

(12) **UK Patent Application** (19) **GB** (11) **2 189 331** (13) **A**

(43) Application published 21 Oct 1987

(21) Application No **8620978**

(22) Date of filing **29 Aug 1986**

(30) Priority data

(31) **8602477** (32) **31 Jan 1986** (33) **GB**

(71) Applicant
Photo-Me international plc,

(Incorporated in United Kingdom),

Station Avenue, Walton-on-Thames, Surrey

(72) Inventor
James Frederick Flitton

(74) Agent and/or Address for Service
Marks & Clerk, 57-60 Lincoln's Inn Fields,
London WC2A 3LS

(51) INT CL⁴
G03B 17/26

(52) Domestic classification (Edition I)
G2X B27 B28

(56) Documents cited
GB 1462991 **GB 1361012**
GB 1454750 **WO A1 84/01040**
GB 1432831

(58) Field of search
G2X
Selected US specifications from IPC sub-class G03B

(54) **A cassette for photographic paper sheets**

(57) A cassette 10 is adapted to be loaded with a photographic paper sheet to take a picture in a photographic camera and afterwards to transfer the exposed sheet to an automatic processor 14 in full daylight without exposing the sheet itself to the daylight. The cassette 10 has a slidable shutter 32 for covering the sheet before and after exposure. It also has a feeder 40 for pushing the sheet out of the front end 26 of the cassette 10 through a slot 60 for the sheet to be taken up by pinch rollers 20, 22 in the processor 14. An adaptor device 16 is fitted in the aperture 18 of the processor 14 and has pegs 28 which enter holes 64 at the front end 26 of the cassette 10 and cause a second shutter 62 to pivot out of the way of the photographic sheet 12 for the sheet to be fed into the processor. Normally this second shutter 62 is spring-biased into a position in which it blocks light from reaching the photographic sheet 12 through the front end slot 60.

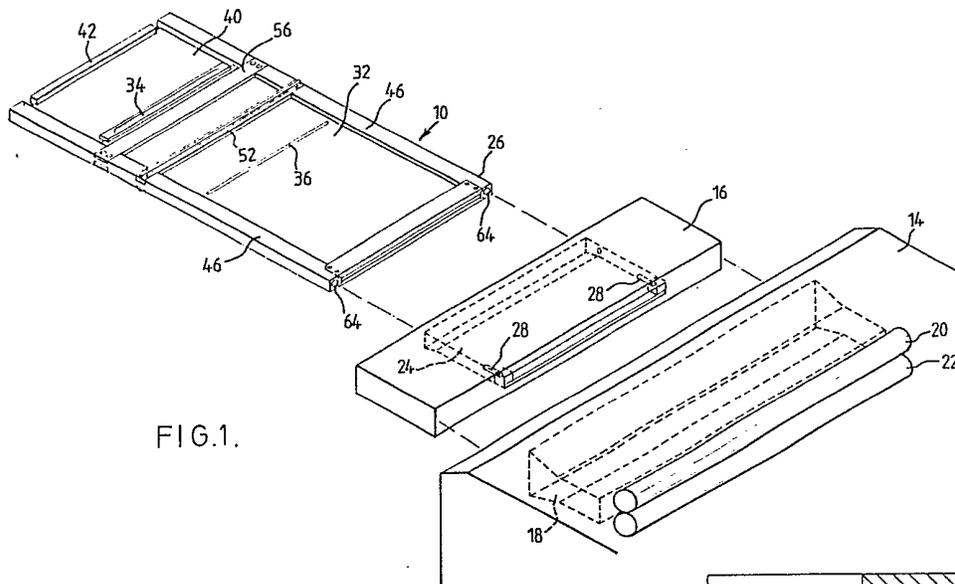


FIG. 1.

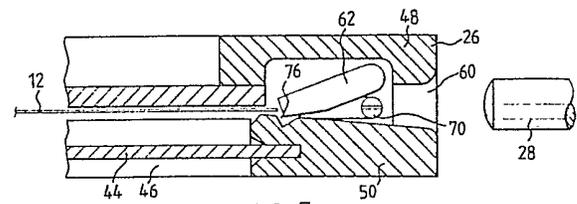


FIG. 5.

