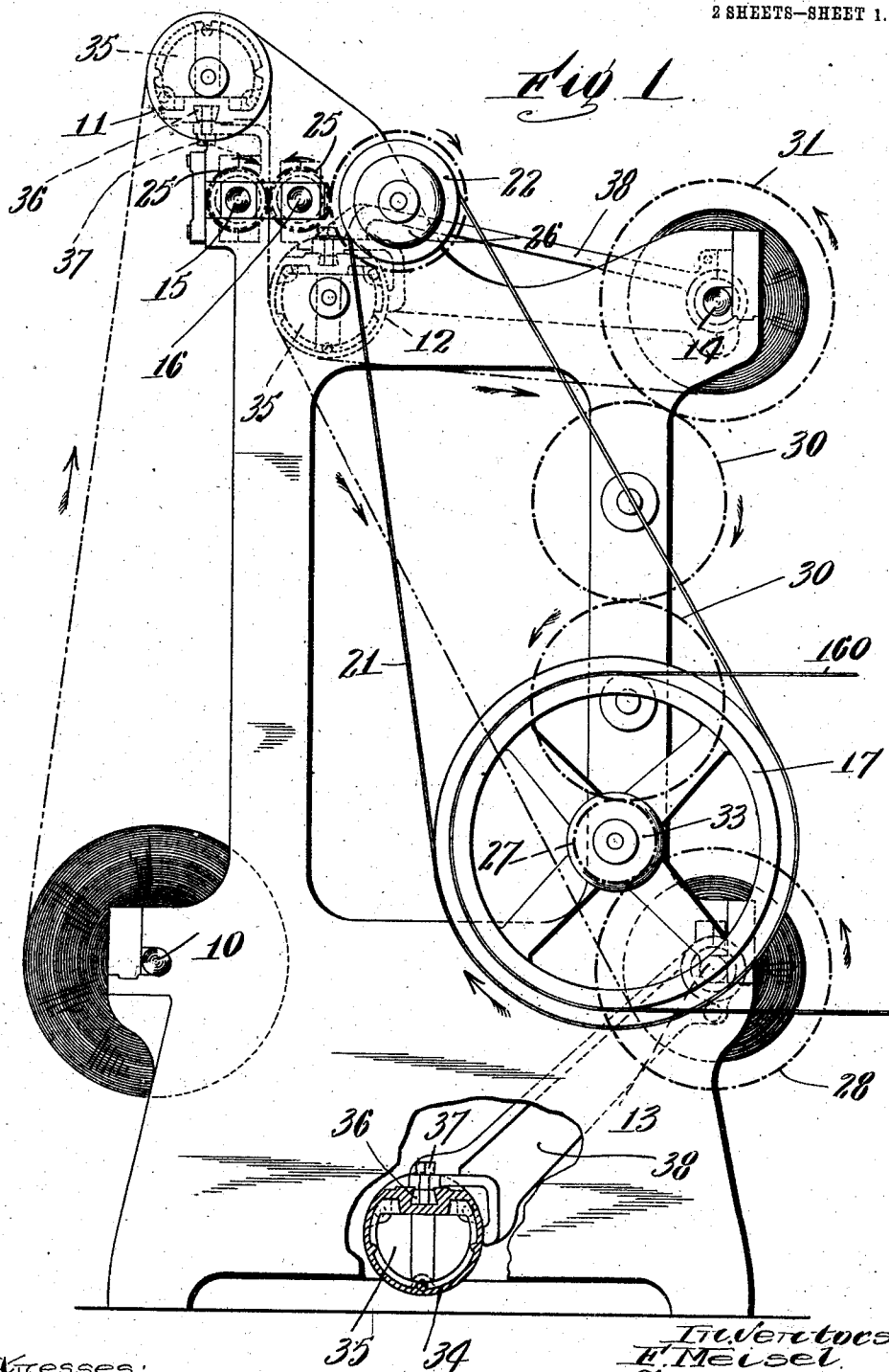


No. 851,017.

PATENTED APR. 23, 1907.

