June 17, 1930. W. W. SPIERS 1,763,869

MACHINE FOR PUNCHING HOLES IN DOCUMENTS AND THE LIKE

Filed Oct. 21, 1927

Fig. 1.

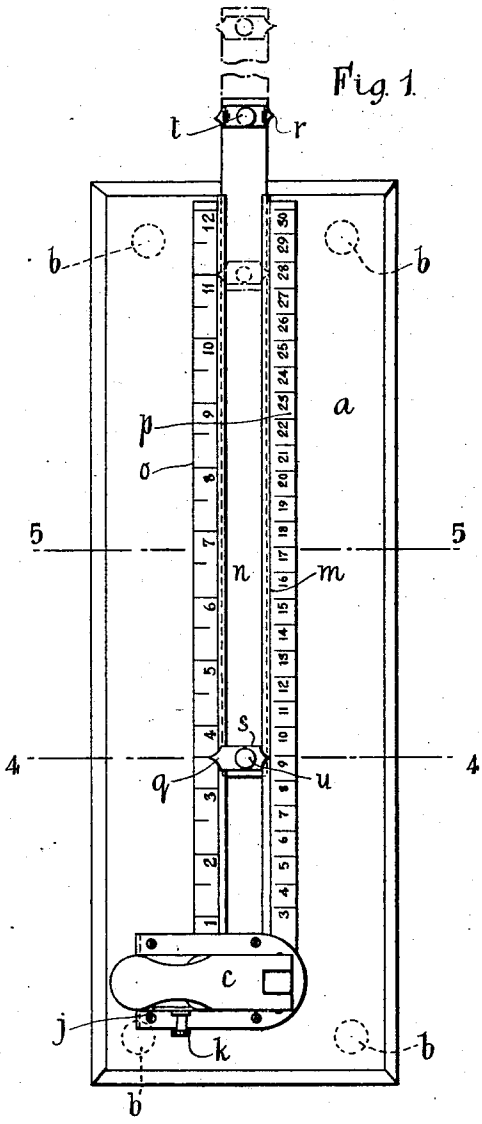


Fig. 4.

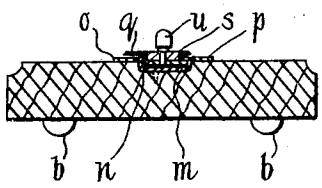


Fig. 5.

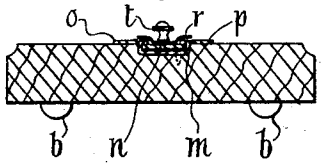


Fig. 2.

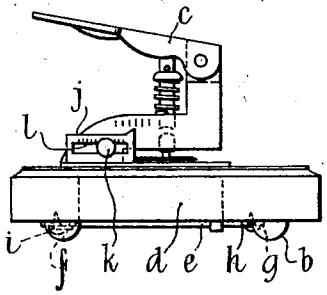
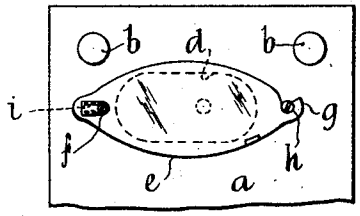


Fig. 3.



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UNITED STATES PATENT OFFICE

WILLIAM WALLACE SPIERS, OF LONDON, ENGLAND

MACHINE FOR PUNCHING HOLES IN DOCUMENTS AND THE LIKE

Application filed October 21, 1927, Serial No. 227,752, and in Great Britain December 18, 1926.

My invention relates to machines for punching holes in documents and the like, and has for its object to provide a machine whereby a plurality of holes may be punched by a single punch at any predetermined distances apart relatively to each other, and to the margins of the article under operation.

To this end, a machine embodying the invention is characterized by the combination of a punch, a measuring device including a linear scale or rule, and an anchoring appliance or appliances adjustably or non-adjustably associated with the device, the arrangement being such that the method of operation consists in adjusting the document or the like to determine the position of the desired hole, punching the hole, re-adjusting the document or the like, and utilizing the said hole as an anchoring expedient for punching another hole.

By way of example, I will now describe my invention with reference to the accompanying drawings which illustrate a construction of machine particularly adapted for punching two holes in sheets typifiable by stock exchange lists and newspapers to be assembled on a file of the kind forming the subject matter of my copending United States application for patent Serial No. 227,088 filed 19th October, 1927, for a binder file.

In these drawings:

Fig. 1 is a plan;

Fig. 2 is an end elevation;

Fig. 3 is a fragmentary inverted plan;

Fig. 4 is a transverse section on the line 4—4 in Fig. 1; and

Fig. 5 is a transverse section on the line 5—5 in the same figure.