GB 2 189 331 A

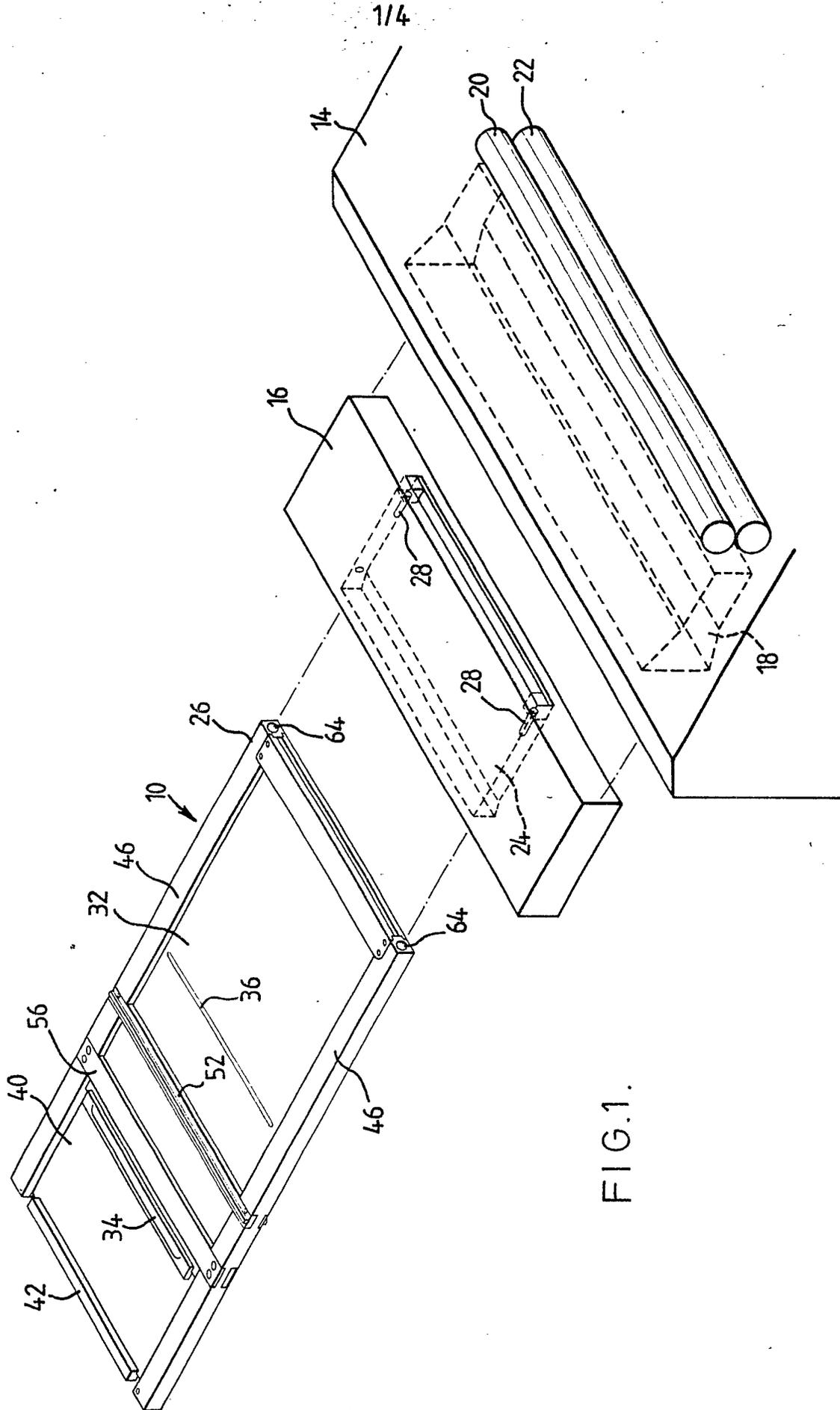


FIG.1.