F. & C. A. MEISEL.
SLITTING AND REWINDING MECHANISM.
APPLICATION FILED JUNE 23, 1906.

2 SHEETS—SHEET 1.



Witnesses:

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M. E. Regan

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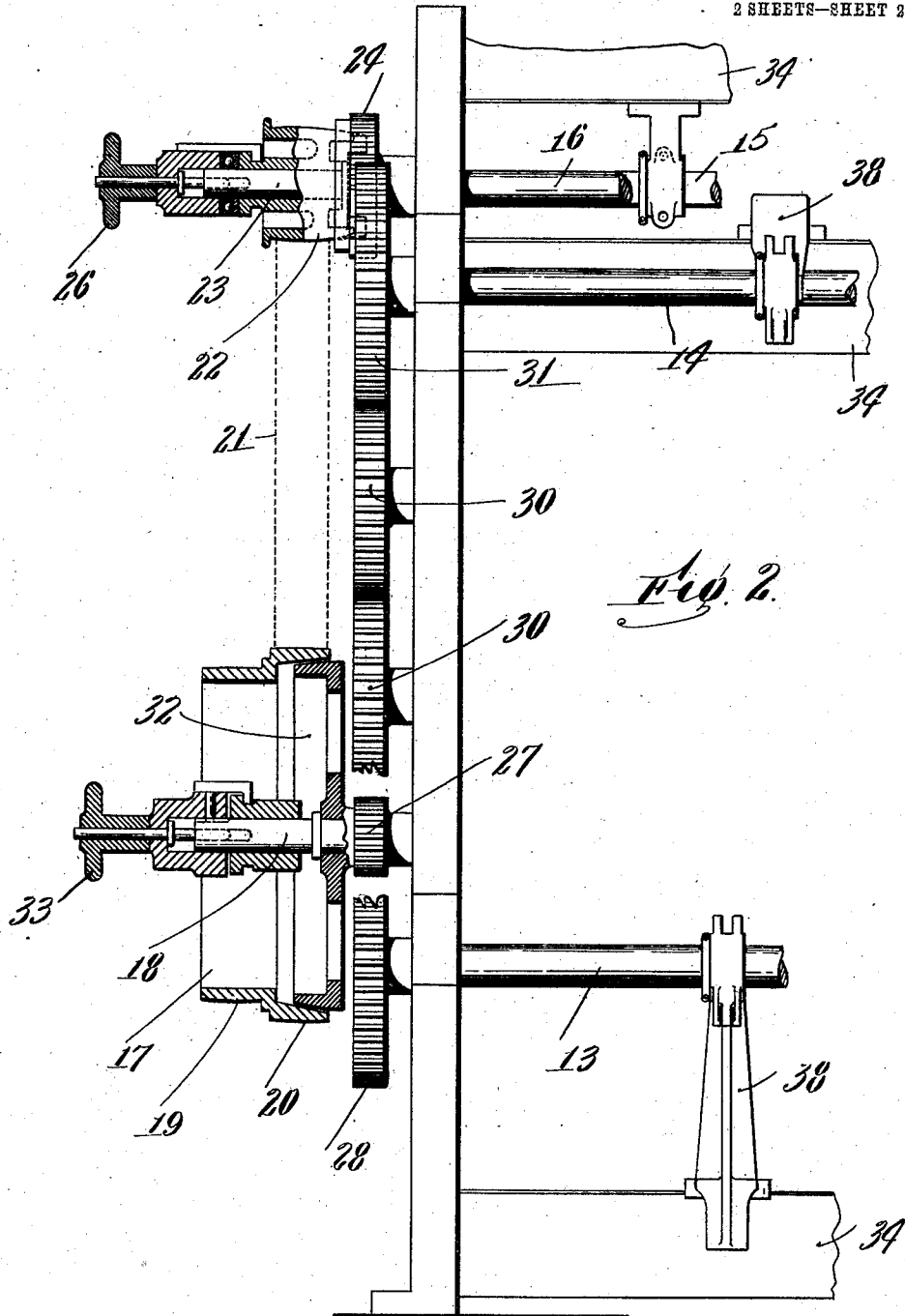
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UNITED STATES PATENT OFFICE.

