(No Model.) 2 Sheets—Sheet 1.

F. HIRSCH.

BAG PUNCHING MACHINE.

No. 381,696. Patented Apr. 24, 1888.

Fig. 1.

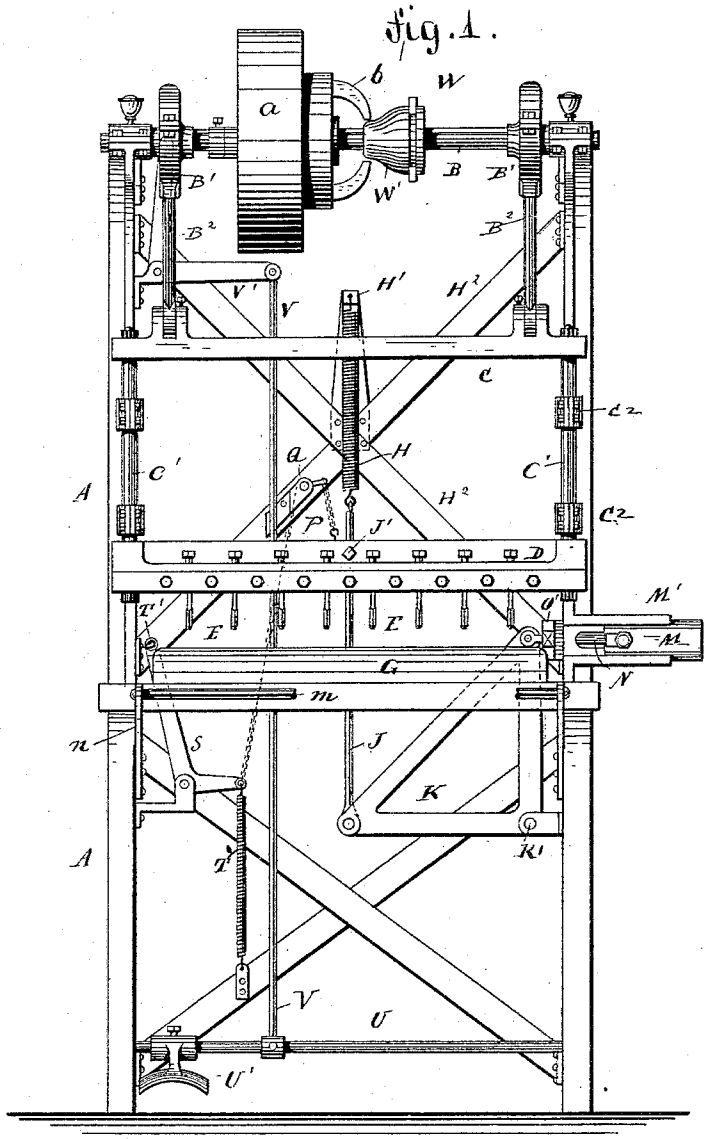
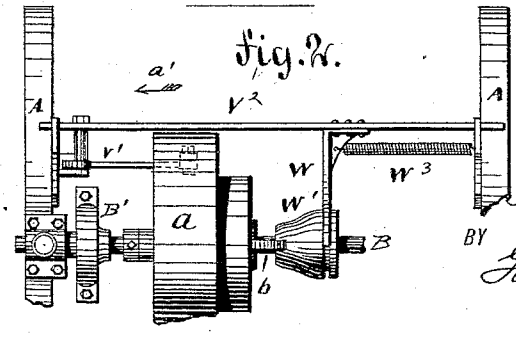