2/4

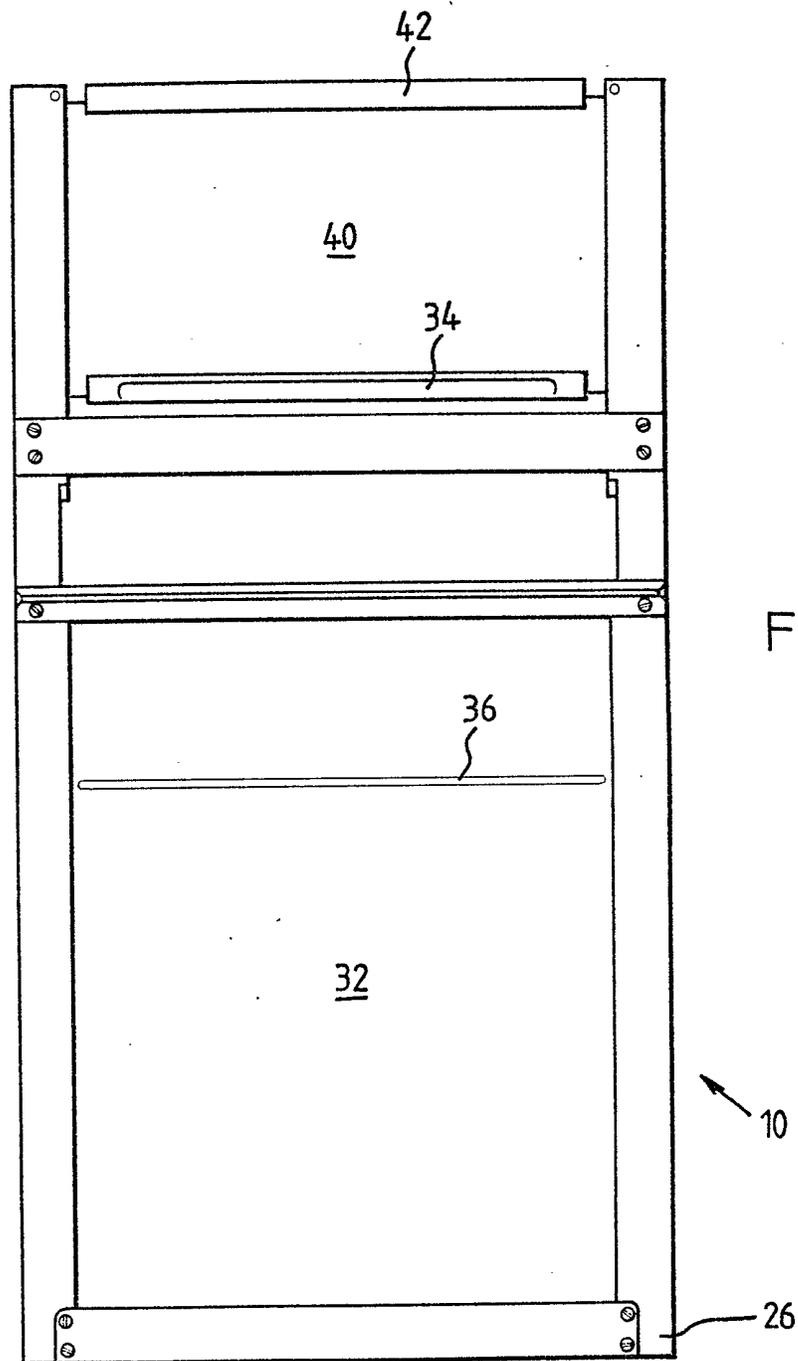


FIG.2.