FRANCIS MEISEL AND CHARLES A. MEISEL, OF BOSTON, MASSACHUSETTS,
ASSIGNORS TO MEISEL PRESS & MANUFACTURING COMPANY, OF BOSTON,
MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

SLITTING AND REWINDING MECHANISM.

No. 851,017.

Specification of Letters Patent.

Patented April 23, 1907.

Application filed June 23, 1906. Serial No. 323,041.

To all whom it may concern:

Be it known that we, FRANCIS MEISEL and CHARLES A. MEISEL, citizens of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Slitting and Rewinding Mechanism, of which the following is a specification.

Our invention relates to a slitting and rewinding machine for paper, cardboard, and sheet material of similar kinds.

The principal objects of the invention are to provide means whereby the trimmings and particles formed during the slitting operation are dropped away from the sheet material and kept out of the path thereof, so as to prevent the trimmings from interfering in any way with the web; to rewind the slitted material; also, to provide means whereby the cutter-shafts can be kept running when the rewinding mechanism is at rest, resulting in a great saving in time in entering material or starting a new roll, and when the web breaks, and, furthermore, to provide for operating the rewinding-shafts when the cutter-shafts are not in operation.

Further objects and advantages of the invention will appear below.

Reference is to be had to the accompanying drawings, which constitute a part of this specification, in which—

Figure 1 is a side elevation of a slitting and rewinding machine, showing one form in which our improvement may be embodied; and Fig. 2 is an elevation of the same, certain parts appearing in section.

Paper or other sheet material on the roller 10 is carried over a guide 11 and dropped vertically therefrom to a guide 12. It is taken from the latter to shafts 13 and 14, which are out of alinement with the paper located between the guides 11 and 12. We locate the delivery side of the guide 11 directly over the receiving side of the guide 12 to provide a vertical drop. Between these guides is located a slitting device, which consists of a pair of shafts 15 and 16, having circular slitting-knives thereon. The cutters are preferably clamped on the shafts, which is an improvement upon the old method of holding them with set-screws.

Power is applied to the machine through a belt 160, operating on a pulley 17, rotatably

mounted on a shaft 18. This pulley has two faces 19 and 20, the former receiving the belt 160 and the latter receiving a belt 21, which passes over a pulley 22 on a shaft 23. Connected with the pulley 22 by means of a clutch is a gear 24, adapted to operate gears 25, mounted on the shafts 15 and 16 and meshing with each other. Mounted at the end of the shaft 23 is a handle 26 for operating the clutch and connecting and disconnecting the gearing. On the shaft 18 is located a gear or pinion 27, which meshes with a gear 28, operating the shaft 13 for winding up part of the material cut by the slitting device. Also meshing with the gear 27 is a train of gears 30, meshing with the gear 31, connected with the shaft 14. The gear 27 is mounted on a clutch member 32, which is loose on the shaft 18. This clutch member is operated by a handle 33, so that the gear or pinion 27 can be thrown out of operative connection with the driving-pulley 17.

The rewinding and slitting shafts are preferably provided with adjustable center bearings in addition to their end bearings. One of these we have shown as having a hollow machined guide 34, bolted to the frame and mounted on stationary lugs 35 at the sides of the frame. The guide 34 has a longitudinal dovetail slot 36, in which is mounted a nut 37, fastened by a bolt. This bolt holds a bearing-frame 38, and by loosening the bolt the frame can be adjusted longitudinally. The frame 38 carries a bearing for the shaft 13. The shafts 14, 15, and 16 are supported in the same way from the guides 11 and 12, which are constructed like the guide 34. These additional bearings can be adjusted to any desired position, but are usually located as near the middle of the machine as possible. They are of course adjusted to allow the slitting-cutters to be placed in any desired position on the shafts and the strips of material to be wound on the rewinding-shafts in proper position.

