

May 13, 1952

W. D. ROBBINS

2,596,725

INK PAD

Filed July 5, 1947

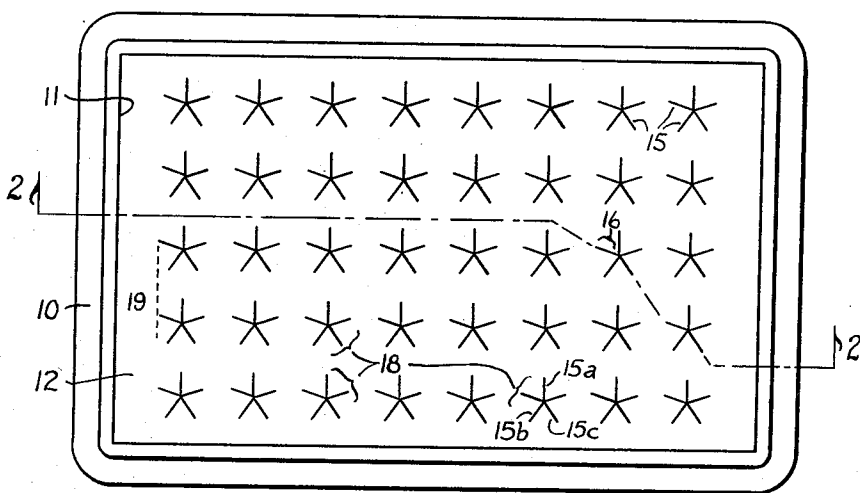


FIG. 1

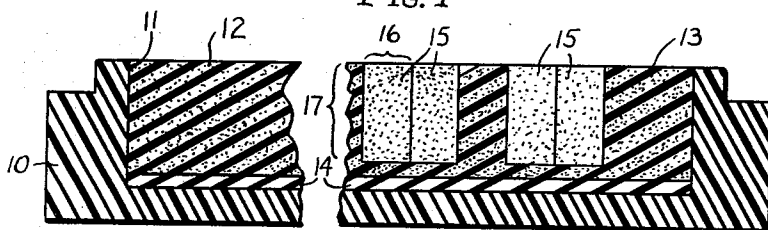


FIG. 2

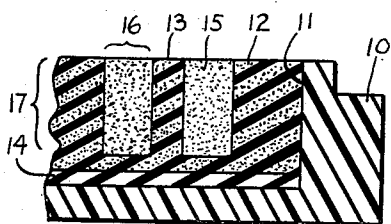


FIG. 4

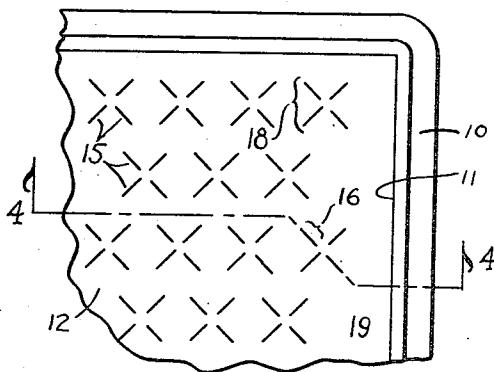


FIG. 3

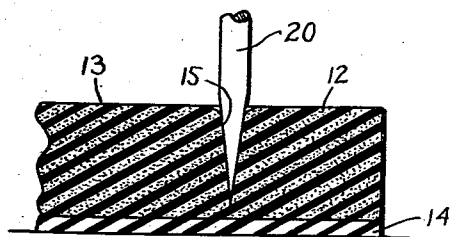


FIG. 5

INVENTOR.
WINNIE DAVID ROBBINS
BY
David R. Bair
ATTORNEY

UNITED STATES PATENT OFFICE

2,596,725

INK PAD

Winnie David Robbins, Denton, Tex., assignor to
Clarence Bentley and Ray Crawford, doing
business as Scientific Office Products, Dallas,
Tex., a partnership

Application July 5, 1947, Serial No. 759,035

1 Claim. (Cl. 15—244)

1

My invention relates to ink pads of the kind commonly used for rubber stamps, although it is not limited to such use, and has other appropriate uses.

It is an object of my invention to provide an ink pad which is economical and serviceable, and which delivers a proper quantity of ink throughout a long period of useful life.