3/4

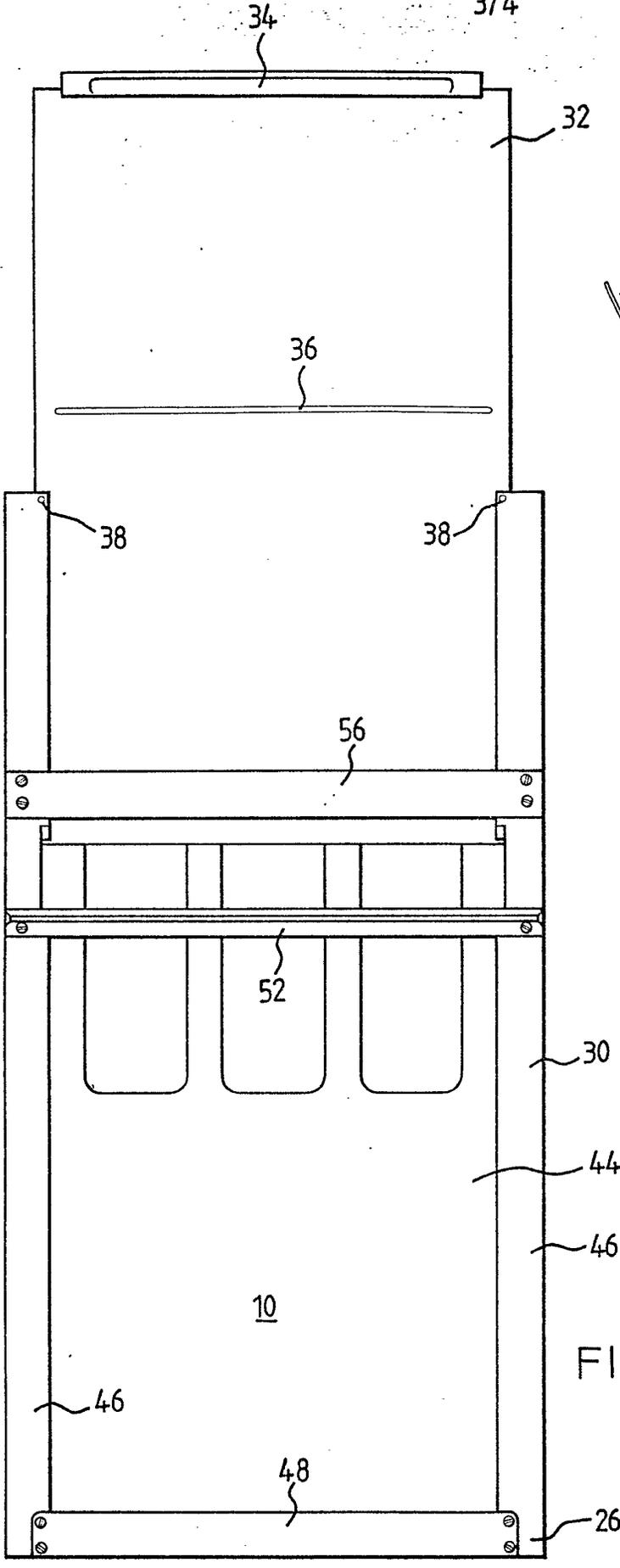


FIG. 3.

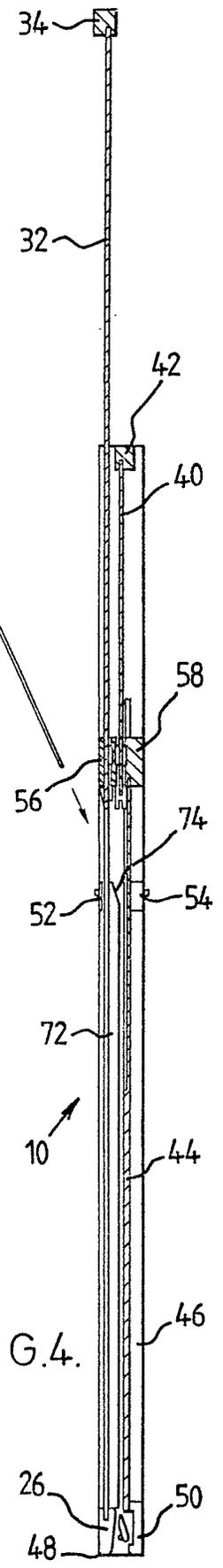


FIG. 4.