The operation of the device is very simple. As stated above, the paper or other sheet material on the roller 10 is passed over the guides 11 and 12, being slit between them, and the slit portions of material are taken alternately to the shafts 13 and 14. The several sheets are thus separated from each other and the trimmings at all times dropped

down vertically from the slitting-cutters out of the way of both sets of sheets taken from the machine. Furthermore, the cutter-shafts can be kept running when the rewinding-shafts are at rest, which results in a great saving of time in entering the web, starting a new roll, or in case of breakage of the web. Furthermore, they can be stopped by disconnecting the pulley 22 from the gear which operates the slitting device.

This arrangement for driving the cutter-shafts dispenses with the customary overhead counter-shaft, and the machine can be driven from the main lines. The rewinding mechanism may also be disconnected from the driving-pulley, as has been stated, without interfering with the operation of the slitting-cutters.

While we have illustrated and described a particular form in which our invention may be embodied, it is to be understood that the same is not to be limited to this particular construction, as many changes can be made by persons skilled in the art without departing from the scope of our invention as expressed in the claims.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a slitting and rewinding machine, the combination of a pair of guides, the delivery side of one and the receiving side of the other being in the same vertical plane, whereby the material to be slit will pass downward from one to the other, a slitting device located between said guides, and means for withdrawing the slit sheets in a path at an angle to the plane of the material passing from one guide to the other, whereby the trimmings will fall substantially in the plane of the material between said guides and out of the path of the slit sheets.

2. In a slitting and rewinding machine, the combination of slitting-cutters, a rewinding-shaft, means for driving said shaft and said slitting-cutters, means for throwing the slitting-cutters out of operative connection with the driving means, and independent means for throwing the rewinding-shaft out of operative connection with the driving means, whereby the slitting-cutters and rewinding-shaft may be operated independently of each other from the same source of power.

3. In a slitting and rewinding machine, the combination of a slitting device, a plurality of rewinding-shafts, a pinion, means connected with said pinion for driving said rewinding-shaft, a driving-pulley loosely connected with said pinion, means for connecting the driving-pulley with the pinion, an additional pulley in operative connection with the driving-pulley, and detachable means connected with said additional pulley for driving the slitting device.

4. In a slitting and rewinding machine, the combination of a slitting device, a rewinding-shaft, a rotary power-transmitting member, a shaft on which said member is loosely mounted, a driving-pulley loosely mounted on the last-named shaft, means for connecting the driving-pulley with said member, an additional rotary member in operative connection with the driving-pulley, and detachable means connected with the additional rotary member for driving the slitting device.

5. The combination of a pair of shafts having circular slitting-knives thereon, gearing for driving said shafts, a plurality of rewinding-shafts, a pinion, means connected with said pinion for driving said rewinding-shafts, a shaft on which said pinion is loosely mounted, a driving-pulley loosely mounted on said last-named shaft, means for connecting said driving-pulley with the pinion, an additional pulley in operative connection with the driving-pulley, and detachable means connected with said additional pulley for driving the train of gearing connected with the slitting-cutters.

6. In a slitting and rewinding machine, the combination of a pair of guides, a slitting device located between the guides, means for withdrawing the slit sheets in a path at an angle to that in which the trimmings fall from the slitting device, said means comprising a rewinding-shaft and mechanism for driving said shaft, said driving mechanism being connected with the slitting device for operating it, and an adjustable center bearing for said rewinding-shaft.

7. In a slitting and rewinding machine, the combination of a slitting device, a rewinding-shaft and longitudinally-adjustable center bearings for the rewinding-shaft and slitting device.

8. In a slitting and rewinding machine, the combination of a slitting device, a rewinding-shaft and longitudinally-adjustable center bearings for the rewinding-shaft and slitting device, said bearings comprising a guide having a longitudinal slot, a frame supporting the bearing proper, and a nut for securing the frame at any desired point along said slot.

9. A slitting and rewinding machine comprising a shaft, and a longitudinally-adjustable bearing for said shaft comprising a guide having a longitudinal slot, a frame supporting the bearing proper, and means for securing the frame at any desired point along said shaft.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

FRANCIS MEISEL.
CHARLES A. MEISEL.

Witnesses:

FRED J. KELLER,
JAMES D. HENDERSON.