Another object is the provision of a pad which can be quickly and thoroughly impregnated with ink, either in the process of original manufacture, or in renewal after a period of service.

A further object is the provision of an ink pad which will minimize evaporation of ink from the surface of the pad when it is not in use, and which will in consequence largely eliminate troubles from thickening of the ink and clogging of rubber stamps experienced with pads in common use.

Still another object is the provision of a pad which is adapted to manufacture by methods which will keep down losses from spoilage and rejections arising from distortion of the pad material in the manufacturing process.

With the foregoing and other objects in view, my invention consists in the improvement in inking pads set forth in the following description and shown in the accompanying drawings, in which:

Figure 1 is a plan view of a pad incorporating my invention;

Figure 2 is an enlarged sectional view of a portion of the pad, taken on the line 2—2 of Figure 1;

Figure 3 is a plan view of a portion of a pad illustrating a modified form of my invention;

Figure 4 is an enlarged sectional view of a portion of the pad of Figure 3, taken on the line 4—4; and

Figure 5 is a fragmentary sectional view showing a step in the making of another form of pad embodying the principles of my invention.

Perhaps the commonest device for inking the ordinary rubber stamp is the one having a padded portion covered with linen, muslin, or other cloth material. The shortcomings of this type are well known—it dries out, rots out, becomes hard, develops a gummy surface, gives up cloth particles to the stamp, or otherwise becomes unsuitable for use, sometimes in a disappointingly short period. Others before me have tried to obviate some of these difficulties by using sponge rubber as a pad material. Sponge rubber, however, has its own shortcomings, which to the best of my knowledge have not been satisfactorily overcome heretofore.

I have devised what I believe to be novel means by which sponge rubber or similar material may

2

be employed in an ink pad with entirely satisfactory results. In the drawings I have used the numeral 10 to designate a base which has a cavity 11 formed therein to receive a pad 12 of sponge rubber or similar porous, resilient material such as the synthetic products having rubber-like qualities. The base 10 has several functions: it holds the pad in place on the desk, its added weight reducing accidental movement of the assembly when the pad is used; it retains the excess without mess or waste in case the pad is over-inked; but perhaps most important in connection with my invention is that it confines the pad against lateral expansion when a stamp is pressed on it.

One of the disadvantages of a plain sponge rubber pad is that although the material is porous, it is difficult to impregnate fully with ink. I do not know the reason for this, but have found by cutting pads open that they are not well impregnated even after vigorous kneading for some considerable time while bathed in ink. Obviously this is a source of difficulty both in manufacture of a pad, and in subsequent renewal of the ink supply by the user. Furthermore, a new pad would not contain a full supply of ink, and would require renewal sooner than should be necessary.

Allied, doubtless, to the difficulty of inking is the fact that after a period of use a sponge rubber pad does not deliver ink readily to the inking surface when a stamp is pressed on it, even though there would seem to be enough ink in the interior of the pad. It appears that even though the material is porous, it does not permit sufficient freedom for passage of ink to and from the deeper portions of the pad.

The pad as I prefer to make it has a raw cut surface 13 placed uppermost, exposing the porous structure of the sponge. To avoid complicating the drawing, I have not endeavored to illustrate this porous structure in the plan view of Figures 1 and 3. Preferably, though not necessarily, the bottom of the pad has a solid or non-porous layer or skin surface 14 which is normally present in the material as manufactured. The advantage of this layer is that it helps to retain ink in the sponge.

Now to facilitate the inking process I cut perforations or slits 15 in the pad, substantially the full depth of the spongy portion thereof, as will be seen in the sectional views of Figures 2, 4 and 5. These slits make for much freer passage of ink through the pad, facilitate speedy and complete inking, and deliver ink readily to the surface of the pad with a minimum of pressure.

3

These advantages obtain even in a sponge pad of quite fine grain, which is desirable for uniformity of inking a stamp.