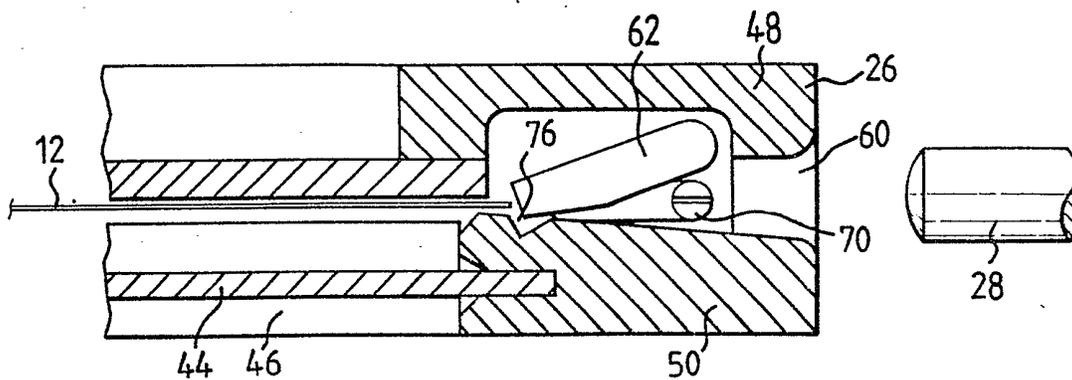


FIG. 5.

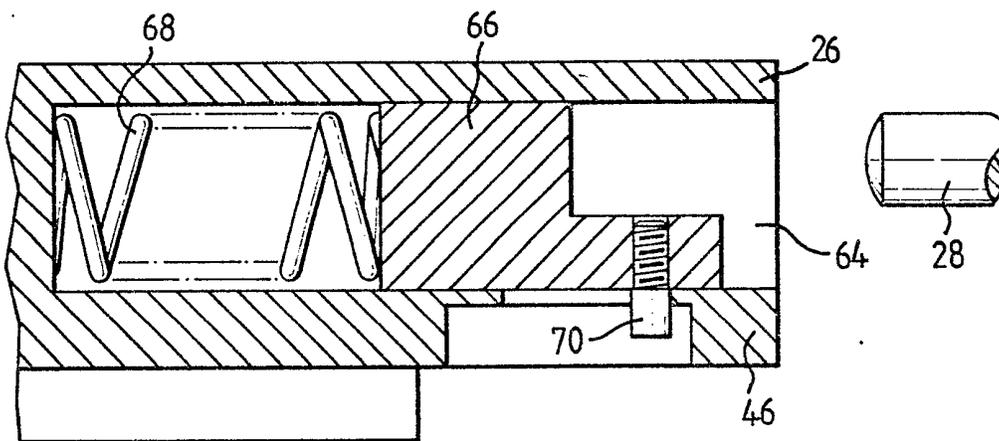


FIG. 6.

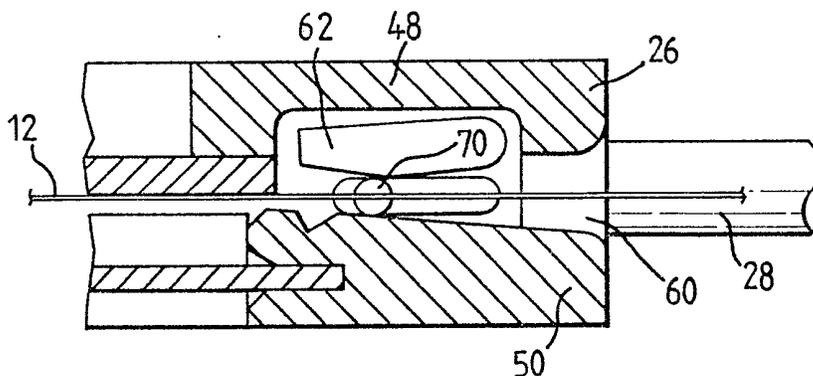


FIG. 7.

SPECIFICATION

A cassette for photographic paper sheets

5 This invention relates to a cassette for photographic paper sheets. One application of the invention is to a cassette for photographic paper sheets for use with a portrait camera system as disclosed in British patent application No. 86 02477.