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

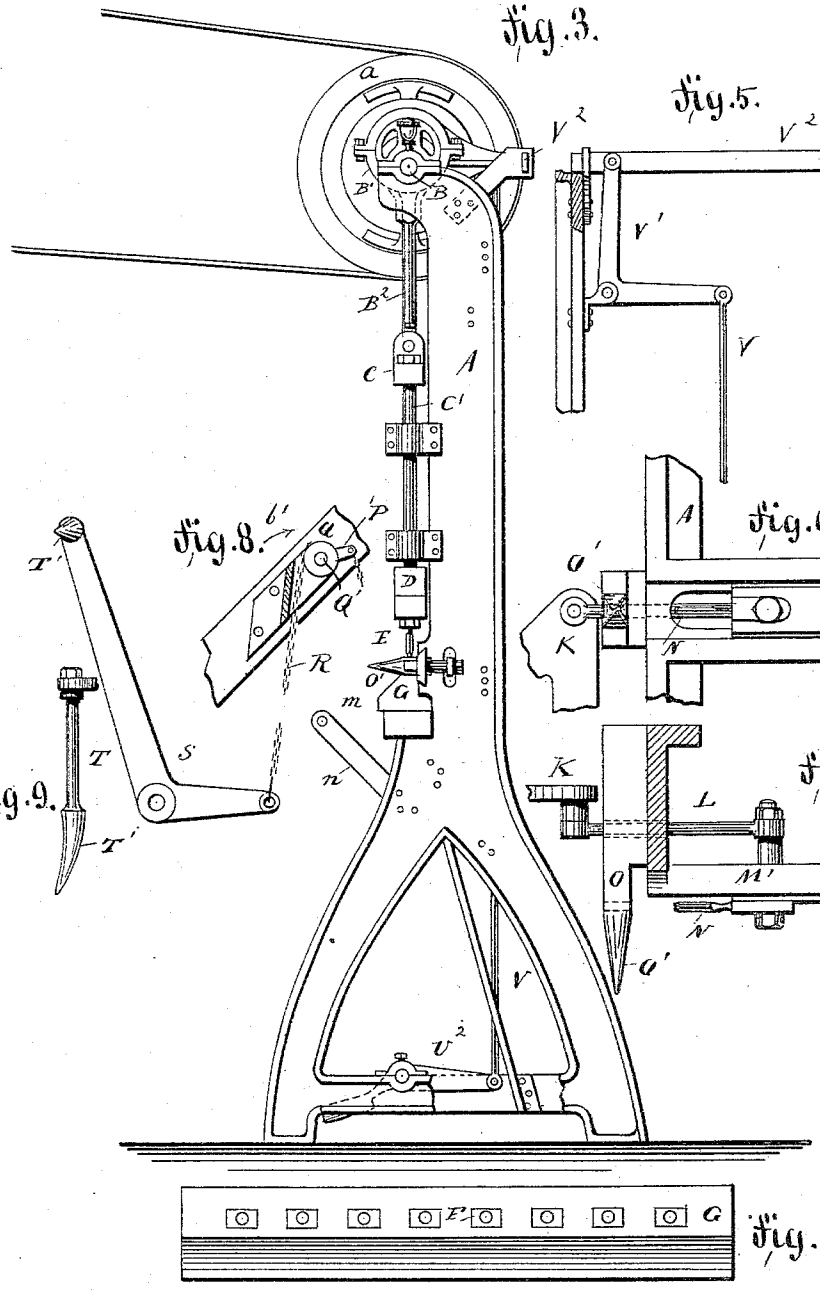


Fig. 5.

Fig. 8.

Fig. 6.

Fig. 9.

Fig. 7.

Fig. 4.

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UNITED STATES PATENT OFFICE.

FEODOR HIRSCH, OF NEW YORK, N. Y., ASSIGNOR TO LEWIS T. SAMUEL, OF SAME PLACE.

BAG-PUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 381,696, dated April 24, 1888.

Application filed December 29, 1886. Serial No. 222,933. (No model.)

To all whom it may concern:

Be it known that I, FEODOR HIRSCH, of the city of New York, a citizen of the United States, have invented certain new and useful Improvements in Sack or Bag Punching Machines, of which the following is a specification.

The object of my invention is to provide a new and improved machine for punching holes into bags or sacks—such as mail-bags—which holes are finished in the same manner as button-holes, or by means of metal eyelets.

The invention consists of the construction and combination of parts and details, as will be fully described and set forth hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of my improved machine for punching holes in sacks or bags, parts being broken out. Fig. 2 is a top view of the same, parts being broken out. Fig. 3 is a side view of the machine, parts being broken out. Fig. 4 is a plan view of the supporting-plate for the bags. Fig. 5 is a detail elevation of a device for shifting the friction-clutch, parts being broken out and others being in section. Fig. 6 is a detail face view of the laterally-moving punch. Fig. 7 is a plan view of the same, parts being in section. Fig. 8 is an enlarged detail face view of the mechanism for stretching the bag. Fig. 9 is an enlarged detail top view of a part of the same.

Similar letters of reference indicate corresponding parts.