It will be understood that the slits can be arranged in the pad in a variety of configurations and still contribute the advantages described with regard to ink reception, storage and delivery, but I have found by experience a number of factors which I consider important, and which might not be readily apparent. For one thing, the length of an individual slit in a given lateral direction must not be too great; a slit which is too long tends to gape when the pressure of a stamp is applied, and may feed too much ink in certain spots. I have concluded that conditions are satisfactory when no straight portion of a slit is greater in a given lateral direction 16 than the depth 17 of the slit in the pad. The slit may actually continue beyond the dimension thus limited, but it must undergo a definite change of direction, which reduces the tendency to gape. And although I define as above the maximum length of any straight portion of a slit, I consider it preferable that no slit have a straight portion extending in any given lateral direction for a distance greater than one-half of the depth of the slit.

A second consideration is that the slits, whether curved or composed of a series of straight portions, should not be continued to form an enclosed figure, such as a circle or a square. The reason is that the sponge material and the cutting tools are each subject to variation. The effort, of course, is to maintain maximum depth of cut, in order to get full advantage of the slits, yet not cut through the bottom of the pad. If the variables mentioned result in the tool cutting through occasionally, the center of an enclosed figure will drop out, and the pad is spoiled.

A third consideration requires somewhat more explanation. An overall pattern of slit figures such as that illustrated in Figure 1 is perhaps best made by a die having a plurality of punches, one for each star or other figure 18. When the cutting operation is performed, the cutting edges of the punches contact the surface of the pad and then compress it considerably before cutting action begins. During this compression the sponge material in the lower layers tends to flow out from under each punch, until finally the cut reaches these layers. When the pressure is relieved as the punch is withdrawn, the lower layers contract laterally again under each punch. The result is that the figure cut by each punch is substantially smaller at its base than at the surface 13 of the pad. Thus with an enclosed figure, the center may be so weak at its base that it will pull out with the punch, or it may break out in use, particularly in coarse grained sponge material.

The flow of material under each punch as pressure is applied is in directions radial to the center line of the punch, so I prefer to use figures or groups of slits in which straight slit portions are arranged radially with respect to a common center line, which can be the same as the center line of the punch with which the incisions are made. Since the slits lie along the directions of flow, the figure will not be distorted by the cutting operation. Such a figure has the advantages of uniformity of pattern without the disadvantages of a closed figure.

4

The slits may be arranged around the center line but not extending to it, as in Figures 3 and 4, or, as in Figures 1 and 2, they may connect at the center. In the latter case I prefer an odd number of equally-spaced slits; with an odd number, no slits fall in alignment on opposite sides of the center of the figure, so that the change of direction previously mentioned is provided for. This is illustrated, for example, by the difference in direction between the direction of the arm 15a in the star figure 18, and either of the most nearly opposite arms 15b or 15c.

A modified form of my invention is illustrated in Figure 5, which shows an approximately conical pointed punch pressed into the pad. The cut made in the pad by such an operation is a vertical line, giving readier access of ink to the interior of the pad, though of course not as effectively as a slit of finite length in a lateral direction. However, it is practical to make a large number of such perforations or punctures, closely and uniformly spaced over the area of the pad, resulting in substantial improvement in operation over a plain pad. This type of perforation is of course a non-enclosed figure, with the advantages previously pointed out.

With regard to the general spacing of the slits or perforations or groups thereof in the pad, I consider it preferable to have close enough spacing so that no point on the surface 13 of the pad is at a distance from a perforation greater than the depth 17 of the perforations. This insures sufficient uniformity of ink delivery to the surface of the pad. The mechanical requirements of the perforating operation are such that a marginal area 19 may not fulfill this condition, but this exception is of no great importance when the pad is used.

It will be understood that some changes may be made in the construction and arrangement of the various parts of an ink pad or in the materials thereof, without departing from the true spirit and purpose of my invention, and it is my intention to cover any and all such modified forms as come within the full and proper scope of my claim.

I claim as my invention:

An inking pad comprising a body of spongy, porous, resilient material having groups of slits formed therein, said groups being composed of five slits extending radially from and communicating with a common line at substantially equiangular spacing, said slits extending downwardly into said body more than half the total thickness of said body but not through the bottom surface thereof, each slit extending laterally in a straight line for a distance not exceeding the depth of cut.

WINNIE DAVID ROBBINS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,323,487	Payne	Dec. 2, 1919
1,923,114	Partridge	Aug. 22, 1933
2,374,198	Harris	Apr. 24, 1945
2,422,814	Alexander	June 24, 1947