10 An object of the invention is to provide a cassette which can be used to transfer an exposed photographic paper sheet from a camera to an automatic processor in full daylight without exposing the photographic paper sheet itself to daylight during the transfer.

15 According to the invention there is provided a cassette for photographic paper sheets, comprising a holder for holding a photographic paper sheet for exposure, a slidable shutter for covering the sheet before and after exposure, the shutter being movable to a non-operative position for the exposure, and a feeder for feeding the sheet after exposure at least partly out of the cassette, the cassette being adapted to be loaded into a camera for the exposure.

The invention will be described by way of example with reference to the accompanying drawings, wherein:-

30 *Figure 1* illustrates a cassette embodying the invention, an automatic photographic sheet processor and an auxiliary adaptor device;

Figure 2 is a plan view of the cassette in closed condition;

35 *Figure 3* is a plan view of the cassette in open condition;

Figure 4 is a side elevational section of the cassette showing an unexposed photographic sheet to be inserted therein;

40 *Figure 5* is an enlarged side elevational view in section of a part of the cassette broken away;

Figure 6 is a plan view, also sectioned, of the same part of the cassette; and

Figure 7 corresponds to *Figure 5* but in a different condition.

45 Referring to the drawings, a cassette 10 is shown which is adapted to take photographic paper sheets such as the illustrated sheet 12, for loading the photographic paper sheet 12 into a photographic camera (not shown) for exposure and for

50 transferring the photographic paper sheet 12 after exposure to an automatic photographic paper sheet processor 14 in full daylight, without exposing the sheet 12 itself to daylight during the transfer. As will be described in more detail hereinafter, the processor 14 is provided with an auxiliary adaptor device 16 to enable it to function properly with the cassette 10.

60 Before proceeding with a full description of the cassette 10 itself, it is mentioned that the automatic processor 14, which is only partly illustrated in *Figure 1*, is provided with tanks (not shown) containing the necessary chemicals for developing the photographic paper sheet 12 after exposure. The automatic processor 14 is manufactured with a relatively wide aperture 18 which is designed for

manual insertion (in darkness) of an exposed photographic paper sheet, to be taken up between two pinch rollers 20, 22, one being driven by means not shown and the other being an idler roller, for feeding the photographic paper sheet into the processor.

70 The auxiliary adaptor device 16 is adapted to fit into the aperture 18 and has a relatively small aperture 24 designed to receive the front end 26 of the cassette 10. The auxiliary adaptor device 16 is fitted with two longitudinally extending pegs 28 in the aperture 24, for a purpose to be described.

75 The cassette 10 itself comprises a rectangular case 30 in which a shutter 32 is slidably received for selectively covering the photographic sheet 12, as in *Figures 1* and 2, to protect the photographic sheet 12 from exposure to daylight. The shutter 32 is provided at its rear end with a handle 34 for manually sliding the shutter 32 partially out of the casing 30, as shown in *Figures 3* and 4, for the purpose of loading the photographic sheet 12 (in darkness) into the cassette before exposure and also, when the cassette 10 with the photographic sheet has been loaded into the photographic camera (not shown) for taking a photograph. The shutter 32 is marked with a line 36 which may conveniently be aligned with markings 38 on the case 30 to show the position in which the shutter 32 has sufficiently exposed the photographic sheet 12 inside the camera. *Figures 3* and 4 show the shutter 12 withdrawn beyond this position.

90 The cassette 10 also comprises a feeder member 40 which is slidably arranged in the case 30 and is provided at its rear end with a handle 42 for manually sliding the feeder member 40 in the case 30. As will be described in more detail hereinafter, the feeder member 40 is designed to feed the photographic paper sheet 12 out of the cassette 10 sufficiently for the sheet to be gripped by the rollers 20, 22.

105 As shown in *Figures 3* and 4, the cassette 10 is provided with a back plate 44 extending between side frame members 46, such that the photographic sheet 12 is sandwiched between the shutter 32 (when closed as in *Figures 1* and 2) and the back plate 44.