The uprights A A of the frame are united by suitable cross-pieces, and in the upper ends of said uprights the shaft B is journaled, which carries the eccentric-disks B′, surrounded by rings connected by connecting-rods B^2 with a cross-piece, C, which is connected by vertical rods C′ with a second cross-piece, D, the said rods C′ being guided in fixed collars C^2 on the uprights A. A series of punches, E, are held on the cross-piece D and project from the bottom edge of the same, their lower ends being above a series of blocks, F, of wood, rubber, or other suitable material, held in a transverse bar or plate, G, secured at its ends on the uprights A. A spring, H, is fastened to the bar H′, projecting upwardly from diagonal bars H^2, fastened to and connected with the uprights A, which spring H is also fastened to the upper end of a rod, J, connected by a bolt, J′, or other device, with the cross-piece D, the lower end of said rod or bar J being pivoted to one end of an angle-lever, K, pivoted at K′, and having a rod, L, pivoted to its other end, which rod is connected with a pin projecting from a horizontal slide, M, mounted to slide in horizontal guides M′ of one of the uprights A. A punch, N, is secured to and projects from the inner end of the slide M. An arm, O, having a tapered end, O′, projects from the standard A at the inner ends of the guides M′, against which arm the end of the punch N can be pressed. A chain, P, is secured to the cross-piece D, and has its upper end fastened to the arm P′ of a rocking hub, Q, mounted or pivoted at Q′ on one of the diagonal bars H^2, and a chain, R, is passed over the hub and fastened thereto, the lower end of which chain is fastened to the lower end of an angle-lever, S, which is pivoted to a bracket on that support A opposite the one provided with the arm O. From the upper end of the angle-lever S a pin, T, projects, provided with a tapered and curved end, T′. A spring, T^2, is fastened on the lower arm of the angle-lever S and to a suitable piece of the frame. In the base of the frame a rocking shaft, U, is mounted, which is provided with a foot-lever, U′, and an arm, U^2, connected by a rod, V, with one end of an angle-lever, V′, pivoted to the inner side of one of the standards A, near the upper end, the other end of said angle-lever being connected by a pin with a horizontal sliding bar, V^2, suitably guided in the standards A, which bar V^2 is provided with an arm, W, having a forked end passed into the groove of a conical drum, W′, mounted to slide on the shaft B. A friction belt-pulley, *a*, is loosely mounted on the shaft B, and is provided with two arms, *b*, resting against the conical block W′. A spring, W^3, is connected with one of the frames and the arm W of the sliding bar V^2, and draws said arm in the direction from the friction-pulley.

The operation is as follows: The bag to be punched is placed on the bag-support G in such a manner that the tapered prongs T′ O′ pass into the mouth of the bag. The foot-lever U′ is pressed downward, whereby the bar

V² is moved in the direction of the arrow *a'*, Fig. 2, and the cone W' pressed against the arms *b*, whereby the friction-pulley *a* is locked on the shaft B, which shaft is revolved, whereby the cross-bars C and D are moved downward and the punches E forced through the fabric or other material of which the bag is made. The foot-lever U' is then released, and the punches are raised by the action of the spring H. At the same time that the bars C D are pressed downward the chain P revolves the hub Q in the direction of the arrow *b'*, Fig. 8, whereby the lower end of the angle-lever S is moved upward and the upper end of the same is moved outward—that is, in a direction from the center of the machine—whereby the bag resting on the support G is stretched. At the same time the rod J is moved downward, whereby the slide M and the rod M' are moved in the direction of the arrow *d'*, Fig. 7, and the punch N is forced through that part of the bag resting on the outside of the arm O, whereby a hole is punched into the side edge of the bag.

Any number of punches E may be secured in the cross-bar D, and in place of the punches suitable dies may be used for fastening eyelets. A rod, *m*, is preferably held by arms *n* in front of the plate G, to support the front part of the bag during the time the same is being punched.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for punching bags or sacks, the combination, with a frame, of a vertically-movable punch-holder in the same, and laterally-movable bag-stretching levers, and mechanism, substantially as described, for operating said bag-stretching levers from the vertically-movable punch-holder, substantially as shown and described.

2. A machine for punching bags or sacks, constructed with a vertically-movable punch-holder, a laterally-movable punch-holder operated with the vertically-movable punch-holder, and a bag-stretching mechanism operated by the vertically-movable punch-holder, substantially as shown and described.

3. In a machine for punching bags or sacks, the combination, with the vertically-movable frame, of punches held in the same, a bag-support below the punch-holder, an angle-lever operated from the vertically-movable frame, a laterally-sliding piece connected with one end of the angle-lever, and a punch held on said laterally-sliding piece, substantially as shown and described.

4. In a machine for punching holes in bags or sacks, the combination, with a vertically-movable frame, of punches held on the same, a pivoted angle-lever connected by a rod with the vertically-movable frame, a laterally-movable slide connected with the angle-lever, a punch on said slide, and an arm having a tapered end projecting from the frame a short distance from said laterally-movable slide, substantially as shown and described.

5. In a machine for punching bags or sacks, the combination, with a vertically-movable frame, of punches held in the same, a bag-support below the punches, and a fixed tapering arm at one end of the bag-support, and a laterally-movable tapered arm at the other end of the support, substantially as shown and described.

6. In a machine for punching bags or sacks, the combination, with the vertically-movable frame, of punches held on the same, a bag-support below the punches, a fixed tapered arm at one end of the bag-support, a laterally-movable tapered arm at the opposite end of the bag-support, a pivoted angle-lever on one end of which the movable tapered arm is fastened, a rocking hub, a chain connecting the angle-lever with the rocking hub, and a chain connecting the rocking hub with the vertically-movable punch holder or frame, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FEODOR HIRSCH.

Witnesses:

LOUIS C. RAEGENER,

SIDNEY MANN.