The same letters of reference are used throughout to designate the same parts.

As represented, I employ a rectangular base *a* of wood or any other suitable material which, appropriately, is provided in the region of each corner with an anti-scratch foot *b* of rubber or the like. At one end of, and on the top of, the base *a* I fix a punch *c* of any known or appropriate kind.

The base *a* below the punch *c* is cut-away at *d* as shown in Figs. 2 and 3 to form a receptacle in conjunction with a cover *e* for the punchings. The cover *e* comprises a plate which at one end is pivoted at *f* to the base *a*, while the other end is formed with a hook *g* for engaging and disengaging a pin *h* secured to the base *a*. Suitably, the pivotal arrangement *f* comprises a spring *i* adapted to cause the hook *g* to engage the pin *h* with a snap action and thus ensure maintenance of closure and absence of chattering.

At the outer cheek of the punch *c* I provide an adjustable gauge *j* for determining the distance of the hole to be punched from the edge of the sheet. This gauge *j* may be of any known or appropriate form, such as that illustrated which comprises a headed pin *k* screwed in the cheek of the punch *c*, and a slotted plate *l* mounted on the pin *k* and adapted to slide between the cheek of the punch *c* and the head of the pin *k*. The gauge *j* is suitably calibrated.

Between the inner cheek of the punch *c* and the distant end of the base *a* I secure on the top of, and centrally of, the base *a* a metal channel-section member *m* destined to constitute a guide to a metal slidable bar *n*. At the sides of the member *m* I secure scales *o* and *p* which are suitably calibrated in measures of length, the scale *o* denoting the English system and the scale *p* the metric system. The width of the base of the punch *c* is utilized to form a portion of the unit of length of the scales *o* and *p*. The bar *n* is furnished with pointers *q* and *r* at the respective ends, and with them headed screw pins *s* and *t* are associated for frictionally engaging the guide *m* and thus locking the bar *n* in any position set according to the scale *o* or *p*. The head *u* of the screw pin *s* is adapted to operate as an anchor to a sheet in conjunction with a hole previously punched in the sheet as I will presently explain.

The bar *n* is adapted to be adjusted end for end in the guide member *m* for the purpose I will also presently explain.

The operation briefly is as follows:

Having adjusted the gauge *j* to meet the distance of the perforations from the edge of the sheet, the sheet is aligned with the scale *o* or *p* for determining the distance of the perforation from the top of the sheet

and with the punch c which is operated and the hole obtained. Next, the bar n is slid until the pointer q is brought into alignment with the desired part of the scale o or p agreeing with the distance the perforations are to be apart. Then, the perforation already made is placed over the head u of the screw pin s, and on operating the punch c the other perforation is made, the pin s functioning as an anchor to the sheet.

Now, supposing the perforations are at a distance apart outside the limits of the scales o and p, the bar n is withdrawn from the guide m and re-inserted in the reverse direction as depicted by the dot-and-dash lines in Fig. 1. Therefore, the length of the bar n being known, the aggregation of such length with the scale o or p provides the requisite measurement. Thus, according to the example, the bar n is ten inches long and the pointer r is set at the eleven-inch mark whereby a total adjustment of twenty one inches is given, the maximum being twenty two inches.

As will now be evident, the bar n and the scales o and p compose the aforesaid measuring device, and the head u of the screw pin s the anchoring appliance, which, in itself, is not adjustable lengthwise of the scales o and p, but its rendered adjustable by the sliding of the bar n, although it can be adjustably arranged by fixing the bar n and providing it with a series of holes in determined space relation by constituting the bar n as a rule. Obviously, too, the screw pin t may be adapted in the same way as the screw pin s.

What I claim and desire to secure by Letters Patent is:

1. A machine for punching holes in documents and the like comprising, in combination, a punch, a guide member in juxtaposition to the punch, a bar adjustable in the guide member and removable and reversible relatively thereto, a scale device in association with the guide member, the means for locking the bar in the adjusted position forming an anchor to the article under operation.

2. A machine for punching holes in documents and the like comprising, in combination, a single punch, an adjustment device for determining the position of the places of the holes to be punched, a base plate on which is disposed the punch and the adjustment device, movable means for attaching a pin to said base plate, said pin being adapted to co-act with a hole punched out to determine the position of a consecutive hole to be punched, the device carrying the pin also holding an adjustable projection for the adjustment of the distance from the punch of the end of the paper to be punched.

In testimony whereof, I affix my signature.

WILLIAM WALLACE SPIERS.