 2 which are detachable from the clamping elements and are slidably engaged with the clamping elements during the clamping operation.

The handles 11 shown in Figs. 1 and 2 consists merely of frames, each of which includes end bars 12 pivoted at 13 to the plates 7 and a lengthwise bar, the end bars slidably engaging the ends of the lengthwise bars of the frames of the clamping elements 3. The clamping elements 3 are held in closed position by latches 14 carried by one of said elements at opposite ends thereof and hooking over shoulders 15 provided on the opposite ends of the other clamping element, the latch having a plurality of notches 16 for engaging such shoulders. When the handles are rigid with the clamping elements, as seen in Fig. 4, the latch, as the latch 17, is carried by one of the handles 10.

The means for holding the intermediate portions of the articles or bags during the closing movement of the clamping elements 3 as here shown preferably comprises a rod 18 arranged above the table 2 and means for holding the rod different distances above the table, said means consisting of standards 19 projecting upwardly from the plates 7 and each having a vertical series of notches 20 for receiving the rod 18.

Obviously the rod holds the intermediate portions of the bags during the closing op-

eration of the jaws and when the jaws are closed and the bags have been tied up, the rod can be removed by an endwise movement.

5 This machine is particularly adapted for folding bags, as cement bags, which are to be returned to the manufacturer, as a large number of bags can be folded thereby into a comparatively small bundle.

10 What we claim is:

1. A machine for bundling flat articles comprising opposing clamping elements for folding the side portions of such articles, and means for holding the intermediate portions thereof during the folding operation, the clamping elements being constructed to fold the edges of the side portions inwardly and permit the side portions to bulge between their free edges and the point they are held by said means, substantially as and for the purpose described.

2. A machine for bundling flat articles comprising opposing clamping elements for folding the side portions of such articles, and means for holding the intermediate portions of said articles during the folding operation, each clamping element comprising a frame including end bars and members spaced at intervals lengthwise of the frame and extending in a direction parallel to the end bars, said members being constructed to permit the articles to bulge on opposite sides of their intermediate portions during the folding operation, substantially as and for the purpose set forth.

3. A machine for bundling flat articles comprising opposing clamping elements for folding side portions of said articles, and means for holding the intermediate portions of such articles during the folding operation, each clamping element comprising a frame including end bars pivoted at corresponding ends and a lengthwise bar connecting the end bars, and means connected to the lengthwise bar and extending in a direction parallel to the end bars, and spaced apart at intervals lengthwise of the frame, the last-mentioned means being constructed to permit the side portions of the articles to bulge during the folding operation, substantially as and for the purpose described.

4. A machine for bundling flat articles comprising opposing clamping elements for folding the side portions of such articles, and means for holding the intermediate portions of said articles during the folding operation, each clamping member comprising a frame including end bars and bails extending in a direction parallel to the end bars and spaced apart at intervals lengthwise of the frame, substantially as and for the purpose specified.

5. A machine for bundling flat articles comprising opposing clamping elements for folding side portions of the articles, and

means for holding the intermediate portions of said articles during the folding operation, each clamping element comprising a frame including end bars pivoted at corresponding ends and a lengthwise bar connecting the end bars and bails extending in a direction parallel to the end bars and spaced apart at intervals lengthwise of the frame and connected at corresponding ends to the lengthwise bar and being pivoted at their opposite ends near the pivotal axis of the frame, substantially as and for the purpose set forth.

6. A machine for bundling flat articles comprising a base, opposing clamping elements for holding the side portions of said articles, and means for holding the intermediate portions of said articles during the folding operation, each clamping element comprising a frame including end bars pivoted to the base, said elements having different pivotal axes, substantially as and for the purpose set forth.

7. A machine for bundling flat articles comprising a base, clamping elements for folding the side portions of such articles, said elements being pivoted to the base; and means for holding the intermediate portions of said articles during the folding operation, each clamping element comprising a frame including end bars, and a lengthwise bar connecting the end bars and bails connected to the lengthwise bars of the frame and extending crosswise of the base, substantially as and for the purpose described.

8. A machine for bundling flat articles comprising a base, opposing clamping elements for folding side portions of said articles, and means for holding the intermediate portions of such articles during the folding operation, a rod extending lengthwise of the base, each clamping element comprising a frame including end bars pivoted at corresponding ends to the base near the ends of the rod, and a lengthwise bar extending in a direction parallel to the pivotal axis of the frame and said rod and spaced apart therefrom, and bails spaced apart at intervals lengthwise of each frame, and secured at corresponding ends to the lengthwise bars of each frame and pivoted at their opposite ends to the rod, substantially as and for the purpose specified.

9. A machine for bundling flat articles comprising a base having a table for supporting the articles, clamping elements for folding the side portions of such articles, and means for holding the intermediate portions thereof during the folding operation of the clamping elements, the clamping elements having portions movable below the table whereby the articles can be laid flat on the table preliminary to the folding thereof, substantially as and for the purpose set forth.

10. A machine for bundling flat articles comprising a base, having a table for supporting such articles, clamping elements for folding the side portions of said articles, and means for holding the intermediate portions of such articles during the folding operation, a rod extending lengthwise of the base beneath the table, each clamping element comprising a frame including end bars pivoted at corresponding ends of the base near the ends of the rod, and a lengthwise bar extending in a direction parallel to said rod and spaced apart therefrom, and bails spaced apart at intervals lengthwise of each frame and secured at corresponding ends to the lengthwise bar of each frame, and pivoted at their opposite ends to the rod, substantially as and for the purpose described.

11. A machine for bundling flat articles comprising opposing clamping elements for folding the side portions of such articles, means extending between the clamping elements and non-movable therewith for engaging the intermediate portions of such articles and holding the intermediate portions during the folding operation, and the clamping members being constructed to permit the side portions on opposite sides of said means to bulge during the folding operation and bring the margins of such opposite side portions together, substantially as and for the purpose described.

12. A machine for bundling flat articles comprising a base, clamping elements for folding the side portions of such articles, said elements being pivoted to the base, means for holding the intermediate portions of such articles during the folding operation, and operating members for the

clamping elements, said members being pivoted to the base and slidably engaging the clamping elements, and means for holding the clamping elements in closed position, substantially as and for the purpose described.

13. A machine for bundling flat articles comprising a base, opposing clamping elements for folding the side portions of said articles, said elements being pivoted to the base, and means for holding the intermediate portions of said articles during the folding operation, each clamping element comprising a frame including end bars pivoted to the base, and a lengthwise bar extending in a direction parallel to and spaced apart from the pivotal axis of said frame, and the clamping elements including bails spaced apart at intervals between the end bars and secured to the lengthwise bar and operating means for the clamping elements comprising a frame including end bars pivoted at corresponding ends to the base near the pivotal axes of the corresponding clamping element and a lengthwise bar connecting the last-mentioned end bars, the operating means slidably engaging the frames of the clamping elements, substantially as and for the purpose specified.

In testimony whereof, we have hereunto signed our names in the presence of two attesting witnesses, at Manlius, in the county of Onondaga, in the State of New York, this 18th day of January, 1911.

CHARLES A. PHILLIPS.
FRED C. SHERWOOD.

Witnesses:

CHAS. E. COLE,
W. J. PHILLIPS.