110 In addition to the back plate 44 and side frame members 46, the case 30 comprises upper and lower cross frame members 48, 50 which extend between, and are screwed to, the side frame members 46 at the front end 26 of the cassette. Two further pairs of upper and lower cross frame members 52, 54 and 56, 58 are screwed to, and extend between, the side frame members 46, further back along the frame 30.

115 At the front end 26 of cassette 10 there is a slot 60, between the front upper and lower cross frame members 48, 50, for feeding the photographic paper sheet 12 out of the cassette. A second shutter 62 is pivoted (by means not shown) to the side frame members 46 so that it can pivot between the position shown in *Figure 5*, in which it blocks light from reaching the photographic paper sheet 12 from the slot 60, and the position shown in *Figure 7*, in which it allows the sheet 12 to be fed through the slot 60 out of the cassette 10. For the purpose of pivoting the second shutter 62, the side frame members 46 are each provided at the front end 26 with a hole 64 to

admit the pegs 28 of the auxiliary adaptor device 16. Inside each longitudinal hole 64 is a slider 66 which is biased by a compression spring 68 towards the front end 26. A bolt 70 is screwed into a tapped hole in the slider 66 and projects inwardly of the sides of the shutter 62. Hence, when each peg 28 enters the corresponding hole 64, it pushes the corresponding slider 66 rearwardly against the spring 68, and the bolt 70 cams the shutter 62 into the position shown in Figure 7, to allow the photographic paper sheet 12 to be fed through the slot 60.

Referring to Figure 4, the side frame members 46 are each formed with a rib 72 for holding the photographic sheet 12 against the back plate 44 and having a chamfer 74 at its rear end for facilitating the insertion of the sheet 12 into the cassette.

A simple spring device, not shown, is used to spring-bias the second shutter 62 to the position shown in Figure 5, in which its rear end partly engages in a shallow slot 76 in the cross frame member 50, to exclude the light.

In use, the first shutter 32 and the feeder member 40 are both withdrawn rearwardly to the positions shown in Figures 3 and 4 and the photographic sheet 12 is introduced into the cassette as indicated in Figure 4. The shutter 12 is then closed to the position shown in Figures 1 and 2. All this is done in darkness, of course.

The cassette 10 with the sheet 12 is then inserted into the photographic camera (not shown). Then the shutter 32 is withdrawn rearwardly until the marker line 36 is aligned with the markings 38 on the case 30, to expose the photographic sheet 12 inside the camera. After the picture had been taken, the shutter 32 is then closed again to the position shown in Figures 1 and 2 and the cassette 10 is withdrawn from the camera and transferred to the automatic processor 14 fitted with the auxiliary adaptor device 16 in its aperture 18. The front end 26 of cassette 10 is introduced into the aperture 24 in device 16 as far as possible, until the pegs 28 enter the holes 64 to pivot the second shutter 62 to the position shown in Figure 7. The feeder member 40 is then pushed forwardly by means of its handle 42 to feed the photographic sheet 12 out of the cassette through the slot 60 until the sheet 12 is taken up by the pinch rollers 20, 22 and automatically fed into the automatic processor 14.

CLAIMS

1. A cassette for photographic paper sheets, comprising a holder for holding a photographic paper sheet for exposure, a slidable shutter for covering the sheet before and after exposure, the shutter being movable to a non-operative position for the exposure, and a feeder for feeding the sheet after exposure at least partly out of the cassette, the cassette being adapted to be loaded into a camera for the exposure.
2. A cassette as claimed in Claim 1 wherein the cassette is adapted to be engaged, after the exposure, with an automatic processor for the paper to be loaded from the cassette into the processor for processing.
3. A cassette as claimed in Claim 2 wherein the

cassette comprises a second shutter which is spring-biased to an operative position for shutting out light from the paper and is movable to a non-operative position to permit the loading of the paper from the cassette into the processor.

4. A cassette as claimed in Claim 3 wherein the cassette comprises means engageable by means on the processor to cause the movement of the second shutter into its non-operative position.

Printed for Her Majesty's Stationery Office by
Croydon Printing Company (UK) Ltd, 8/87, D8991685.
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY,
from which copies may be obtained.